(No Model.)

W. A. GROVE.

BIT JACK AND HOLDER.

No. 538,254. Patented Apr. 30, 1895.

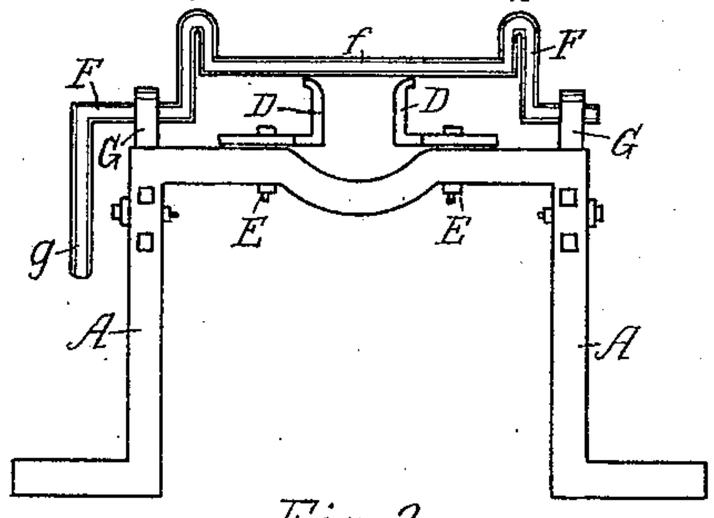

Fig. 2.

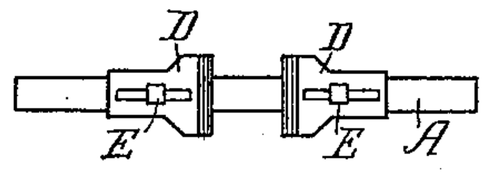

Fig. 3.

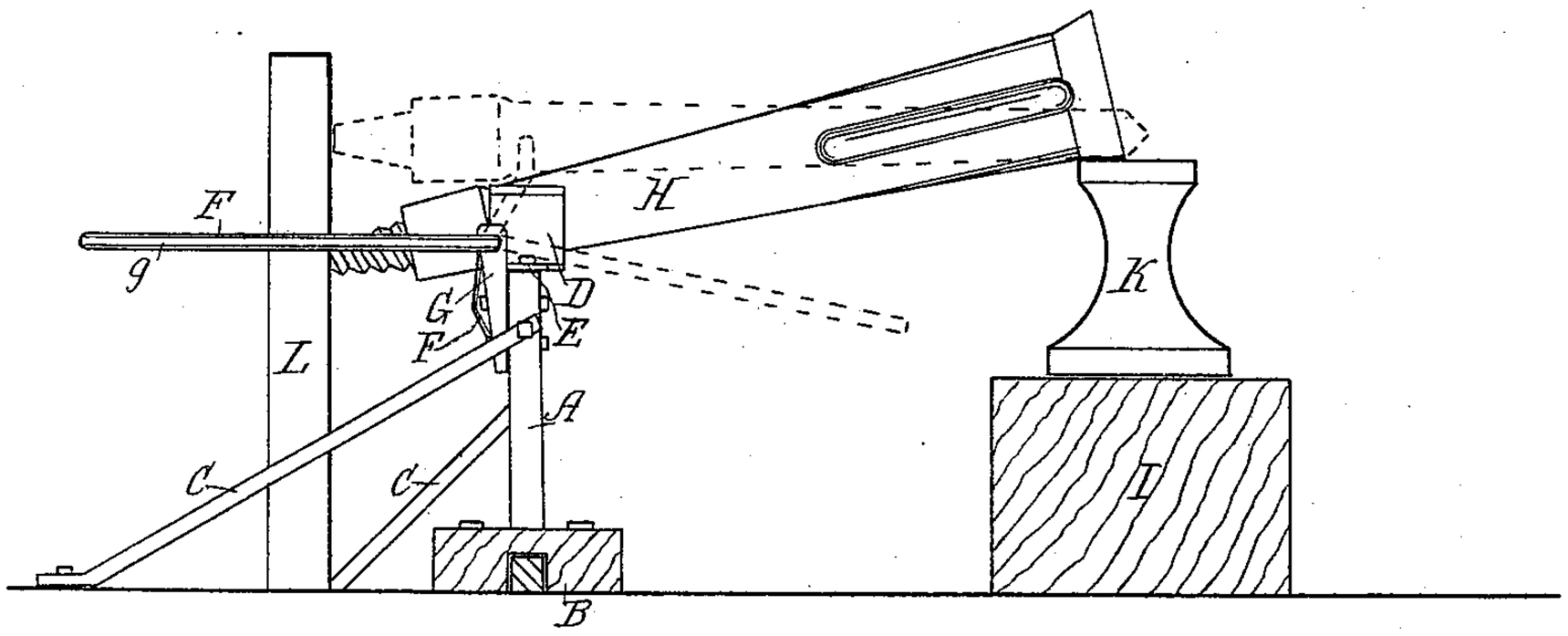

Fig. 1.

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BIT JACK AND HOLDER.

SPECIFICATION forming part of Letters Patent No. 538,254, dated April 30, 1895.

Application filed August 24, 1894. Serial No. 521,219. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. GROVE, a citizen of the United States, and a resident of Tionesta, in the county of Forest and State of Pennsylvania, have invented a new and useful Bit Jack and Holder, of which the following is a specification.

My invention relates to one of the appliances necessary in boring or drilling oil or Artesian wells. It is understood that the work of drilling those wells, especially oil wells, is generally done away from the vicinity of machine shops, or any establishments having facilities for doing heavy work; also, that the time occupied in the drilling of one well is so short that it does not pay to fit up extensively for doing the necessary work of putting and keeping the machinery and tools in order. Consequently many crude devices are used, or simple and light contrivances, that can be easily set up, and taken down and removed to another location after the work in one place is completed; also, that the drilling tools, or as they are called, the "string of tools" are composed of several parts, the drill proper, or the "bit" being the lower, and attached to the stem by a screw socket so that it can be easily removed for sharpening and dressing, which must be done often. The bit for different size holes varies in weight from one hundred and fifty, to seven hundred pounds, and the size of the shank from three to six inches. In some districts all the different sizes are used to drill one well. In the process of drilling, the bit must be removed, sharpened and dressed every two or three hours, and this is done at a forge constructed in one side of the derrick. The work must be carefully done and the bit held firm while being dressed.

The object of my invention is to furnish a simple, cheap, and effective device for manipulating and holding the bit while it is being dressed, and one that is compact and light for transporting from well to well, as well after well is completed.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view, showing the jack in use, holding a bit, the other end of which is resting on the anvil; Fig. 2, a front view, and Fig. 3 a top view of the frame and holding jaws, all other parts being omitted.

In the several figures the same letters are used to indicate the same parts.

A, represents a rectangular frame, consisting of bar iron, in one piece as shown. This is fastened to the floor of the derrick as shown in Fig. 1, by the blocks B, which are secured to the floor by spikes or bolts.

C—C, are braces, also secured to the floor.

D—D, are two jaws, secured to the upper part of the frame A, by the bolts E—E, passing through the frame A. The jaws D—D, are slotted where the bolts E, pass through, to admit of their being adjusted upon the frame. Any other means of adjustment in common use can be substituted for that here shown and described.

F, is a rod of round iron or steel, formed into a crank *f*, and lever *g*, and revolving in the eye bolts G—G, which are attached to the upright parts of the frame A. The crank part *f*, is made of greater width than the widest extension of the jaws D—D, and is provided at its ends with the shoulders *h*—*h*. The eye bolts G—G, are made and adjusted preferably so that the center of motion of the crank shall be about the center of the upright part of the jaws D, for the reason hereinafter explained.

H, is a bit, being held by the jack; I, the anvil block; K, the anvil; L, the stoving post.

The operation is as follows: The jack being secured to the floor in the proper relative position and distance between the anvil and the stoving post, the crank *f*, and lever *g*, being in the position shown by the full lines in Fig. 1; the bit is removed from the forge, and the shank of the bit placed between the jaws D—D, which have previously been adjusted to the proper width to receive it and hold it from turning, the cutting end of the bit resting on the anvil, and the other end bearing against the stoving post L, which is adjusted at the proper distance, and which prevents the cutting end from being driven from the anvil in the process of dressing. The bit is now resting on the frame A, and in position to dress the edges of the cutting part, the shank being lower than the anvil brings the bit so that the reverse edge to the one being

operated on rests at the right bevel on the anvil, and the bit is held from turning over or canting by the jaws D—D. When it is wished to turn the bit, by the use of the lever *g*, the crank *f*, is brought up under the shank and raises it out from the jaws D—D, when it may be turned over and again lowered into the jaws, or it may be turned quarter down and placed right for "stoving" or sharpening; the shank being elevated and resting on the crank *f*, which in turn rests on the top of the jaws D—D, taking the position shown by the dotted lines in Fig. 1. While in this position the shank of the bit is kept from rolling or sliding off the crank by the shoulders *h*—*h*.

The advantage gained by having the center of motion of the crank *f*, elevated to about the center of the upright part of the jaws D, is that upon the commencement of the half revolution of the crank, the crank begins to lift on the stem, and the leverage is greater than if the center was lower.

The jaws D—D, being adjustable, they can be adjusted to receive any size bit used in the drilling of wells.

I claim as my invention—

A bit jack and holder; consisting of the frame A, having mounted thereon the adjustable jaws D—D, and the crank *f* and lever *g*, all constructed and operating in combination as shown, and adapted to be placed between the anvil and stoving post; substantially as shown and described.

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