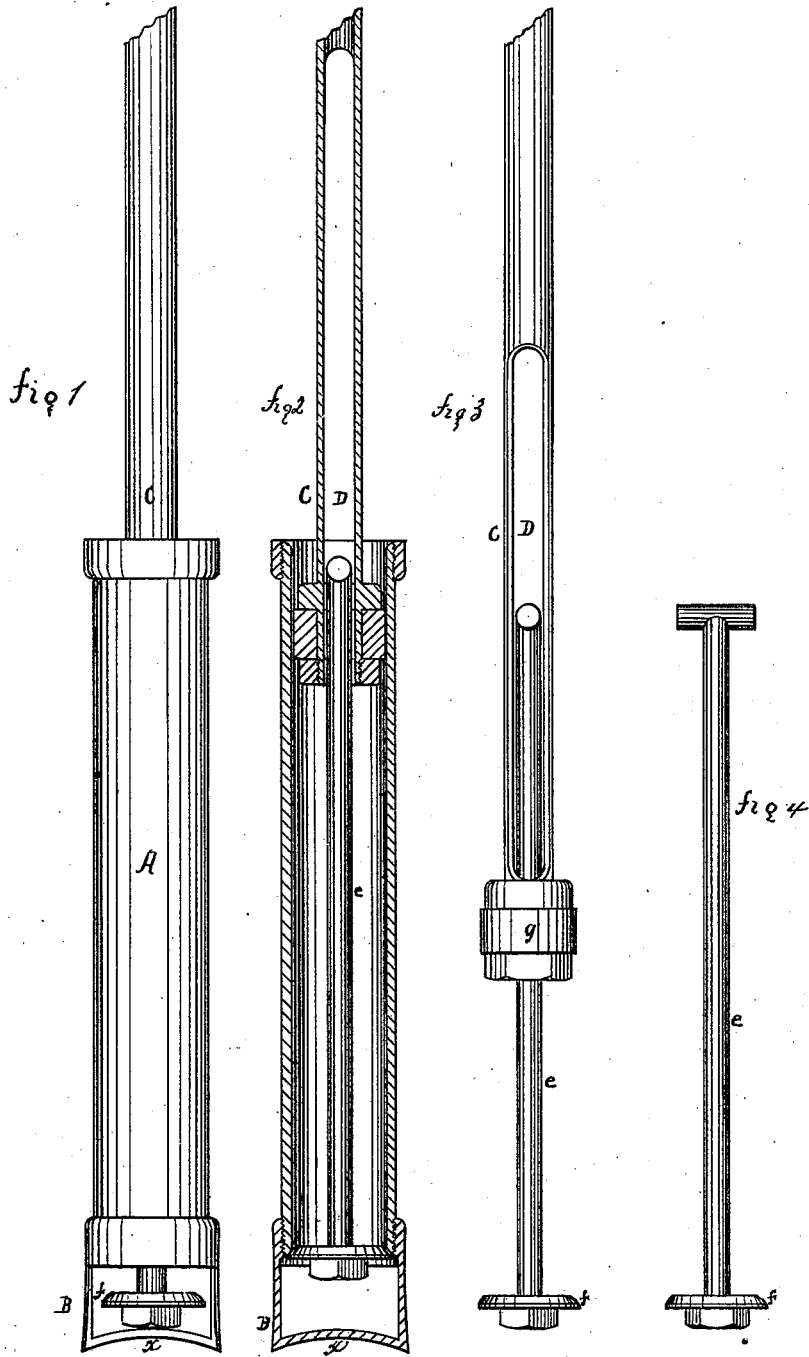


W. FORKER.
SAND-PUMPS.

No. 194,948.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SAND-PUMPS.

Specification forming part of Letters Patent No. 194,948, dated September 4, 1877; application filed April 21, 1877.

To all whom it may concern:

Be it known that I, WILLIAM FORKER, of Emlenton, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Sand-Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in sand-pumps used in connection with the boring of oil and salt wells; and consists in the construction, combination, and arrangement of the devices hereinafter described for providing the lower end of the pump-barrel or bailing-tube with a support or rest for preventing the lower end or valve of said barrel or bailing-tube from sinking down into the sand at the bottom of the well below the point desired, and also for allowing for a free ingress of sand and water between the lower end of said barrel or bailing-tube and its bottom or valve when the latter is dropped down.

My invention also consists in connecting the usually detached bottom or valve of the pump-barrel or bailing-tube to a rod which moves within the sucker-rod, in such manner that when the sucker-rod moves downward in the pump-barrel or bailing-tube, the rod to which the bottom or valve is connected will drop down, thereby lowering the detached bottom or valve, so as to allow sufficient opening for the ingress of sand and water, which is drawn into the pump-barrel or bailing-tube by the upward movement of the sucker-rod, which will, after drawing into the pump-barrel or bailing-tube sand and water, be drawn on the rod to which the bottom or valve is attached, and thereby bring it up to its seat in the lower end of the pump-barrel or bailing-tube, so as to retain the water and sand in it, which, when removed from the well, are discharged from the pump-barrel or bailing-tube by forcing downward the sucker-rod, thereby forcing downward the rod to which the bottom or valve is attached, which allows the sand and water to be discharged from the barrel or bailing-tube.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a side elevation of my improvement in sand-pumps. Fig. 2 is a vertical section of the same. Fig. 3 is a side view of the sucker-rod and rod for operating the detached bottom or valve. Fig. 4 is a side view of the rod to which the detached bottom or valve is connected.

In the accompanying drawings, A represents the barrel or bailing-tube, the lower end of which is provided with a rest or support, B, having a transverse bar, *x*, which serves the purpose of a positive stop for the detachable bottom or valve *f*, preventing it from sinking into the sand and mud in the well.

C represents the sucker or valve rod, and is provided with a slot, D, in which moves the rod *e*, to which the bottom or valve *f*, which is usually detached, is connected. The upper end of the rod *e* is T-shaped—that is, having arms projecting at right angles to its longitudinal section—which acts as a guide and stop. The rod *e* moves within the rod C.

The bottom or valve *f* is fitted to the lower end of the pump-barrel or bailing-tube A similar to the seating of valves by curved or beveled edges, as shown in Fig. 2.

The sucker *g* is of the ordinary construction.

The operation of my improvement is as follows: The barrel or bailing-tube is lowered into the well, and the rest or support B holds it in a suitable position in the sand and water, and the descent of the sucker-rod C lowers the rod *e*, which causes the bottom or valve *f* to drop down sufficiently to allow the ingress of the sand and water which is drawn into the barrel by the upward movement of the rod C and its valve, which will also draw up the rod *e*, thereby closing the bottom or valve *f*. The pump-barrel or bailing-tube is then hoisted out of the well, and the sand and water allowed to run out, the rods C and *e* acting as a bail for manipulating the pump-barrel or bailing-tube.

Having thus described my improvement, what I claim as of my invention is—

1. In a sand-pump, the rod C, sucker *g*, rod *e*, and detachable bottom or valve *f*, in combination with the pump-barrel or bailing-tube A, substantially as described, and for the purpose set forth.

2. In a sand-pump, the rod *e*, provided at its upper end with two arms projecting at right angles to its longitudinal axis, operat-

ing within the rod C, constructed, arranged, and operating with relation to each other, as herein described, and for the purposes set forth.

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