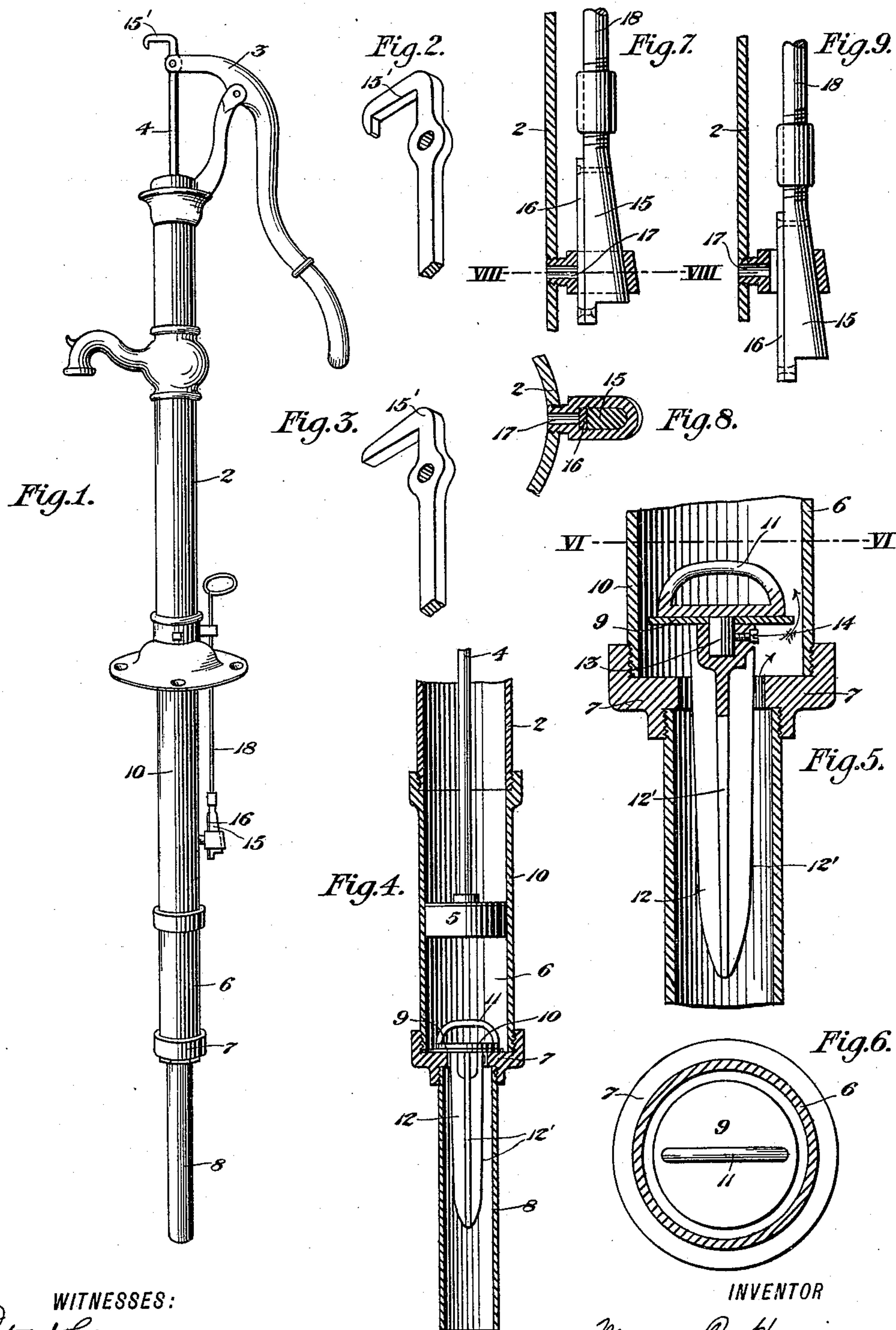


(No Model.)

M. C. HARRISON.  
SINGLE ACTING PUMP.

No. 583,746.

Patented June 1, 1897.



WITNESSES:

*Peter Edwards*  
*V. J. Shepard*

INVENTOR

*Moses C. Harrison*  
BY  
*C. M. Clarke*  
his ATTORNEY.



# UNITED STATES PATENT OFFICE.

MOSES C. HARRISON, OF PITTSBURG, PENNSYLVANIA.

## SINGLE-ACTING PUMP.

SPECIFICATION forming part of Letters Patent No. 583,746, dated June 1, 1897.

Application filed April 18, 1896. Serial No. 588,132. (No model.)

*To all whom it may concern:*

Be it known that I, MOSES C. HARRISON, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered a new and useful Improvement in Single-Acting Pumps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this application, in which—

Figure 1 is a perspective view of a pump constructed according to my invention. Figs. 2 and 3 are detail detached views in perspective illustrating the construction of the top of the piston-rod. Fig. 4 is an enlarged vertical sectional view of the bottom of the pump, showing the valve-chamber, cylinder, and piston. Fig. 5 is an enlarged vertical sectional view of the valve and seat, showing it in a raised position. Fig. 6 is a cross-sectional view on the line VI VI of Fig. 5. Figs. 7, 8, and 9 are detail views illustrating the release-valve.

Similar numerals of reference refer to like parts wherever used throughout this specification.

My invention relates to the class of single-acting hand-pumps for wells of medium and considerable depth and refers to an improved form of release-valve.

Referring to the drawings, 2 is the main vertical portion of the pump fitted with the usual lever 3, to which is attached the customary piston-rod 4, terminating in the piston 5, working in the short cylinder or working barrel 6. As is customary, the piston 5 is made to allow of free passage of water on the downstroke. Secured to the bottom of the working barrel 6 is the valve-seat 7, projecting downwardly from which is a section of pipe 8, which may vary in length to suit the depth of well. The valve consists of a leather face 9, secured between an upper circular plate 10, provided with an open ring 11, and a downwardly-extending tapering longitudinal tail portion 12, having lateral wings 12', into the upper end of which projects a teat 13, held in place by a screw 14, and in this manner the leather seat is thus securely held between the upper plate 10 and the upper portion of the lower part 12. When in operation, this valve will rise under action of the piston 5 into the

position shown in Fig. 5, allowing the water to pass up around it, the tailpiece 12 serving to keep it in a vertical position and causing the valve by its weight to quickly reseal itself. The piston-rod 4 is provided at its upper end with a hook 15', as shown, either with a downwardly-turned end, as in Figs. 1 and 2, or plain, as in Fig. 3. When for any reason it is desired to withdraw the valve from the pump, this rod is withdrawn, reversed, and inserted top down in the pump, when the valve may be readily withdrawn by engaging the ring 11 with the hook 15'. This will be found to be a valuable feature, especially when it is desired to renew the leather seat of the valve.

The release-valve for draining water above the frost-line of the pump (illustrated in Figs. 1, 7, 8, and 9) consists of a wedge-shaped valve 15, provided with a leather face 16, designed to bear tightly against the face of the opening 17, leading into the interior of the pump and forming a part of the correspondingly-wedge-shaped socket within which the valve 15 plays.

The valve is connected by a nipple with a rod 18, extending up through the pedestal of the pump to within easy reach of the operator, being secured in position by friction of the leather face 16. By raising or lowering this rod the valve may be opened or closed, as will be readily seen, due to the wedge shape of the valve forcing it against the seat and releasing it therefrom, according to the position it occupies.

The advantages of my invention will be appreciated by those skilled in the art, as the features of improvement are valuable and practicable, and have been demonstrated in practice to produce the most satisfactory results.

Changes and modifications may be made in its construction by the skilled mechanic without departing from my invention, and I desire to include any and all such variations in its scope.

Having described my invention and in what manner it operates, what I claim, and desire to secure by Letters Patent, is—

In a pump, the combination with an integral release-valve socket provided with internal oppositely-located, flat vertical and con-

cave inclined faces respectively, and a threaded stem having an internal opening leading through the stem to the flat vertical face; of the valve 15 provided with an inclined convex back adapted to bear against the concave face and a flat leather seat 16 adapted to seat itself upon and be wedged against the perforated flat vertical face by upward motion, with a rod 18 secured to the top of the valve

and projecting upwardly, provided with a rod handle, substantially as set forth.

In testimony whereof I have hereunto set my hand this 9th day of March, 1896.

MOSES C. HARRISON.

Witnesses:

PETER J. EDWARDS,  
C. M. CLARKE.