

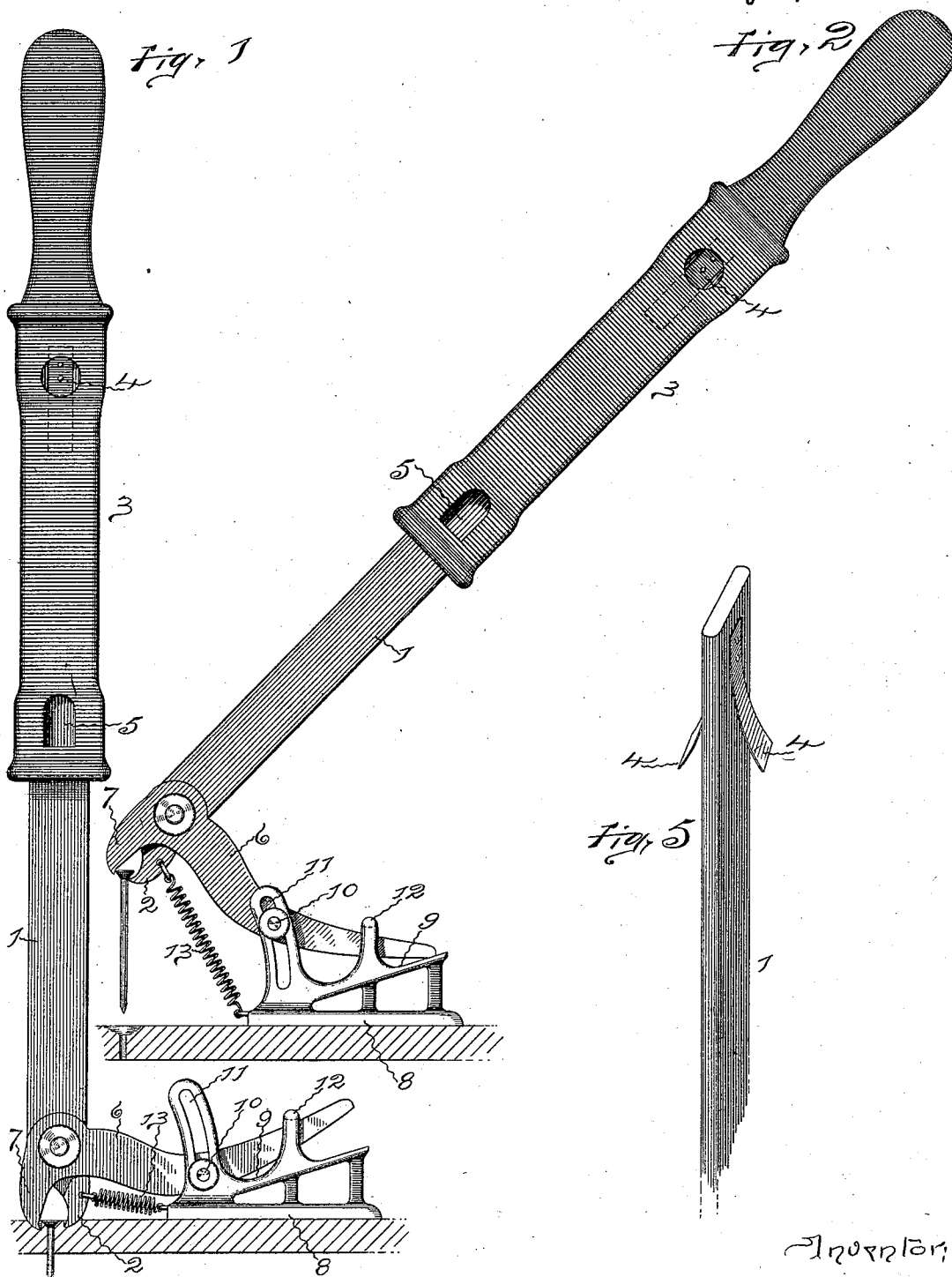
(No Model.)

2 Sheets—Sheet 1.

G. J. CAPEWELL.
NAIL PULLER.

No. 519,034.

Patented May 1, 1894.



Witnesses:

A. L. Tamm
C. Buckland

Inventor:
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att.

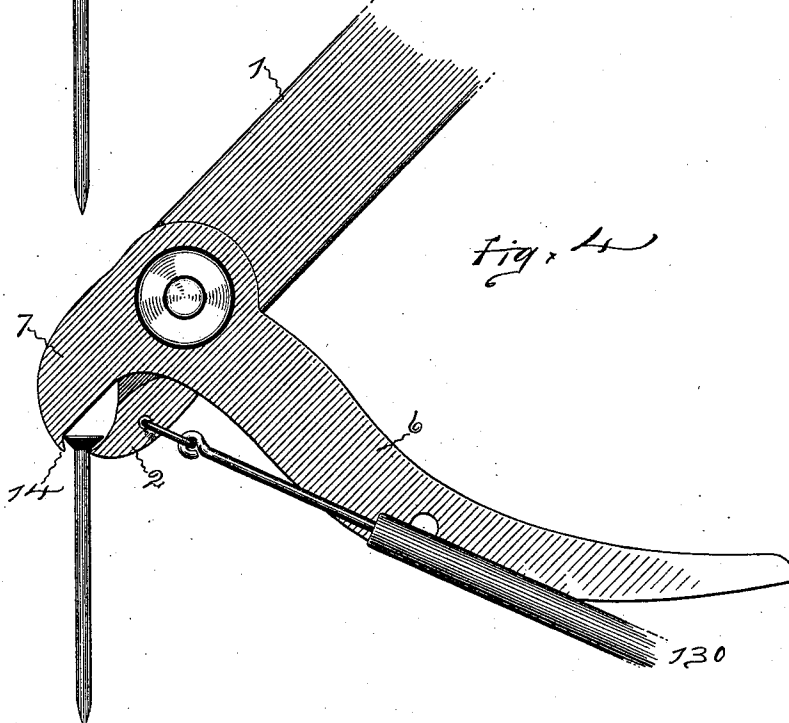
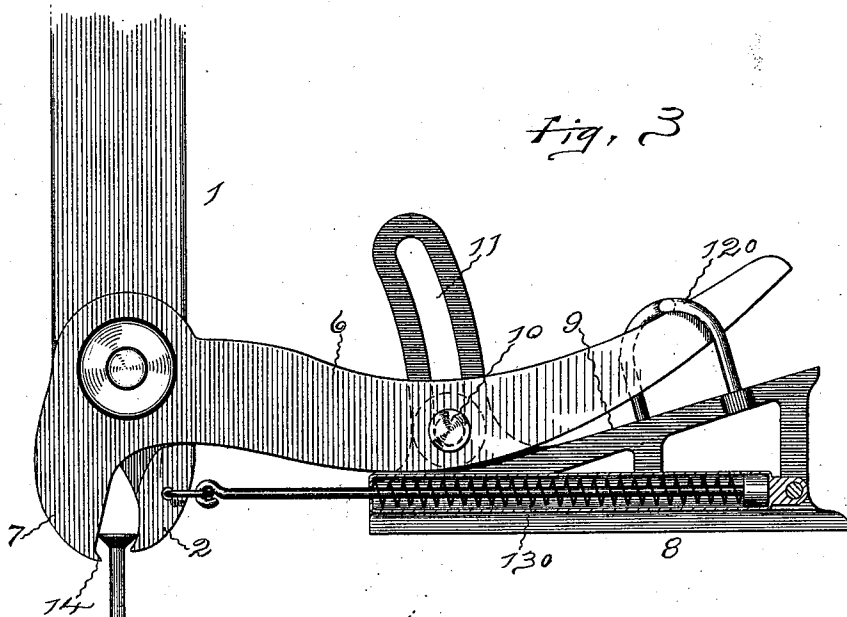
(No Model.)

2 Sheets—Sheet 2.

G. J. CAPEWELL.
NAIL PULLER.

No. 519,034.

Patented May 1, 1894.



Witnesses:

*C. E. Duckert and
A. L. Dean*

Inventor,

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UNITED STATES PATENT OFFICE.

GEORGE J. CAPEWELL, OF HARTFORD, CONNECTICUT.

NAIL-PULLER.

SPECIFICATION forming part of Letters Patent No. 519,034, dated May 1, 1894.

Application filed May 12, 1893. Serial No. 473,906. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CAPEWELL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Nail-Pullers, of which the following is a full, clear, and exact specification.

The invention relates to the tools for extracting nails, which have one fixed and one movable jaw with a lever end; and the object is to provide a simple and cheap tool of this class with which nails, pins, brads, tacks and the like can be easily and quickly pulled from the material into which they have been driven, without any bending or breaking, so that they are in condition to be used again.

Referring to the accompanying drawings: Figure 1 is a side elevation, showing the puller at the commencement of the operation of extracting a nail. Fig. 2 is a similar view showing the position of the parts after the nail has been extracted. Fig. 3 is an enlarged elevation of a portion of a modified form of puller, showing the position when pulling the nail. Fig. 4 is a view of the jaws of this latter form of puller, showing the position when the same nail is pulled; and Fig. 5 is a detail view of a portion of one end of the rammer bar.

In the form shown in the drawings, the rammer bar 1 is formed of a rectangular piece of metal, usually steel, with a beak-shaped fixed jaw 2 at one end, and on this bar slides the rammer 3. This rammer with the usual handle is cast hollow, and slides freely on the bar, its complete removal being prevented by the contact of the ends of the springs 4 on the bar with the edges of the perforations 5 in the walls of the rammer; but of course, if desired, the bar could be made hollow and the rammer shaped to slide in the bar instead of outside. Pivoted to the bar adjacent to the fixed jaw is a lever 6 that has a jaw 7, and loosely connected to the tail of this lever or oscillating jaw, is a bed 8 which has a way 9, upon which the lever rocks when drawing a nail and this provides a changeable fulcrum for the lever. This bed is held to the tail of the lever by a stud 10, that passes through the lever and the slot 11, formed in an arm that projects upward from the way, and also by the loop 12 that is usually cast integral with

the bed. The bottom of the bed is made to rest flatly upon the material from which the nail is to be drawn, and any common spring 13, either open or incased, is connected between the bed and the fixed jaw or a portion of the bar, to normally hold the bed close to the tail of the lever and also keep the jaws open ready for use. The slot 11 in the arm projecting upward from the bed is curved, so that when the nail is being drawn and the fulcrum of the lever is changing and rising to increase its distance from the handle, the stud in traveling upward in the slot draws the lever forward on the bed in such manner that the ends of the jaws rise up vertically and pull the nail out straight.

In the modified form shown in Figs. 3 and 4 the loop, 120, is made to rise and after passing over the tail of the lever passes down on the other side a little in advance, while the spring, 130, is shown as incased for protection in a cylinder that is hinged to the bed. This spring, thrusts between one end of the interior of the cylinder and the head of a rod that is loosely connected with the bar, the spring, 13, illustrated in Figs. 1 and 2 simply being loosely fastened to the end of the bed and the bar to pull the parts together.

In pulling nails in this manner the fixed jaw does the lifting, the movable jaw only holding the nail head against the fixed jaw, and it is necessary when the jaws travel upward as the puller is rocked on the lever, that the head of the nail change its position in the grasp of the jaws; if not, either the body of the nail or the head will be bent or broken. For this purpose the inner edge of the fixed jaw is considerably curved to properly catch under the head, while the inner edge of the other or movable jaw is made nearly straight for most of its length; in fact it is desirable that the straight part of the inner edge of the movable jaw should diverge from the inner edge of the fixed jaw, so that the distance between them increases except where the small hook 14 is left at the end of the movable jaw, which is slightly longer than the fixed jaw. When the distance between the jaws increases, the head of the nail being pulled slides freely on the straight inner edge of the movable jaw toward the outer end without having to force the jaws apart, so that it will

readily adjust itself with relation to the changed position of the jaws without bending or breaking the head, for of course, although the jaws move upward in a straight line the opening between them changes its direction. If the inner edges of the jaws do not diverge, the head of the nail has to pry the jaws apart when adjusting itself to the changing relation of the parts as they move upward, and when the nails have to force the jaws apart to obtain this adjustment, they are always bent near the head or the head itself is damaged, while if the jaws are shaped as above described, the head of the nail tends naturally to adjust itself, sliding easily outward along the diverging straight edge of the movable jaw, when the jaws are forced together obviating all danger of bending or breaking the nail or the head as in the old forms of jaws which when forced together tend to draw the head of the nail in and hold it tight so it cannot adjust itself but is obliged to bend, when the relation of the parts changes as the nail is drawn, by the rocking of the tool.

By means of these improvements the jaws of the puller are made to rise vertically to draw the nail straightly out, and the head of the nail easily moves or changes its position between the jaws to naturally adjust itself, while the smaller hook at the end of the movable jaw holds the head from dropping completely from the grasp of the jaws, so that nails can be extracted and left in such condition that they may be at once used again.

I claim as my invention—

1. A nail puller consisting of a bar with a fixed jaw, a lever with a changeable fulcrum

and a jaw pivoted to the bar, and a bed having a way for the fulcrum, movably connected to the lever with the fulcrum resting loosely on the way, substantially as specified.

2. A nail puller, consisting of a bar with a fixed jaw, a pivoted jaw with a bed for its fulcrum movably attached to the pivoted jaw, and a spring connecting the fixed jaw with the movable bed, substantially as specified.

3. A nail puller, consisting of a bar with a fixed jaw, a pivoted jaw with a bed for its fulcrum, said bed being connected with the pivoted jaw by means of a sliding stud, substantially as specified.

4. A nail puller, consisting of a handle bar with a fixed jaw and a lever, with a changeable fulcrum and jaw pivoted to the bar, the latter jaw having a straight grasping edge opposite the end of the fixed jaw, said straight grasping edge, as it extends outward, diverging from the grasping edge of the fixed jaw so that, when in use, there is a wider distance between the grasping edges of the jaw below the nail head than above, and a hook on the end of the movable jaw a greater distance from the pivot than the end of the fixed jaw, substantially as specified.

5. A nail puller, consisting of a bar with a fixed jaw, a lever with a fulcrum and a jaw pivoted to the bar, and a bed for the fulcrum of the pivoted jaw connected thereto by means of a movable stud and an open loop, substantially as specified.

GEORGE J. CAPEWELL.

Witnesses:

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