

W. T. BAUM & A. SHIDEL.
 Apparatus for, and Process of, Extracting Casings
 from Oil and Other Wells.

No. 197,538.

Patented Nov. 27, 1877.

Fig. 1

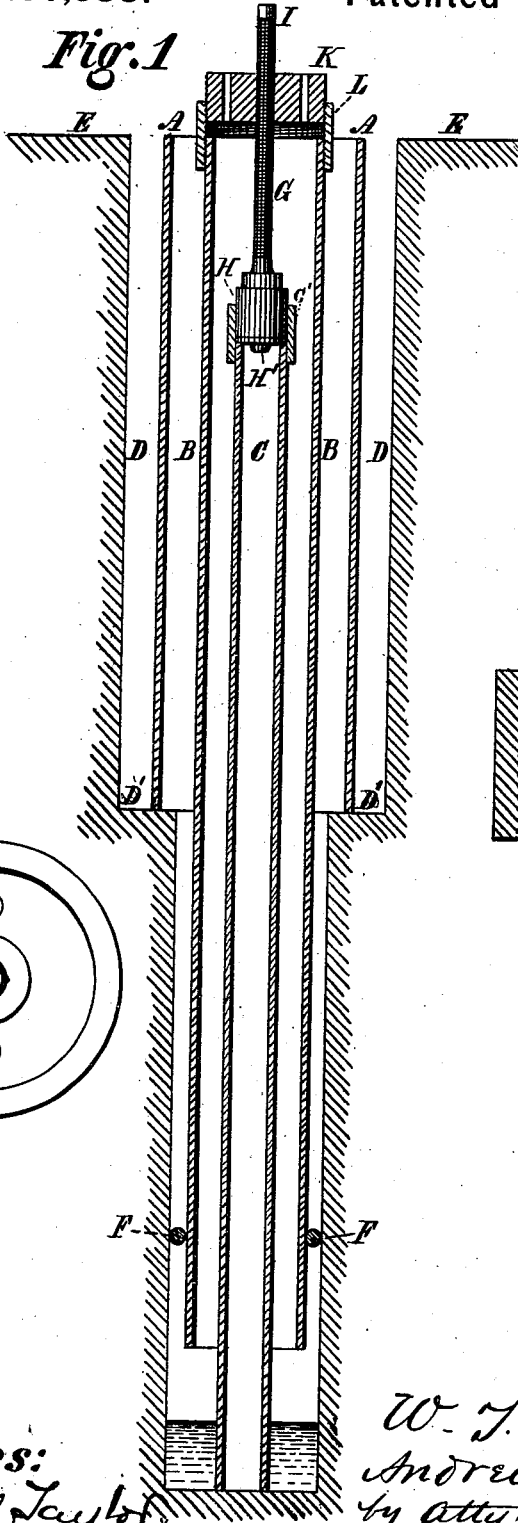


Fig. 2

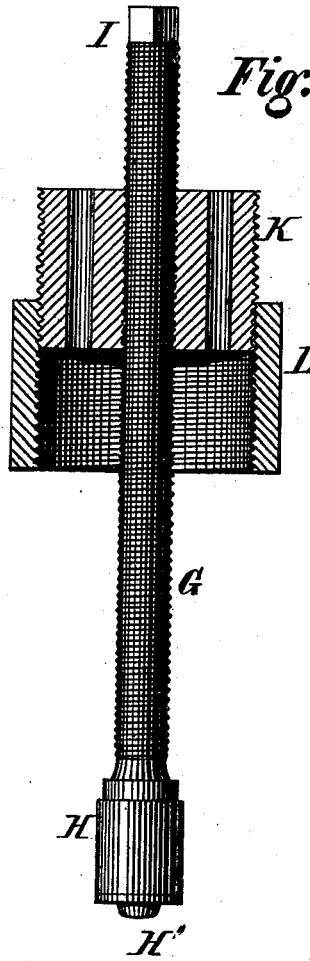
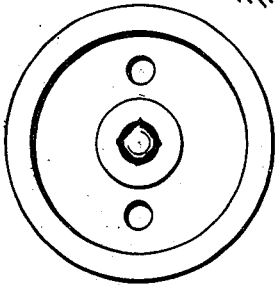


Fig. 3



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IMPROVEMENT IN APPARATUS FOR AND PROCESSES OF EXTRACTING CASINGS FROM OIL AND OTHER WELLS.

Specification forming part of Letters Patent No. **197,538**, dated November 27, 1877; application filed November 3, 1877.

To all whom it may concern:

Be it known that we, WILLIAM T. BAUM and ANDREW SHIDEL, of Franklin, in the county of Venango and State of Pennsylvania, have invented a new and useful Process of and Apparatus for Extracting Casings from Oil and Other Wells, of which we declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical sectional elevation of an oil-well with its casing and tubing, and provided with our improved apparatus. Fig. 2 is a vertical elevation of our apparatus, partially in section; and Fig. 3 is a top view of the same.

In order that our invention should be better understood, we will first fully describe the usual manner in which oil-wells are provided with casings and tubing.

Referring to the drawings, D represents the first or upper section of a well, which, having been sunken to a proper depth, and of a diameter usually of eight inches, is provided with a casing, A, of five and five-eighths inches, which casing, when in position, rests upon the bottom D' of the well D. The casing A having thus been placed in position, as described, the well is continued downward of a diameter of five and one-half inches to such a depth as is necessary to strike oil-bearing rock.

A tubing, B, of three and one-fourth inches diameter is then placed within the tubing A, and extended from the top E of the well to a point in the well below the water-bearing rock, and to a point above the surface of the oil. This tube B is suspended in its described position by being supported at its upper extremity upon the ground E or platform of the derrick by means of a clamp or other like device, which clamp necessarily passes over the upper extremity of the casing A, in order to find a bearing upon the surface of the ground or derrick E.

F F represent "packers," so called, which are employed to prevent water from passing between the wall of the well and the tubing B to the bottom of the well, and thus becoming mingled with the oil. After the casing B has

thus been placed in position a tubing, C, having a diameter of two inches or less, is placed within the casing D, and extended downward to a point beneath the surface of the oil. This tubing rests upon the bottom of the well during the process of extracting the casing A, hereafter to be described. Without setting forth the objects to be attained by the successive provision of the casings A and B, the offices of which are well known, it will be readily seen that it is impossible to extract or remove the casing A from the well after the introduction of the casing B, for the reason that the clamps or other devices by which the casing B is supported upon the ground E pass over the upper extremity of the casing A, and thus prevent its withdrawal from the well.

It is a well-known fact that the casing A performs no useful office in the well after the introduction of the casing B; hence, as the casing A, if removed, can be employed in the process of sinking other wells, and thus a large expense be avoided, which would be incident to the provision of a new casing, A, for each well sunk, it is important to provide such mode of suspending and supporting the casing B as will allow the withdrawal of the casing A.

Our invention relates, therefore, to the process and apparatus for supporting the inner and extracting the outer casing of wells; and to this end it consists as follows:

L is a hollow cylinder, of a diameter equal to the outer diameter of the casing B, the inner surface of which is provided with a screw-thread.

K is a cylindrical block, having its outer surface provided with a screw-thread, which works in and is supported by the interior screw-thread of the cylinder L.

The cylindrical block K is provided with a vertical circular screw-threaded orifice, capable of receiving and allowing to work within it the screw-threaded shaft G.

The shaft G, at its upper extremity, is of such right-lined cross-section as to permit the shaft being revolved by a wrench or other like device, and is provided at its lower extremity with the enlarged cylindrical portion H, of greater diameter than the outer diameter of the tubing C: This enlarged portion H is at

its lower extremity provided with a projection, H', of slightly smaller diameter than the inner diameter of the tubing C.

Such being the construction of our apparatus, its mode of operation is as follows: When it is desired to withdraw the casing A from the well, the tubing C is allowed to rest on the bottom of the well, the upper portion of this tube C being provided on its outer surface with a screw-thread. The cylinder L is placed upon and connected with the upper part of the casing B, above the clamps which support the casing B. The shaft G is then screwed down through the block K until the portion H rests upon the upper extremity of the tubing C. The portion H is held horizontally in position upon the tubing C by means of a projection, H', projecting downward within it, and by means of an exterior cylindrical thimble, C', which may be placed around the line of contact of the shoulder H and tubing C, if found desirable.

The devices described having been thus placed in position, the screw-threaded shaft G is moved downward through the block K. The block and its attached casing B is thus raised and supported. At this point the clamps or other devices which had hereto supported the casing B may be removed, and thus the casing A is left free to be extracted from the well.

The casing A having been removed, the casing B may again be supported by clamps extending from said casing and resting upon the ground or derrick E, and the cylinder L and its attached devices disconnected from the casing B and removed from the well.

It will, therefore, be readily understood that an efficient, easy, and inexpensive means of removing casings from wells is provided.

Having thus described our invention, we claim as new and desire to secure by Letters Patent of the United States—

1. The mode of supporting and suspending the casing of a well, which is located between the interior tubing and outer casing of said well upon said tubing, so that the exterior casing may be withdrawn from the well, substantially as shown and described.

2. The combination of the cylinder L, cylinder-block K, and shaft G, the whole forming a device for supporting the casing of a well upon its interior tubing, substantially as shown and described.

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