J. S. ADAMS.

PUMP.

No. 178,225. Patented June 6, 1876.

Fig. 1

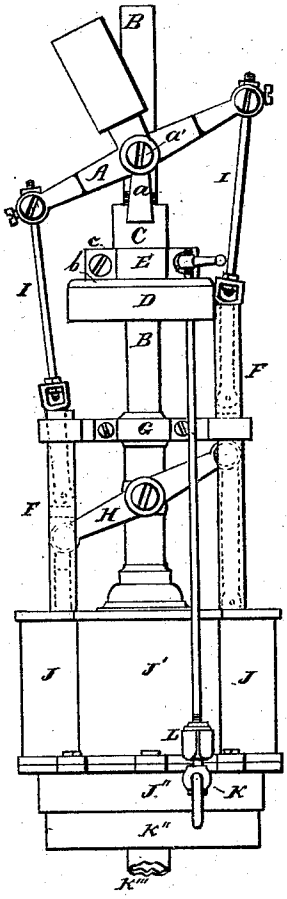


Fig. 2

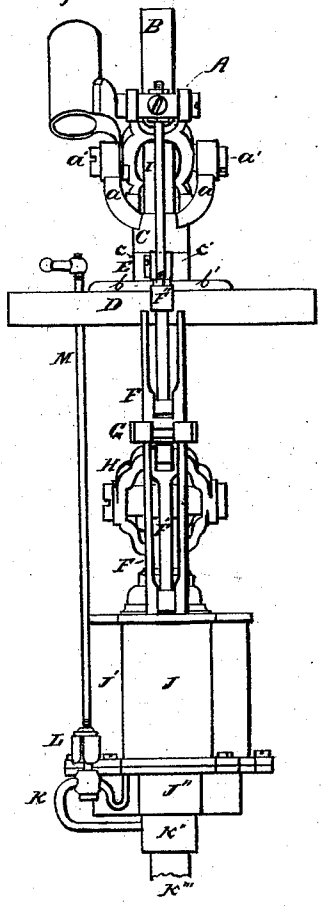
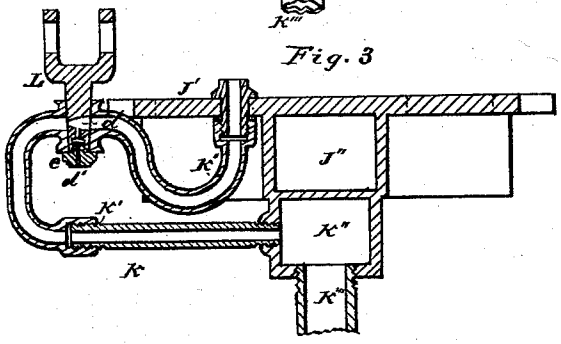


Fig. 3



WITNESSES.

F. H. Lawlor

Wm. P. Ferry

INVENTOR.

John S. Adams

By F. F. Warner

(his atty)

UNITED STATES PATENT OFFICE.

JOHN S. ADAMS, OF ELGIN, ILLINOIS.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **178,225**, dated June 6, 1876; application filed March 13, 1876.

To all whom it may concern:

Be it known that I, JOHN S. ADAMS, of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Pumps; and I do hereby declare the following to be a full, clear, and exact description of the same, which will enable others skilled in the art to which my invention appertains to make and use the said improvements, reference being had to the accompanying drawing, forming a part hereof, and in which—

Figure 1 is a side elevation of a pump embodying my invention; Fig. 2, a like representation of another side of the same; and Fig. 3, a vertical central longitudinal section through the let-off device.

Like letters of reference indicate like parts.

The object of this invention is threefold: first, to so improve the construction of that class of pumps worked by means of walking-beams and tension-rods, that pumps of this class may be removed from the well or cistern with facility, for the purpose of making repairs and removing sand, without disturbing the adjustment of the tension-rods or other working parts not requiring repairs; and, second, to make a novel device whereby the water may be allowed, by passing around the lower valves, to return to the well or cistern, for the purpose of emptying the pump to prevent freezing, and for washing out the sand-trap, when the pump is provided with the latter device; and, thirdly, to so improve the construction and operation of various other parts of the pump as to result in better action of the working parts.

In the drawing, A represents the upper walking-beam, and B the discharge-pipe. C is the beam-head. The head C consists of a tubular piece having therein a female screw, and provided with vertical or bent arms *a a*, adapted to receive screw-pins *a' a'*, which enter and constitute the bearings of the beam A. The upper two sections of the discharge-pipe are screwed into the tubular part of the head C, so that the latter performs the office of a coupling, while also serving as a bearing for the beam A. D is the floor or platform through which the discharge-pipe passes, and E is the floor-plate or pipe-clamp by means of which the pipe is firmly held in place. This part consists of two pieces, *b* and *b'*, each of which is a horizontal leaf, adapted to fit the pipe B, and lie on the floor D. *c* and *c'* are vertical walls or flanges projecting from the inner edges of the horizontal parts of the plate or clamp E. The flanges *c c'* are bent to clasp the pipe B, and are caused to clamp it firmly by means of screws or bolts entering the parallel parts of the said flanges, as shown. The pieces *b* and *b'* are firmly fastened to the floor D, and thus firmly support the pump, and hold it in place. F F are slotted piston-stems or rods, and F' F'' are links or connecting-rods, the lower ends of which are pivoted to the rods F F. G G are guides for the parts F F, and consist of two pieces clamped to the pipe B, and bent at the ends to clasp the parts F F, as shown. H is a lower walking-beam, pivoted to the pipe B. The upper ends of the links F' F' are pivoted to the ends of the beam H. I I are tension-rods, adjustably connected to rocker-boxes in the ends of the beam A, and attached to the upper ends of the links F'' F''. J J are the piston-chambers. J' is the air-chamber, and J'' the valve-box. K is the let-off device. This device consists of the pipe K', the upper end of which enters the chamber J', and the lower end of which enters a channel, K'', below the valves, which channel is also entered by the upper end of the suction-pipe K''', as shown. L is a spigot in the pipe K'. The horizontal opening *d* in the spigot is tapering, as shown, and the largest end of the opening lies toward the pump. This opening is met by a smaller vertical opening, *d'*, which is continuous with a like opening in a nut, *e*, screwed into the lower end of the spigot, as shown. M is a rod connected to the spigot, and passing through the platform D, to admit of the spigot being there controlled.

In order to raise the pump from the well or cistern, the parts of the floor-plate should be detached from each other and from the platform. The pump may then be raised for examination, repairs, and cleaning, without interfering with the adjustment of the tension-rods. The various parts of the pump may also be detached from each other with facility, and readily arranged together. The working parts operate nicely together, with little or no lost motion, and the friction is slight.

The water may be allowed, by means of the internal let-off, to escape, either for the purpose of preventing freezing, or for the purpose of washing out the lower parts of the pump, and cleaning the sand-trap, when one is employed, and which is usually arranged near the lower end of the pump. By constructing the spigot L in the manner described, it may be made to perform the function of a two-way cock. When it is so turned as to present the large end of the opening *d* toward the pump, but not sufficiently to open the small end, the water will escape slowly through the opening *d'*, without passing into the lower parts of the pump, but the latter result will follow when both ends of the opening *d* communicate with the pipe K'—in other words, the spigot may be so controlled as to either prevent any flow of water through the pipe K', or to allow it to escape without entering the suction-pipe, or to flow through the latter pipe, and all the parts below the spigot.

I am aware that pumps have heretofore been provided with an internal let-off, and I do not here intend to claim such broadly; but

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

1. The combination, substantially as specified, of a pump discharge-pipe made in sections, the pipe-coupling and beam-head C adapted to couple two of the sections, and provided with the arms *a a*, extending laterally and upwardly from the body of the coupling, and the walking-beam A fulcrumed on the said arms, for the purposes set forth.

2. The floor-plate or pipe-clamp E, consisting of the horizontal pieces *b* and *b'*, each adapted to fit the pipe, and of the vertical walls or flanges *c* and *c'*, projecting from the inner edges of the parts *b* and *b'*, and bent to clasp the pipe, in combination with clamps for tightening the part E upon the pipe, and in connection with the floor or platform D, substantially as and for the purposes specified.

3. The combination of the slotted or mortised piston-rods F F, links or connecting-rods F' and F'', pivoted at their lower ends to the rods F F, guides or clamps G G, tension-rods I I, connected to the upper ends of the links F'' F'', beam H connected to the upper ends of the links F' F', beam A connected to the upper ends of the tension-rods, and the discharge-pipe, substantially as and for the purposes specified.

4. The external pipe K', in connection with a pump, and terminating within it at points above and below the valves, respectively, in combination with a spigot, arranged in the said pipe, and a spigot-actuating rod extending above the platform, for the purposes set forth.

5. The external pipe K', in connection with a pump, and terminating within it at points above and below the valves, respectively, in combination with the spigot E, having therein the tapering opening *d*, and the opening *d'*, substantially as and for the purposes specified.

JOHN S. ADAMS.

Witnesses:
F. F. WARNER,
HARRY S. STEVENS.