

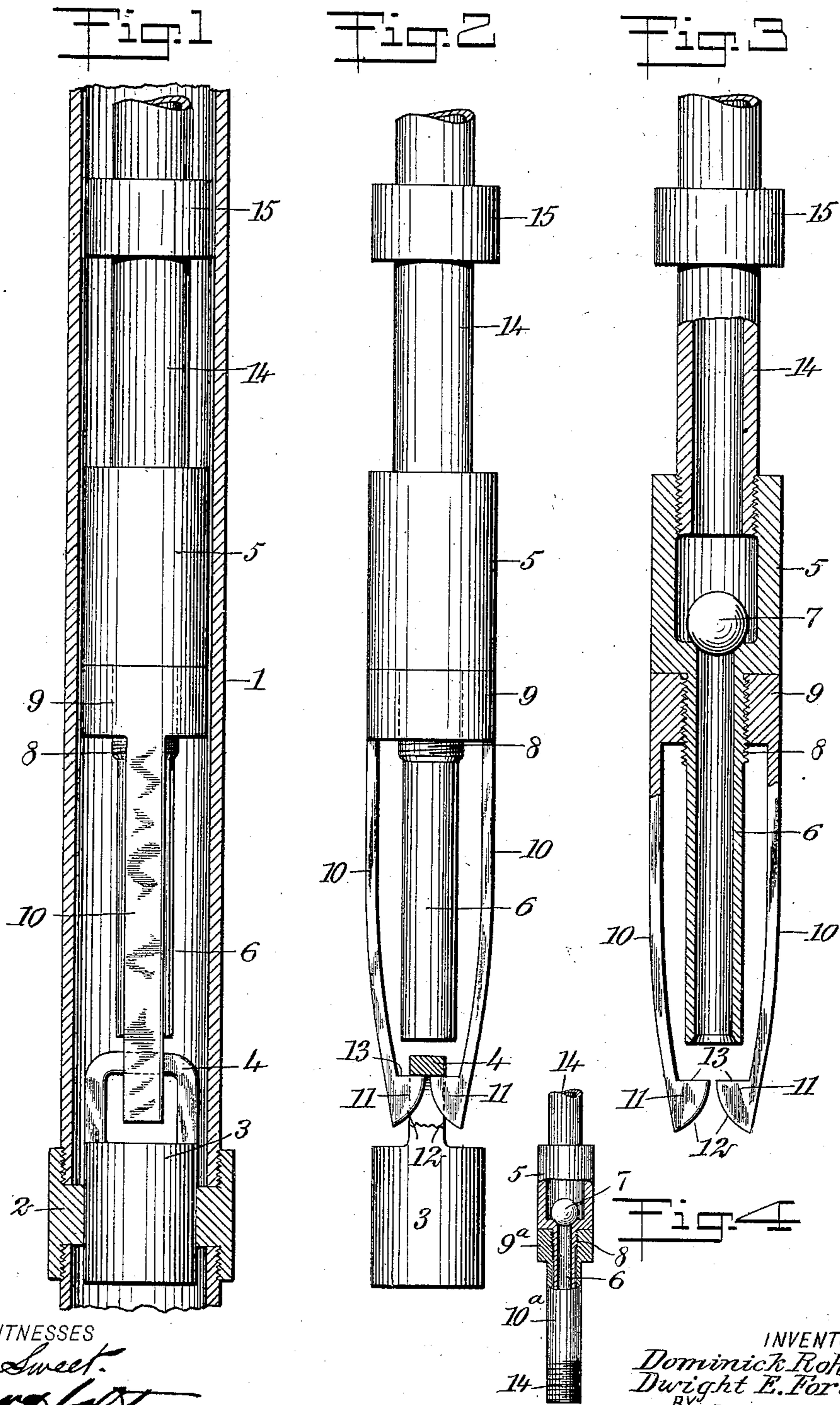
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D. ROHEN & D. E. FORTON.

VALVE LIFTER.

APPLICATION FILED JAN. 19, 1907.



WITNESSES
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DOMINICK ROHEN AND DWIGHT E. FORTON, OF EVART, MICHIGAN.

VALVE-LIFTER.

No. 886,868.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed January 19, 1907. Serial No. 353,078.

To all whom it may concern:

Be it known that we, DOMINICK ROHEN and DWIGHT E. FORTON, citizens of the United States, and residents of Evart, in the county of Osceola and State of Michigan, have invented a new and Improved Valve-Lifter, of which the following is a full, clear, and exact description.

This invention is an improved lifting device for foot or check valves as used in tubular wells, and is especially designed to be employed in connection with sand pumps, wherein it forms a permanent and detachable part of the same, and is adapted not only as a means for grabbing and lifting the valve, but also to bore or drill to loosen the sand in the well-pipe in order that it may be readily pumped out.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central, vertical section through a well casing showing an embodiment of our invention for removing bail valves; Fig. 2 is an elevational view of the valve at right angles to Fig. 1, and our improved lifter, showing the latter engaged with the foot-valve; Fig. 3 is a view corresponding to Fig. 2, partly in central, vertical section and with the foot-valve detached, and Fig. 4 is a view partly in section and on a reduced scale, of our improvement when employed in removing screw valves.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 indicates a tubular well casing, the sections of which are joined together by an ordinary form of foot-block 2, the latter having a bore for receiving a closely-fitting foot or check-valve 3, provided with a bail or loop 4 at its upper end.

5 indicates a valve cage having centrally depending therefrom a tubular extension 6, which has seated over the upper end of its bore in the cage 5, a ball valve 7. The tubular extension adjacent to the cage 5 is screw-threaded as at 8, on which is screwed our improved lifter comprising an internally-threaded collar 9, having depending spring-arms 10 formed as an integral part thereof at diametrically opposite points. These spring arms are extended below the tubular extension 6 where they are curved slightly inward and provided at their extremities with integral hooks 11, having opposed,

curved, inner faces 12 and flattened upper edges 13.

In the upper end of the cage 5 is threaded a well-pipe 14, having a collar 15 secured to it a short distance from the cage, which acts as a guide for the pump when in operation.

It should be noted that the collar 9 is of the same external diameter as the cage 5, constituting in connection with it, a piston or plunger for forcing the sand and water in the well casing up through the tubular extension 6.

In the operation of the valve in connection with our improved lifter, it is worked in the usual manner and revolved at intervals as it is reciprocated, in order that the hooks 11 at the extremity of the spring arms will act to cut and loosen the sand from the interior of the well casing. When the foot valve 3 is reached, it is only necessary to force the hooks 11 over the bail 4, adapting the valve to be removed from the casing at the same time the well rods are withdrawn.

In Fig. 4 is shown the form of attachment that is applied to the tubular extension 6 when removing screw valves. This consists of a tube 10^a having a collar 9^a formed at its upper end, said collar being interiorly threaded for screwing upon the threaded portion 8 of the extension 6. The tube 10^a is of sufficient length to extend the full length of the extension 6 when applied thereto, and is provided with a threaded lower end 14 for screwing into the foot valve, should a foot valve of this type be located in the well.

Having thus described our invention we claim as new and desire to secure by Letters Patent:

1. In combination with a valve cage having a tubular extension centrally depending therefrom, a collar of the same external diameter as said cage threaded on said tubular extension adjacent to said cage, spring arms formed as an integral part at each side of the collar and extended below the end of said extension, and hooks carried at the extremities of said arms.

2. In combination with a valve cage having a tubular extension centrally depending therefrom, a collar of the same external diameter as said cage secured adjacent thereto on said extension, spring arms formed as an integral part of said collar and depending therefrom at opposite sides of said extension, and hooks having opposed, inner, curved

faces at the extremities of said arms below said extension.

3. The combination of a valve cage having a tubular extension centrally depending therefrom, a valve within the cage seated over the extension, and a valve lifter inclosing and threaded on said extension adjacent to said cage.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

DOMINICK ROHEN.
DWIGHT E. FORTON.

Witnesses:

DAN YOUNGS,
HARRY H. READING.