

H. H. SMITH.
BOLT JACK.
APPLICATION FILED JAN. 4, 1909.

953,106.

Patented Mar. 29, 1910.

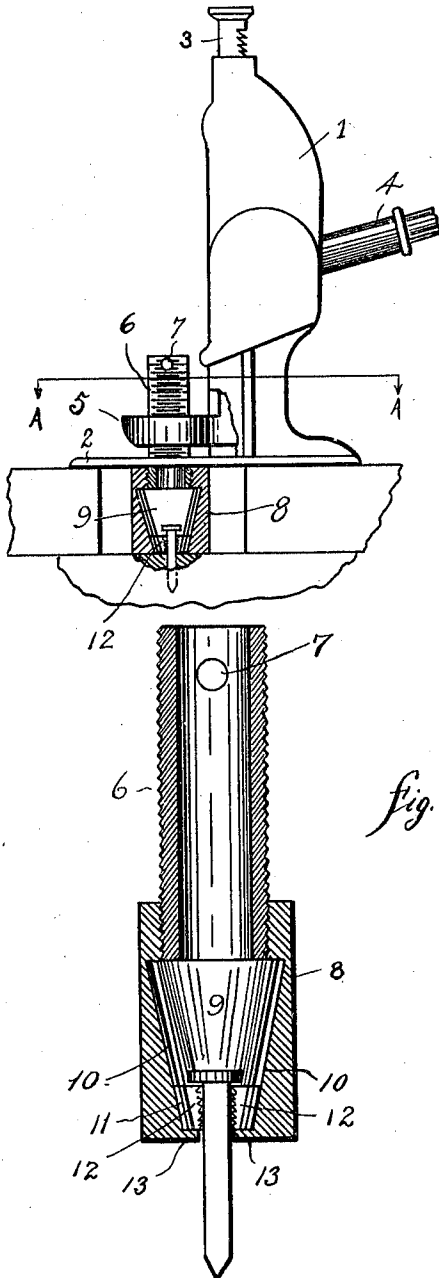


fig. I.

fig. II.

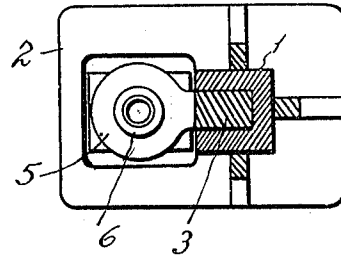


fig. III.

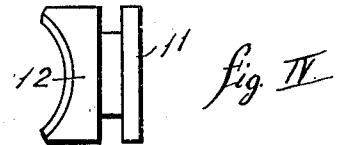


fig. IV.

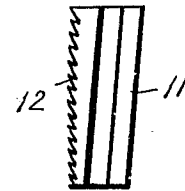


fig. V.

WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY H. SMITH, OF HOUSTON, TEXAS.

BOLT-JACK.

953,106

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed January 4, 1909. Serial No. 470,671.

To all whom it may concern:

Be it known that I, HENRY H. SMITH, citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Bolt-Jacks, of which the following is a specification.

My invention relates to new and useful improvements in jacks and more particularly to a bolt jack.

The object of the invention is to provide a device with which bolts and similar fastenings may be withdrawn or "pulled" without bending the bolt and for bolts having heads as well as those not having heads.

Another object of the invention is to provide a device of the character described that will be strong, durable and efficient, easy and rapid in operation, simple and comparatively inexpensive to construct, and also one in which the several parts will not be liable to get out of working order.

With the above and other objects in view, my invention has particular relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation showing the jack in operation, Fig. 2 is a plan view with the upper portion of the jack in section, Fig. 3 is a vertical section of the extracting sleeve, Fig. 4 is a plan view of one of the tooth blocks, and Fig. 5 is an elevation of the same.

In the drawings, the numeral 1 designates an ordinary jack frame, 2 the base, 3 the rack lifting bar, and 4 the operating lever.

To the lower end of the bar 3 an annular toe 5 is attached. This toe receives a vertical externally screw threaded sleeve 6 which is provided at its upper end with alined diametrically opposed apertures 7 adapted to receive a suitable tool by which the sleeve may be adjusted vertically in the toe. A tooth head 8 is screw threaded at its upper end on the lower end of the sleeve 6. This head is provided with an upwardly tapering opening 9 on the opposite sides of which vertical guide ways 10 are provided. These guide ways are adapted to receive and retain, the T-shaped shoes 11 of segmental tooth blocks 12. It will be noted that the toothed portion of each block extends vertically at substantially right angles to its base, while the shoe inclines rearwardly. It

is obvious that the blocks may be moved upward in the guide ways and while gradually separated as raised, the toothed portions remain substantially parallel, so that all the teeth of the block may act to grip the work. At the lower open end of the head lips 13 project under the guide ways to retain the block therein. These blocks fit loose enough to slide freely in the guide ways and it is obvious that as the blocks are forced downward, they are moved closer together thus more firmly gripping the work.

In operating the jack, the material in which the bolt is embedded, is dug away sufficiently to permit a portion of the bolt to extend up into the head 8 between the toothed portions of the shoes 12. As the rack bar 3 of the jack is raised, the sleeve 6 and head 8 will be drawn upward and the blocks wedged about the bolt and through the agency of their teeth firmly grasp the same and as the raising of the bar 3 is continued, the bolt will be drawn upward in a straight line and extracted without bending or twisting. As the toe is elevated, thus carrying the head 8 upward, the sleeve 6 may be screwed down by inserting a suitable tool through the apertures 7, thus permitting the blocks to take a fresh hold on the bolt nearer the surface of the material from which it is being removed.

It is obvious that various styles of jacks may be used and further the exact style of the jack forms no particular part of this invention.

I wish to call particular attention to the fact that the bolt is withdrawn in a straight line and by a steady upward movement, none of the extracting parts moving in the arc of a circle, the liability of bending twisting or breaking the bolt is reduced to a minimum and in a comparatively short time and with little exertion on the part of the workman.

What I claim, is:

1. In a device of the character described, the combination with the lifting bar and toe of a jack, of an internally threaded ring carried by said toe, a hollow bolt threaded in said ring, a hollow head threaded upon the lower extremity of the bolt, said head having upwardly inclined guide ways, and blocks having shoes engaging in said guide ways and adapted to move therein, the said blocks having vertical faces provided with a plurality of working engaging teeth.

2. In a device of the character described,
the combination with an ordinary jack of
the rack lifting bar type, of an internally
threaded ring carried by the toe of said jack,
5 a sleeve screw threaded in said ring, and
means carried by the lower extremity of
said sleeve, adapted to grip a spike.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

HENRY H. SMITH.

Witnesses:

JACK A. SCHLEY,
LILAN SCHLEY.