

W. E. & J. A. ROWE.  
VENT STOPPER.  
APPLICATION FILED FEB. 20, 1911.

994,691.

Patented June 6, 1911.

2 SHEETS—SHEET 1.

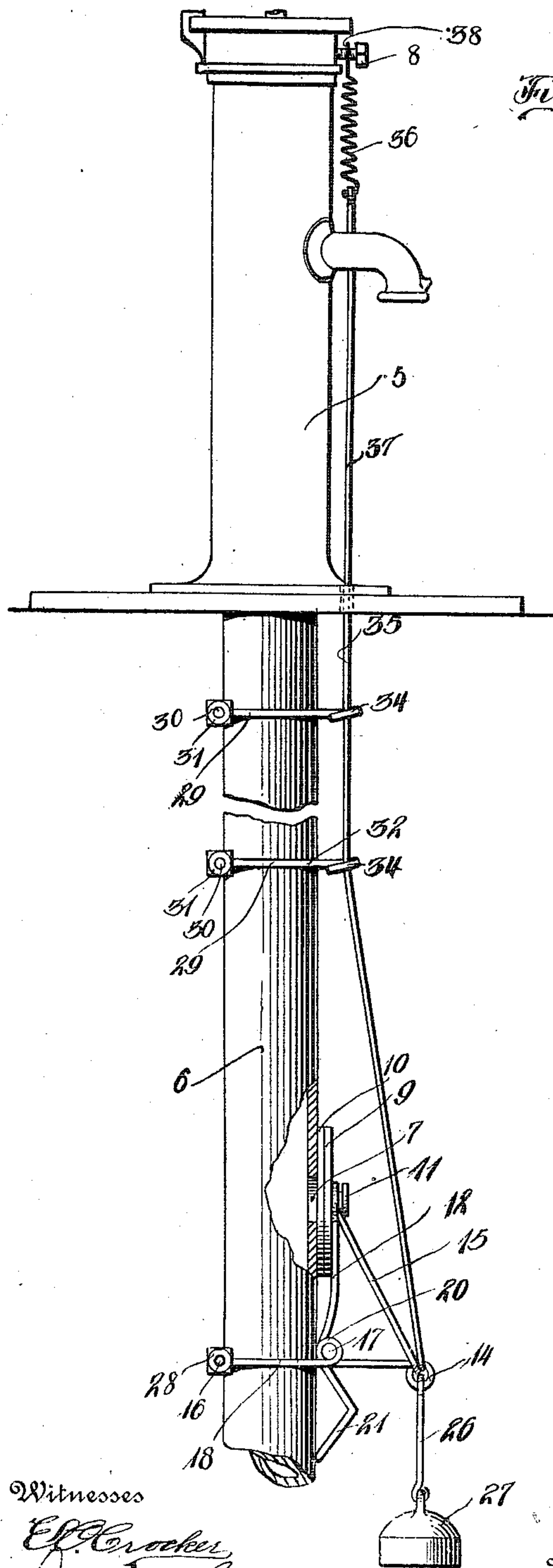


Fig. 1.

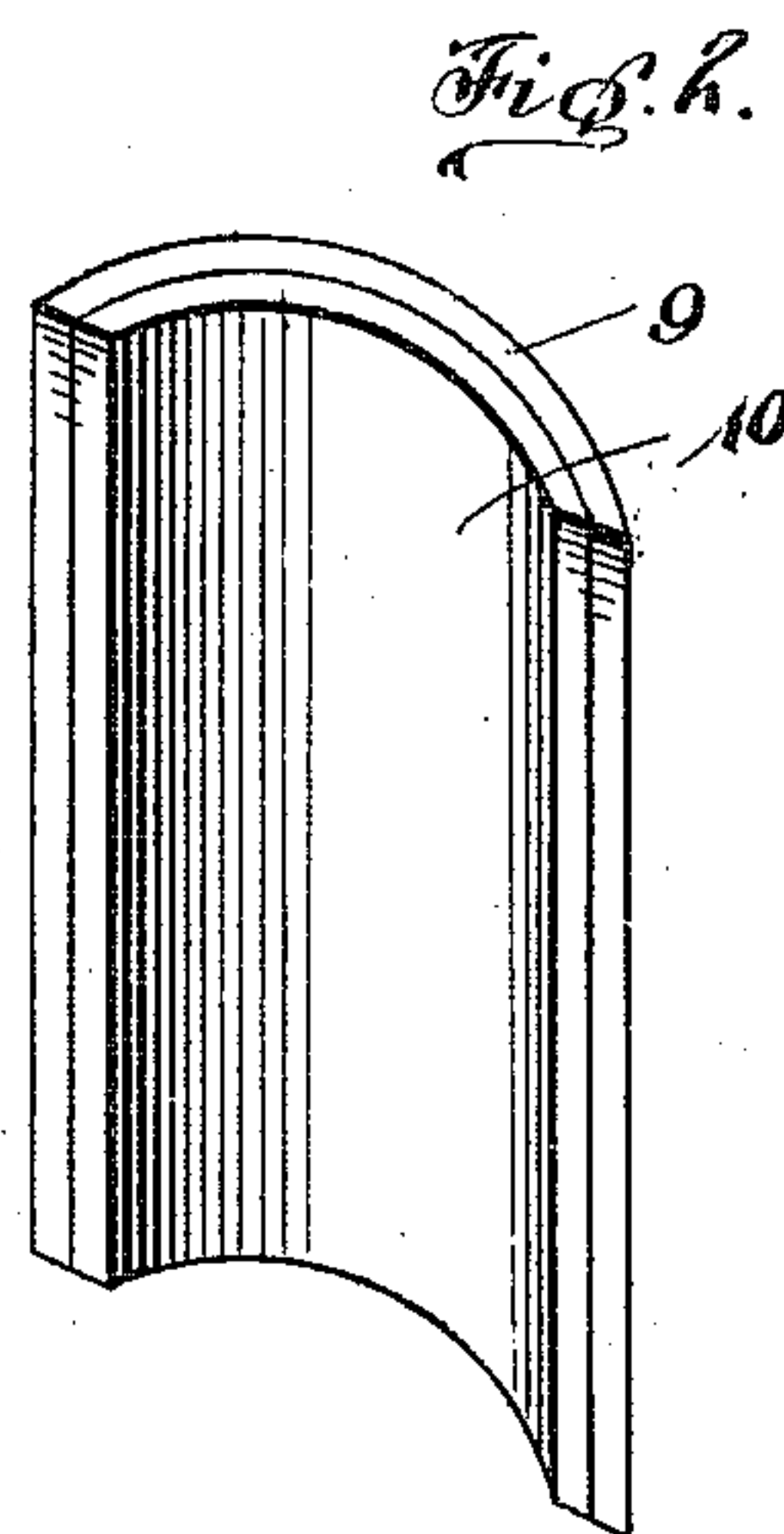


Fig. 2.

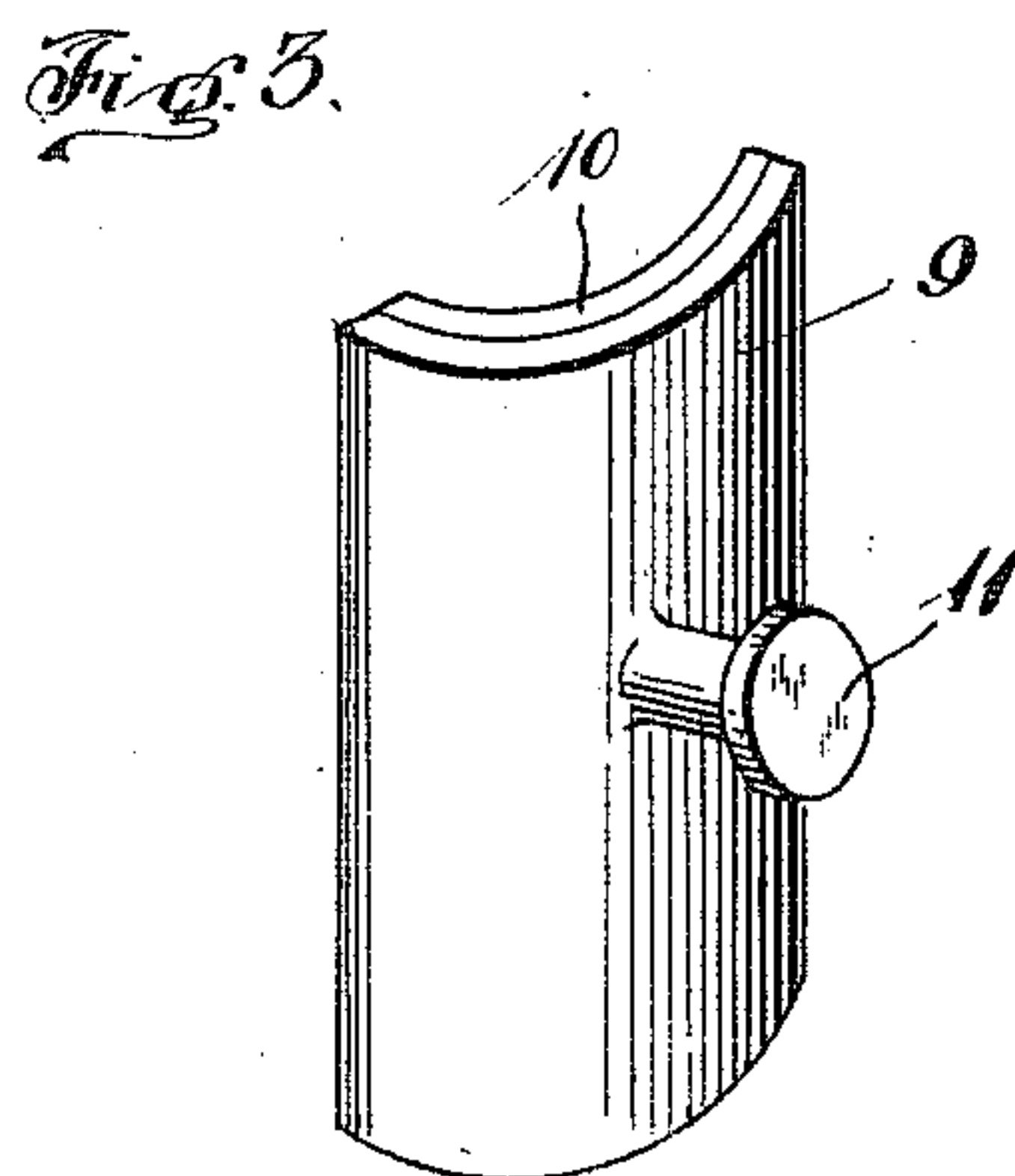


Fig. 3.

Witnesses

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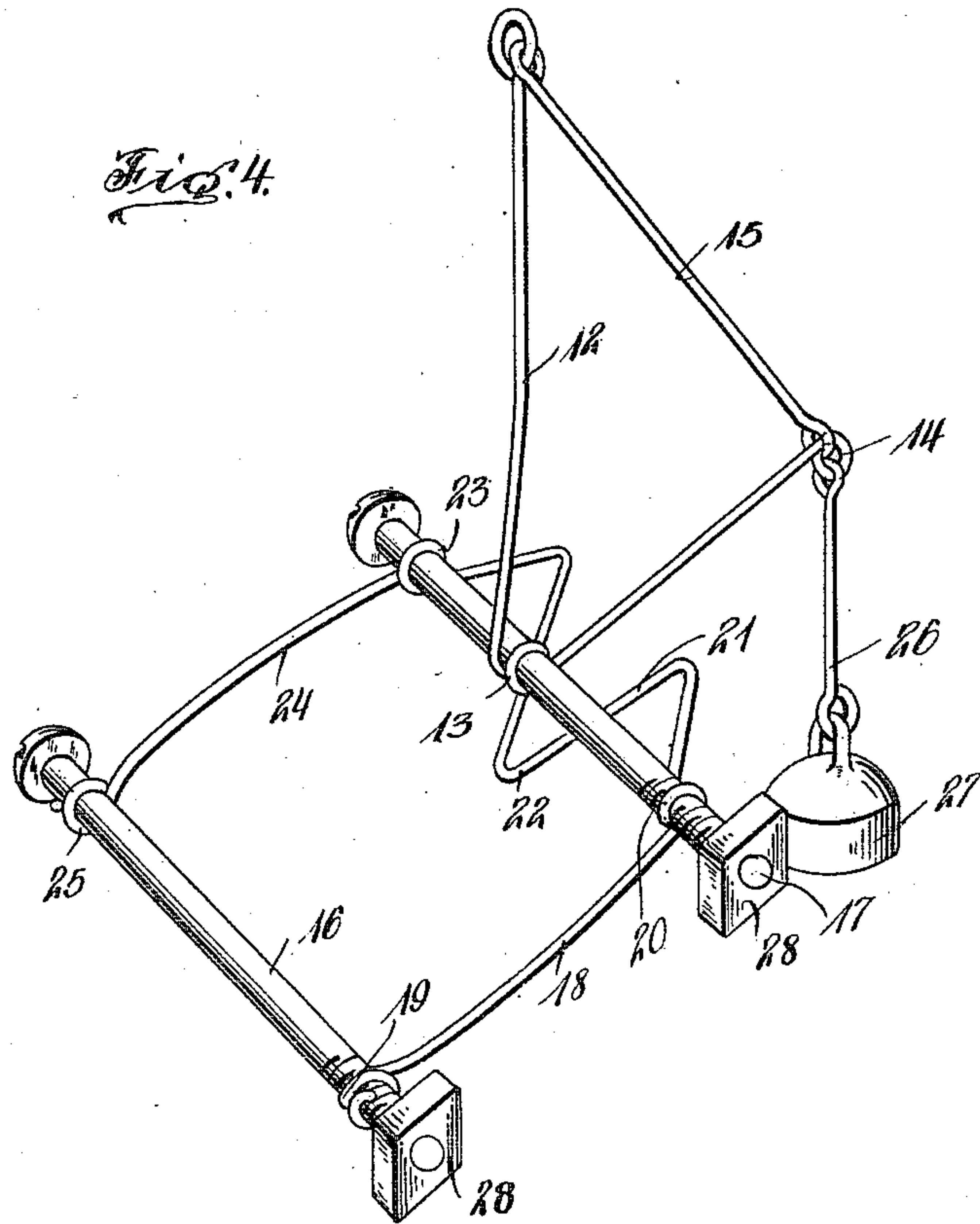
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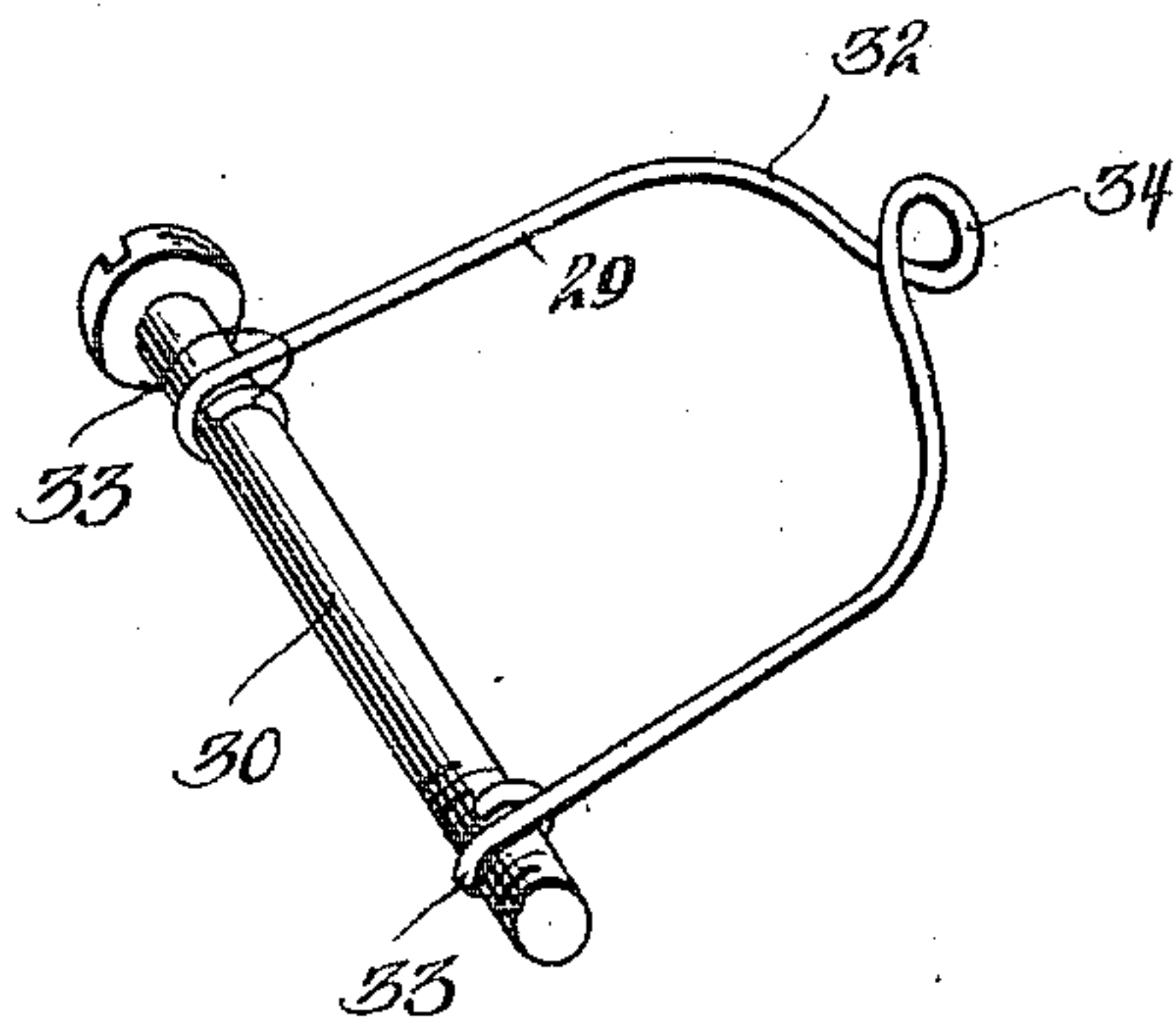
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2 SHEETS—SHEET 2.



*Fig. 5.*



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM E. ROWE AND JOHN A. ROWE, OF ORCHARD, NEBRASKA.

## VENT-STOPPER.

994,691.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed February 20, 1911. Serial No. 609,744.

*To all whom it may concern:*

Be it known that we, WILLIAM E. ROWE and JOHN A. ROWE, citizens of the United States, residing at Orchard, in the county of Antelope, State of Nebraska, have invented certain new and useful Improvements in Vent-Stoppers; and we 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 appertains to make and use the same.

This invention relates to an improvement in vent stoppers for pumps, or the like.

It has been found by practice that by having an air opening in the suction pipe of the pump, the water contained therein is thereby prevented from freezing.

The principal object of this invention is to provide a stopper for such openings, said stopper being provided with means for normally holding the same in contact with the pipe.

Another object of the invention is to provide a stopper of the character described in which a weight is provided for automatically withdrawing the stopper from the vent opening immediately upon release of the holding means.

It will thus be observed that by this construction the vent opening is kept normally closed during the warm weather, and that during cold weather the stopper can be easily released to permit of air entering the pipe.

A still further object of the invention is to provide a stopper for the purpose described which is composed of a minimum number of parts, said parts being adapted to be easily positioned on suction pipes of pumps now in general use.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing: Figure 1 is a side elevation of a portion of a pump and suction pipe, showing our invention associated therewith, Fig. 2 is a perspective view of the closure, Fig. 3 is another perspective view

of the closure, Fig. 4 is a perspective view of the clamp and closure mechanism, and Fig. 5 is a perspective view of one of the guide clamps.

Like reference numerals designate corresponding parts in all the figures of the drawing.

Referring to the drawing 5 designates a pump stock, 6 the suction pipe having a vent opening 7 formed therein, and a pin 8 is connected to said stock. A concaved plate 9, having a cushion 10 secured to its inner face, is disposed over the vent opening 7. Extending from the outer face of the plate 9 is a headed pin 11, to which is connected one end of a bell-crank lever 12 which is preferably formed of wire. This bell-crank lever is coiled at its angle, as shown by reference numeral 13, to form a bearing for a purpose hereinafter described. The other end of the lever is bent to form a loop 14, and connecting this loop and the other end of the lever is a brace member 15.

Disposed on opposite sides of the pipe below the stopper are bolts 16 and 17, the last mentioned bolt being disposed within the coil 13 of the lever. These bolts are connected by a clamping member 18, which is preferably formed of wire. One end thereof is looped around the bolt 16, thence extends around the pipe to the bolt 17, and thence around the bolt 17, as indicated by reference numeral 20. The wire is then bent to form a downwardly extending and outwardly bowed loop 21, the bight 22 thereof being adapted to bear against the pipe 6. The wire thence extends around the pipe 17, as indicated by 23, and thence around the pipe 6, as indicated by 24, and the free end thereof is coiled around the bolt 16 as indicated by 25. Thus it will be seen that the wire 18 forms a clamp for supporting the bolt 17, and consequently the stopper 9, in proper position.

Connected to the loop 14 of the bell-crank lever is a link 26, and connected with the other end of the link is a weight 27, which is adapted to unseat the stopper, as will be hereinafter described. Associated with each of the bolts 16 and 17 are squared nuts 28—28 respectively, one edge thereof fitting tightly against the pipe 6. It will be observed in this connection that in order to tighten the clamp 18, the bolts 16 and 17 are rotated, the nuts 28 being held stationary during such movement by reason of their



contact with the pipe. As a result, the end portions of the clamp 18 will be caused to tightly embrace the said pipe, and thereby hold the stopper against longitudinal or rotary movement thereupon.

A plurality of spaced guides 29 are supported on the pipe 6. Each of these guides includes a bolt 30 and a squared nut 31. A wire 32 is bent to embrace the pipe 6, and has its end portions 33—33 coiled around the said bolt 30. A laterally projecting loop 34 is formed by twisting the wire at its bight, to form a guide. Disposed within these loops or guides 34 is a connecting wire 35, one end thereof being suitably connected to the loop 14 of the bell-crank lever and the other end extending beyond the upper guide, and connected to one end of a coil spring 36. Extending from the opposite end of the spring 36 is a pull-rod 37, having a suitable hook 38 formed at its free end and for engagement with the pin 8 which is carried by the pump stock.

In operation, the hook 38 will normally rest upon the upper pin 8, and in this position the wire 35, through the medium of the bell-crank lever 12, will cause the stopper to tightly engage the pipe over the opening 7 thereof. When, however, it is desired to pass water from the pipe, the hand-piece 38 is disengaged from its supporting pin and immediately thereupon the weight 27 will cause the bell-crank lever 12 to swing upon its bearing, and thereby open the outlet 7. It will also be observed that by the employment of the spring 36, considerable pressure can be exerted upon the stopper when the same is being operatively positioned against the pipe. Thus it will be observed that letting the water out from the suction pipe all danger of the pipe being rendered inoperative, due to the freezing of water therein, is eliminated.

What is claimed is:

1. An attachment for pipes having a vent opening, consisting of a pipe clamp comprising spaced pipe-engaging bolts, a wire having its central portion coiled around one

bolt and its end portions coiled around the other bolt, tensioning means for the wire associated with each bolt, a bell-crank lever fulcrumed on one of the bolts, a stopper for the opening carried by one arm of the lever, a weight connected to the other arm of the lever, and means connected to the last mentioned arm for actuating said stopper against the weight.

2. An attachment for pipes having a vent opening, consisting of a pipe clamp comprising spaced pipe-engaging bolts, a wire having its central portion coiled around one of the bolts and its end portions coiled around the other bolt, tensioning means for the wire associated with each bolt, a bell-crank lever coiled at an angle to form a fulcrum, said coil being mounted on one of the bolts, a stopper for the opening carried by one arm of said lever, a weight connected to the other arm of the lever, a brace connecting the ends of the said arms of the lever, and means connected to the last mentioned arm for actuating said stopper against the weight.

3. An attachment for pipes having a vent opening, consisting of a pipe clamp, a bell-crank lever fulcrumed thereon, a stopper for the opening carried by one arm of said lever, a weight connected to the other arm of the lever, means connected to the last mentioned arm for actuating said stopper against the weight, guides for said means adapted to be secured to said pipe, said guides each comprising a bolt adapted to be engaged against the pipe, a wire having its central portion bent to form a guide-eye and having its terminal portions adapted to embrace the pipe and having their extremities coiled around the said bolt, and tensioning means associated with the bolt for clamping the wire to the pipe.

In testimony whereof, we affix our signatures in presence of two witnesses.

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JOHN A. ROWE.

Witnesses:

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