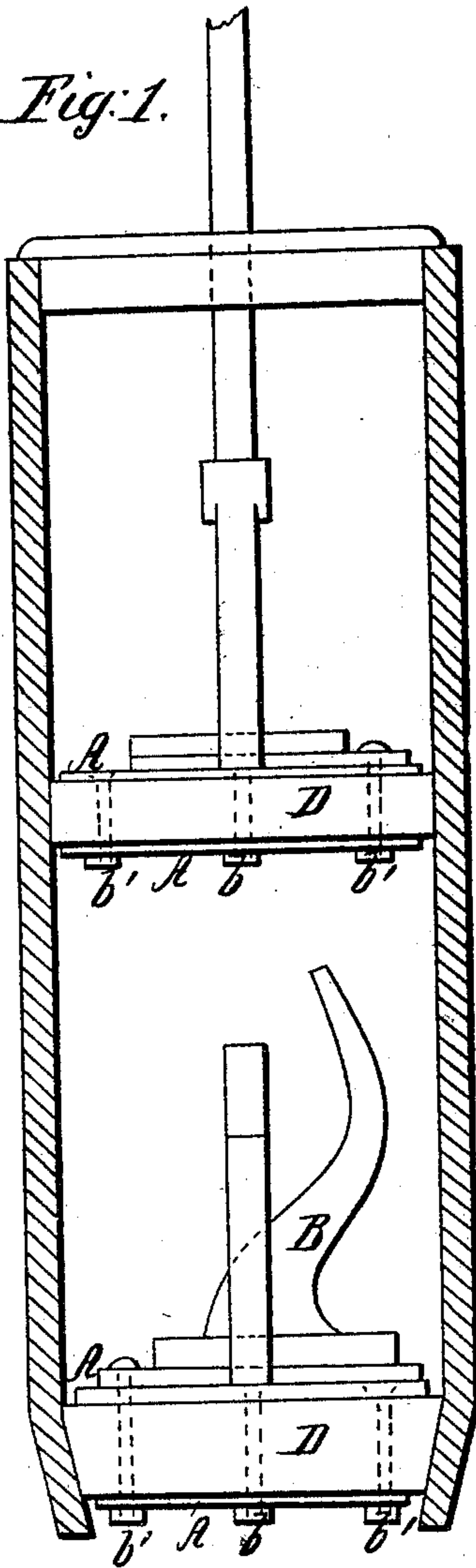


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PUMP.

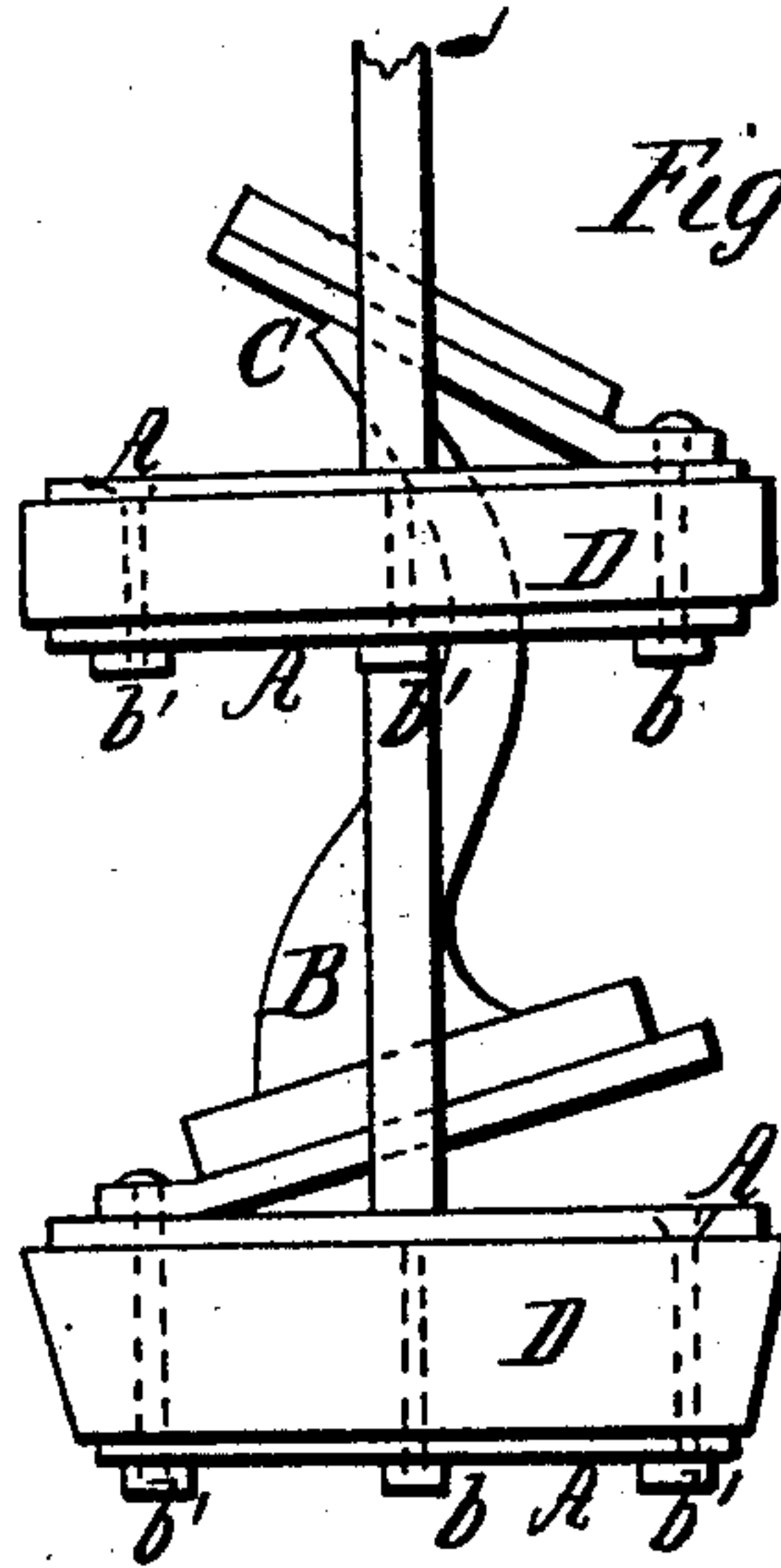
No. 67,666.

Patented Aug. 13, 1867.

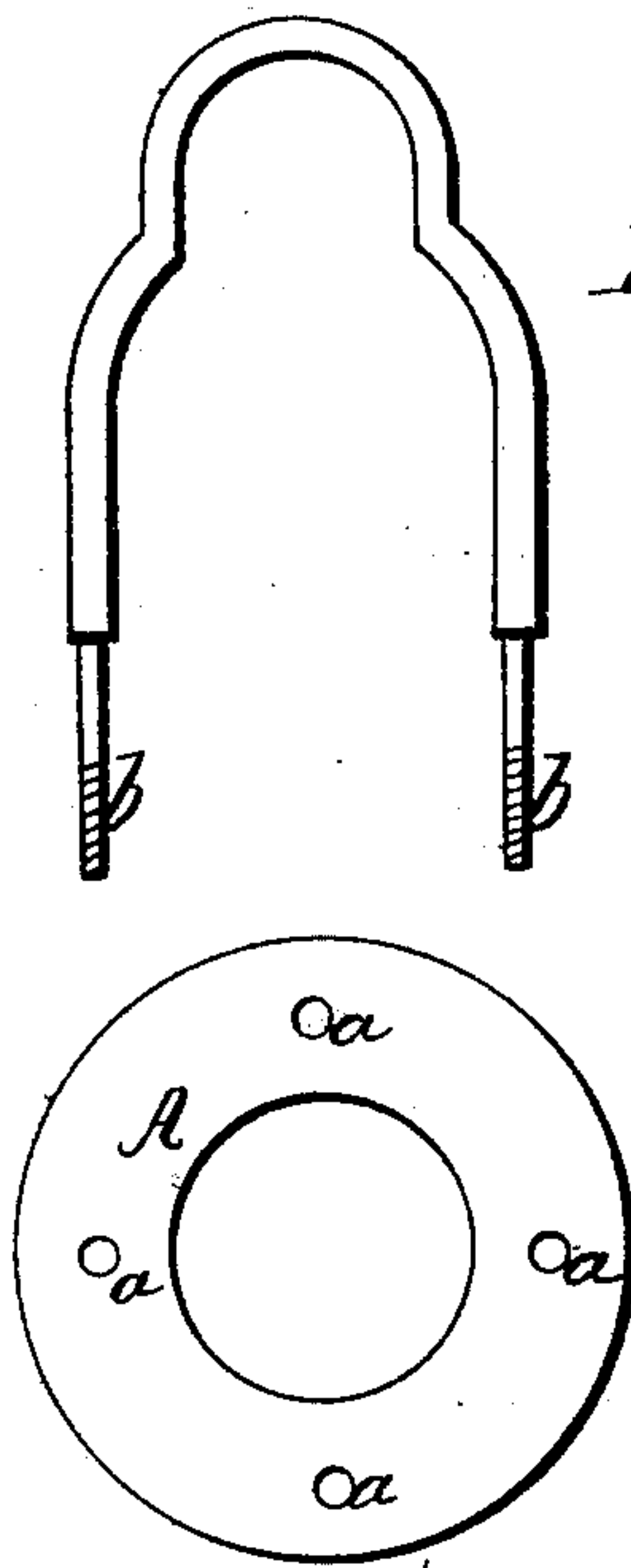
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses;

*L. A. G. Arnold*  
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Inventor;

*J. W. Merrill*  
*E. H. Lawrence*

# United States Patent Office.

JOSEPH W. MERRILL AND EDWARD H. LAWRENCE, OF BERLIN, MASSACHUSETTS.

*Letters Patent No. 67,666, dated August 13, 1867.*

## IMPROVEMENT IN PUMPS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOSEPH W. MERRILL and EDWARD H. LAWRENCE, of Berlin, in the county of Worcester, State of Massachusetts, have invented a new and useful Improvement in Pump-Boxes; and we do hereby declare the following to be a full, clear, and exact description of the same, due reference being had to the accompanying drawings.

The objects of our invention are to simplify the construction of pump-boxes by making them of few parts, that can be easily adjusted to compensate for the wear of use, and also so formed that the pump may be easily freed from water at any time without disarranging it or injuring it for use. To these ends its nature consists in making the boxes of two plates or rings, held together by adjustable bolts, retaining an elastic material between the plates, and in so forming the lower box and valve with a lever that shall be operated by the inner edge of the upper box and open the lower valve, whilst at the same time it passes through and opens the valve in the upper box, and thus lets back all the water from the pump. In the accompanying drawings—

Figure 1 shows a portion of a glass pump with our improved boxes as in operation.

Figure 2 shows the boxes in position to let off the water from the pump.

Figure 3 shows some of the parts separately.

The same parts are indicated by the same letters where they occur in each.

In constructing our improved pump-boxes we make two collars or plates A a little smaller than the bore of the pump, and with a hole in the centre large enough to allow the water to pass freely through, and having bolt-holes *a a a*, through which the bolts *b b b' b'* pass. Between these plates we place a vulcanized rubber packing, D, fitting the pump, and having a hole about the size of those in the plates. The bail of the box terminates at each end with a screw and shoulder, forming two bolts *b b*; and two others, *b' b'*, are inserted; one of them serving to hold the valve in place. To the valve of the lower box we attach the lever B, which is so made that the upper box shall press in the upper end, and open the lower valve; and the lever passing partly through the upper box opens the upper valve, thus letting off all the water from the pump. The rubber of the lower box is made conical to fit the socket of the pump, and the bail is made in the form shown at C, fig. 2, to allow the upper box to pass over it sufficiently to give motion to the lever B. The other parts of the pump may be of almost any of the common forms of construction, and therefore it is not deemed necessary to describe them in detail.

When in operation for raising water the boxes do not come near enough together to operate the lever B; but on raising the handle hard up they are brought together, and operate the lever for the purpose of freeing the pump of water to avoid freezing, or for some other purpose; and should the pump by chance get frozen the use of rubber for the valves and packing allows the use of boiling water or similar means to thaw it without injury.

It will be seen that if the boxes wear loose the tightening the plates by the bolts will restore the fit by forcing out the rubber; and the arrangement and form of parts are so simple that should any part break or get out of order it can be readily replaced.

We are aware that tilting-levers turning on a pivot in the bail have been used to open ball-valves and others; these we do not claim; but what we claim as new, and desire to secure by Letters Patent, is—

1. The peculiar construction of the lower valve with its fixed lever or arm B, when constructed and operating in the manner and for the purposes as above set forth and described.

2. We claim, as arranged in relation to the foregoing, the boxes of the two plates A, bolts *b b b' b'*, and rubber D, when constructed and operating in the manner and for the purposes above set forth.

J. W. MERRILL,  
E. H. LAWRENCE.

Witnesses:

J. G. ARNOLD,  
L. A. G. ARNOLD.