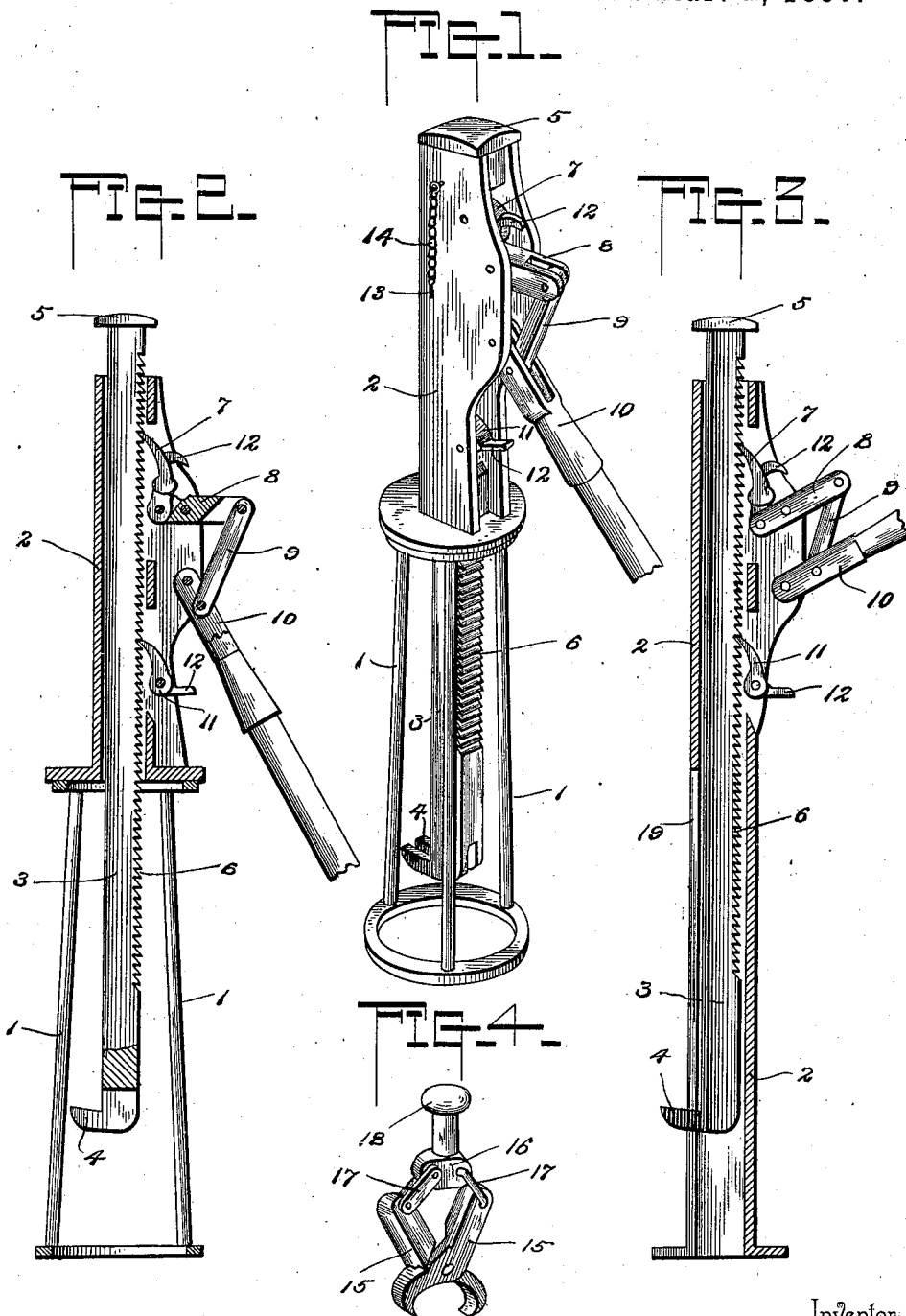


(No Model.)

J. HUMPHREYS.
BOLT OR SPIKE EXTRACTOR.

No. 577,959.

Patented Mar. 2, 1897.



Inventor

John Humphreys,

By *his* Attorneys,

Chas. Snow & Co.

Witnesses

A. M. Poynton,

R. M. Smith.

UNITED STATES PATENT OFFICE.

JOHN HUMPHREYS, OF HENDERSON, KENTUCKY, ASSIGNOR OF ONE-HALF
TO SOLOMON M. STEVENS, OF LAKE, INDIANA.

BOLT OR SPIKE EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 577,959, dated March 2, 1897.

Application filed June 23, 1896. Serial No. 596,605. (No model.)

To all whom it may concern:

Be it known that I, JOHN HUMPHREYS, a citizen of the United States, residing at Henderson, in the county of Henderson and State of Kentucky, have invented a new and useful Bolt or Spike Extractor, of which the following is a specification.

This invention relates to bolt and spike extractors; and the object in view is to provide a light, portable, and powerful device of the character referred to, which may be used either upon railways for extracting bolts or spikes or in ship-yards and machine-shops wherever it is required to draw bolts or other forms of fasteners.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and embodied in the claim hereto appended.

In the accompanying drawings, Figure 1 is a perspective view of the improved extracting device. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a similar view showing a modified form of stand. Fig. 4 is a detail perspective view of the grapple used in connection with the lifting-bar.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates a tripod comprising upper and lower annular plates or rings rigidly connected by a series of substantially vertical posts. Upon the upper ring is mounted the casing 2, in which the operative parts of the device are mounted. This casing is open from top to bottom to receive a vertically-movable lifting-bar 3, which is provided at its lower end with a laterally-projecting claw 4 and at its upper end with a head 5, forming a stop for limiting the downward movement of such bar.

The lifting-bar 3 is provided upon one side with a longitudinal series of teeth 6, the same being adapted to be engaged by a lifting-pawl 7, pivotally connected to the inner end of a lever 8, fulcrumed intermediate its ends within the casing 2, and pivotally connected

at its opposite end to a link 9, which in turn connects pivotally to a lever or lever-socket 10, also fulcrumed at its inner end within the casing 2. By vibrating the lever the pawl 7 is moved upward and thereby effects a corresponding elevation of the lifting-bar 3. In the downward vibration of the lever this lifting of the bar 3 is accomplished, while in the return movement of the lever the bar 3 is prevented from descending by means of a detent 11, pivotally mounted within the casing 2 and engaging the teeth of the lifting-bar. The pawl 7 and the detent 11 are both provided with projections 12, by means of which they may be moved out of engagement with the lifting-bar when desired. The pawl 7 may be thrown out of engagement and so held by means of a pin 13, which is insertable through an opening in the casing and adapted to enter between said pawl and the lifting-bar. The pin 13 is connected to the casing exteriorly by means of a chain or other flexible connection 14, as shown.

The claw 4 may be used itself for the purpose of drawing bolts, spikes, or other fasteners, or a grapple may be used in connection with such claw. This grapple comprises a pair of jaws 15, pivotally connected together intermediate their ends, the lower ends of the jaws being curved to pass over and beneath the head of a bolt or spike and the upper ends thereof being pivotally connected to a shouldered block 16 by means of interposed links 17. The block 16 is provided at its upper end with a spherical head 18, and is adapted to be removably inserted into the crotch of the claw, the head 18 serving to retain the grapple in position as the lifting-bar is moved upward for drawing the bolt or spike.

In lieu of the tripod 1, above described, the casing 2 may be extended downward to form a suitable base or stand for the operating mechanism, as shown in Fig. 3. In this event such casing is left open at one side or provided with a longitudinal slot 19, through which the claw 4 may project, and in which it may work up and down. It will be apparent that these and other changes in the form, proportion, and minor details of construction

may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what
5 is claimed as new is—

The combination with a suitable base, of an extracting-bar slidingly mounted thereon and provided with a claw at or near one end, a lever and suitable connections between such
10 lever and the extracting-bar for actuating the latter, and a grapple comprising pivoted jaws

connected to a common block, the latter being adapted to be removably inserted in the claw and provided with a rounded or spherical head, substantially as described. 15

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN HUMPHREYS.

Witnesses:

AARON FRANK,
PHIL LEVY.