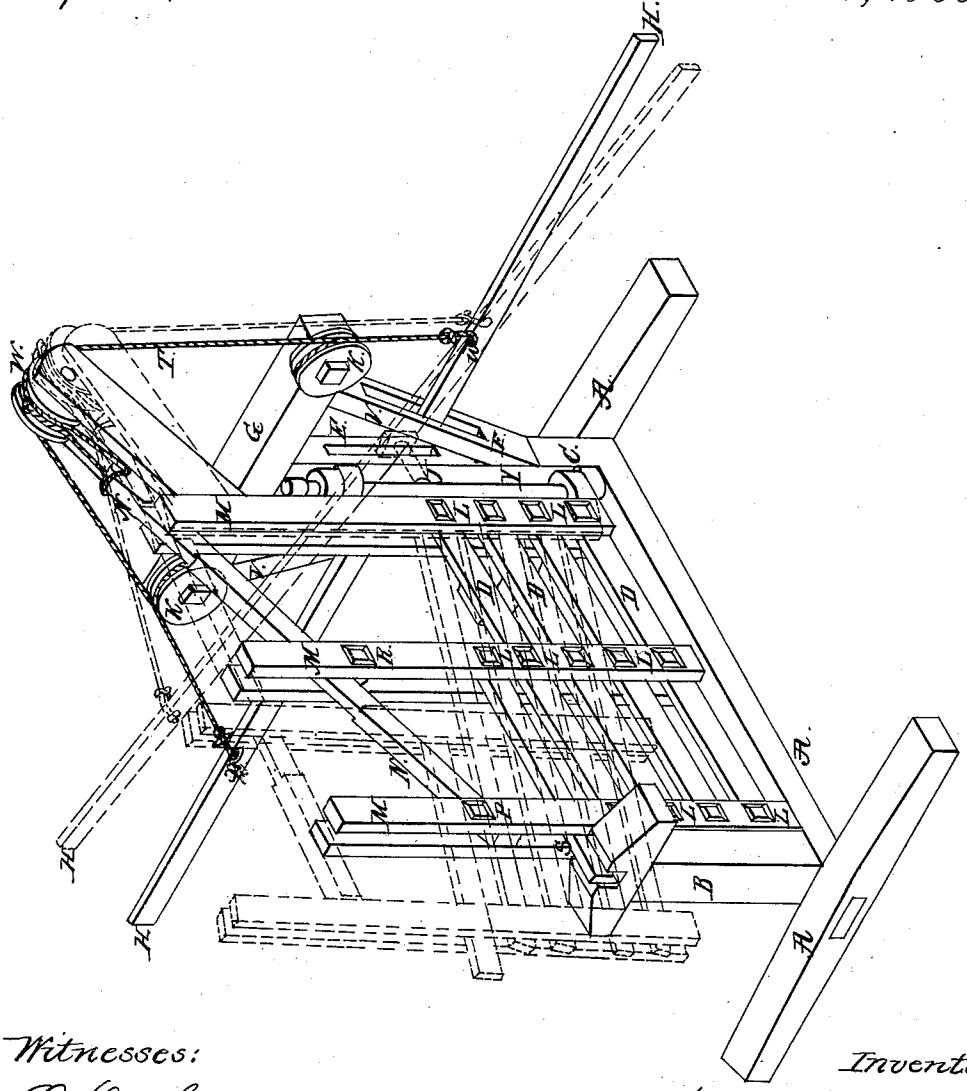
These photos were recently received from Phil Nendel while he was doing research in the U. S. Patent Office Archives. Thank you, Mr. Nendel!

# R. W. McFarland,

## Automatic Gate,

No. 59,621, Patented Nov. 13, 1866.



Witnesses:
L Luchs
Jas K. Stevens -

Inventor:
Robert Wells McFarland
By his Atty
J. Franklin Reigart.

# UNITED STATES PATENT OFFICE.

ROBERT W. McFARLAND, OF MONTICELLO, WISCONSIN.

## IMPROVEMENT IN FARM-GATES.

Specification forming part of Letters Patent No. **59,621**, dated November 13, 1866.

*To all whom it may concern:*

Be it known that I, ROBERT W. McFARLAND, of Monticello, county of Green, State of Wisconsin, have invented a new and Improved Gate or Farm-Gate; and I do hereby declare the following to be an exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the arrangement and combination of the main lever, pulleys, and V-shaped frame with an adjustable gate, so that the gate can be opened and closed by a person on horseback or in a carriage.

A represents the ground, in which the posts B and C are permanently set. The post C is higher than the rails D of the gate, and has a slot, E, and two incline-arms, V V, that are also slotted, as at F, the arms forming a V-shaped frame, with a cross-brace, G, at top. The main lever H operates in the slots E and F on a fulcrum, J, in the post C. At each end of the brace is a pulley, K. The rails D are supported by and operate on pivots L in three high posts, M, that are constructed of two flat rails, so that the gate-rails D operate between them, so that the front part of the gate is adjustable by raising or lowering when required to be opened or closed. Another rail, N, above the gate-rails D, is set at an incline from the back of the gate to the front, pivoted at front at P, and resting on bolt R, so as to slide back when required to open the gate and raise the front of the gate.

The latch S rests in the groove of the cap of the gate-post B. A rope, T, is permanently fastened to the lever H at U, passing around the pulley K, thence around the pulley W, and knotted to the end of rail N; thence again extending to the opposite pulley K, passing round it and fastened to the lever H at X.

By catching hold of either end of lever H and pressing it downward, the rail N raises the gate and opens or closes it, the red lines showing the operation of the rope T upon the rail N and the gate, so that the gate is not prevented from being opened in snowy weather, the gate rising above the snow and swinging on an upright rod-hinge, Y.

What I claim as my invention, and desire to secure by Letters Patent, is—

The V-shaped frame, lever H, pulleys K, rope T, sliding rail N, when constructed and arranged in combination with the adjustable gate, as herein described, and for the purposes set forth.

ROBERT W. McFARLAND.

Witnesses:

J. FRANKLIN REIGART,

JOHN S. HOLLINGSHEAD.

C. M. ROLPH.

CAR MOVER.

APPLICATION FILED JUNE 24, 1915.

1,167,660. Patented Jan. 11, 1916.

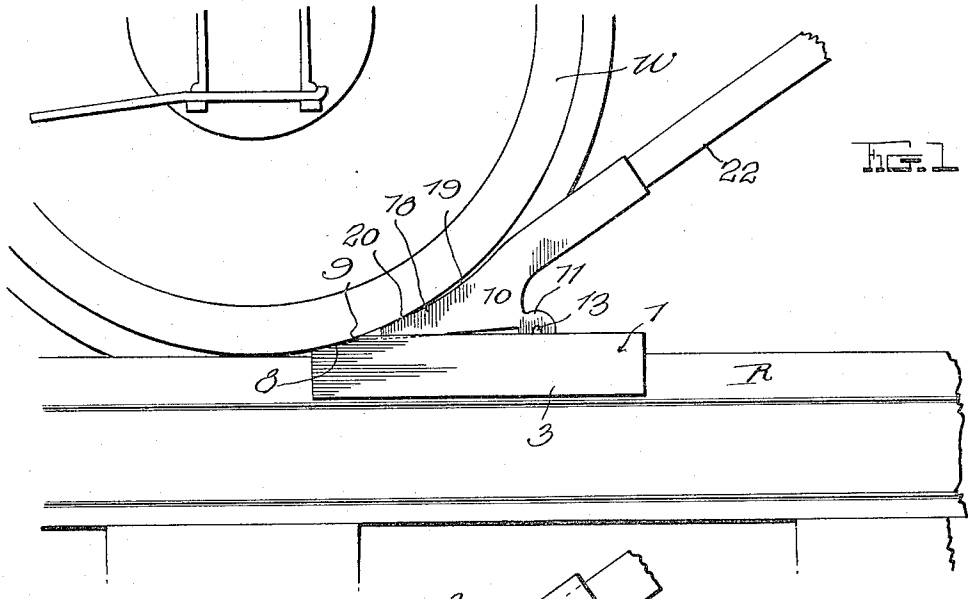



FIG. 1.

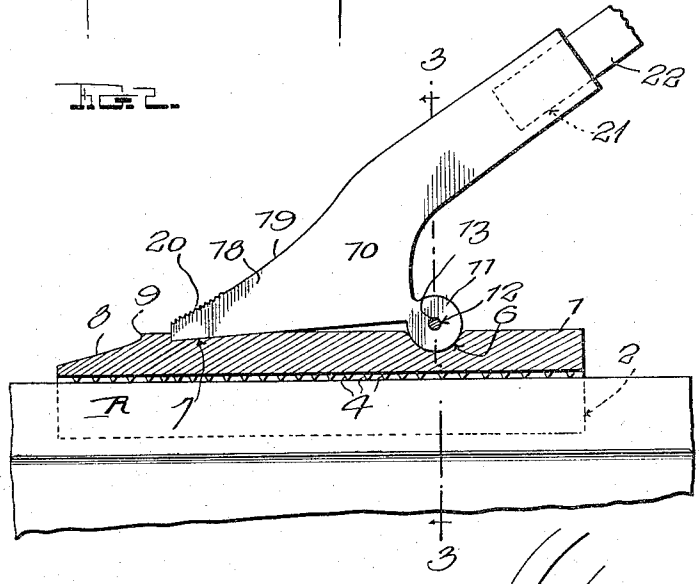



FIG. 2.

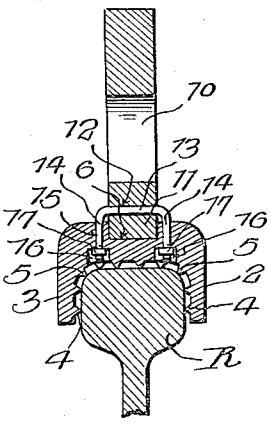



FIG. 3.

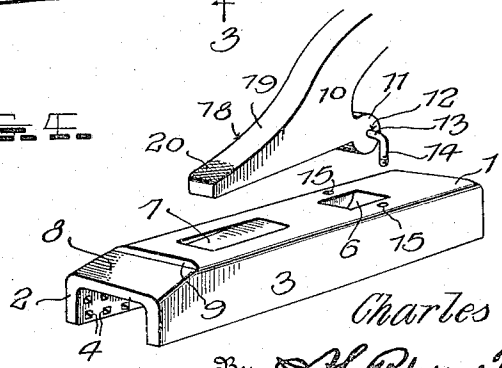



FIG. 4.

Witnesses
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By H. B. Wilson & Co
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# UNITED STATES PATENT OFFICE.

CHARLES M. ROLPH, OF MONTICELLO, WISCONSIN.

## CAR-MOVER.

1,167,660. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed June 24, 1915. Serial No. 36,123.

*To all whom it may concern:*

Be it known that I, CHARLES M. ROLPH, a citizen of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Car-Movers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in car movers, and more particularly to that class of car movers in which a pinch bar is fulcrumed on a base plate that is adapted to engage the top of a rail, and the said fulcrumed bar is designed to engage the outer periphery of a car wheel and impart a forward impulse to the car.

A further object of this invention is to provide a base plate in a device of this character which is adapted to be held tight upon the rail during the operation of the device.

A further object of the invention is to provide a device that is simple and durable in construction, inexpensive to manufacture, and one which will be very efficient in operation.

With these and numerous other objects in view, the invention consists of certain novel features of construction, combination, and arrangement of parts which will be hereinafter referred to and more particularly pointed out in the specification and claim.

In the accompanying drawings: Figure 1 is a side elevation of my improved car mover applied to use; Fig. 2 is a side elevation of the car mover applied to the top of a rail, showing the base plate in vertical section; Fig. 3 is a transverse vertical sectional view taken on the line 3—3 of Fig. 2; and Fig. 4 is a detail perspective view of my improved base plate and pinch bar spaced from one another.

In describing my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which the numeral 1 designates the base plate of my improved device which comprises a substantially U-shaped member having side edges 2 and 3 which are adapted to straddle the top of a rail R as clearly shown in Fig. 3 of the drawings. On the inner surface of the base plate 1 is formed a plurality of parallel rows of biting teeth 4 which are adapted to grip the top of the rail R. It will be noted that I have provided two of these parallel rows of teeth, so that they are adapted to engage the top or head of the rail R at the rounded portions of the same as clearly shown by the numeral 5.

The top of the base plate 1 has formed therein adjacent the rear end of the same a semi-cylindrical socket 6, and adjacent the front end of the same a forwardly inclined depression 7 for a purpose to be hereinafter more fully described. The forward end portion of the top of the base plate 1 slopes or is inclined forwardly as shown at 8, and has formed at the top of said inclined portion a shoulder 9 whereby a two-point contact with the periphery of the car wheel is had with this plate when the same is in position. The pinch bar or fulcrumed member of this device 10 has formed adjacent its forward end a cylindrical extension 11 having a circular bore 12 extending transversely therethrough. This cylindrical extension 10 is adapted to be positioned in the semi-cylindrical sockets 6 in the top of the base plate 1, and is adapted to be held therein by a U-shaped pivot pin 13 which extends through the bore 12 and has its arms 14 projecting downwardly through apertures 15 in the said base plate, that terminate in counter-sunk apertures 16 in the lower wall of said base plate. Nuts 17 are adapted to be positioned in said counter-sunk apertures 16 and to securely engage the ends of the arm sections 14 of the pivot pin 13. By this positioning, the pinch bar 10 will be fulcrumed with respect to the base plate 1.

The forward end 18 of the pinch bar 10 is adapted to be positioned in the inclined depression 7 in the top of the base plate 1 when the parts are assembled in normal position as clearly shown in Fig. 2 of the drawings. The upper face 19 of the forward portion 18 of the pinch bar is inclined so that the same may engage the outer periphery of the car wheel. This engagement between the outer face 19 and the outer periphery of the car wheel is made additionally secure by the provision of a roughened surface 20 on the said outer face.

Disposed in the upper end of the pinch bar 10 is a socket 21 into which is adapted to be placed any desired form of operating

tool, for instance, an ordinary crowbar or any analogous implement. The lengths of the operating tool 22 may be varied as desired to suit the user. When the parts of this device are assembled as shown in Fig. 1 of the drawings, it will be noted that the base plate 1 is moved forwardly along the top of the rail R until it engages the outer periphery of the wheel W at its forward end, at two points; namely the forwardly inclined portion 8 of the same and the shoulder 9 formed thereon. By these two points of contact the base plate 1 will be firmly held beneath the said wheel, and the front end of the plate will be prevented from rising off the track or rail during the operation of the pinch bar 10. In other devices of this character where there was only a single point of contact between the base plate and the periphery of the car wheel, upon operation of the fulcrumed member of the device the forward end of the base plate, in the majority of cases, becomes lifted out of contact on the rail, thereby rendering the device insecure and liable to slide from its operative position.

The forwardly inclined depression 7 in the top of the base plate in my device forms a socket or shoulder in which the forward end 18 of the pinch member 10 is positioned while this device is being placed in position to the car wheel. Also the particular pivotal construction involved in my device which is shown in Fig. 3 of the drawing and clearly described hereinbefore, is a very efficient means employed in a device of this character and one which will easily and efficiently perform the operation described.

The parallel rows of teeth 4 on the inner surface of the U-shaped base plate of my device, particularly the positioning of the rows 5 the purpose of which has been hereinbefore set forth, makes this device one that absolutely cannot become loose when once placed in operative position.

From the foregoing description of the construction of my improved car mover, the manner of applying the same to use, and the operation thereof will be readily understood and it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the object of the invention.

I have particularly described the elements best adapted to perform the functions set forth, but it is obvious that various minor changes as to form, proportion, and in the minor details of construction may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the principles of this invention.

I claim as my invention:

A car mover comprising an inverted substantially U-shaped base plate, a plurality of teeth on the inner surface of the same, the top of said plate having a semi-cylindrical socket adjacent its rear end and a longitudinally extending forwardly inclined depression adjacent its forward end, the said forward end of the plate extending vertically downward and then inclined forwardly, a pinch bar having a cylindrical extension fulcrumed on the said socket, a U-shaped pivot pin extending laterally through said extension and having its arms projecting downwardly through the top of said base plate, counter-sunk positioning means to hold the ends of said arms, the forward end of the pinch bar positioned in the said inclined depression, and the outer forward face of said pinch bar being roughened for engagement with the outer periphery of the car wheel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES M. ROLPH.

Witnesses:
W. A. LOVELAND,
FANNIE BENKERT.

(No Model.)

# D. STEUSSY.

## CONDUCTOR SUPPORT.

No. 397,036. Patented Jan. 29, 1889.

Fig. 1.

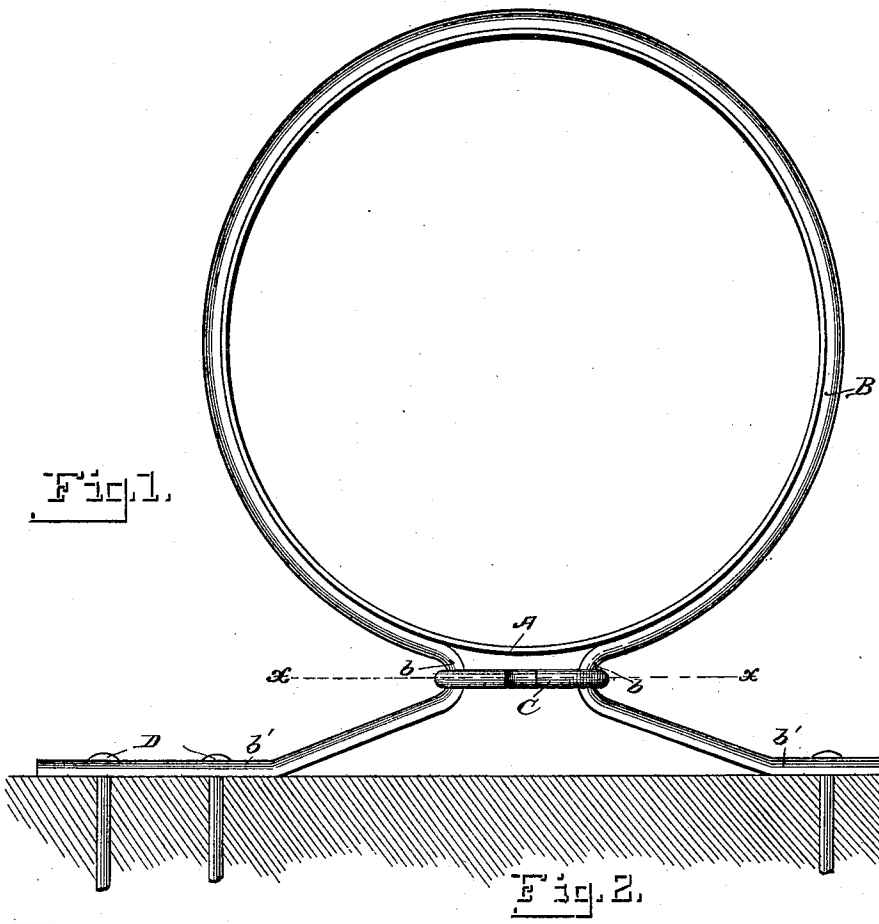
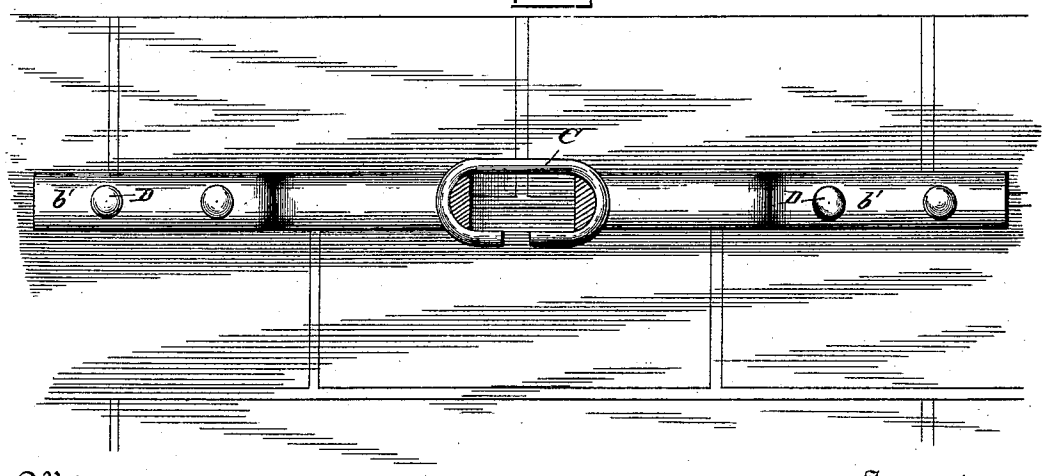



Fig. 2.




Witnesses,
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George H. Lamar.

Inventor,
David Steussy
by Wiles & Greene
Attorneys

# UNITED STATES PATENT OFFICE.

DAVID STEUSSY, OF MONTICELLO, WISCONSIN.

## CONDUCTOR-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 397,036, dated January 29, 1889.

Application filed May 8, 1888. Serial No. 273,195. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID STEUSSY, a resident of Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Conductor-Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in supports for rain-water conductors, and more especially in supports adapted to be fastened to brick walls.

The invention is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a top plan of my improved support in operative connection with a vertical conductor and attached to a wall. Fig. 2 is a vertical section through the line X X, Fig. 1.

In the views, A is a conductor-pipe of ordinary construction, and B is a band of wrought-iron, preferably half-oval in cross-section, conforming to the shape of the pipe and extending very nearly around it. At that point of the pipe where it is nearest the wall to which it is attached the ends of the band B are turned outward, forming two sharp curves or bends, *b*, which are connected by an open link, C, the ends of the link being drawn together sufficiently to draw the band B close about the conductor-pipe A, and the ends of the band B are carried obliquely outward and away from the pipe a short distance, and are then bent into the same plane, forming feet *b'*, perforated for the insertion of nails or screws D and adapted for ready attachment to the plane surface of a wall of brick or wood. In practice these supports are prepared in a shop or factory in substantially the form shown in the drawings, the bends and perforations being made so that a support is ready for connection with the conductor-pipe and for attachment to a building. The bends *b* being sufficiently separate, the band is passed about the conductor and the open link C is put in position and closed by the use of suitable pliers until it draws the band tight. The feet *b'* of the support are then fastened to the wall and the application of the device is completed. The support thus formed and attached is simple and easy of application and forms a strong and secure fastening with very slight rust-surface and with great rigidity.

The application of the link is a great advantage, since it draws the band so closely about the pipe as to make the band and pipe practically a single structure, so that this support sustains the weight of the conductor as effectively as if it were soldered or riveted to it.

It will be observed that this support is so formed as to hold the conductor-pipe at a considerable distance from the wall to which the support is fastened, and this is a material advantage. since it permits free access to the rear face of the pipe and also to the wall directly behind the pipe for the purpose of painting.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a conductor-support, a band adapted to extend nearly about the circumference of a conductor-pipe and having its ends turned outward for attachment to a wall, and a link connecting the bends in said band and adapted to draw them together and clamp the band about the conductor.

2. The band B, having its ends turned outward, forming bends *b* and feet *b'*, in combination with the open link C, connecting the bends *b* and adapted to draw them together, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID STEUSSY.

Witnesses:
R. H. WILES,
M. STOSKOPF.

(No Model.)

# D. STEUSSY.

## CONDUCTOR SUPPORT.

No. 397,037. Patented Jan. 29, 1889.

Fig. 1.

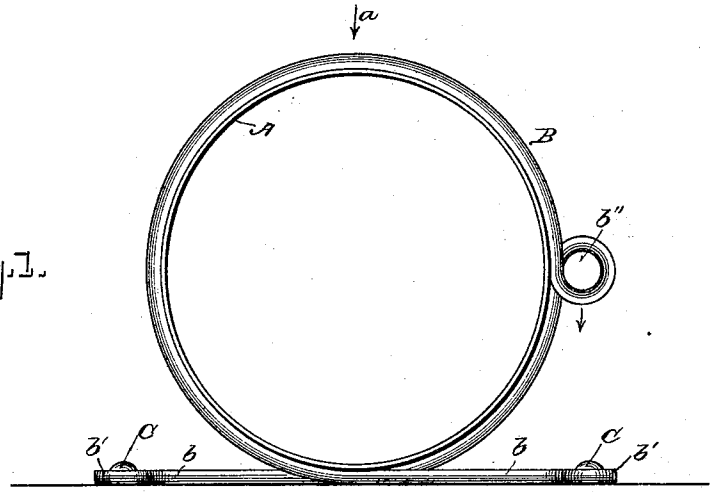



Fig. 2.

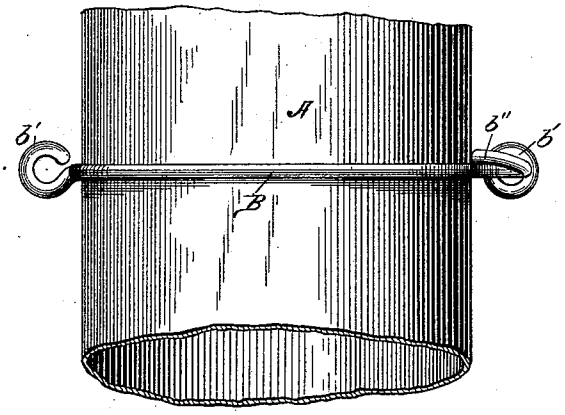
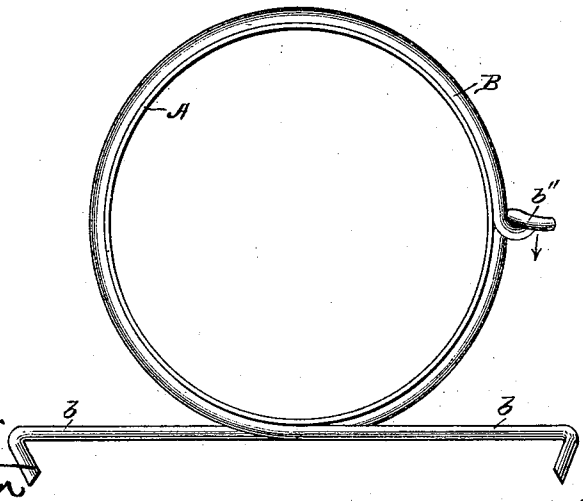



Fig. 3.




Witnesses
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Inventor.
David Steussy
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Attorneys

# UNITED STATES PATENT OFFICE.

DAVID STEUSSY, OF MONTICELLO, WISCONSIN.

## CONDUCTOR-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 397,037, dated January 29, 1889.

Application filed May 8, 1888. Serial No. 273,196. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID STEUSSY, a resident of Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Conductor-Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in fasteners or supports for rain-water conductors, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a top plan of my improved fastener fastened to a wall and in operative connection with a conductor. Fig. 2 is a front elevation of the same, looking in the direction indicated by the arrow *a*, Fig. 1. Fig. 3 is a plan similar to Fig. 1, the eye *b''* in the fastener being twisted for the purpose hereinafter set forth.

In the views, A is an ordinary conductor-pipe, and B is a wire bent to encircle and conform to the pipe, and having straight ends *b*, provided at their extremities with loops or eyes *b'*, adapted to receive nails or screws C for fastening the support to a wall of wood or brick. At any desired point in the portion of the wire B which encircles the pipe is formed a loop or eye, *b''*, which may be readily twisted either by means of a pair of grasping-pliers or by means of an awl or nail of sufficient length and strength passed through the eye.

In practice the fastener is attached by passing it about the conductor, bringing it into the position shown in Fig. 1, and nailing its ends to the wall, drawing them sufficiently to make the wire as close as is convenient. After nailing or otherwise securing the ends of the wire the support may be tightened upon the conductor to any desired degree by twisting the eye *b''*. If the wire be drawn reasonably close before nailing, a quarter-turn of the eye, bringing it into the position shown in Fig. 3, will tighten it sufficiently to hold the conductor firmly in position; but no matter how loose the wire may be before twisting the eye the slack can easily be taken up and the wire rendered perfectly tight by twisting the eye sufficiently. I have found, in fact, that a conductor-pipe of any ordinary construction may be pressed together by the tightening of the wire, the only limit to the pressure which can be put upon it being the strength of the wire and of the nails with which it is fastened to the wall.

It may be found advantageous to form the eye *b''* with a quarter-twist, as shown in Fig. 3, before applying it to the conductor, as this starts the twist evenly; but this is not essential either as a factor of the invention or as an incident in its use.

It is evident that, instead of forming eyes at the ends of the wire for attaching it by means of nails or screws, the ends may be turned downward, forming points for attachment, as shown in Fig. 3; but, as these points are a well-known equivalent of the eyes for this purpose, I do not regard the difference as essential.

Having now described my invention and explained its operation, what I claim as new, and desire to secure by Letters Patent, is—

1. A conductor-support consisting of a single wire adapted to encircle a conductor-pipe and having ends formed for attachment to a wall, and an intermediate loop or eye adapted to be twisted for shortening the wire after its application to the conductor, substantially as and for the purpose set forth.

2. The conductor-support consisting of the wire B, bent to encircle a conductor-pipe and formed with an eye, *b''*, and having ends *b*, provided with eyes *b'* for attaching the support to a wall, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID STEUSSY.

Witnesses:
R. H. WILES,
J. A. CRAIN.

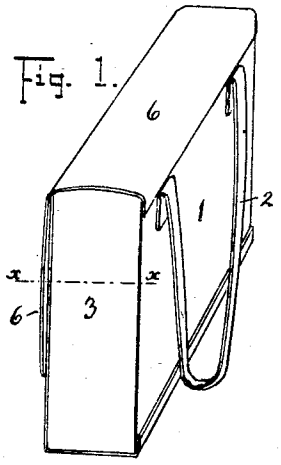
E. KOSTA.

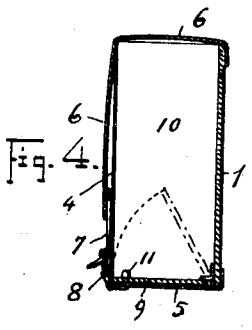
FLEXIBLE OR RIGID HAND BAG.

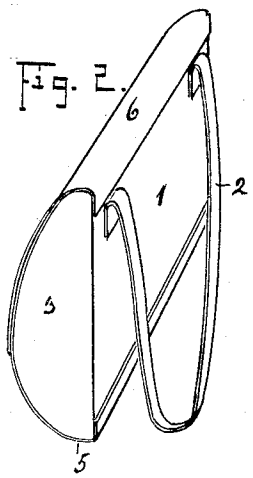
APPLICATION FILED SEPT. 22, 1915.

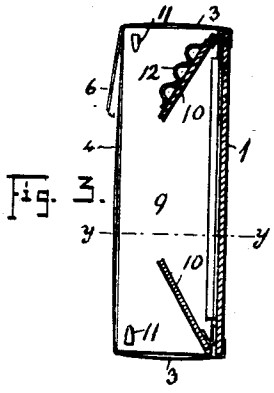
1,273,875.

Patented July 30, 1918.



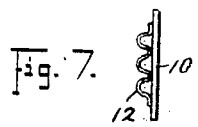
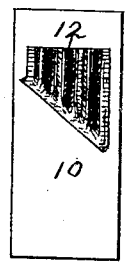
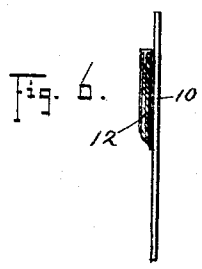




Fig. 5.




WITNESSES:

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M.M. Denbigh.

INVENTOR

Emanuel Kosta

BY Munn Pritchett

ATTORNEY

# UNITED STATES PATENT OFFICE.

EMANUEL KOSTA, OF MONTICELLO, WISCONSIN.

## FLEXIBLE OR RIGID HAND-BAG.

1,273,875. Specification of Letters Patent. Patented July 30, 1918.

Application filed September 22, 1916. Serial No. 121,606.

*To all whom it may concern:*

Be it known that I, EMANUEL KOSTA, a citizen of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented new and useful Improvements in Flexible or Rigid Hand-Bags, of which the following is a specification.

This invention has for its object to provide a hand bag or luggage carrier which can readily be changed from a rigid structure to a flexible one. Another object is to provide a bag which can readily be interchangeable so as to vary the carrying capacity of the same.

Another object of the invention is to provide a bag in which the frame members are collapsible or foldable so as to vary the nature of the bag.

These and other objects will clearly present themselves after reading the following specification in connection with the accompanying drawings.

Figure 1 is a perspective view of the bag in the so called rigid condition, Fig. 2 is a similar view of the bag showing the same changed into a so called flexible bag, Fig. 3 is a transverse sectional view on line *x—x* Fig. 1, Fig. 4 is a sectional view on line *y—y* Fig. 3, Fig. 5 is a front elevation of one of the hinged side frame members, Fig. 6 is an edge view and Fig. 7 is a top view of said frame member.

In the drawings numeral 1 designates a rigid back to which is attached either a rigid or flexible handle 2, a flexible one being illustrated in the drawing. To this rigid back, at its two sides and bottom, is secured a flexible leather or cloth structure which constitutes the two side walls 3—3 the front wall 4 and the bottom 5 of the bag. To the top of the rigid back 1 is secured a flap member 6 which constitutes the top or cover for the bag. To the free edge of this flap 6 is secured straps 7—7 which engage fastening members 8—8 secured adjacent the bottom of the bag.

The structure so far described constitutes a so called flexible bag or in other words one in which the side walls are yieldable and the fastening straps may be drawn in more to cause a binding action between the articles carried and the front, bottom and corner of said bag. In this form of bag the goods contained therein are positively prevented from relative movement. In the so called rigid type of bag either the two side members or the top and bottom members or all of said members are non-collapsible so as to retain the rectangular formation of the bag either in its fastened or unfastened condition. Bags of this general rigid type are commonly old but it is the purpose of my invention to provide a bag which may be readily interchanged from the rigid to the flexible type yet retain all of the characteristics of both types.

Within the flexible bag structure and hingedly secured to the bottom of the rigid back 1 is a rigid bottom 9, and to either side of the back 1 is similarly secured rigid side members 10—10. The dimensions of the rigid bottom and side members are such that when they are extended within the flexible bag all of the walls of the latter are under a slight tension. This positively removes all wrinkles and thereby greatly improves the outside appearance of the bag. In order that the tension that is placed on the outside flexible structure will not force the rigid bottom and side members to collapse lugs 11—11 are provided on the bottom member and behind these the side members are held. The bottom 9 is flexibly hinged to the back 1 so as to allow sufficient space between said back and bottom member for the side members when said bottom member is folded over the folded side members. Any suitable material may be used for the back, bottom and side members such as sheet metal, heavy leather, leather covered cardboard or other material that will not bend under ordinary conditions but will yield when undue pressure is exerted upon the exterior of the bag.

Pocket members 12 are provided on any one of the rigid members for the purpose of carrying articles.

To change from the flexible type of bag described in the first part of this specification to the rigid type all that is necessary to do is to first extend the rigid bottom member then the two side members forcing the latter over the locking lugs on the bottom member.

When the bag is to be changed back to the flexible type the bottom is slightly depressed till the lugs are clear of the side members, then these latter are folded inward against the back 1, then the bottom member

is folded upwardly overlapping the already folded side members.

While I have described the preferred form of my structure I wish it understood that certain deviations therefrom may be resorted to without sacrificing any of the spirit or scope of the invention.

What I claim is:

1. In an interchangeable bag of the class described having a rigid back member, a flexible structure secured to the rigid back constituting the front, sides and bottom of the bag, in combination with side and bottom members hingedly secured to the rigid back and arranged to be extended within the flexible structure to sustain the same when in one position thereby forming a rigid structure, said hinged members adapted to be folded over each other to form a flexible structure when in another position.

2. In an interchangeable bag of the class described having one rigid wall, a flexible structure secured to the said rigid wall constituting the front, sides and bottom of the bag, in combination with collapsible side and bottom members removably associated with certain walls of the flexible structure to sustain the same in a rigid state, said side and bottom members when collapsed providing a flexible structure, and means for locking the collapsible members in their extended position.

3. In an interchangeable bag of the class described having one rigid wall, a flexible structure secured to the said rigid wall constituting the front, sides and bottom of the bag, in combination with side and bottom members hingedly secured to the rigid wall and arranged to be extended within the flexible structure to rigidly sustain the same when in one position, said side and bottom members adapted to be folded over each other to form a flexible structure, and lugs on the bottom member behind which the side members lock when all of the said members are in extended position.

4. In an interchangeable bag of the class described having a rigid back member, a flexible structure secured to the rigid back constituting the front, sides and bottom of the bag, in combination with side and bottom members hingedly secured to the rigid back and arranged to be extended within the flexible structure to sustain the same and thereby form a rigid structure, said side and bottom members arranged to be folded over each other and thereby form a flexible structure.

5. In an interchangeable bag of the class described having a rigid back member, a flexible structure secured to the rigid back constituting the front, sides and bottom of the bag, in combination with side and bottom members hingedly secured to said back member and adapted to be folded over each other to provide space for articles to be placed therein, and means secured to the free ends of the flexible structure for drawing said ends together whereby the size of the bag may be diminished and articles placed therein may be prevented from relative movement.

This specification signed and witnessed this 2nd day of Septbr., 1916.

EMANUEL KOSTA.

Witnesses:
FANNIE G. BENKERT,
D. KLING.

March 30, 1926. 1,579,055

G. ARN

GATE

Filed Jan. 24, 1924 2 Sheets-Sheet 1

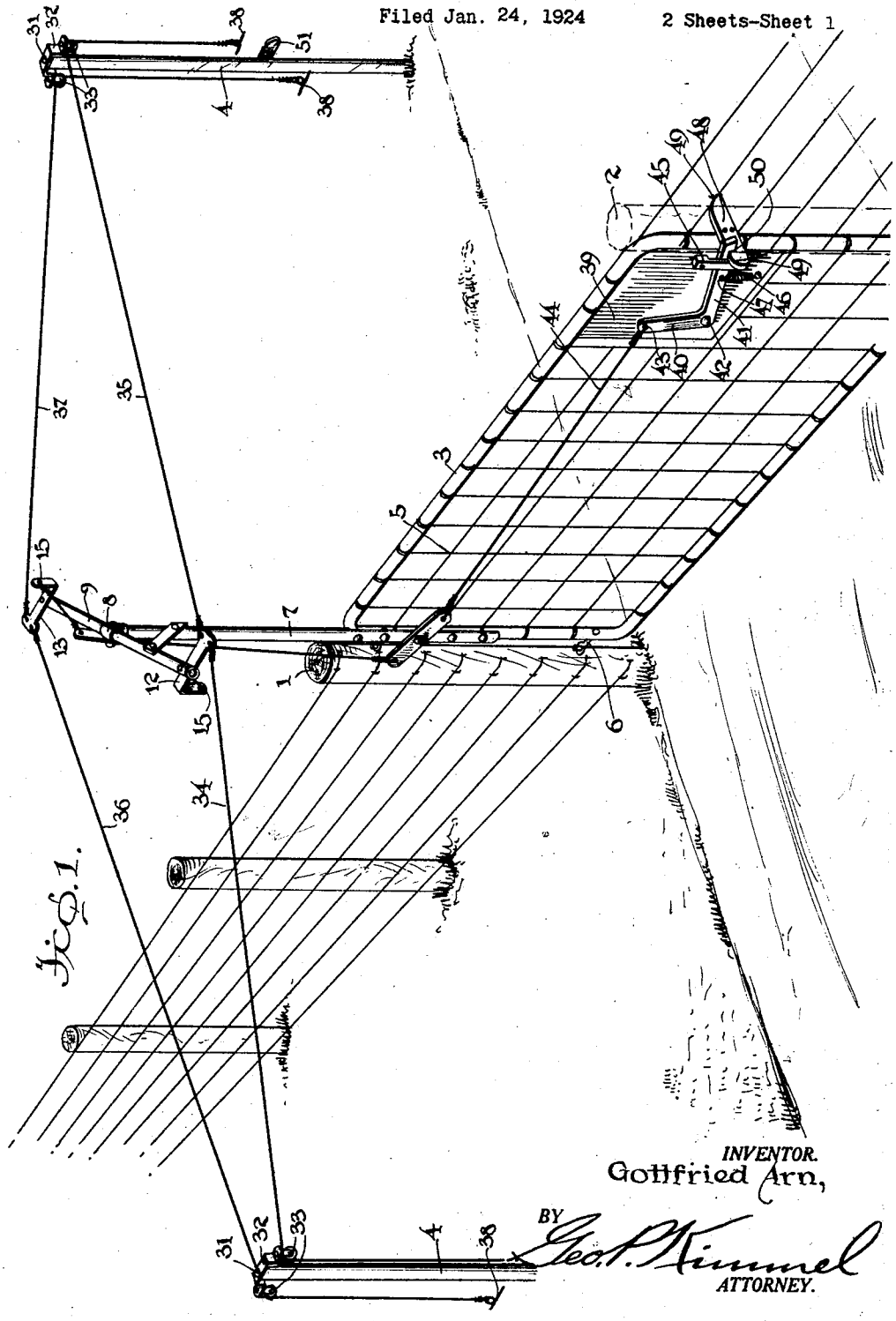


Fig. 1.

INVENTOR.
Gottfried Arn,

BY Geo. P. Kimmel
ATTORNEY.

March 30, 1926. 1,579,055

G. ARN

GATE

Filed Jan. 24, 1924 2 Sheets-Sheet 2

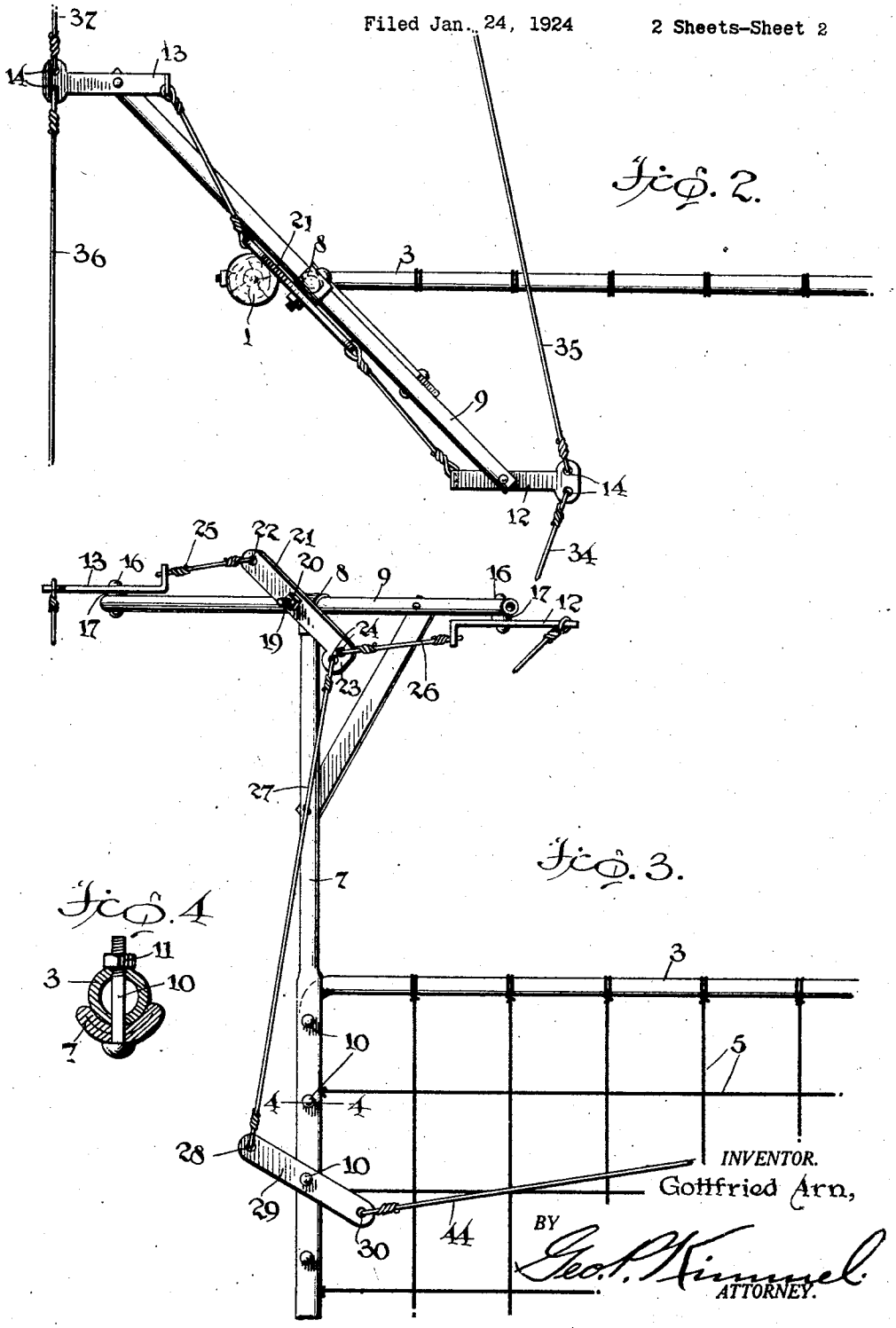



Fig. 2.

Fig. 3.

Fig. 4.

INVENTOR.
Gottfried Arn,
BY
Geo. P. Kimmel.
ATTORNEY.

Patented Mar. 30, 1926. 1,579,055

# UNITED STATES PATENT OFFICE.

GOTTFRIED ARN, OF MONTICELLO, WISCONSIN.

## GATE.

Application filed January 24, 1924. Serial No. 688,235.

*To all whom it may concern:*

Be it known that I, GOTTFRIED ARN, a citizen of Switzerland, residing at Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Gates, of which the following is a specification.

This invention relates to gates and more particularly to the class of automatic gates which are adapted to be operated at a distance from the gate.

The primary object of the invention is the provision, in a manner as hereinafter set forth, of an automatic gate having an improved means connected therewith by which the gate may be swung at a distant point from the gate and swung to from a distant point at the opposite side of the gate after passage has been made therethrough. This gate is especially constructed for vehicle roads, although the same is not confined to such application, and the operating means therefor is so positioned and arranged that a person approaching the gate in a vehicle can cause the gate to automatically swing open without the necessity of alighting from the vehicle and going forward to operate the gate and after the gate has been passed the occupant of the vehicle can manipulate other apparatus on the opposite side of the gate to cause the same to swing to the closed position.

A further object of this invention is the provision in a manner as hereinafter set forth, of a means for bringing about the opening and closing of a gate from a distant point on either side of the gate and at the same time automatically releasing a latch means on the gate whereby the gate can be unlatched from the post against which it abuts.

A further object of the invention is the provision in a manner as hereinafter set forth, of an automatic gate which is strong and durable, which has no parts to easily get out of order, which is quick and efficient in its action, and inexpensive to manufacture.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming part of this specification, with the understanding that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claim.

In the drawings:

Figure 1 is a perspective view of the device embodying this invention shown as set up and ready for use.

Fig. 2 is a top plan view of the rear portion of the gate and the operating mechanism connected therewith.

Fig. 3 is a detail side elevation of the operating mechanism located at the rear or pivoted end of the gate.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3.

Referring to the drawings, wherein like numerals of reference indicate corresponding parts throughout the several views there is shown at 1 and 2 the usual fence or gate posts in a fence line between which there is swung a gate 3 of any desired construction. Located at opposite sides of the gate post upon which the gate 3 swings are posts 4 being as shown of substantially greater height than the fence post of the fence, and these posts 4 are located or placed from the gate supporting post 1 a distance equal to the distance betweeen the posts 1 and 2. The purpose for this will become apparent as the description of the device proceeds.

The gate 3 is here shown as being constructed of a tubular iron frame having wire 5 carried thereon, but, it is obvious that any type of gate may be used. This gate is pivotally swung in any well known manner upon the post 1 as at 6. Secured to the hinged end of the gate 3 and extending a substantial distance above the gate is an upright post 7 here shown as formed of tubular material and carrying at its upper end a T-coupling 8 carrying a cross-head 9 at the upper end of this post 7. The lower portion of the post is flattened as indicated clearly in Fig. 4 and is secured to the frame of the gate by means of the bolts and nuts 10 and 11. The cross bar 9 at the upper end of the post 7 is positioned at an acute angle with respect to the fence line and this post and cross arm form a substantially T-shaped member carried by and extending above the rear part of the gate 3.

The outer or free ends of the cross bar 9 have secured thereto bell cranks 12 and 13 respectively, each having a long arm and a short arm and one being at right

angles to the other. The free end of the long arm of each of these bell crank members is enlarged and has formed therethrough a pair of apertures 14 and the short arm of each of the members has formed therethrough a single aperture 15. Each of the levers 12 and 13 further has formed through its long arm intermediate the ends thereof an aperture through which there is passed a bolt 16 which passes through the end of the cross arm 9 and pivotally secures the lever thereto. A washer 17 is interposed between each lever and the adjacent portion of the arm 9. As is clearly shown, the lever 12 is inverted, its short arm depending and is secured to the underside of the arm 9 and at that end which is directed toward the front end of the gate. The lever 13 is oppositely positioned from the lever 12 and as shown has its short arm standing upright and the long arm secured to the upper portion of the arm 9 and at that end directed away from the gate.

Extending horizontally through the T connection 8 is a bolt 19 which pivotally secures to the coupling by means of a nut 20 a link member 21. This link member has a passage through its body portion intermediate its ends through which the bolt 19 extends, and further has one end provided with a single aperture 22 and its other end, which is enlarged as at 23, is provided with a pair of apertures 24. This pair of apertures is positioned in a line transverse to the longitudinal axis of the link. This link 21 is normally disposed at an inclined angle with respect to the cross arm 9, and is connected at its upper end to the upright short arm of the lever 13 by means of a flexible wire or cable 25 one end of which is passed through the aperture 22 and the link 21 and the other end passed through the aperture 15 in the lever 13. One of the apertures 24 in the other end of the link 21 has passed therethrough one end of a flexible wire or cord 26 which has its other end passed through the aperture 15 in the lever 12. These flexible connections 25 and 26 are at all times drawn tight as shown clearly in Figure 3. Passed through the other of the apertures 24 in the enlarged portion 23 of the link 21 is another flexible connecting element 27, which passes downwardly and has its other end connected through an aperture 28 in a link 29 pivotally secured intermediate its ends, by means of one of the bolts 10, to the lower portion of the post 7. This link 29 is also normally at an angle with respect to the post 7, and the flexible element 27, which connects it with the link 21 is normally drawn tight between the two links. The other or lower end of this link 29 is provided with a single aperture 30.

Pivotally secured upon the top of each of the posts 4 by means of a bolt 31 is a yoke member 32 having pivotally secured to each end, and at the under side thereof, a single pulley 33. Connected at one end through the apertures 14 in the enlarged ends of each of the levers 12 and 13 are flexible cords or cables 34, 35, 36 and 37 respectively, and the free ends of each of these cables passes over one of the pulleys 33. As clearly shown in Figure 1 of the drawings, the cable 34 is connected to the aperture14 in the lever 12 and passes away from one side of the fence and gate to and over one of the pulleys suspending from the yoke upon the post on that side of the gate, while the cable 35 extends from the same lever 12 to the opposite side of the fence and over the pulley 33 carried by the yoke which in turn is suspended by the post 4 from the opposite side of the fence. The arrangement and connection of the cables 36 and 37 at the opposite end of the arm 9 is identical with the arrangement of the cables 34 and 35. The free depending ends of each of the cables is supplied with a grasping means 38.

Fixed to the front upper portion of the gate 3 is a plate member 39 carrying on one side thereof a latch member in the form of a bell crank lever having the arms 40 and 41. At the joinder of these two arms there is passed through the lever a bolt 42 which is secured to the plate 39 and upon which the lever pivots. At the outer end of the arm 40 which is of less length than the arm 41 there is formed an aperture 43 and through this aperture there is passed and secured one end of a flexible cable 44, the other end of which is passed through the aperture 30 in the link 29 at the rear part of the gate. The longer arm 41 is adapted to ride in a guide block 45 carried by the plate 39, and this arm 41 is normally retained drawn down to the lower portion of the slot in the guide block 45 by means of the spring 46 which has one end secured in an aperture 47 in the arm 41 inwardly of the guide block 45 and has its other end secured to the plate 39 below the said arm. Secured to the face of the post 2 is a keeper 48 which has its end portions curved upwardly as at 49 and further has formed in its top edge a notch 50 adapted to receive the latch end of the bell crank lever. When the gate is swung open the outer or latch end of the arm 41 engages a similarly formed keeper 51 secured to the post 4.

The operation of this gate is as follows:

It is assumed that the vehicle approaches the gate from the side opposite to that upon which the latch is shown. The occupant leaning out of the vehicle will grasp the handle 38 of the cord 35 and upon the actuation of this cord the bell crank lever 12 will be rotated upon its pivot 16 causing the short

arm thereof to pull the cord 26 in such a manner as to draw upwardly the head 23 of the link 21. This draws upwardly the cord 27 and also the upper end of the link 29 which is pivotally carried by the rear portion of the gate causing the cord 44 to be drawn rearwardly and actuating the bell crank lever carried upon the plate 39 to release the arm 41 from the notch 50 in the keeper 48. A continued pulling upon the cord 35 will cause that end of the arm 9, which carries the lever 12, to be drawn towards the person actuating the cord 35, thus causing the gate to swing open and when fully swung to the open position the arm 41 of the bell crank lever will engage the keeper 51 to secure the gate in open position until the vehicle has passed through the gate. After the passage through the gate the operator stops his vehicle at the side of the other post 4 and grasping the handle member 38 of the cord 34 draws upon the cord, which will cause the bell crank lever 12 to reverse its position, that is the position in which it is shown in Figure 2, and draw upon the cord to release the latch member upon the plate 39 in the same manner as above described. A continued pulling upon the cord 34 will then cause the gate to be drawn to and latched.

What I claim is:—

A gate structure of the character described, comprising spaced head and latch posts, a gate hinged to the head post, a standard fixed to the hinged end of the gate and rising a distance above the same, a T-fitting on the upper end of said standard, a cross-arm trained through the T-fitting, L-shaped members pivoted to the outer ends of the cross arm, vertical posts arranged on opposite sides of the head post, brackets carried at the upper ends of the said vertical posts and having pulleys at opposite sides of the same, a lever pivoted medially to the T-fitting and having flexible connection with the short arms of the L-shaped members, and cables connected with the long arms of the L-shaped members and extending in opposite directions and trained over said pulleys, and a latch carried by the gate and co-operating with the keeper on the latch post and having connection with one end of the lever.

In testimony whereof, I affix my signature hereto.

GOTTFRIED ARN.

(No Model.)

# D. STEUSSY.

## HARNESS.

No. 329,685. Patented Nov. 3, 1885.

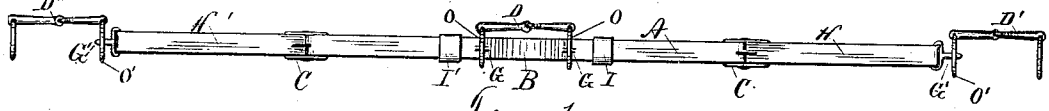



Fig. 1.

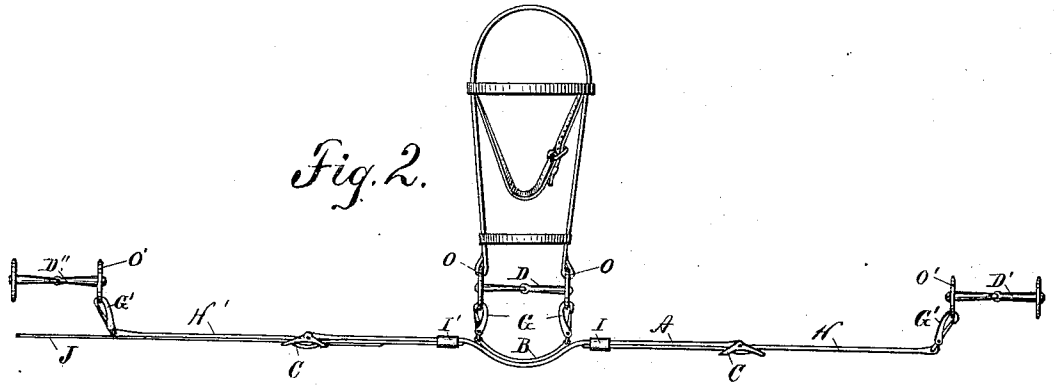
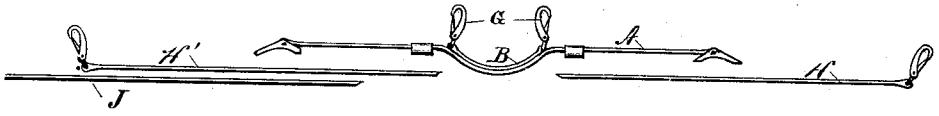



Fig. 2.

Fig. 3.




WITNESSES:

L. M. Currier

J. W. Emmert

INVENTOR

David Steussy

BY

Wiles and Greene

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

DAVID STEUSSY, OF MONTICELLO, WISCONSIN.

## HARNESS.

SPECIFICATION forming part of Letters Patent No. 329,685, dated November 3, 1885.

Application filed June 8, 1885. Serial No. 168,039. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID STEUSSY, a resident of Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Harness; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in harness, and especially to devices for coupling three or five horses when driven abreast. The invention is described and explained in the following specification and shown in the accompanying drawings, in which—

Figure 1 is top plan of my device connecting the bits of three bridles; Fig. 2, a front elevation of same looking in the direction indicated by the arrow in Fig. 1, a bridle of ordinary form being shown in connection with the central bit of the series; Fig. 3, a front elevation showing the detached parts of my device.

In these views, A is the center strap of my device, provided at its ends with buckles C, and at its center with a preferably flat or half-oval bent bar of metal, B, in whose ends are pivoted two snap-hooks, G, for attaching to the bit-rings O of the central horse of the team. Extension-straps H are fastened to the ends of the center strap by means of the buckles C, the ends of the extension-straps being held in loops I, fastened to the center strap. Snap-hooks G′ are fastened in the ordinary way to the ends of the extension-straps H, and engage, respectively, the inner bit-rings, O′, of the two horses on opposite sides of and next to the center horse, all the bit-rings being attached to bridles of ordinary form, as illustrated in Fig. 2, in which a bridle is shown in connection with the central bit of the series. A second pair of extension-straps, J, may be fastened to the center strap by means of the buckles C, as shown in Fig. 2, the outer end of each of said straps being provided with a snap-hook for attaching to the inner bit-ring of a horse when five are harnessed abreast.

The buckles and snaps used for making the connection of the parts shown and described may have any desired form. Those shown are such as are in common use, and no novelty is claimed for them. The bar B need not have the exact curve shown. In fact, it may be made straight; but it is preferable to curve it for the purpose of avoiding the striking of the jaw of the horse when the device is in use. I have used the connecting devices without the bar B, fastening the snaps G to the center strap, A, or to a short strap attached to the center strap; but I consider the iron bar a material advantage.

The arrangement for attaching the straps J may be varied, if desirable, by substituting for each of the snaps G′ a combined snap and buckle and fastening the straps J therein, instead of carrying them to the buckles C, as shown; and a limited device may be substituted for each of the snaps G at the center, though the use of the ordinary snaps and buckles shown gives perfectly satisfactory results.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device for coupling an odd number of horses harnessed abreast, the combination, with a strap, of two snap-hooks near its center adapted to engage both the bit-rings of the center horse, and other snap-hooks placed at suitable intervals, and each adapted to engage one of the bit-rings of a horse on either side of the central horse.

2. The combination of the center strap, A, the bar B, and snaps G, the buckles C, extension-straps H, and snaps G′, substantially as shown and described and for the purpose set forth.

3. The combination of the center strap, A, the bar R, and snaps G, the buckles C, extension-straps H and J, and snaps attached to the outer ends of said extension-straps, substantially as shown and described, and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID STEUSSY.

Witnesses:
J. A. CRAIN,
M. REINEKE.

H. F. KUBLY.

HAY SLING.

APPLICATION FILED JUNE 26, 1919.

1,319,291.

Patented Oct. 21, 1919.

2 SHEETS—SHEET 1.

FIG. 1

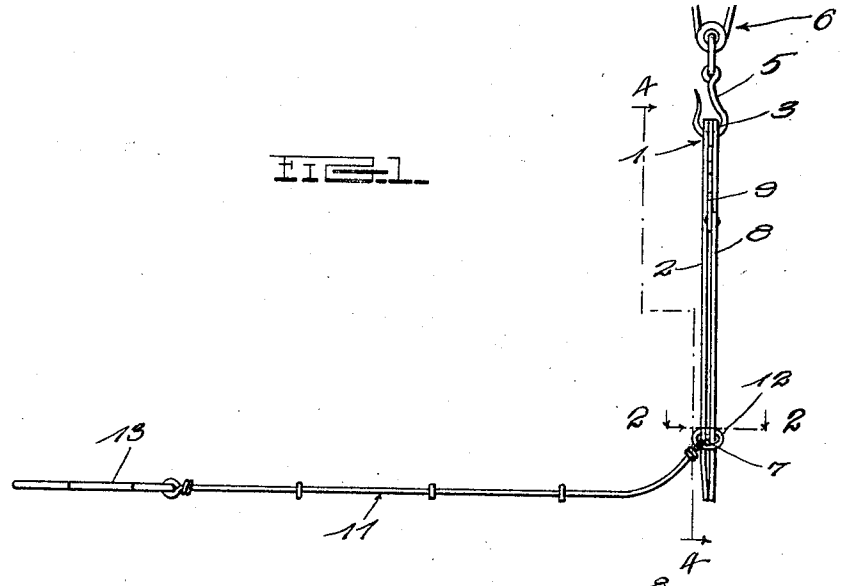



FIG. 2

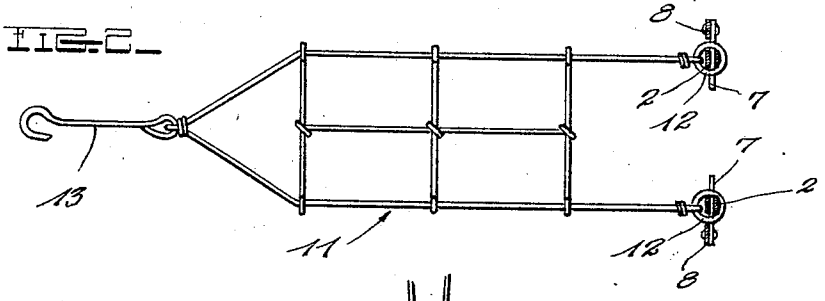
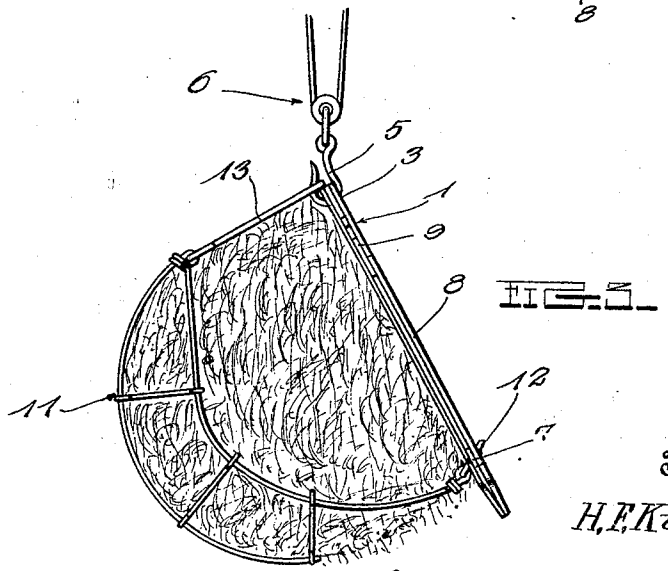



FIG. 3




Witness

Georg M. Gibney Etts

Inventor

H. F. Kubly

By A. B. Williamson & Co

Attorneys

H. F. KUBLY.

HAY SLING.

APPLICATION FILED JUNE 26, 1919.

1,319,291.

Patented Oct. 21, 1919.

2 SHEETS—SHEET 2.

FIG. 4.

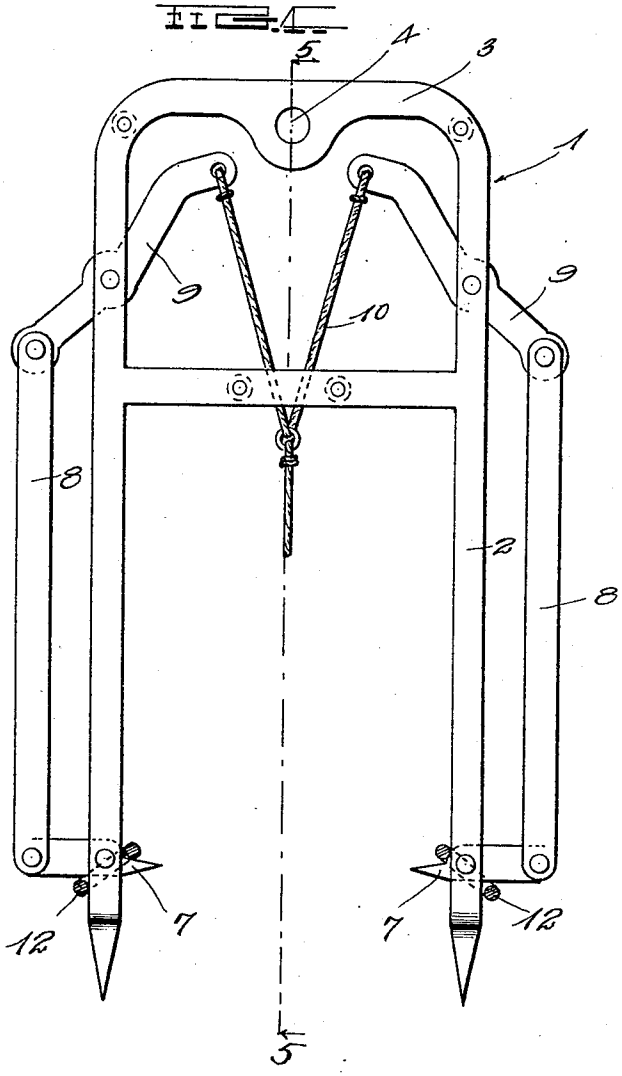
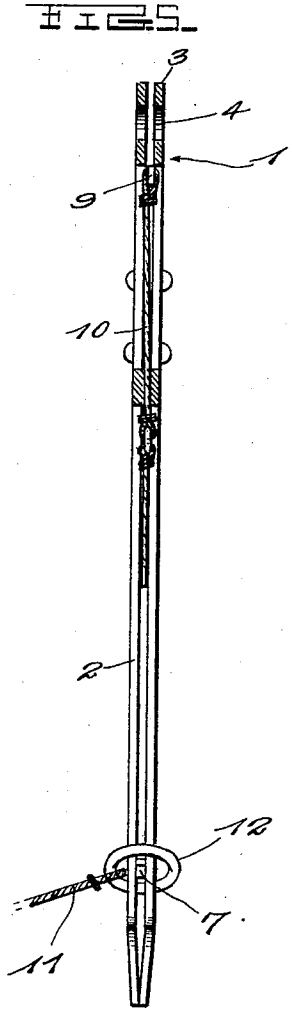



FIG. 5.




Witness

George W. Giovanetti

Inventor

H. F. Kubly

By H. B. Williamson & Co

Attorneys

# UNITED STATES PATENT OFFICE.

HENRY F. KUBLY, OF MONTICELLO, WISCONSIN.

## HAY-SLING.

1,319,291. Specification of Letters Patent. Patented Oct. 21, 1919.

Application filed June 26, 1919. Serial No. 306,788.

*To all whom it may concern:*

Be it known that I, HENRY F. KUBLY, a citizen of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Hay-Slings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its principal object to provide a simply constructed and inexpensive, yet a highly efficient, reliable, and easily operated sling which may be used in connection with an ordinary hay hoisting fork of the type having projectable barbs to prevent slippage of the hay therefrom until it has been carried to the required point; and in carrying out this object, a further object is to provide one end of the sling with eyes to receive the tines of the fork and to be held against slipping therefrom by the barbs, and to equip the other end of the sling with means for attaching it to the suspending hook of the fork. By this arrangement, a large amount of hay may be confined between the fork and the sling and when the barbs of the former are retracted, the sling will be released to dump the load.

With the foregoing in view, the invention resides in the novel construction and association of parts hereinafter described and claimed, reference being made to the accompanying drawings.

Figure 1 is an edge view of a hay fork and the sling attached at one end thereto, preparatory to loading.

Fig. 2 is a horizontal section of the fork on the plane of line 2—2 of Fig. 1, showing a plan view of the sling.

Fig. 3 is an elevation showing the manner in which the fork and sling coöperate in lifting the hay.

Fig. 4 is a vertical section on the plane indicated by the line 4—4 of Fig. 1, showing more clearly the manner of connecting one end of the sling with the usual hay fork.

Fig. 5 is a vertical section on the plane of line 5—5 of Fig. 4.

In the drawings I have illustrated a common form of hay hoisting fork which includes the usual arched frame 1 whose sides 2 form tines and whose crown 3 is provided with an opening 4 to receive a hook 5 on any preferred block and tackle mechanism or the like 6. The tines 2 are equipped with the usual pivoted barbs 7 controlled by the links 8, levers 9, and trip cable 10. All of these parts are of well known construction and form no part of the present invention except in their association with the sling 11.

The sling 11 is of elongated net like form, one end of said sling being provided with a pair of rings or eyes 12 of a size to receive the tines 2, while the other end of said sling is equipped with a hook or the like 13 for engagement with the hook 5. The sling 11 is of much greater length than the height of the fork 1 and the shank of the hook 13 is of such length as to space the upper end of said sling a considerable distance from the fork.

The barbs 7 are projectable through the rings 12 to normally hold them against slipping from the tines 2, and when the sling is loaded, the hook 13 is engaged with the hook 5 as seen in Fig. 3. The load is now hoisted to the required point and the trip cable 10 is pulled, with the result that the barbs 7 are retracted. This allows the eyes 12 to slide from the tines 2 and dumps the load.

The device is of extremely simple and inexpensive nature, may be used expeditiously in connection with numerous forms of hay forks, and may be easily attached and detached whenever required.

I claim:

The combination with a hay hoisting fork including a pair of tines, projectable barbs carried by said tines, releasing means for said barbs, and a hook connected with the crown of the fork for elevating the same; of an elongated hay sling having a pair of spaced rings at one end for passage over the lower ends of said tines and for retention on said tines by said barbs, and a hook on the other end of said sling for connecting it with the aforesaid hook, whereby the hay may be confined between said sling and said fork.

In testimony whereof I have hereunto set my hand.

HENRY F. KUBLY.

E. KOSTA.

HORSE RELEASER.

APPLICATION FILED NOV. 27, 1914.

**1,140,516.**

Patented May 25, 1915.

2 SHEETS—SHEET 1.

Fig. 1

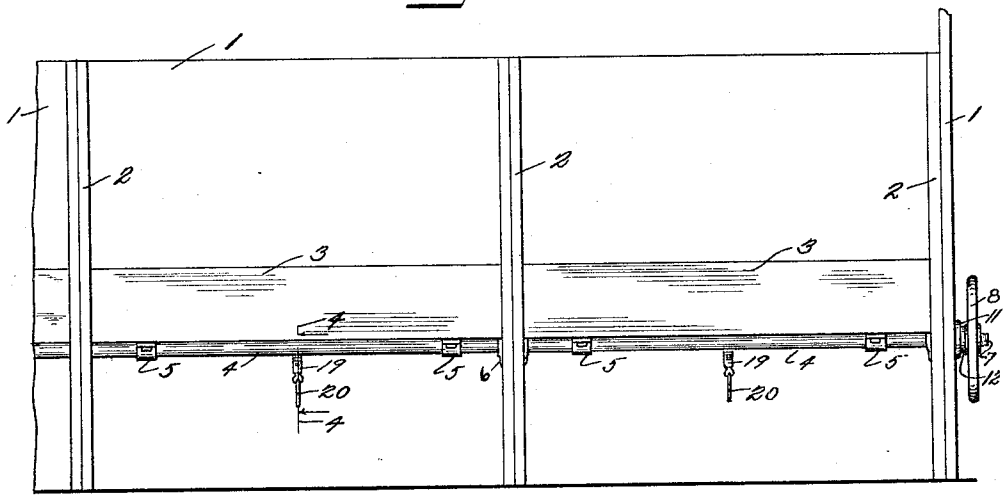



Fig. 2

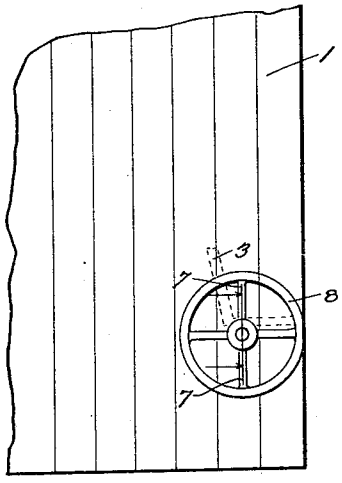
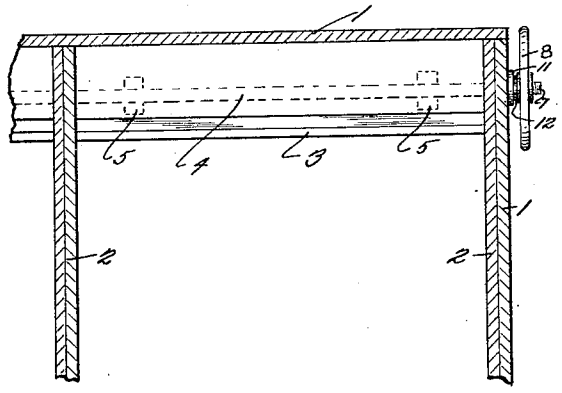



Fig. 3




WITNESSES

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HORSE RELEASER.

APPLICATION FILED NOV. 27, 1914.

1,140,516.

Patented May 25, 1915.

2 SHEETS—SHEET 2.

Fig. 4

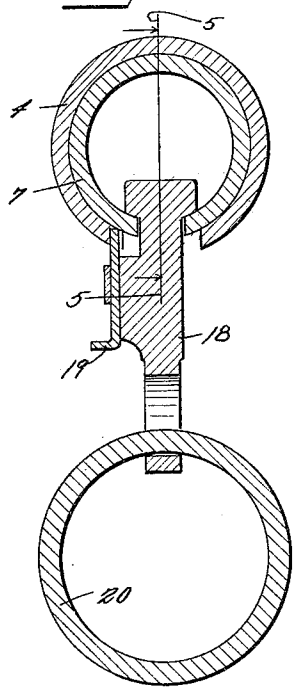



Fig. 5

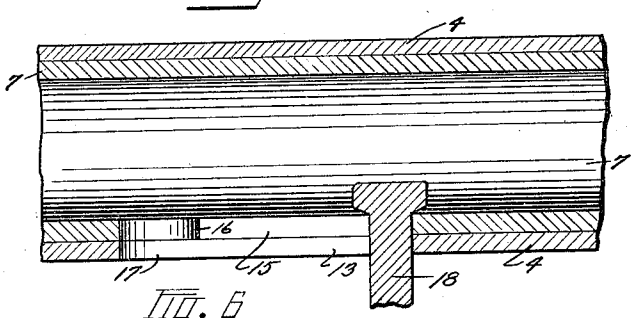



Fig. 6

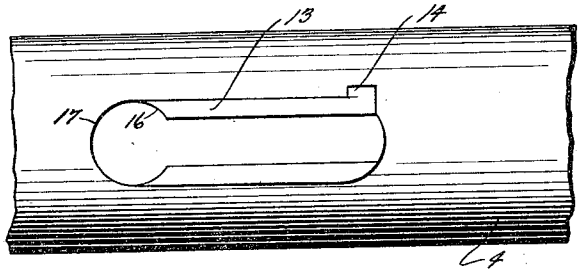
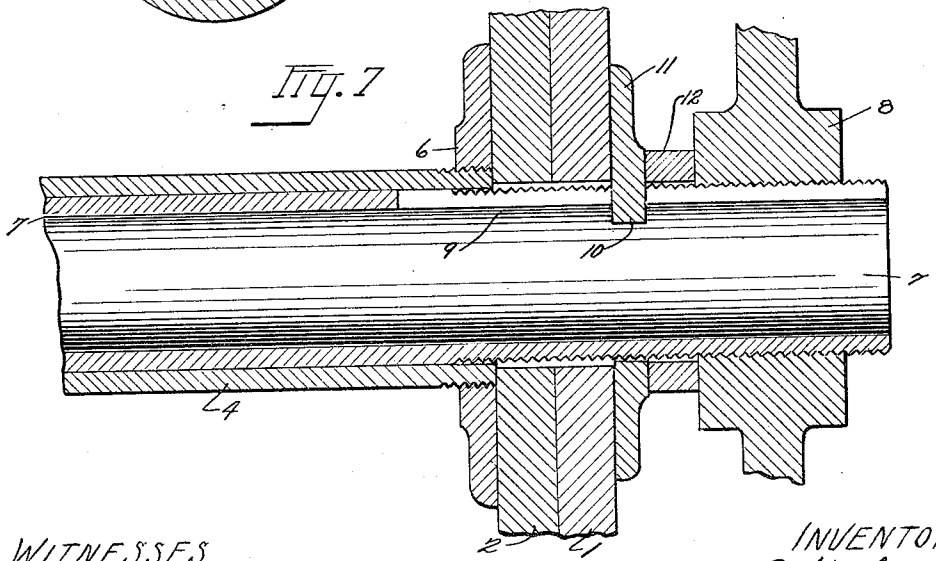



Fig. 7




WITNESSES

Otto Melchior

A. S. S. Nickelsen

INVENTOR

E. Kosta

H Sanders

BY

ATTY.

# UNITED STATES PATENT OFFICE.

EMANUEL KOSTA, OF MONTICELLO, WISCONSIN.

## HORSE-RELEASER.

1,140,516. Specification of Letters Patent. Patented May 25, 1915.

Application filed November 27, 1914. Serial No. 874,219.

*To all whom it may concern:*

Be it known that I, EMANUEL KOSTA, a citizen of Germany, residing at Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Horse-Releasers, of which the following is a specification.

This invention relates to improvements in devices for releasing horses or other animals in times of emergency and its object is to produce a device of this class that is simple in construction, efficient in operation and cheap to manufacture.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described in the following specification, pointed out in the claims and illustrated in the accompanying drawings which form a part of said specification and in which—

Figure 1 is a front view of my invention applied to the stalls of a stable. Fig. 2 is an end view. Fig. 3 is a plan view showing one stall and the barn wall in section. Fig. 4 is a section taken on line 4—4 of Fig. 1. Fig. 5 is a section taken on line 5—5 of Fig. 4. Fig. 6 is an inverted plan view of Fig. 5. Fig. 7 is a section taken on line 7—7 of Fig. 2.

Like reference characters indicate corresponding parts throughout the several views.

The reference numeral 1 designates the stable, 2 the stall walls and 3 the feed trough within the stalls. To the under side of the feed trough in each stall a pipe 4 is secured by clamps 5, the said pipe being formed of sections each of which is of a length equal to the width of the stall and each section is threaded for engagement with the threaded clamps 6 that support it. Within the pipe 5 a continuous one-piece pipe 7 is disposed and one end of the same, which is threaded, is projected through the end wall of the barn and provided with a hand wheel 8 by which it may be moved longitudinally. The pipe 7 throughout its threaded extremity is formed with a slot 9 into which a lug 10 of collar 11 is projected, said collar encircling the pipe against the outside wall of the barn and being spaced away from the wheel 8 by a washer 12. Rotation of the wheel 8 in one direction will move the pipe 7 outward; the pipe 7 may be returned when desired by exerting manual pressure upon its outward end the limit of movement of the pipe in an outward direction being attained when the lug 10 comes in contact with the pipe 7 at the end of the slot 9.

Referring again to the pipe 4 the same is formed within each stall with a slot 13, which is offset as at 14, which is in alinement with a slot 15 in the pipe 7, which is narrower than the slot 13 and which at one end terminates in an enlarged opening 16 in alinement with a similar opening 17 in the pipe 4. A bolt 18 projects through the slots 13 and 15 and its head is normally disposed within the pipe 7 and said bolt carries a sliding bar 19 that normally extends through the offset 14 in pipe 4 to retain the bolt 18 against movement longitudinally of the pipes. To move the bolt longitudinally of the pipes the bar 19 is manually moved out of engagement with the pipe 4 when the bolt may be moved along the slotted portions of the pipes into the openings 16, 17 when it may be withdrawn. To remove all of the bolts simultaneously the hand wheel 8 is rotated thus moving the pipe 7 longitudinally of the pipe 4 until the open portions 16 reach the bolts 18 and the heads of said bolts drop through the said openings. The slot 13 is of greater diameter than the head of the bolt. A ring 20 carried by bolt 18 is used to hitch an animal in the stall.

What is claimed is:—

1. The combination with a series of stalls, of a pipe extending therethrough and formed with a series of slots terminating in enlarged openings and in offsets, an inner pipe formed with a plurality of slots registering with the slots of the first named pipe and of narrower formation than said slots and terminating at one extremity in enlarged openings, one end of said inner pipe being projected beyond the termination of the first named pipe and threaded and formed with a longitudinal slot, means terminally carried by said inner pipe for moving the same longitudinally of said first named pipe, means disposed about the threaded extremity of said inner pipe and projected through the slotted portion of that extremity whereby movement of said pipe with relation to the first named pipe is limited in one direction, bolts projected through the alined slotted portions of said pipes, the heads of said bolts being of greater diameter than the slots of said inner pipe but of less diameter than the slots of said first named pipe and means carried by

said bolts and disposed in the offset slotted portions of said first named pipe whereby movement longitudinally thereof by said bolts is arrested.

2. The combination with a series of stalls and of a stable wall, of a pipe extending through said stalls and formed with a series of slots terminating in enlarged openings and in offsets, an inner pipe movably disposed in said first named pipe and projected through the stable wall and formed with a plurality of slots registering with the slots of the first named pipe and of narrower formation than said slots and terminating in enlarged openings, the free end of said inner pipe being threaded and formed with a longitudinal slot, means terminally carried by said inner pipe for moving it longitudinally, a collar encircling said inner pipe and abutting said stable wall, a lug formed integral with said collar and projected through the slotted portion of said inner pipe end, bolts projected through the alined slotted portions of said pipes, the heads of said bolts being of greater diameter than the slots of said inner pipe but of less diameter than the slots of said first named pipe, and bars slidably carried by said bolts and projected into the offset slotted portions of said first named pipe whereby movement longitudinally thereof by said bolts is arrested.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two subscribing witnesses.

EMANUEL KOSTA.

Witnesses:
FREDDIE BLUM,
ROBERT BLUM.

No. 700,788. Patented May 27, 1902.

# E. D. LEVITT & J. W. POLCHOW.

## KEYLESS PIN OR BOLT.

(Application filed Jan. 25, 1902.)

(No Model.)

Fig. 1.

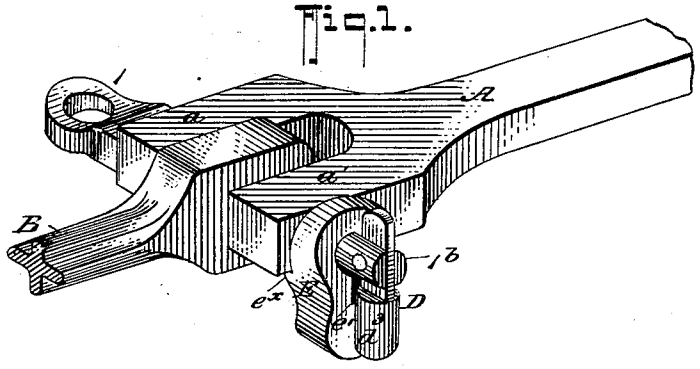


Fig. 2.

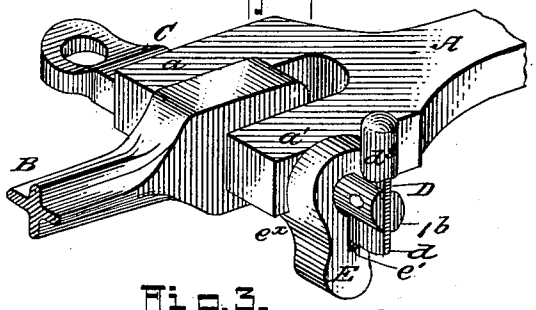


Fig. 4.

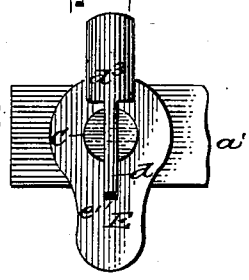


Fig. 5.

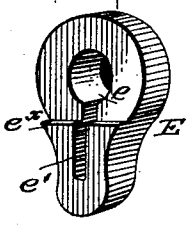


Fig. 3.

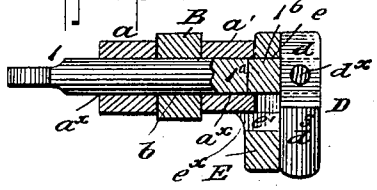
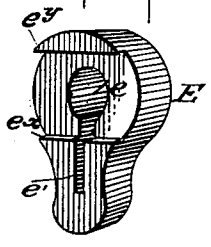


Fig. 6.



WITNESSES:

Guy D. Worthington

Louis Dieterich

INVENTORS

E. D. LEVITT

J. W. POLCHOW

BY

Fred G. Dieterich & Co

ATTORNEYS

# UNITED STATES PATENT OFFICE.

EDWIN D. LEVITT, OF MONTICELLO, WISCONSIN, AND JOHN W. POLCHOW, OF APPLE RIVER, ILLINOIS.

## KEYLESS PIN OR BOLT.

SPECIFICATION forming part of Letters Patent No. 700,788, dated May 27, 1902.

Application filed January 25, 1902. Serial No. 91,262. (No model.)

*To all whom it may concern:*

Be it known that we, EDWIN DENT LEVITT, of Monticello, Wisconsin, and JOHN W. POLCHOW, residing at Apple River, in the county of Jo Daviess and State of Illinois, have invented a new and Improved Keyless Pin or Bolt, of which the following is a specification.

Our invention relates to that class of pins or bolts having a pivoted portion in its outer or penetrating end adapted to gravitate at right angles to the shank or body portion and form a locking member for holding the pin or bolt from working lengthwise and out of its bearings or seat.

In keyless bolts or pins of the kind stated the bolt or shank of necessity is of such length as to provide for sufficient projection of said shank to permit the pivoted member or latch being swung up into a longitudinal plane with the shank to form, as it were, an extension of the shank to permit the ready withdrawal of the bolt or pin. This correlative projection of the shank with the pivoted latch necessitates a certain loose longitudinal play of the bolt. This has been found objectionable, especially where the pin or bolt is used in a movable connection—for example, in pitman-rods, &c.—as the momentum of the parts frequently swings the latch up into alinement with the bolt, and thereby leaves the bolt in a position to freely drop out of its seat or bearing. Means have heretofore been provided for coöperating with the object to which the bolt or pin is applied the bolt and the latch member for taking up the lost motion mentioned—such, for example, as springs interposed between latch and the object to which the bolt is applied or supplemental key or detent devices; but these, so far as we know, while in a general way effective do not produce all of the results desired in that the cost thereof and the requirements of adjustment limit their general adoption.

Our invention especially seeks to provide a very simple and inexpensive means for coöperating with keyless pins or bolts of the character before mentioned, which require little or no adjustment in fitting the pin or bolt in place and which will effectively serve to hold the pin or bolt from loose longitudinal movement in its bearing or seat and also prevent the latch member from swinging into such position with the bolt that the said bolt can accidentally leave its bearing or seat and yet admit of as free an adjustment of the latch for setting it to its bolt-removal position as is found in the adjustment of the ordinary type of bolts of this kind, and, furthermore, our invention seeks to provide means adapted to form a coöperative part of a keyless pin or bolt which in its use will avoid the necessity of providing a specially-formed aperture in one of the members of the body to which the pin or bolt is to be applied.

With the above objects in view our invention embodies a bolt or pin of the character described of the peculiar construction and correlation of parts hereinafter fully described in detail, and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a pitman connection with our improved bolt or pin forming a part thereof, the parts being in their normal or operative position. Fig. 2 is a similar view of the same, the latch member being shown swung up in full lines in a plane with the slot extension of the aperture in the washer and swung into alinement with the bolt in dotted lines. Fig. 3 is a vertical transverse section of the pitman, taken on a line central of the bolt C. Fig. 4 is an end elevation, the parts being in the position shown in Fig. 2. Fig. 5 is a detail view of the washer. Fig. 6 is a similar view of a slightly-modified form of said washer, hereinafter referred to.

In the accompanying drawings our improved bolt or pin is shown as forming a part of a connection for pitman-rods. It is manifest, however, that the same may be utilized for numerous other purposes.

As shown, the member A of the connection has a forked end, the members $a$ $a'$ of which have apertures $a^x$ $a^x$ in alinement and both made of the cross-sectional shape of the body of the bolt C.

B designates the pitman-rod head, apertured at $b$ for the bolt. The bolt C comprises the usual head 1 and shank or body $1^a$, that extends solid from the head 1 to the outer edge of the member $a'$, from which point it

projects a suitable distance and is bifurcated to its outer extremity, as indicated by $1^b$. Within the bifurcated end is pivotally hung the latch member D, which consists of a flattened shank $d$ of a length approximately the same as the length of the bifurcated extension $1^c$ of the bolt, and this shank $d$ is fulcrumed on the pivot-pin $d^x$ in such manner that it can be swung into a longitudinal alinement with the bolt-shank and just clear the face of the member $a'$. The shank $d$ merges with an enlarged portion $d^3$, having the same diameter as the body of the bolt, and said portion, with the shank $d$, constitutes the latch or lock member for holding the bolt from endwise movement in its bearing when the washer E, presently referred to, is fitted in place. The end $d^3$ being heavier than the shank $d$, it follows that when the bolt is pushed home and the shank is in a proper position relatively to the opening in the washer E the part $d^3$ will gravitate to a vertical position, and thereby bring the "latch" at right angles to the body of the bolt. By reason of the relative construction of the several parts, as shown and described, it is obvious that when the latch is turned to its locking position, as shown in Fig. 3, a space equal the length of the end of the shank that projects above the bolt exists between the latch and the member $a'$ of part A, and hence loose longitudinal play of the bolt would occur if provision is not made to overcome it. This we accomplish by a peculiar construction of the washer E, which while primarily for taking up any loose longitudinal play of the bolt is also provided for maintaining the latch in such position as to reduce the danger of same swinging into alinement with the body of the bolt during ordinary usage to the minimum. For this purpose the washer E has a thickness equal the space between the part $a'$ and the latch D, and the said washer has a bolt-aperture $e$, adapted, when the washer is in place, to aline with the bolt-apertures in the members $a\,a'$. The aperture $e$, however, merges with a vertical slot $e'$ in a pendent portion $e^2$ to provide for the proper turning of the latch-shank $d$ up into a plane with the bolt when it (the shank $d$) is turned to the vertical position to register with the slot $e'$, as shown in Figs. 2 and 4. The pendent part $e^2$ also serves the function of a gravity member for maintaining the washer E with its slot $e'$ to its vertical position below the axis of the bolt. While under ordinary circumstances the weighted lower end of the washer will serve to maintain the said washer with its slot end in proper position below the bolt, yet to prevent the said washer turning by reason of frictional contact with the weighted end of the latch we provide the said washer E with a shoulder flange or projection $e^x$ to extend under the lower edge of the member $a'$. This will positively hold the washer from swinging laterally on or with the bolt when the parts are arranged as shown in Fig. 1. When, however, the bolt is used in a position other than horizontal—vertically, for instance—with latch end uppermost to hold the washer from turning on or with the bolt, it in addition to the projection on the slotted end to engage the part $a'$ is also formed with a projection $e^y$ on the upper end, as shown in Fig. 6, whereby to engage the part $a'$ on the opposite sides to prevent lateral swing of the washer E in any direction.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with the connection members A and B, having alining bolt-apertures; of the bolt C having a bifurcated outer end, the latch D having a shank pivotally hung on the said slotted end, and a weighted extremity, and the washer E having a bolt-aperture, a pendent member provided with a slot merging with the bolt-aperture, the inner side of said washer having means projecting over and engaging the member A to prevent it from swinging on or with the bolt, as shown and described.

2. The combination with the parts A and B, and the bolt C, said bolt having a bifurcated extension; of the latch D, pivotally hung on said bifurcated bolt end and having a weighted outer end, adapted to be swung into longitudinal alinement with the bolt, and the washer E apertured to loosely hang on the bolt, said washer having a slotway merging with its bolt-aperture, and having on its inner face projections to engage the opposite edges of the member A, all being arranged substantially as shown and for the purposes described.

E. D. LEVITT.
JOHN W. POLCHOW.

Witnesses:
J. S. LAMONT,
A. PRICE.

May 13, 1924. 1,493,749

H. G. HOESLY

MILK COOLING MACHINE

Filed May 7, 1923 3 Sheets-Sheet 1

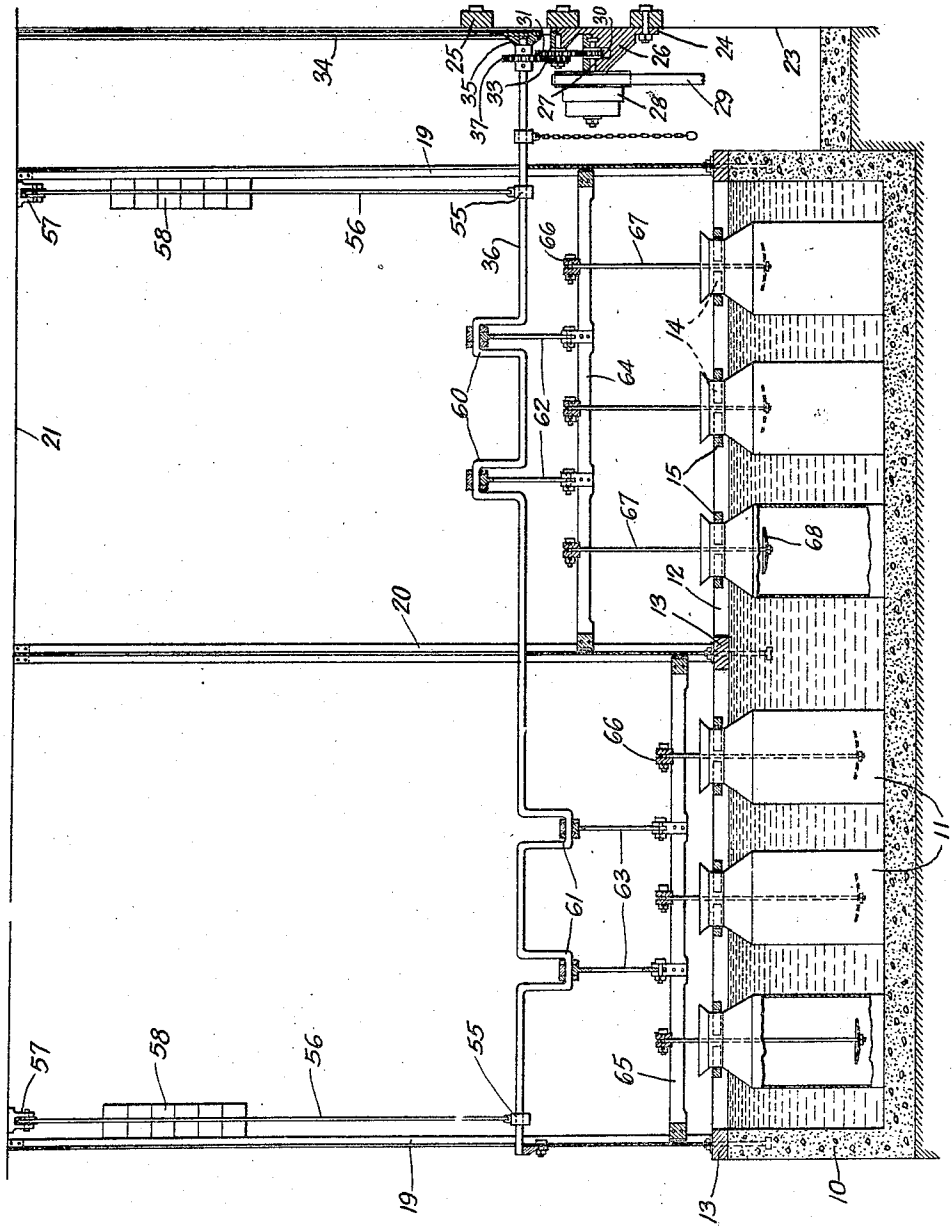



Fig. 1.

Inventor
Henry G. Hoesly
By Attorney Marion Delany

May 13, 1924. 1,493,749

H. G. HOESLY

MILK COOLING MACHINE

Filed May 7, 1923 3 Sheets-Sheet 2

Fig. 2.

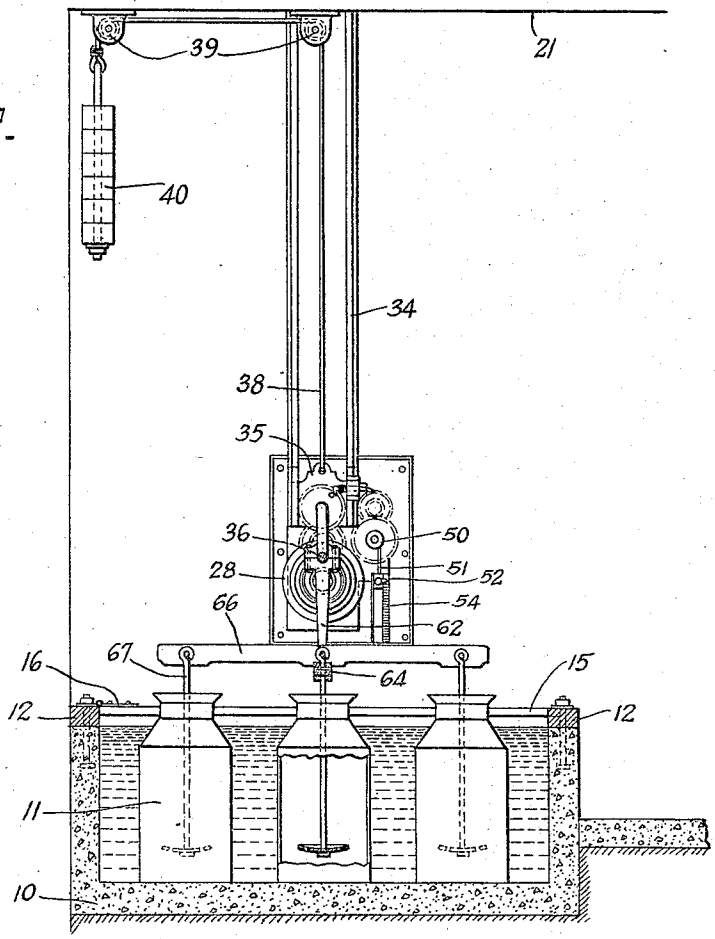



Fig. 3.

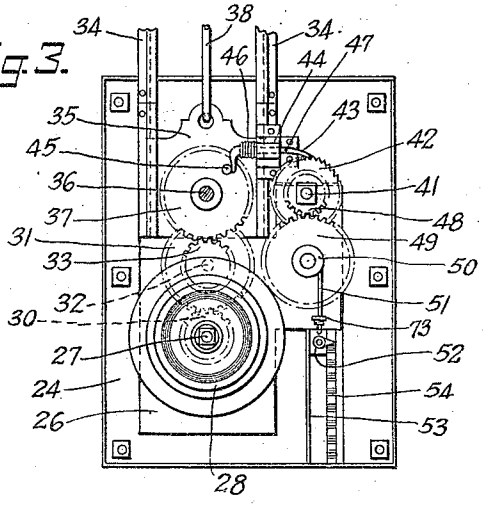
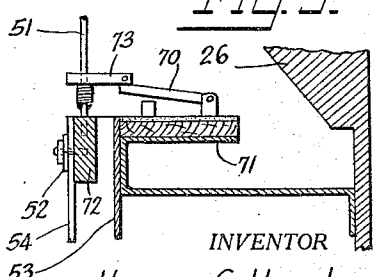



Fig. 5.




INVENTOR

Henry G. Hoesly

BY Marion Delmore

ATTORNEY

May 13, 1924. 1,493,749

H. G. HOESLY

MILK COOLING MACHINE

Filed May 7, 1923 3 Sheets-Sheet 3

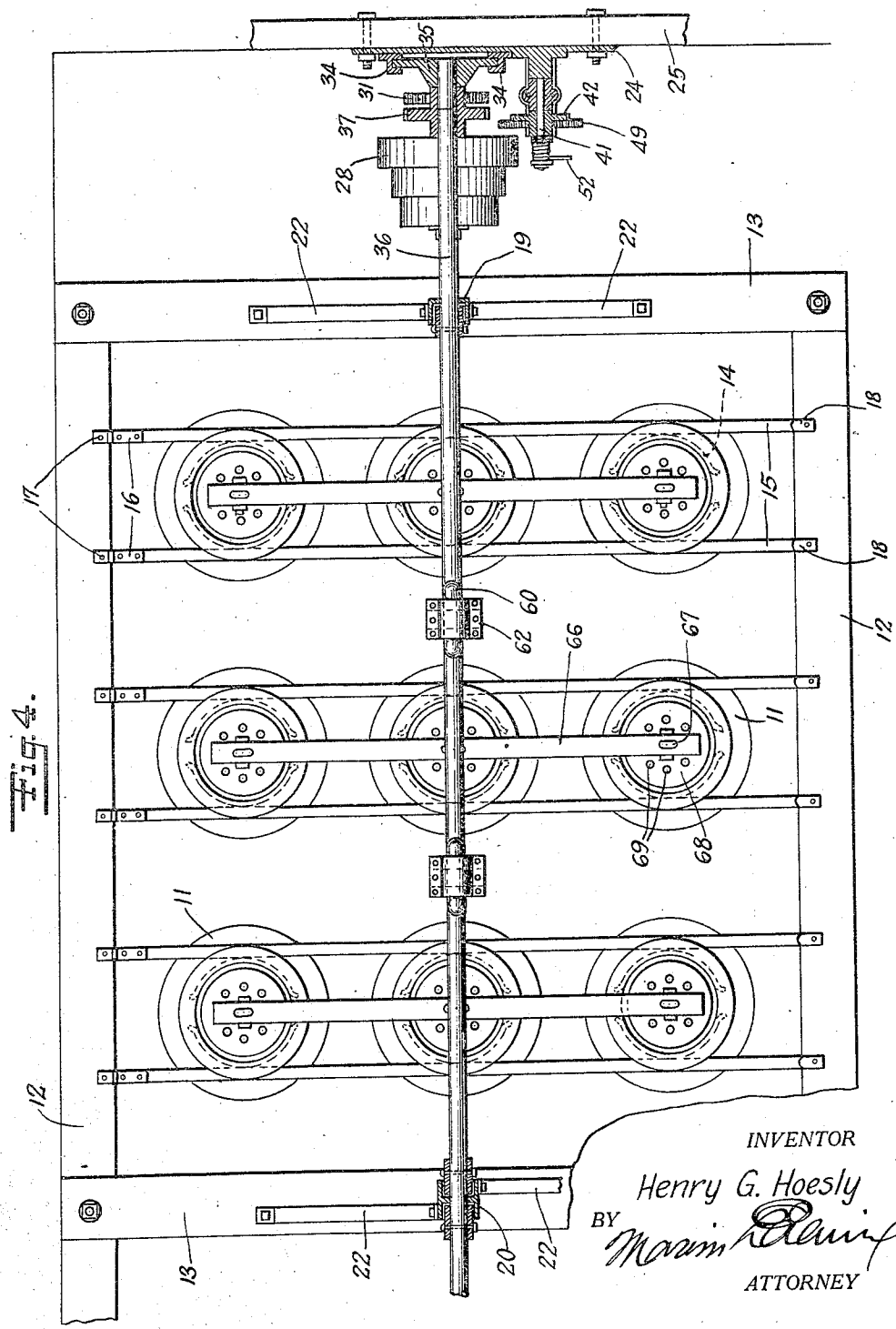



Fig. 4.

INVENTOR

Henry G. Hoesly

BY Marion Davis

ATTORNEY

Patented May 13, 1924. 1,493,749

# UNITED STATES PATENT OFFICE.

HENRY G. HOESLY, OF MONTICELLO, WISCONSIN, ASSIGNOR OF ONE-HALF TO JACOB J. RIEDER, OF NEW GLARUS, WISCONSIN.

## MILK-COOLING MACHINE.

Application filed May 7, 1923. Serial No. 637,179.

*To all whom it may concern:*

Be it known that I, HENRY G. HOESLY, a citizen of Switzerland, residing at Monticello, in the county of Green and State of Wisconsin, have invented certain new and useful Improvements in Milk-Cooling Machines, of which the following is a specification.

This invention relates to improvements in dairy apparatus and particularly to milk cooling machines, having as one of its objects to provide a water filled tank in which may be placed a plurality of milk filled cans, the cans resting on the bottom of the tank with their necks above the surface of the water, so that the contents of the cans may be cooled thereby.

Another purpose is to produce means for agitating the contents of the cans while in the tank by a mechanically actuated perforate disc, raised and lowered in the filled cans in such manner that the milk is caused to constantly change its position relative to the walls of the cans, thus bringing the entire contents rapidly to the temperature of the water.

A further aim is to provide releasable means for holding the cans in properly spaced position in the tank during the cooling process and thereafter be removed to facilitate changing the cans.

A still further object is to provide means for raising the entire agitating mechanism, at any desired time, by counterbalancing devices, completely out of the way when changing the cans in the tank.

These and other like objects are attained by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a partial side elevational partial sectional view of a milk cooling machine made in accordance with the invention.

Figure 2 is an end elevational view of the same, also partially in section.

Figure 3 is an enlarged front view of the dasher driving and raising device used therewith.

Figure 4 is a fragmentary plan view illustrating the tank and can arrangement, together with the operating means, the latter being partially in section.

Figure 5 is an enlarged fragmentary sectional view taken on line 5—5 of Figure 3.

These drawings, which are largely diagrammatic, represent as the basis of the invention an oblong rectangular tank, generally designated by the numeral 10, the same being preferably made of cement, smooth finished interiorly and impervious to water.

Said tank may be of any size, according to the capacity of the dairy, that shown being capable of accommodating eighteen standard size milk cans 11 arranged in three rows, the cans being spaced apart at least a distance equal to half their diameter, which is approximately twelve inches.

Said cans rest upon their bottoms in the tank, the walls of which extend upward to the necks of the cans, the tank being provided with overflow, inlet and outlet means of ordinary type, not shown.

A frame composed of side beams 12 and end and center cross beams 13, is securely bolted to the upper edge of the tank walls, serving as a guard therefor and also as a foundation for the superstructure as will hereafter be seen.

In order to hold the cans properly positioned in the tank, pairs of spring arms 14, curved to suit the necks of the cans, are arranged in opposite relation and secured at spaced distances to the inner adjacent edges of bars 15 engaged by hinges 16, the outer leaf elements of which are secured by pivots 17 to one of the frame members 12 and held by clips 18 on the opposite frame member when adjusted, as best seen in Figure 4, this arrangement holding the cans in proper position in the tank.

A pair of opposed channels 19 are fixed on the end or cross beams 13 to extend vertically upward and an I beam 20 is similarly erected on the center cross beam, these rolled structural steel elements being connected at the tops by a rail or the ceiling 21 of the building in which the tank is located, and are held rigidly in position by a plurality of braces 22 bolted to the cross beams.

On one of the end walls 23 of the building is bolted a plate 24, re-enforced by stringers 25, and having a bracket 26 in which is

mounted a revoluble shaft 27, its end extending toward the tank, above and at its center and fixed on the shaft is a driving pulley 28 over which is trained a belt 29 leading to any convenient source of power.

Also fixed on the shaft 27 is a gear 30, meshing with an idle gear 31 rotatable on a stud 32 fixed in the upper part of the bracket and alongside the gear is a pinion 33.

A vertical guideway composed of upright elements 34 in which a plate 35 is slidably arranged and rotatable in the plate is one end of a shaft 36 to which is fixed a gear 37 engageable operatively with the pinion 33 when the plate is down, said plate having attached at its upper end a cable 38 running over sheaves 39 carried by the ceiling 21 and held in adjustment by a counterbalancing weight 40.

A stud 41 fixed in the plate 26 has rotatably mounted on it a ratchet wheel 42 operated by a pawl 43 slidably mounted in a bracket 44, the opposite end of the pawl being downturned to engage a pin 45 fixed in the face of the gear 37 and is normally held out in an engaging position by a coiled compression spring 46, being limited by a stop pin 47.

Fixed to the side of the ratchet wheel 42 is a pinion 48 in mesh with the teeth of a spur gear 49, to which is attached a drum 50 having wound upon it a cord 51 fixed to a pointer 52 movable vertical in a guideway 53 and acting as an index for a series of graduations 54 on the sideway which determine the operation of the machine.

The shaft 36, in addition to its end bearing in the plate 35, is loosely mounted in bearings 55 supported by cables 56 running over sheaves 57 attached to the ceiling 21 and provided with counterbalancing weights 58.

A pull chain 59 is provided for drawing the shaft down, causing the gear train elements to engage, thus causing the shaft to rotate, and it will be understood that the uprights 19 and 20 are slotted to permit the shaft to raise and lower.

Formed on the shaft 36 are pairs of crank throws 60 and 61, one pair being opposite to the other and engaging these cranks are connection rods 62 and 63, operatively engaged with bars 64 and 65, guided at their ends in the vertical elements 19 and 20.

Attached to these bars are cross bars 66 used as suspenders for pivoted rods 67, connected at their lower ends with concave circular plates 68 of such diameter as to readily pass into the milk cans and provided with perforations 69 through which the milk passes as the plates are raised or lowered by the cranks of the shaft 36 when rotated.

In operation, the shaft 36, plate 35 and associated parts are raised bodily to such height above the walls of the tank as to readily permit the cans to be removed or replaced in a filled condition.

This is accomplished by swinging the bars 15 outwardly and raising them on their hinges, releasing the spring arms 14 from embracing the cans to permit their replacement.

When the freshly filled cans have been entered in the tank and arranged approximately in their proper location, the bars 15 and spring arms are arranged to grip and hold the cans rigidly in position in the tank, and the chain 59 pulled, lowering the shaft.

The plates 68 are entered in the cans, the throw of the cranks being such as to move the plates up and down in the cans without touching their bottoms or coming out at the top and a relatively slow motion is imparted to the train of gears from the pulley to the shaft, this churning motion being continued only for a short time.

The number of reciprocations transmitted to the plates 68 is indicated on the index 54 by the pointer 52, which is automatically reset by raising the plate 25.

In addition to the foregoing, if the device be operated by an electric motor, a knife switch, generally designated by the numeral 70, may be mounted on a bracket 71, adjacent the plate 24, immediately back of the support 72 of the index 54, so that as the latter is lowered, a block 73 fixed to the cable 51 will make contact with the lever of the switch, thus automatically closing the same and stopping the motor.

From the foregoing it will be seen that a complete and practical device for cooling milk has been disclosed in the preferred form of its embodiment, but it will be understood that minor changes in construction may be resorted to which do not interfere with the scope and spirit of the invention as defined by the subjoined claims.

Having thus described my invention and set forth the manner of its construction and use, what I claim as new and desire to secure by Letters Patent, is:—

1. A milk cooling machine comprising a tank suited to receive a plurality of cans, pairs of bars hinged to one of the walls of the tank, and secured at the other, and curved spring strips fixed on the adjacent sides of said bars to engage automatically on opposite sides of each can in locating and clamping the same in spaced relation midway between the pairs of said bars.

2. A milk cooling machine comprising a tank suited to receive a plurality of cans in predetermined position, a dasher movable in each can, means for reciprocatively operating said dasher including a cranked shaft mounted above said tank in a horizontal plane having operative connections with the dashers, means for raising and lowering said shaft together with its associated parts,

and means for communicating positive rotary motion to said shaft when in its lowermost position, said shaft being quiescent when raised.

3. A milk cooling machine comprising a tank suited to receive a plurality of cans in predetermined position, a dasher in each can, a cranked shaft over the tank, connections between said dashers and the cranks of the shaft, means permitting said shaft to be raised or lowered, a driven gear train adjacent said tank, and a gear on said shaft engaging said train when the shaft is in a lowered position.

In witness whereof I have affixed my signature.

HENRY G. HOESLY.

(No Model.)

# F. KNOBEL & J. BONTLY.

## MILK HEATING DEVICE.

No. 555,515. Patented Mar. 3, 1896.

Fig. 1.

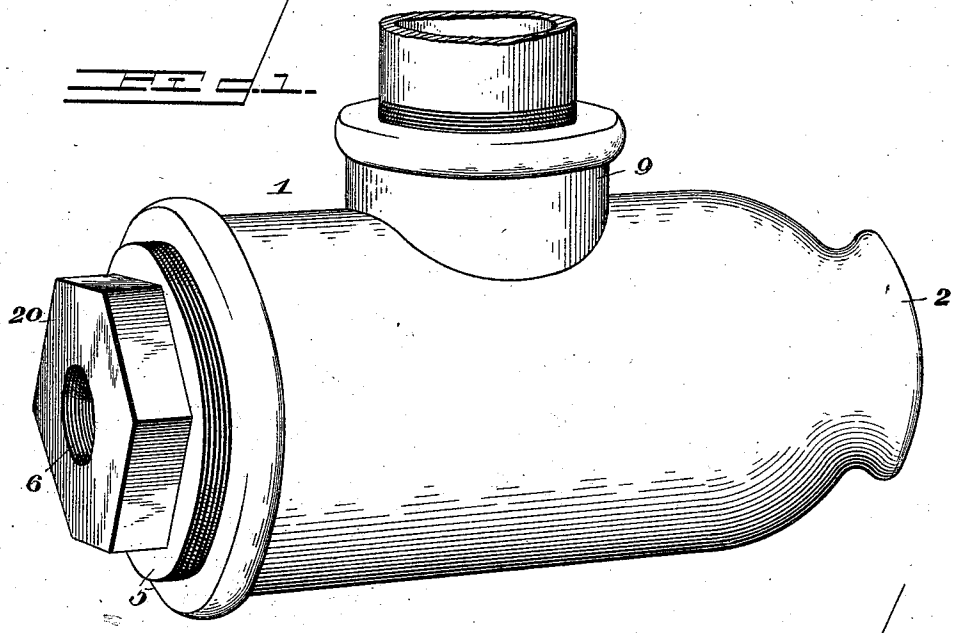



Fig. 2.

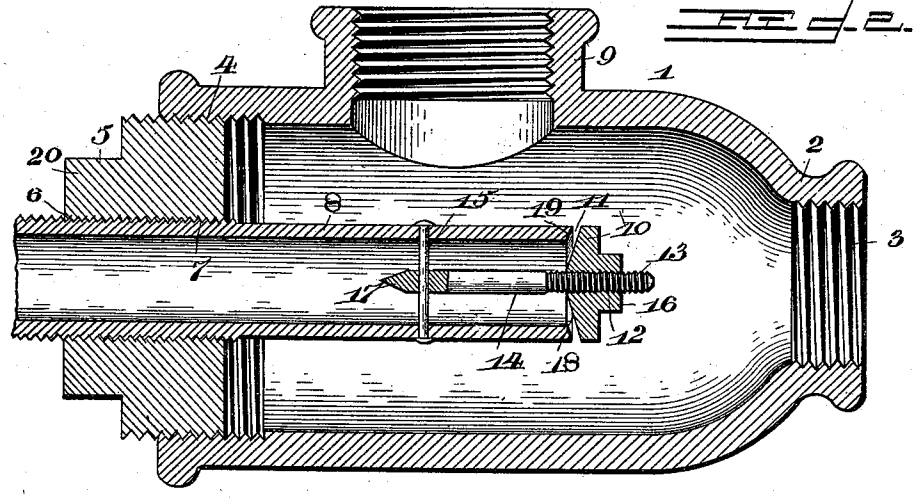
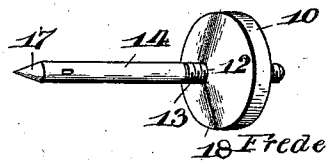



Fig. 3.




Witnesses
H. A. Doyle.
V. B. Hillyard.

Inventors,
Frederick Knobel, and
John Bontly.
By their Attorneys,
C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

FREDERICK KNOBEL AND JOHN BONTLY, OF MONTICELLO, WISCONSIN.

## MILK-HEATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 555,515, dated March 3, 1896.

Application filed May 4, 1895. Serial No. 548,144. (No model.)

*To all whom it may concern:*

Be it known that we, FREDERICK KNOBEL and JOHN BONTLY, citizens of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented a new and useful Milk-Heating Device, of which the following is a specification.

This invention aims to provide an improved milk-heater for treating milk prior to the introduction thereof into a separator in order that the milk may be at the required temperature to insure the proper separation of the butter therefrom.

The object of the present invention is the provision of a simple, inexpensive, and effective device for the purpose aforesaid adapted for attachment to a pipe communicating with the separator, and which is readily accessible for repairs, cleaning, and any other required purpose, and which will subject the milk to a sheet or continuous annular spray of steam which is capable of being varied as to quantity and position to meet various conditions and requirements, and, lastly, to provide a heater of compact form and which will comprise a minimum number of parts and which will attain the desired result in a thorough and satisfactory manner.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be more particularly designated in the subjoined claims and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a milk-heater of the present invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a detail view of the cap and stem provided at the delivery end of the steam-pipe.

Similar numerals designate corresponding parts in the several figures of the drawings.

The body 1 of the heater may have any desired form, and is preferably cylindrical, and has its delivery end 2 tapering and internally threaded at 3 for the attachment therewith of the pipe by means of which the device is connected to the separator. The opposite end is internally threaded, as shown at 4, to receive a plug 5 which is screwed therein, said plug having a centrally-disposed opening 6, which is internally threaded, and receives a corresponding threaded portion 7 of the steam-pipe 8, by means of which the heating media, or steam, is supplied to the interior of the body 1. A collar 9 is formed on a side of the body about midway of its ends, and is designed to have the milk-supply pipe connected therewith, and this collar is internally threaded to make a firm joint with said pipe in the proper positioning of the heater.

The steam-pipe 8 extends within the body 1, and its inner end is fitted with a cap 10, between which and the edge of the said steam-pipe is formed a space 11 for the escape of the steam or heating media in the successful operation of the device, and this cap 10 is provided with a central opening 12, which is internally threaded to receive a corresponding threaded portion 13 of a stem 14 held within the pipe 8 by means of a transversely-disposed pin 15. By this means the cap 10 can be relatively adjusted so as to vary the width of the annular escape or passage 11. The cap 10 is adapted to be turned upon the threaded portion of the stem 14 in any desired manner, and is formed on its outer side with an angular enlargement 16, by means of which a key, tool, or instrument can be fitted thereon for the purpose of turning the cap to obtain the required size of annular escape 11, as will be readily understood.

In order that as little resistance as possible may be offered to the free passage of the steam or heating media through the pipe 8, the stem 14 is slender and its inner end is pointed or tapering, as shown at 17, and to secure and direct the steam outward through the annular escape 11 the inner side of the cap 10 is convexed or made conical, as shown at 18, and the edge of the pipe 8 opposite the conical or convex side of the cap is beveled inward, as shown at 19, whereby the escape or passage 11 has substantially parallel walls.

The steam-pipe 8 is imperforated throughout its length and is adjustable within the body 1 by means of the threaded connection between it and the plug 5. Hence the relative position of the annular escape 11 can be varied as required to meet certain conditions. Thus the said escape 11 can be brought more or less directly opposite the milk-inlet or collar 9, as will be readily understood.

Access is readily had to the interior of the body 1 by removing the plug 5, which latter

can be accomplished in any approved manner, and for this purpose the said plug is provided on its outer side with an angular enlargement 20, to which may be fitted a wrench or like tool for the purpose of turning the plug, whereby the desired result can be attained. The annular escape 11 provides for an equal distribution of the steam or heating media to the body of the milk passing through the device, whereby the same is evenly and uniformly heated, and by regulating the size of the said annular escape the steam or heating media will pass therethrough in a gentle manner and warm the milk to the required temperature without disintegrating or breaking the grains of butter, which in practice is objectionable.

In addition to the advantages resulting from the longitudinal adjustment of the steam-pipe 8, the relative adjustment of the cap 10, and the removability of these parts, together with the plug 5, from the body of the heater, other objects are apparent, and it will be understood that in the embodiment of the invention for various purposes changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. A device for treating milk prior to its separation, consisting of a cylindrical body having a milk-inlet in its side about midway of its ends, and having a milk-outlet at one end, a centrally-disposed imperforate pipe extending within the body for supplying a heating medium thereto and supported in the opposite end thereof, and having its inner end terminating just beyond the milk-inlet, and having its edge inwardly beveled, a stem secured within the inner end of the said pipe and having its inner extremity pointed and its outer portion threaded, a cap mounted upon the threaded portion of the stem and having its inner side convexed, and means for turning the said cap upon the threaded portion of the stem to vary the space between its inner side and the beveled edge of the pipe, substantially as set forth for the purpose described.

2. The herein-specified milk-heater, comprising a cylindrical body having one end reduced and internally threaded, and having the opposite end internally threaded, and having an offstanding collar midway of its ends forming a milk-inlet, a plug removably inserted in the larger end of the body and having a centrally-disposed threaded opening, a centrally-disposed imperforate steam-pipe exteriorly threaded and adjustably mounted in the threaded opening of the plug, and having its inner end open and beveled inwardly and terminating just beyond the milk-inlet, a stem centrally secured within the open end of the pipe and having its projecting end threaded, and a cap adjustably mounted upon the threaded end of the stem and convexed on its inner face and forming an annular space with the inner end of the aforesaid pipe, substantially as described for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FREDERICK KNOBEL.
JOHN BONTLY.

Witnesses:
F. GERBER,
J. H. FRAGNER.

(No Model.)

# W. H. PRISK

## PLOW.

No. 429,060. Patented May 27, 1890.

Fig. 1

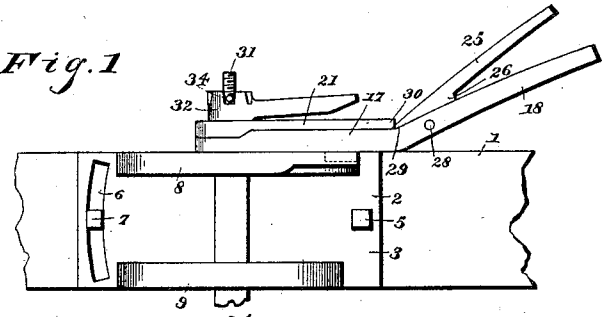
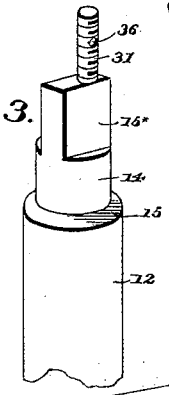



Fig. 3.



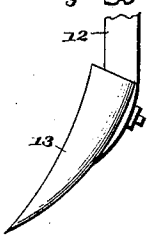




Fig. 7.

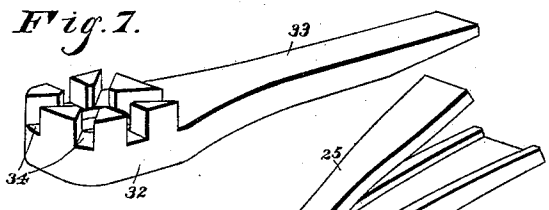



Fig. 2.

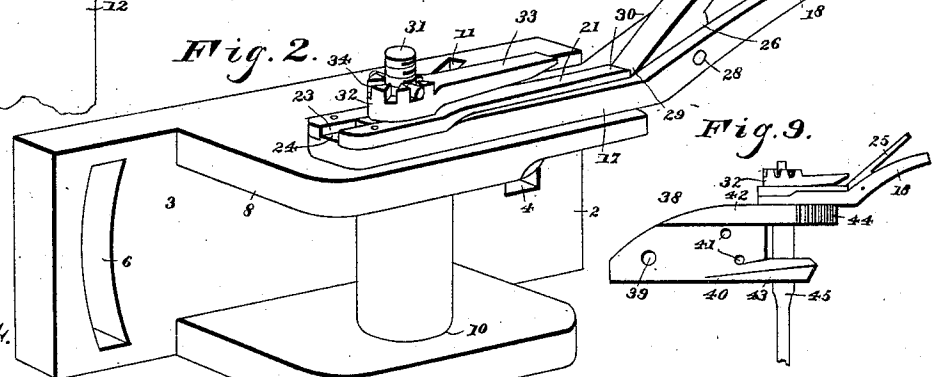



Fig. 9.




Fig. 4.

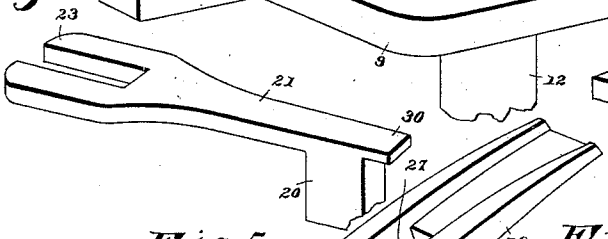



Fig. 6.

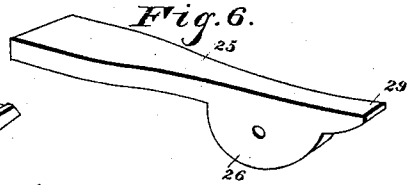



Fig. 5.

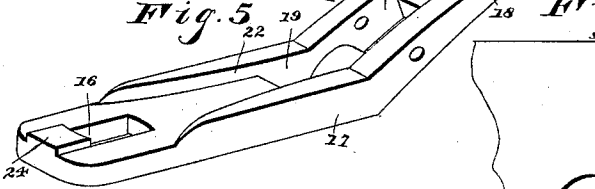
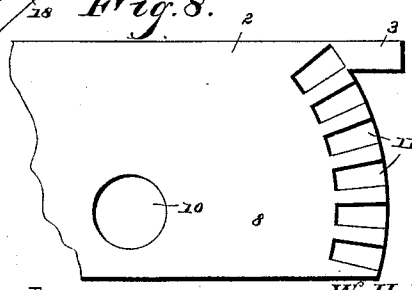



Fig. 8.




Witnesses:

J. M. Whitlow.

W. S. Lyall.

Inventor,

W. H. Prisk,

By his Attorneys,

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

WILLIAM H. PRISK, OF MONTICELLO, WISCONSIN.

## PLOW.

SPECIFICATION forming part of Letters Patent No. 423,060, dated May 27, 1890.

Application filed March 28, 1890. Serial No. 345,716. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. PRISK, a citizen of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented a new and useful Plow, of which the following is a specification.

This invention has relation to improvements in plows, and especially to the means of connecting the plow standard or post to the beam.

The objects of the invention are to provide a simple and inexpensive means for swiveling the standard or post in such a manner as to permit of a ready and quick lateral adjustment of the shovel or a removal of the same, and this without the necessity of unscrewing nuts or the employment of any hand-tools.

Various other objects of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a portion of a plow-beam provided with a shovel-standard connected therewith in accordance with my invention. Fig. 2 is an enlarged perspective in detail of the attaching device or knuckle disconnected from the beam. Fig. 3 is a detail in perspective of the upper end of the shovel-standard. Fig. 4 is a detail in perspective of the spring-latch. Fig. 5 is a similar view of the latch-operating lever. Fig. 6 is a similar view of the standard-operating lever. Fig. 7 is a similar view of the tail-nut. Fig. 8 is a detail in plan of the locking end of the knuckle. Fig. 9 is a side elevation of a knuckle slightly modified to adapt it to the rear end of the iron beam of a walking or corn sulky.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents the beam of a plow, either of iron or wood, and to the side of the same there is secured the knuckle 2. The knuckle 2 consists of the base or securing plate 3, provided at its rear end with a square opening 4, through which is passed a bolt 5, the square end of the bolt taking within the opening and the cylindrical portion thereof passing through the beam 1, and serving as a pivot for the raising and lowering of the opposite end of the knuckle, which latter has the front end of its plate provided with a transverse curved slot 6, through which and an opening in the beam there is passed an adjusting-bolt 7, by which said knuckle when swung upward or downward upon its pivot may be tightly clamped in position, and thus, it will hereinafter appear, will raise or lower the point of the shovel, so as to take more or less deeply into the ground.

From the opposite parallel edges of the plate 3 there project upper and lower ears or flanges 8 and 9. The rear end of the upper flange 8 has its edge extended and curved and concentric with bearing-openings 10, formed in the flanges 8 and 9, said curved edge having its upper face provided with a concentric series of teeth or notches 11.

12 represents the shovel post or standard, to the lower end of which there is secured in any well-known manner the shovel 13. The lower opening 10 is of a diameter adapted to receive the cylindrical portion of the post 12, and the upper opening 10 is of a diameter to receive the reduced upper portion 14 of said post, the intermediate shoulder 15, caused by the reduced portion 14, bearing upon the under surface of the upper flange 8. The extreme upper end of the post 12 is flattened at opposite sides, as at 15*, and receiving the same is an opening 16, agreeing therewith and formed in the end of a lever 17, the outer half of which is upwardly disposed, as at 18. The lever is provided with an opening 19, in line with the teeth 11, formed in the flange 8, and through said opening and engaging the teeth is a lug 20, formed upon the under side of a spring-latch 21, which latch is seated in a recess 22, formed in the upper face of the lever 17, and has its opposite end bifurcated, as at 23, to straddle the flattened portions 15, and a small lug 24, whereby the spring-latch is maintained in perfect parallelism with the lever 17 and in line with the recess 22, the walls of which opposite the post 12 are cut away. The recess 22 is continued throughout the length of the handle 17 and its upwardly-disposed portion 18, and mounted therein is a latch-operating lever 25, provided with a lug 26 upon its under surface, which takes into an opening 27, formed in the handle 17, and through which

and the walls of the opening there is passed a pivot 28. Beyond said pivot the lever terminates in a finger 29, which takes under an extension or shoulder 30, formed upon the adjacent end of the spring-latch 21 in front of its lug 20. The upper end of the post 12 is still further reduced and threaded, as at 31, and threaded thereon is a nut 32, having a tail 33, and its upper surface provided with a series of diametrically-disposed recesses 34, either pair of which is adapted to be thrown into line with a perforation 36, formed transversely in the threaded portion 31 of the post 12.

From the above construction it will be apparent that by depressing the lever 25 an elevation of the dog 20 of the spring-latch from engagement with the teeth 11 will take place, and that the lever 17 may be moved so that the dog will take into any one of a series of notches 11, and in this manner partially rotate the shovel-post.

A further advantage is that the shovel-post may be detached readily from the plow without the use of a wrench.

Heretofore numerous methods for turning the shovel-post have been employed, principal among which was by loosening the nuts binding the post to the beam. Such methods as this one mentioned required a stoppage of the plow, a loosening of the nut, a turning of the post, and a resetting of the nut.

The invention is particularly adapted for hillside plowing, wherein you set your shovels straight at one end of the field, where the ground is, for instance, level; but as soon as the hillside is reached the downhill-shovels will remove the earth away from the corn, leaving the roots exposed, while the uphill-shovels are so inclined as to cover the corn, if it be young. By my invention, however, when the hillside is reached, the operator can raise the hillside-shovels one or two notches, so as to make less depth of earth engaged, then turn both shovels uphill, which compels the earth to work in that direction instead of an opposite direction.

Very often it is necessary for farmers to plant a few rows of potatoes on the side, ends, or corners of their corn-fields, and when it is time for banking or hilling the driver may, without stopping his team, bank or hill the potatoes at the ends of the rows of corn, and then turn the plow, and by operating his levers so dispose said plows or shovels as to adapt them for cultivating corn.

Referring to Fig. 9, wherein I have shown my invention applied to the rear end of the iron beam of an ordinary corn-sulky, 38 represents the beam, to which is pivotally bolted, as at 39, the opposite securing-plates 40 of the knuckle, which plates embrace the sides of the beam and may be adjusted upon their pivot by set-bolts 41. From the rear ends of the plates project the upper and lower semicircular flanges 42 and 43, respectively, the periphery of the former being provided with the locking-notches 44. In these flanges is pivotally mounted the shovel-post 45, the same being in this instance flat. The remainder of the knuckle and its locking mechanism is a counterpart of that previously described, and a detailed description is therefore deemed unnecessary. The operation and advantages are also the same.

Having thus described my invention, what I claim is—

1. The combination, with a plow-beam, of a shovel-standard swiveled therein, said standard having a squared portion in its upper end and above said upper end terminating in a threaded reduced portion of a curved locking-plate concentric with the post or standard, a lever having an opening to receive the squared portion of the standard and having an opening in line with the notched locking-plate, a spring-latch secured to the pivoted end of the lever and provided with a dog in rear of its front end and projecting through the opening of the handle-lever, and a latch-operating lever pivoted in the handle-lever and having its front end terminating under a shoulder formed at the inner end of the latch, substantially as specified.

2. The combination, with a plow-beam, of a knuckle pivoted thereto and provided with opposite parallel horizontal flanges having bearing-openings opposite each other and the upper flange provided with a series of locking-notches concentric with its bearing-opening, a shovel-post of cylindrical shape mounted in the bearings and having a squared portion near its upper end and beyond the same terminating in a reduced threaded portion, a standard-operating lever having an opening fitting the squared portion and its upper surface recessed throughout its length, a spring-latch having a dog or locking-lug projected through an opening in the handle and adapted to engage the notches and at its opposite end bifurcated to receive the squared portion of the standard and mounted within the recess of the handle, a lever pivoted in the upper end of the recess and having its inner end terminating under and depressed by the shoulder of the latch, and a binding-nut mounted on the reduced threaded portion of the standard, substantially as specified.

3. The combination, with the beam 1, of the plate 3, having the openings 4 and 6 and the binding-bolts mounted therein, and having the opposite flanges 8, having bearings 10, vertically opposite each other, the upper flange being provided with a concentric series of locking-notches 11, the post 12, mounted in the openings 10 and having the reduced portions 14, 15, and 31, the lever 17, upwardly disposed, as at 18, recessed, as at 22, on its upper face, having the opening 16 to receive the portion 15 of the shaft, and provided with the lug 16, the flat spring-latch 21, having the lug 20, projecting through the lever 17 and engaging the notches, and at its opposite end provided with the bifurcations 23, the lever

25, pivoted, as at 28, in the recess 22, and having its forward end engaging a shoulder 30 of the spring-latch, the tail-nut 32, having the tail 33, radial recesses 34, and the pin 37, inserted through a perforation in the upper end of the standard and seated in a pair of the recesses, substantially as specified.

4. The combination, with a plow-beam, of a knuckle secured thereto and comprising a securing-plate and upper and lower flanges, one of which is provided with a series of locking-notches, a shovel-post pivoted in the flanges, a post-operating lever mounted on the post, and a spring locking-latch mounted on the lever and adapted to engage the notches, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

W. H. PRISK.

Witnesses:
JOHN RICHARDS,
HENRY KELLER.

(No Model.) 2 Sheets—Sheet 1.

# T. B. WITHERS & M. EDGAR, Jr.

## ROCK DRILLING MACHINE.

No. 417,618. Patented Dec. 17, 1889.

Fig. 1.

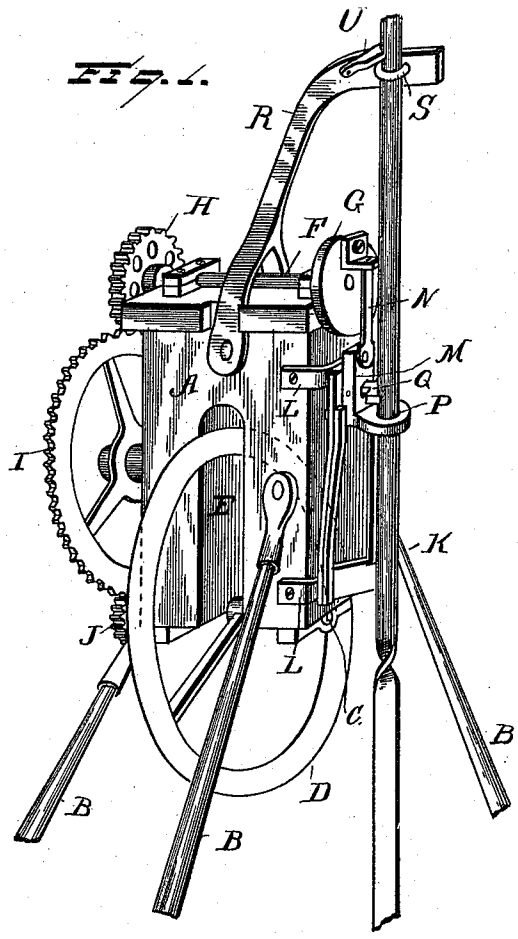



Fig. 2.

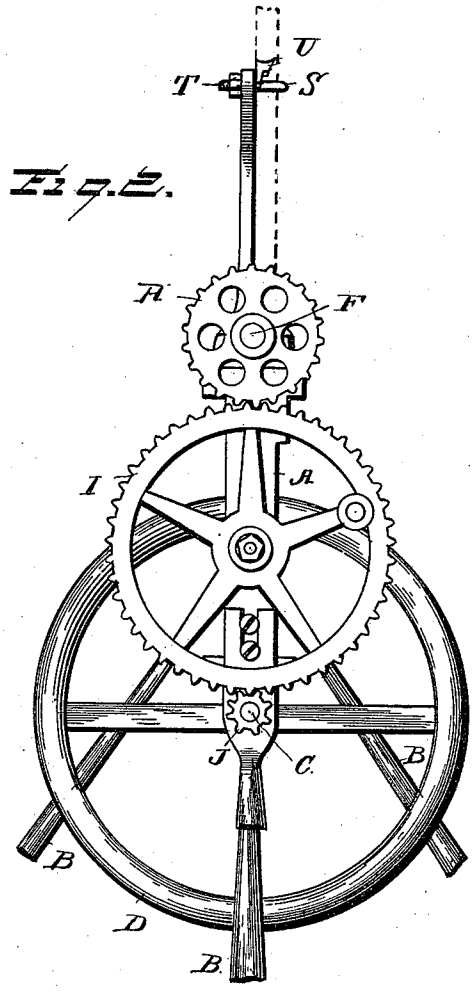
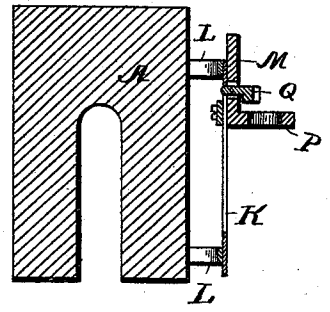



Fig. 3.




Witnesses

E. C. Hardeman.

R. H. Bishop.

Inventors

T. B. Withers and

By their Attorneys M. Edgar, Jr.

C. A. Snow & Co

(No Model.) 2 Sheets—Sheet 2.

# T. B. WITHERS & M. EDGAR, Jr.

## ROCK DRILLING MACHINE.

No. 417,618. Patented Dec. 17, 1889.

Fig. 5

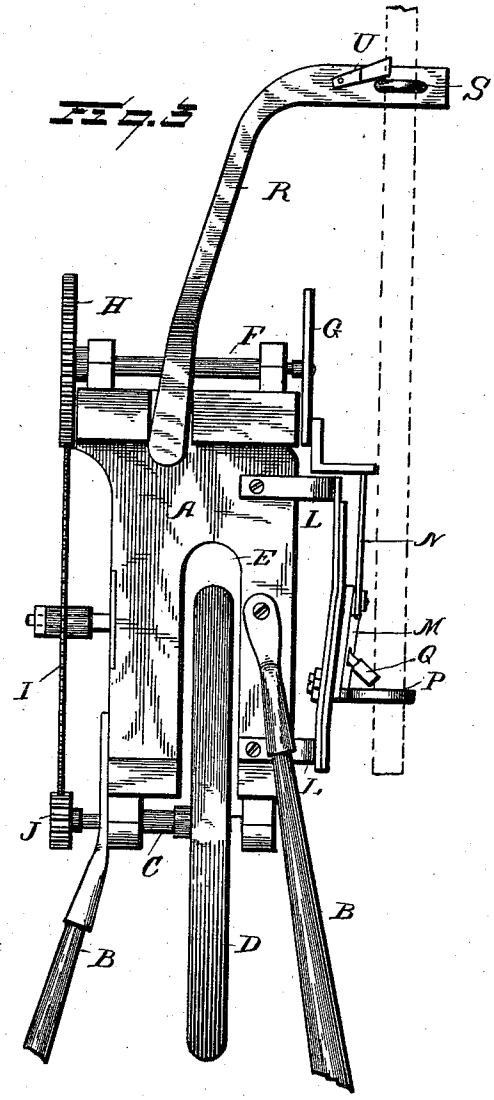
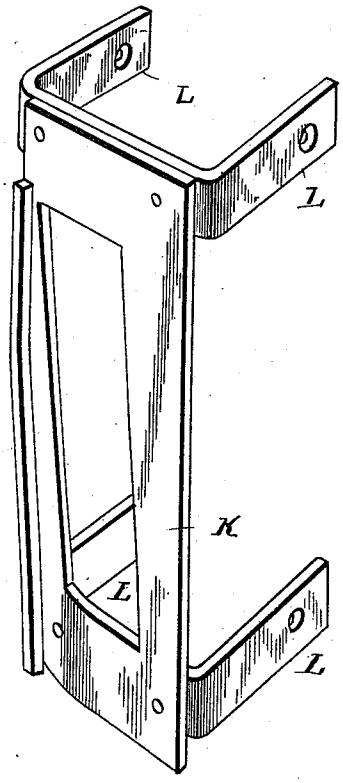



Fig. 4.




Witnesses

E. C. Wurdeman

R. N. Bishop.

Inventors

T. B. Withers and

By their Attorneys M. Edgar, Jr.

C. A. Snow & Co

# UNITED STATES PATENT OFFICE.

THOMAS B. WITHERS AND MATTHEW EDGAR, JR., OF MONTICELLO, WISCONSIN.

## ROCK-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 417,618, dated December 17, 1889.

Application filed April 29, 1889. Serial No. 308,999. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS B. WITHERS and MATTHEW EDGAR, Jr., citizens of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented a new and useful Rock-Drilling Machine, of which the following is a specification.

Our invention relates to improvements in rock-drilling machines; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of our improved rock-drilling machine. Fig. 2 is a rear elevation. Fig. 3 is an enlarged side view showing the manner of operation of the device, and Fig. 4 is a detail perspective view of the guide for the plunger or lifting-clamp. Fig. 5 is a detail sectional view to show the plunger or lifting-clamp.

In carrying out our invention we provide the body or block A, which is supported on suitable legs B, and has a transverse shaft C mounted at its lower end, on which a balance-wheel D is secured, the said balance-wheel moving through a vertical longitudinal slot E in the body. On the upper end of the body we secure suitable journal-boxes, in which the driving-shaft F is mounted, the said driving-shaft having a crank-disk G on its front end and a gear-wheel H on its rear end. This gear-wheel H meshes with the driving-wheel I, mounted on a suitable stub-shaft on the rear side of the body, and the said driving-wheel also meshes with a pinion J on the rear end of the shaft C, so that the balance-wheel and the driving-shaft will be simultaneously rotated and an even steady motion imparted to the machine.

On the front side of the body, below the crank-disk G, we secure the guide K, which consists of a longitudinally-slotted plate, slightly twisted in the direction of its length and provided with the rearwardly-projecting arms L at its ends, by means of which it is secured to the body. The plunger or lifting-clamp M is mounted in this guide and is connected with the crank-disk by a pitman N, as shown. The said plunger or lifting-clamp consists of a substantially L-shaped bracket, provided on its rear side with a T-head engaging the rear side of the guide and passing through the slot in the same, so as to hold the plunger to the said guide, as will be readily understood. The horizontal shorter arm of the bracket is provided with a central opening P, through which the drill-rod passes, and on the longer arm of the bracket we pivotally mount a dog Q, having a concave outer end which is adapted to engage the drill-rod.

To the upper end of the body we secure the guide-arm R, which projects upward and forward from the body, and is provided at its end with a transverse perforation in which a staple or hook S is mounted, the said staple or hook being provided with a screw-threaded extremity, on which nuts T are mounted and adapted to be turned up against the said arm R, so as to clamp the staple or hook around the drill-rod. A dog U is pivoted on the arm R, and is adapted to engage the rod, as clearly shown.

In practice the drill-rod is passed vertically through the staple S and the perforation P in the lifting-clamp, and the driving-wheel is then rotated so as to impart a reciprocating motion to the lifting-clamp through the driving-shaft, the crank-disk, and the pitman, as will be readily understood. On the upward movement of the lifting-clamp the dog pivoted thereto will incline downward and bind around the drill-rod, so as to raise the same. When the said clamps starts on its downward stroke, the dog will be thrown out of engagement with the drill-rod, and the said rod will then fall onto the rock, as will be readily understood. The twisted formation of the guide for the lifting-clamp causes the drill-rod to make a partial turn each time it is raised, so as to cut a regular hole in the rock and prevent uneven wear on the drill-blade. When it is desired to lift the drill-rod from the ground, the dog U is thrown forward, so that when the drill-rod attempts to fall this dog will bind around the said rod and hold it in its raised position. After the rod has been raised to the desired height the nuts P are turned home, so as to clamp the staple S around the drill-rod, and thereby secure the same.

It will be seen from the foregoing description that we have provided a very efficient rock-drilling machine which can be easily

operated, and which is composed of few parts, so that it can be manufactured cheaply and readily.

The advantages of our device are thought to be obvious from the foregoing description, when taken in connection with the accompanying drawings, and detailed reference thereto is deemed unnecessary.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the body, of the arm R, secured to the upper end thereof and projecting upward and forward therefrom, the staple mounted in the end of said arm and adapted to pass around the drill-rod, and the nuts mounted on the end of said staple, as set forth.

2. The combination of the body, the twisted and slotted guide secured on the front side of the body, the plunger having a T-head engaging the slotted guide, the crank-disk at the upper end of the body, the pitman having its upper end pivoted to the crank-disk and its lower end pivoted to the plunger, the drill-rod passing through the plunger, the dog pivoted on the plunger and binding against the drill-rod, and mechanism for rotating the crank-disk, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

THOMAS B. WITHERS.
MATTHEW EDGAR, JR.

Witnesses:
E. F. WRIGHT,
EMILY F. WRIGHT.

E. G. VOEGELI.

TRACTOR MOTOR TRUCK.

APPLICATION FILED OCT. 29, 1921.

1,438,414. Patented Dec. 12, 1922.

Fig. 1.

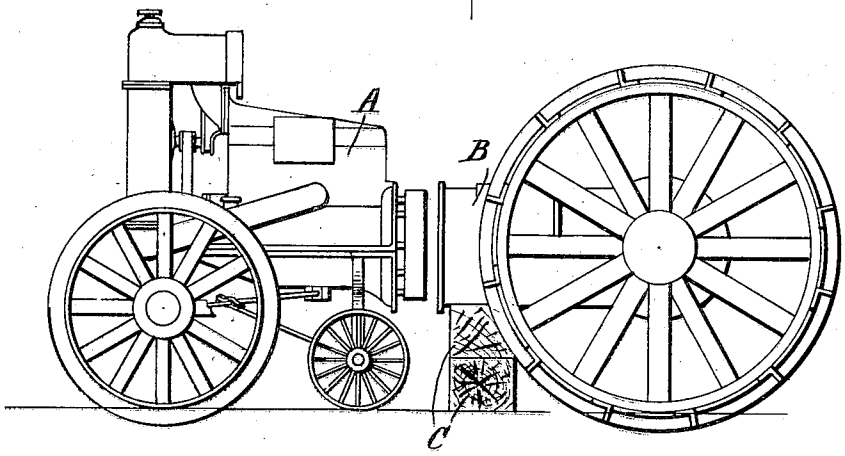



Fig. 3.

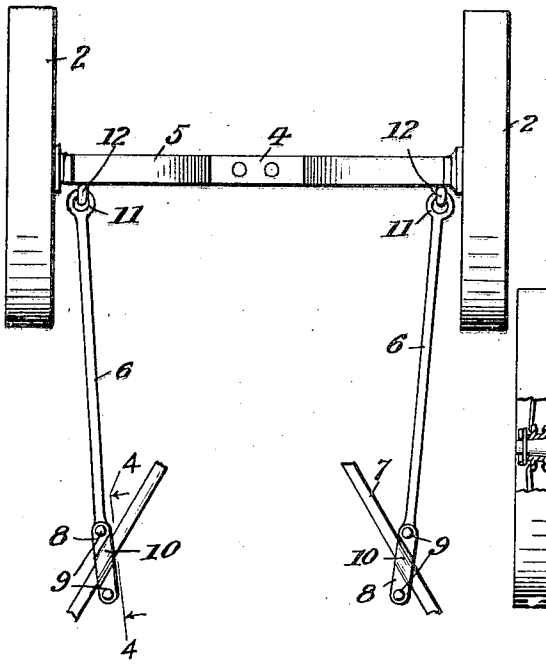



Fig. 2.

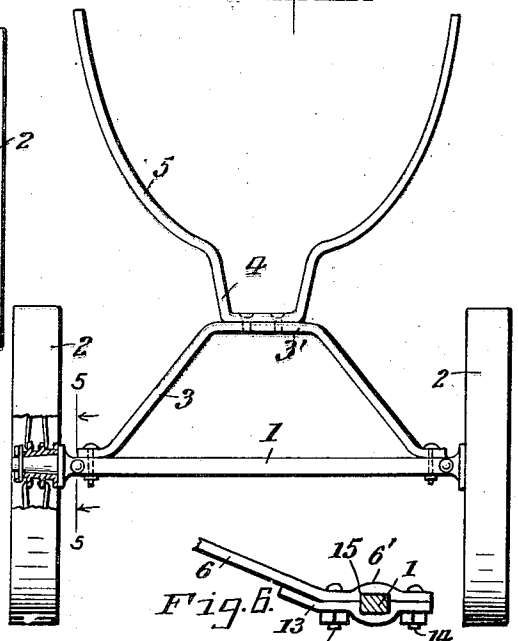






Fig. 6.

Fig. 4.

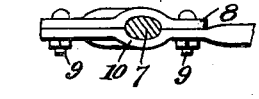
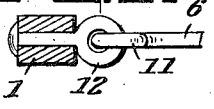



Fig. 5.




INVENTOR.

Emil G. Voegeli

BY

William J. Jacobi

ATTORNEY.

Patented Dec. 12, 1922. 1,438,414

# UNITED STATES PATENT OFFICE.

EMIL G. VOEGELI, OF MONTICELLO, WISCONSIN.

## TRACTOR MOTOR TRUCK.

Application filed October 29, 1921. Serial No. 511,278.

*To all whom it may concern:*

Be it known that EMIL G. VOEGELI, a citizen of the United States, residing at Monticello, in the county of Green and State of Wisconsin, has invented certain new and useful Improvements in Tractor Motor Trucks, of which the following is a specification.

This invention has relation to certain new and useful improvements in a tractor motor truck and has for its primary object the provision of a truck which may be employed to support the motor of a tractor and serve as a truck for the same when disconnected from the remaining portion of the tractor for the purpose of repairs or for any other purposes.

The invention has for an object the provision of a tractor motor truck which will be of simple construction and operation and which may be readily connected with the motor section of a tractor such as the Fordson when it is desired to disconnect this portion of the tractor from the remaining portion for any purpose.

The invention has for a further object the provision of a truck of the character stated which will be composed of the minimum number of parts, may be readily placed in position or removed and when in position will support the rear end of the tractor motor in the proper position for connection with the opposite portion or section of the tractor, so that these parts may be properly alined for reconnection.

The invention has for a still further object the provision of a truck of the character stated which will be of inexpensive construction and will serve, when positioned to properly support the tractor motor.

With the foregoing and other objects in view as will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of co-operating elements as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming a part of the present application and in which:—

Figure 1 is an elevation of a tractor of conventional form such as the Fordson with the two sections thereof disconnected and my improved truck in use to support the rear end portion of the tractor motor.

Figure 2 is an elevation of the truck removed.

Figure 3 is a top plan view of the truck and showing the manner in which the same is connected at its forward end to the radius rod.

Figure 4 is a detail sectional view on the plane of line 4—4 of Fig. 3, looking in the direction indicated by the arrows.

Figure 5 is a detail view on the plane of line 5—5 of Fig. 2, looking in the direction indicated by the arrows.

Figure 6 is a view similar to Fig. 5, showing a slightly modified form of the invention.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 indicates the axle of the truck carrying the removable ground wheels 2, so that one of these wheels may be readily removed when placing the truck in position, as will be later clearly understood. This axle 1 has rigidly mounted thereon the supporting arch 3 which is secured by its opposite end portions upon the axle 1, adjacent the ends thereof and inwardly of the wheels 2, as clearly shown in Fig. 2 of the drawings. Secured upon the upper central portion 3′ of the arch 3 is the downwardly offset portion 4 of the substantially U-shaped tractor motor supporting member 5 which has its opposite upstanding arms concaved on their inner faces by bending these members to conform to the shape of the motor casing at the point at which this truck is to be positioned, as shown in Fig. 1 of the drawings. For securing the truck in the position shown in Fig. 1, the forwardly extended rods 6 are connected to the axle 1 adjacent the end thereof and inwardly of the wheel 2, as shown in Fig. 3. These rods 6 extend forwardly and slightly converge so as to pass beneath the opposite side portion of the radius rod 7 of the tractor, suitable clamping members 8 being secured upon the forward end portion of the rod 6 by clamping bolts 9 or the like. These clamping members 8 together with the forward end portions of the rod 6 are provided with pockets opposed to one another so as to receive the radius rods 7, as clearly shown in Figs. 3 and 4 and to securely clamp upon this radius rod 7. The rods 6 are shown as having eyes 11 formed at their rear ends and secured upon the eye bolts 12 carried in the axle 1, as shown in Fig. 5. These rods 6, connected in the manner stated to the axle 1 and the radius rod 7 will serve to retain the axle 1 in proper

position with the rear portion of the engine section of the tractor resting on the member 5, as shown in Fig. 1. The engine section of the tractor may be designated by the letter A while the rear section or remaining section of the tractor is designated by the letter B. The forward part of the section B of the tractor is shown as being supported upon the block C in Fig. 1 so as to make it possible for the sections A and B to be properly alined when separating or reconnecting these parts of the tractor for the purposes of repair or for any other purposes.

In Fig. 6 I have shown a slightly modified form of the invention in which the rods 6 are shown as having their rear ends extended, as shown at 6′ for engagement over the axle 1 and the clamping members 13 employed in connection with these ends 6′ to clamp the same upon the axle 1. The connecting bolts 14 or other suitable members are employed for connecting the clamping member 13 and the rear end 6′ of the rod 6 and these clamping members 13 and extended ends 6′ of the rods 6 are provided with opposed pockets or recesses 15 to accommodate the axle 1. This manner of connecting the rear ends 6′ of the rods 6 with the axle 1 will prevent all possibility of turning of the axle 1, thereby making it impossible for the member 5 to slip out of position from beneath the engine section A of the tractor.

It is believed that the complete construction and operation of this device may now be readily understood without further detailed description. It is to be borne in mind that while the preferred embodiment of the invention has been shown and described, minor changes in the details of construction and arrangement of parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

What I claim is:—

1. A tractor motor truck comprising an axle, a supporting member carried on said axle, a tractor engine section receiving member carried on said supporting member, and meas for connecting said axle to the radius rod of the tractor, and ground wheels removably mounted on said axle.

2. A tractor section truck comprising an axle, removable ground wheels carried by said axle, means for connecting said axle with the radius rod of the tractor engine section and preventing turning of said axle, a supporting member carried on said axle, and a resilient member mounted on said supporting member to receive the rear portion of the tractor engine section to support the latter in elevated position when disconnected from the remainder of the tractor.

3. A tractor section supporting truck comprising an axle, ground wheels removably mounted on said axle, a resilient tractor section supporting member rigidly mounted on said axle and adapted to receive and form a seat for the free end of a disconnected section of the tractor, and means for rigidly connecting said axle with a stationary portion of the disconnected tractor section previous to disconnection thereof from the remainder of the tractor and preventing the rotation of said axle.

In testimony whereof I affix my signature.

EMIL G. VOEGELI.

G. A. HERRICK.

WEATHER-STRIP.

No. 171,936. Patented Jan. 11, 1876.

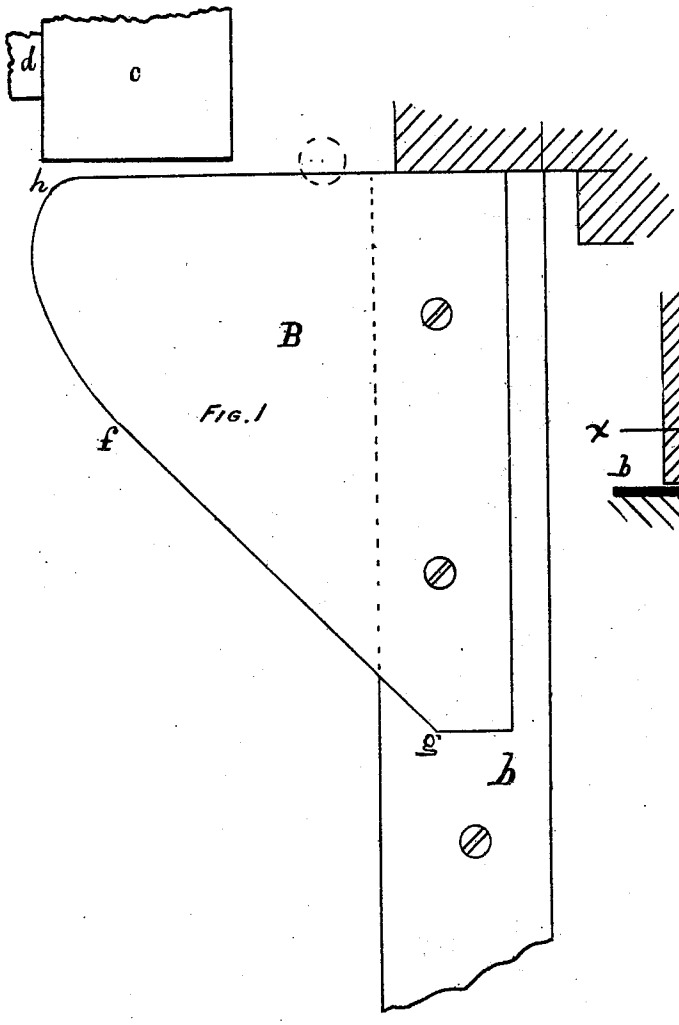



FIG. 1

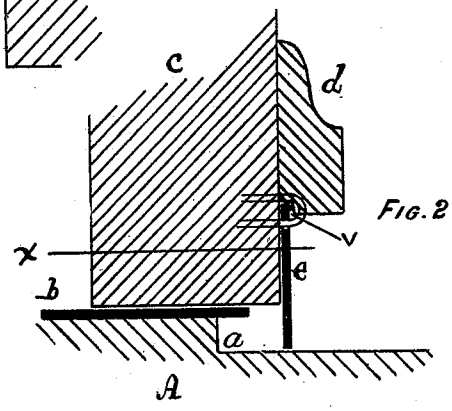



FIG. 2

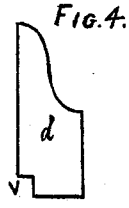



FIG. 4.

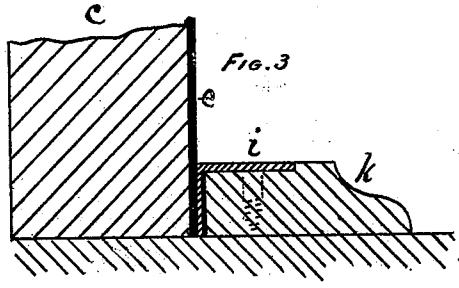



FIG. 3

WITNESSES

Wm. W. Wright

S. M. Smith

G. A. Herrick

INVENTOR.

# UNITED STATES PATENT OFFICE.

GILBERT A. HERRICK, OF MONTICELLO, WISCONSIN.

## IMPROVEMENT IN WEATHER-STRIPS.

Specification forming part of Letters Patent No. **171,936**, dated January 11, 1876; application filed August 13, 1875.

*To all whom it may concern:*

Be it known that I, GILBERT A. HERRICK, of Monticello, Green county, State of Wisconsin, have invented new and useful Improvements in Weather-Strips for the Bottoms of Doors, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the parts shown, except that the door-frame is in section; Fig. 2, a vertical section of the parts shown; Fig. 3, a horizontal section of the parts shown, taken on line *x* of Fig. 2, and Fig. 4 a detail.

This invention consists in providing the threshold with a rabbet and a strip of metal projecting over the same; in providing the strip, which is secured near the bottom of the door, with a rabbet, as hereinafter described; in providing a peculiarly-shaped plate, against which the loose weather-strip strikes when the door is being closed; and in the several combinations hereinafter described or claimed as new.

In the drawings, A represents a threshold. It is provided with a rabbet, *a*. *b* is a strip of metal, secured to the threshold and projecting over the rabbet *a*, as shown in Fig. 2. *c* represents the door. *d* is a strip secured to the door, near the bottom thereof. It is provided with a rabbet, *v*. *e* is a strip of metal, loosely secured to the outside of the door by means of staples, its upper end being in the rabbet *v*. B is a metal plate fastened to the threshold, against the edge of which the end of the strip *e* strikes when the door is being closed. The edge of this piece B is straight between the points *f g*, but from *h* to *f* it is curved, as represented. The edge from *f* to *g* may also be beveled. *i*, Fig. 3, is an angle-iron, recessed into the stop *k* upon the door-frame, against which iron *i* the strip *e* strikes when the door is closed.

I am aware that weather-strips for the bottoms of doors of various kinds are in use. Without the rabbet *a* the water is liable to drive up under the strip *e* and over the threshold, and without the rabbet *v* in the strip *d* the water might pass over the top of the strip *e*, and then down between it and the door and over the threshold. Both of these difficulties are obviated by my construction, as the plate *b* projects over the rabbet *a* and effectually prevents the passage of water at that point, while the upper edge of *e* is protected by the rabbet *v* in the strip *d*.

I am also aware that irons somewhat similar to B have been used in connection with a strip, *e;* but they have been of such form that, when the door was closed, the parts were liable to be injured or the lower hinge of the door be torn off. The peculiar form of the edge of this piece B, shown, obviates this difficulty.

In Fig. 1 the door is represented as wide open, and in Fig. 2 as closed. When the door is being opened the strip *e* drags over the threshold and the plates *b* B. When the door is wide open *e* will fall down into the same position shown in Fig. 2. In closing the door the end of the strip *e* next to B will come in contact with this plate B, and *e* will be gradually elevated till it passes up over the edge of B on the top thereof, which position it will retain until it passes over the edge of *b*, when it will drop down into the position shown in Fig. 2.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The strip or guard *e*, in combination with the door *c* and strip *d*, having a rabbet, *v*, substantially as specified.

2. The strip or guard *e*, in combination with the door *c*, the threshold A having a rabbet, *a*, and the plate *b*, all constructed and arranged substantially as and for the purposes specified.

3. The combination of the strip *e*, strip *d*, having a rabbet, *v*, door *c*, threshold A having a rabbet, *a*, and the plate *b*, substantially as and for the purposes specified.

4. The angle-iron *i*, in combination with the strip *e*, door *c*, and piece *d*, substantially as described.

GILBERT A. HERRICK.

Witnesses:
WM. W. WRIGHT,
S. M. SMITH.

(No Model.)

# T. B. WITHERS & C. KNOBEL.

## WEATHER STRIP.

No. 440,857. Patented Nov. 18, 1890.

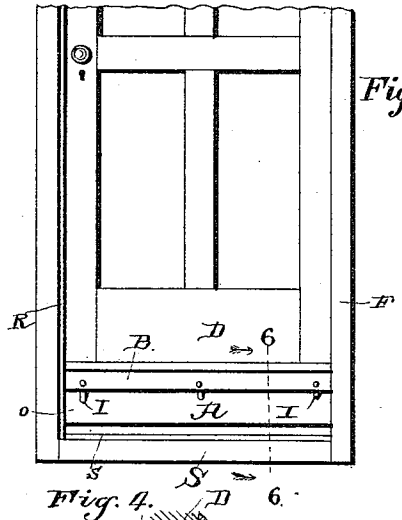



Fig. 1.

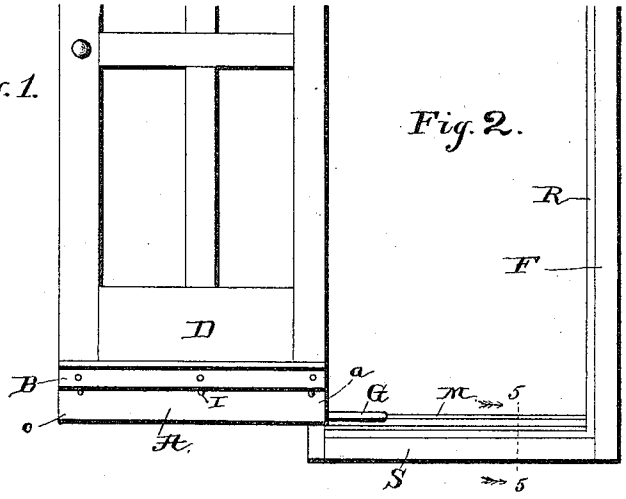



Fig. 2.

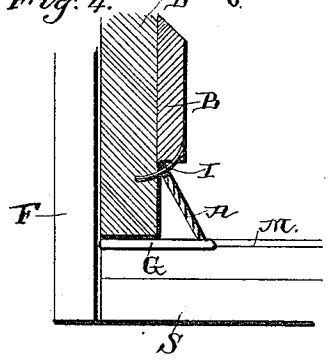



Fig. 4.

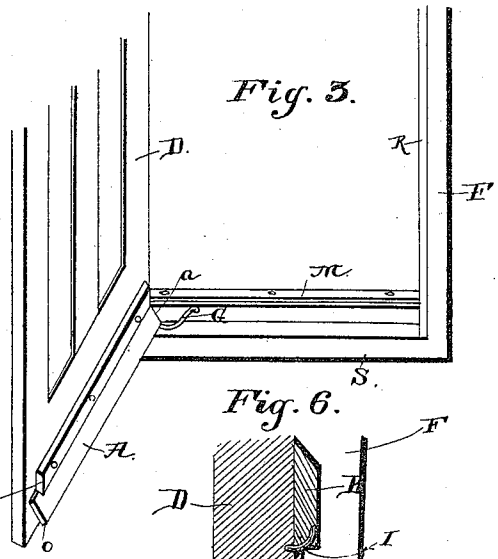



Fig. 3.

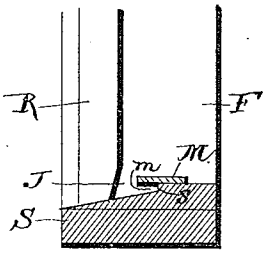



Fig. 5.

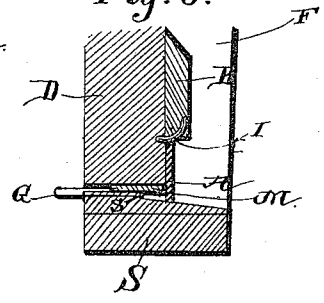



Fig. 6.

Witnesses

Horace S. Sutz

N. L. Collamer.

Inventors

Thomas B. Withers (Seal)

By his Attorneys Casper Knobel.

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

THOMAS B. WITHERS AND CASPER KNOBEL, OF MONTICELLO, WISCONSIN.

## WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 440,857, dated November 18, 1890.

Application filed January 25, 1890. Serial No. 338,110. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS B. WITHERS and CASPER KNOBEL, citizens of the United States, residing at Monticello, in the county of Green and State of Wisconsin, have invented a new and useful Weather-Strip, of which the following is a specification.

This invention relates to weather-strips, more particularly of that class which are adapted to be attached to the lower edge of a hinged door and to close or seal the crack beneath the door when the latter is closed; and the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

Figure 1 is an outside view of the door in its closed position. Fig. 2 is an inside view of the door in its open position. Fig. 3 is a perspective view of the door, showing it in the act of closing. Fig. 4 is a cross-section of the pivoted strip and its support. Fig. 5 is a section on the line 5 5 of Fig. 2. Fig. 6 is a section on the line 6 6, Fig. 1.

The letter F designates the door-frame having an ordinary sill S, and in this frame is hinged the door D. The sill S has a shoulder *s*, at a proper point from which it is beveled outwardly, and on the flat upper face of the sill is secured the metallic strip M, whose outer edge projects slightly over the shoulder *s*, thereby forming a small groove or space *m* beneath the outer edge of the strip, all as shown in Fig. 5.

The door D is of the ordinary construction, except that along its outer face near its lower edge is pivoted the metallic strip A. We prefer to attach this strip as shown in the drawings—that is, by securing a wooden or other strip B irremovably along the door and providing small eyes I, arranged at its lower edge and formed by curved pins, these eyes passing through apertures near the upper edge of the movable strip; but it will be understood that almost any other form of pivot will answer equally well. We prefer this form, however, because the use of the rigid strip B more firmly holds the pivoted strip in place, and also serves other advantages which experience has taught us are desirable.

In the upper face of the sill S, adjacent the hinge-bar of the frame F, we secure a guide or loop wire G, whose body preferably stands in an arc of a circle projecting inwardly from the sill. The movable plate A hangs normally below the horizontal plane of the upper face of the sill, and as the door is closed, Fig. 3, the inner end *a* of the movable plate A strikes the rounded guide-wire G and rides up over the same, whereby the lower edge of the plate A is caused to slide over the upper face of the stationary strip M. The door having reached its closed position, the plate A of course falls down beyond the outer edge of the stationary plate M, and just as the door is tightly seated in its place the outer end *o* of the strip A enters a notch J in the rabbet R, the latter then pressing the plate A firmly into place. It will be understood that during the entire closing movement of the door and while the plate A is sliding upon the plate M the former is in an inclined position. This position is of course maintained until the plate A slides off the plate M and drops to its vertical position. The last portion of the plate A which slides on the plate M is its outer end *o*, and just as it drops off the same it falls into the notch J. This notch is employed to receive the plate while it is turning about its pivot, and the flat vertical face of the rabbet R, just above the notch, strikes against the plate A and bears the same firmly in position when the door is tightly closed. In this latter condition the inner face of the plate a slight distance from its lower edge bears against the outer edge of the stationary plate M, and the body of the plate A below said point of impact projects downwardly in front of the space *m* below the stationary plate, thereby forming what we prefer to call the "dead-air space." When the door is thus tightly closed, not only the air, but also water, snow, or sleet is prevented from entering beneath the same, as the movable plate A closes the crack beneath the door, and the dead-air space *m* serves an additional guard to prevent the undesirable entrance of cold and moisture. The door is opened in the ordinary manner, as will be readily understood, the outer end of the plate A drawing naturally out of its seat without any difficulty.

Having described our invention, what we claim is—

The sill S, having the shoulder *s*, the stationary plate M, secured to the upper face of the sill and projecting beyond the said shoulder, the vertical rabbet R, having the inclined notch J in front of said plate, and the curved wire guide G in rear of said plate adjacent the hinge-bar of the door-frame, in combination with the hinged door B and the plate A, pivoted thereto on its outer face and hanging normally below the level of said stationary plate M, the inner end of said plate riding upwardly over the guide and over the stationary plate, and its outer end passing into said notch as the door is closed, as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

THOMAS B. WITHERS.
CASPER KNOBEL.

Witnesses:
E. F. WRIGHT,
EMILY F. WRIGHT.