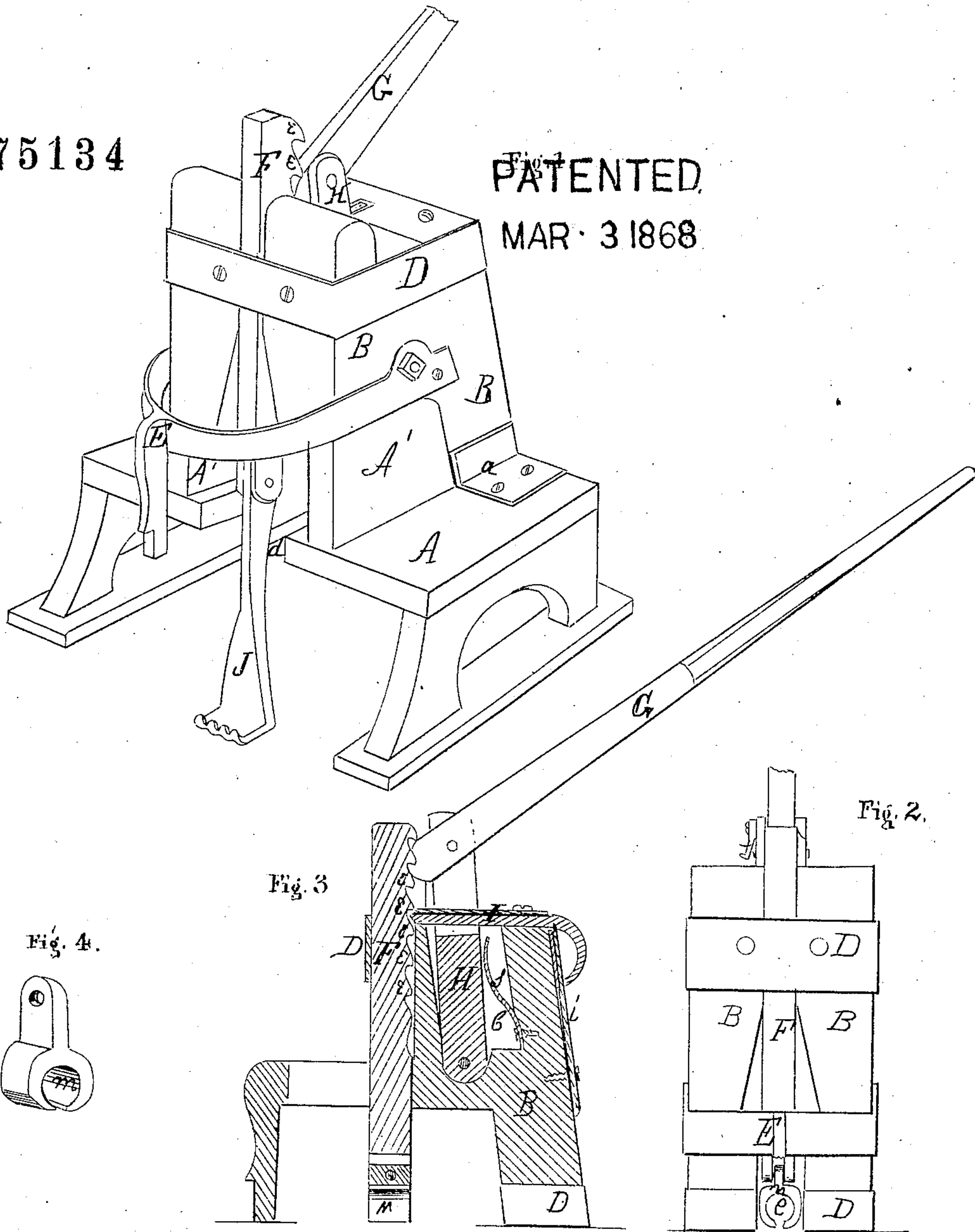


Lifting Jack & R.R. Spike Extractor. am -

Joseph Douglass

75134

PATENTED
MAR. 3 1868



Witnesses.
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JOSEPH DOUGLASS, OF McCONNELLSTOWN, PENNSYLVANIA.

Letters Patent No. 75,134, dated March 3, 1868.

IMPROVED LIFTING-JACK AND SPIKE-EXTRACTOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSEPH DOUGLASS, of McConnellstown, in the county of Huntingdon, and State of Pennsylvania, have invented a new and improved Railroad-Spike Extractor and Jack; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable those skilled in the art to which my invention appertains to make use of it, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a perspective view.

Figure 2, a front elevation.

Figure 3, a vertical longitudinal section through the centre; and

Figure 4, a detached view of the grappling-claw.

This invention is a simple, compact, and powerful device for extracting spikes from timber, combined with an apparatus which renders the instrument useful for raising ties, rails, and other heavy articles, from the ground.

In the drawings, A is a removable base in the form of a stout bench, having two vertical wooden lugs A' A', two vertical metallic cleats *a a*, by which the upper portion of the body of the instrument is held in position when resting on the base, and between the wooden lugs a deep gain, *a'*, in which the grapnel works up and down. This base is not shown in figs. 2, 3, and 4, the instrument being there represented as when used without the base. Upon this base rests a stout wooden post, B, chambered at C to admit the mechanism hereafter described, and provided with a vertical groove in its front side, in which plays the ratchet-rod that carries the grapnel, and with a longitudinal passage or slot through it at the bottom, as shown at *c*, fig. 2, through which access may be had from the rear side of the instrument to the space enclosed between the upright wooden lugs A' A'. This post is bound with brass or iron at D D to prevent its splitting, and is provided with a supplementary brace or leg, E, on the front side, which is useless when the apparatus rests on the base, A, but when it does not rest on the base, as in figs. 2 and 3, supports its front side. F is a vertically-sliding rod, working in the front groove of the post B, and provided on its rear side with a series of ratchet-teeth, *e e e e*, of the peculiar form shown in figs. 1 and 3, by which it is raised by a hand-lever, G, working on a rocking-fulcrum, H. The lever is pressed against the ratchet by a spring, *s*, operating against the fulcrum. A pawl, I, operated by a spring, *i*, also engages with the ratchet, and prevents its falling back when raised. The lower end of the ratchet-rod F is fashioned into a socket, which receives and holds the upper end of the grapnel or claw, which takes hold of the spike or timber to be raised. There are several forms of the grapnel, one for raising timber being shown at J in the shape of a hook with broad serrated edge; another for drawing spikes being shown in fig. 4, provided with a retess, *m*, to receive the head of the spike; and still another, *n*, for the same purpose, being shown in fig. 2, provided with an aperture entirely through it to hold the head of the spike. Either may be used, as occasion requires. They are all hinged to the lower end of the ratchet-rod, so as to swing freely back and forth.

It will be observed that the claw *v*, at the end of the lever G, which engages with the teeth of the ratchet, is of peculiar shape, being convex on its under side and concave on its upper. The teeth *e e* are concave both on their upper and under sides, and are of such dimensions that the concavity of their upper side is filled by the convexity of the under side of the lever-claw, which fits into them accurately, as shown in fig. 3. By this means the lever is more easily operated, the claw working smoothly against the teeth and pressing the rocking-fulcrum back easily to allow the lever to take hold anew in a lower tooth of the ratchet.

For the purpose of lifting the ends of ties to level the road, the apparatus is used with the base, A, and hook J, as shown in fig. 1. For drawing spikes, the base is removed, and the form of grapnel shown in figs. 2 or 4 is used. The apparatus then is worked as illustrated by figs. 2 and 3.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The removable base A, in combination with the post B, when used in a lifting-jack or device for extracting spikes, substantially as and for the purposes specified.
2. The hook J, with broad serrated edge, as and for the purpose set forth.
3. The combination of the rod F, lever G, rocking-fulcrum H, spring *s*, pawl I, and spring *i*, substantially as and for the purpose set forth.

Witnesses:

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