No. 654,372. Patented July 24, 1900.

J. B. WEST.

INDICATOR FOR PUMP ACTION.

(Application filed Sept. 28, 1899.)

(No Model.)

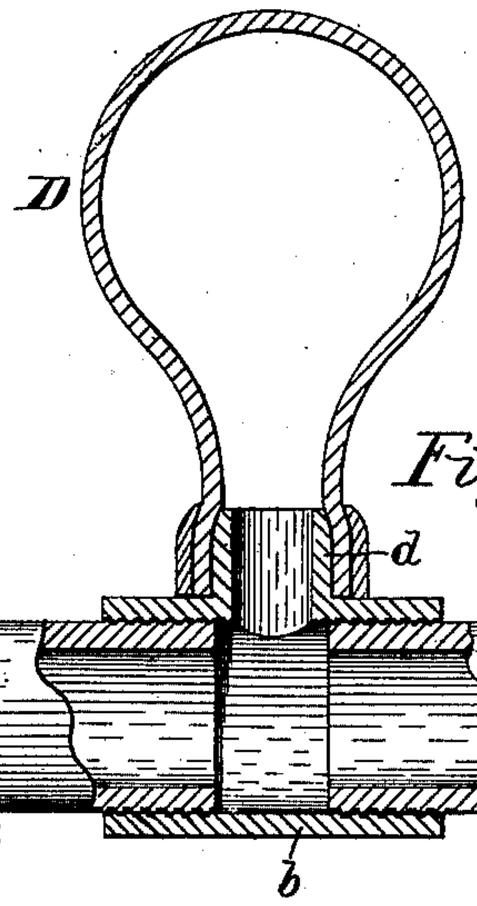

Fig. 3.

Fig. 1.

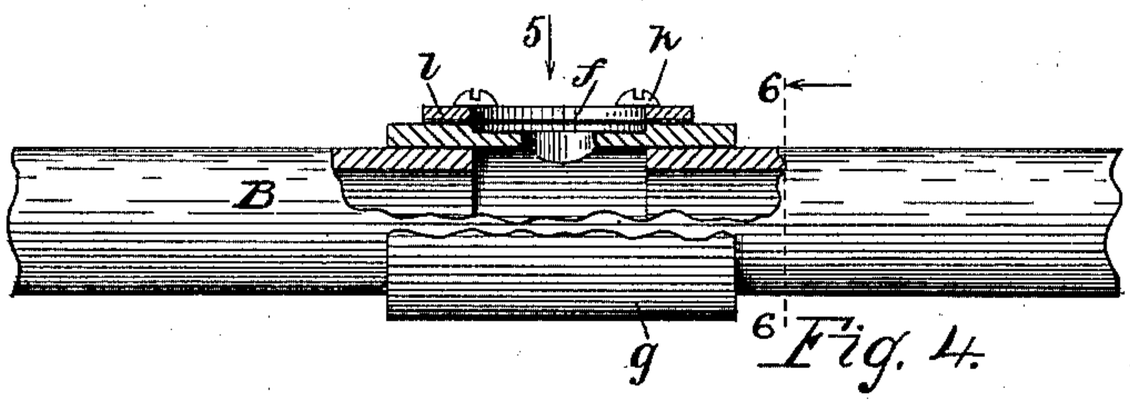

Fig. 4.

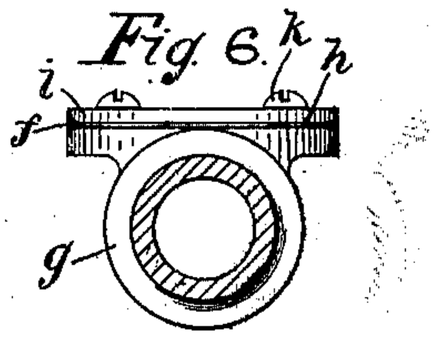

Fig. 6.

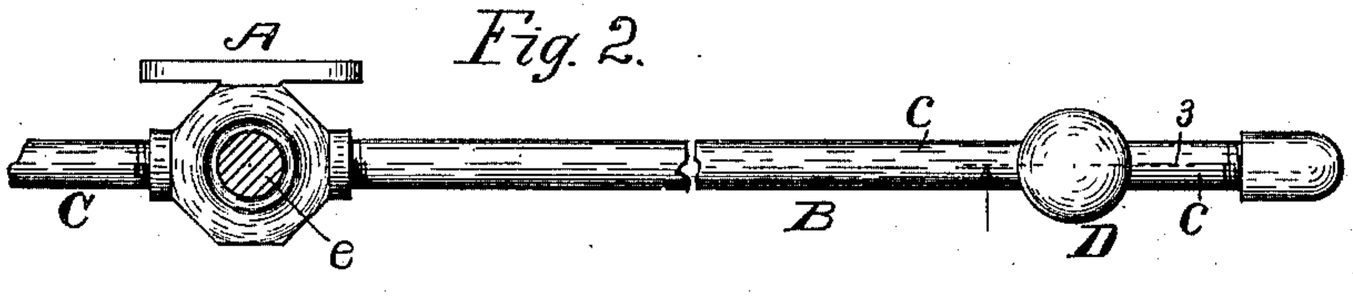

Fig. 2.

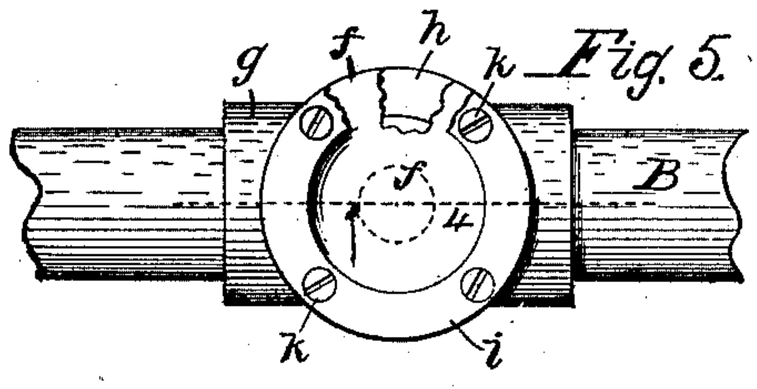

Fig. 5.

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UNITED STATES PATENT OFFICE.

JONATHAN B. WEST, OF ROCHESTER, NEW YORK.

INDICATOR FOR PUMP-ACTIONS.

SPECIFICATION forming part of Letters Patent No. 654,372, dated July 24, 1900.

Application filed September 28, 1899. Serial No. 731,947. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN B. WEST, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Indicators for Pump-Actions, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

In using force-pumps for supplying water to steam-boilers or for other purposes it frequently occurs that from some cause the pump though continuing its motions ceases to throw the water, thereby deceiving the attendant as to the amount of water being supplied by it. This stopping of the effective action of the pump may result from several causes—as, for instance, the sticking or non-action of a valve, the suction-pipe becoming clogged, a leak somewhere in the apparatus, the source of the water-supply giving out, or other cause—the safety of the boiler or other objects thereby being endangered. Small rapidly-acting pumps—as, for example, those used to supply the boilers of small boats, motor-carriages, and other like small generators—are particularly liable to this difficulty or defect.

My invention relates generally to safety appliances for water-supply devices, but more particularly to small quick-acting force-pumps for supplying or driving water by intermittent action.

The object of the invention is to provide a simple device that will indicate the action of the pump either to the eye or to the touch of the hand.

The invention is hereinafter fully described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of an ordinary force-pump with pipes connected, showing the application of my invention, parts being broken away. Fig. 2 is a plan of the same, the section being on the dotted line 2 in Fig. 1. Fig. 3, drawn to a larger scale, more fully shows the relation of the parts, parts being longitudinally sectioned as on the dotted line 3 in Fig. 2. Figs. 4 and 5 show, respectively, a sectional elevation and a plan of a simple modification. Fig. 6 is a transverse section on the dotted line 6 6 in Fig. 4.

In the drawings, A represents any ordinary force-pump, B being the suction-pipe and C the outflow-pipe.

D, Fig. 3, is a yielding hollow body or bulb connected with the suction-pipe B and caused to alternately contract and expand as the pump-plunger reciprocates, thus indicating to the observer the action of the pump. This device D may consist of any yielding part, as of india-rubber, so connected with the supply-pipe or to the pump itself below the plunger as to have its inner surface subjected to the varying pressure of the water within. It may be a part of the wall of the suction-pipe itself, as shown at *f* in Figs. 4 and 5. The bulb may be conveniently attached to the pipe by means of a thimble *b*, threaded onto adjacent ends of sections *c c* of the pipe, the thimble being formed with a nipple *d* to hold the bulb. Thus attached there is a free opening between the interior of the pipe and the bulb, and as the plunger reciprocates the bulb will alternately contract and expand on account of the varying pressure within it. Thus as the water flows and intermits in the suction-pipe the bulb will be affected and show to the eye or to the touch of the hand at once whether the pump is properly acting.

In the modification shown in Figs. 4, 5, and 6 the yielding part *f* is merely a flat disk forming, in a sense, a part of the wall of the pipe. The disk is held by a thimble *g*, having a flat tangential circular face *h*, Fig. 5, to receive the disk, there being a holding-ring *i* above the disk secured by fasteners *k*. The disk being of yielding material (it may be corrugated steel) will bend inward at each outward or suction stroke of the plunger of the pump and then return to its normal position and form, which alternated motions of the disk render visible the actions of the pump against the water—the object sought by this invention.

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

1. A pump and inlet-pipe therefor, in combination with a thimble on the pipe, and a bodily-contractile part independent of said pipe and held by the thimble and subjected

to the pressure within the pipe, substantially as and for the purpose specified.

2. A pump and its pipe, combined with a thimble around said pipe, a bodily contractile and expansible part on said thimble, and means for holding said part in place, substantially as described.

In witness whereof I have hereunto set my hand, this 21st day of September, 1899, in the presence of two subscribing witnesses.

JONATHAN B. WEST.

Witnesses:
E. B. WHITMORE,
M. L. WINSTON.