

No. 658,063.

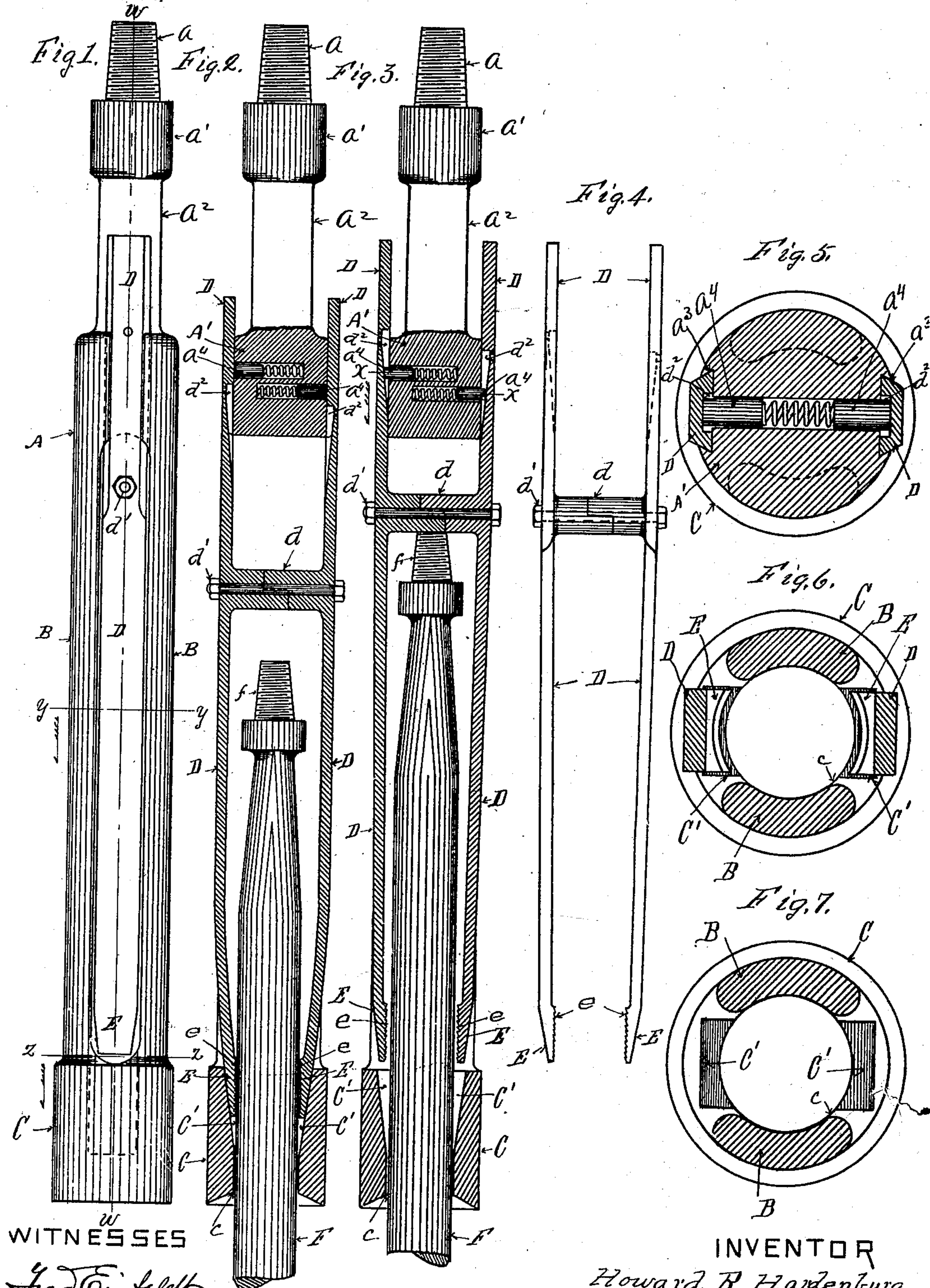
Patented Sept. 18, 1900.

H. R. HARDENBURG.

SLIP SOCKET.

(Application filed June 18, 1900.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

HOWARD R. HARDENBURG, OF SAGINAW, MICHIGAN.

SLIP-SOCKET.

SPECIFICATION forming part of Letters Patent No. 658,063, dated September 18, 1900.

Application filed June 18, 1900. Serial No. 20,684. (No model.)

To all whom it may concern:

Be it known that I, HOWARD R. HARDENBURG, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Slip-Sockets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to slip-sockets for withdrawing detached drilling-tools from oil and other Artesian wells.

In constructing my new and improved slip-socket I have provided stop mechanism adapted to so engage the sliding jaws of the socket that the jaws can when desired be disengaged from the shank of a tool gripped thereby and retained in such disengaged position until removed from the well in which the slip-socket is being operated.

The object of my invention is to so simplify the construction of a slip-socket of this type that the mechanism thereof is durable and positive in its operation.

The features of the invention are hereinafter set forth and described in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation of a slip-socket embodying my invention. Fig. 2 is a vertical section of the same, showing the socket fast to a tool-shank. Fig. 3 is a vertical section of the same, showing the socket disengaged from the tool-shank. Fig. 4 is a view in elevation of the sliding arms detached from the socket. Fig. 5 is a transverse section of the same on the line $x x$ in Fig. 3. Fig. 6 is a transverse section of the same on the line $y y$ in Fig. 1. Fig. 7 is a transverse section of the same on the line $z z$ in Fig. 1.

In the drawings thus illustrating my invention, A is the body of the socket. Upon the upper end of the socket there is a nipple or pin a , below which there is a collar a' , and below the collar a' there is a square shank a^2 ,

adapted to receive a wrench. Below the shank a^2 the body A is enlarged, so as to form a head A', from which two arms B B extend down to and join a collar C, which parts form the body of the socket. The collar C at its lower end is beveled inwardly from the periphery thereof to the central opening c therein, and in the upper end of the collar C, between the lower ends of the arms B B, there are inclined slots C' C', as and for the purpose hereinafter set forth. In the head A' of the body between the arms B B, extending downwardly therefrom, I make vertical dovetailed slots $a^3 a^3$, (see Fig. 5,) and in these slots I place the upper ends of vertically-sliding arms D D. In the head A' are also placed spring-actuated bolts $a^4 a^4$, adapted to engage inclined slots $d^2 d^2$ in the inner faces of the upper ends of the arms D D, as and for the purposes set forth. The arms D D are secured together by means of a cross-piece d and a bolt d' and extend downward between the arms B B of the body A nearly to the collar C and are provided at their lower ends with jaws E E, tapered on their outsides and provided with inwardly-projecting teeth e . The jaws E E are adapted to enter the inclined slots C' C' in the collar C and as they move downward therein be forced together thereby, so as to engage the shank of a tool F entering the lower part of the socket, as illustrated in Fig. 2, after which by lifting up on the socket the jaws E E tighten upon the shank of the tool F, so that it can be withdrawn thereby from the well. If, however, the tool F is so firmly fixed that it cannot be so withdrawn, the socket-body A can then be lowered until the pin or nipple f on the tool F strikes the cross-piece d connecting the arms D D and forces them upward until the jaws E E are withdrawn from the slots C' C', which operates to release the socket from the tool F, so that the socket can be withdrawn from the well, the spring-actuated stops $a^4 a^4$ meanwhile engaging the shoulders in the slots $d^2 d^2$ in the arms D D and preventing the arms D D from moving downward again until the stops $a^4 a^4$ are withdrawn from the slots $d^2 d^2$, so as to permit the arms D D to move downward again.

In the foregoing description the operation

of the mechanism of my invention is so clearly set forth that further reference thereto is deemed unnecessary.

5 Having thus described my invention so as to enable others to construct and use the same, I do not desire to confine myself to the exact form and construction of the parts thereof, as some of the features shown and described can be considerably modified in
10 their construction without departing from the spirit of my invention.

Therefore what I claim as new, and desire to secure by Letters Patent of the United States, is—

15 The combination in a slip-socket, of a socket-body comprising substantially a head having

vertical slots therein, arms projecting downward from said head, a collar on the lower ends of said arms, with arms adapted to slide vertically in the slots in the head, jaws on 20 the lower ends of such arms adapted to enter the collar, a cross-piece connecting said vertically-sliding arms, and spring-actuated stops in the head adapted to engage notches in the vertically-sliding arms, substantially 25 as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD R. HARDENBURG.

Witnesses:

JOHN FORESTER,

E. E. THORNTON.