

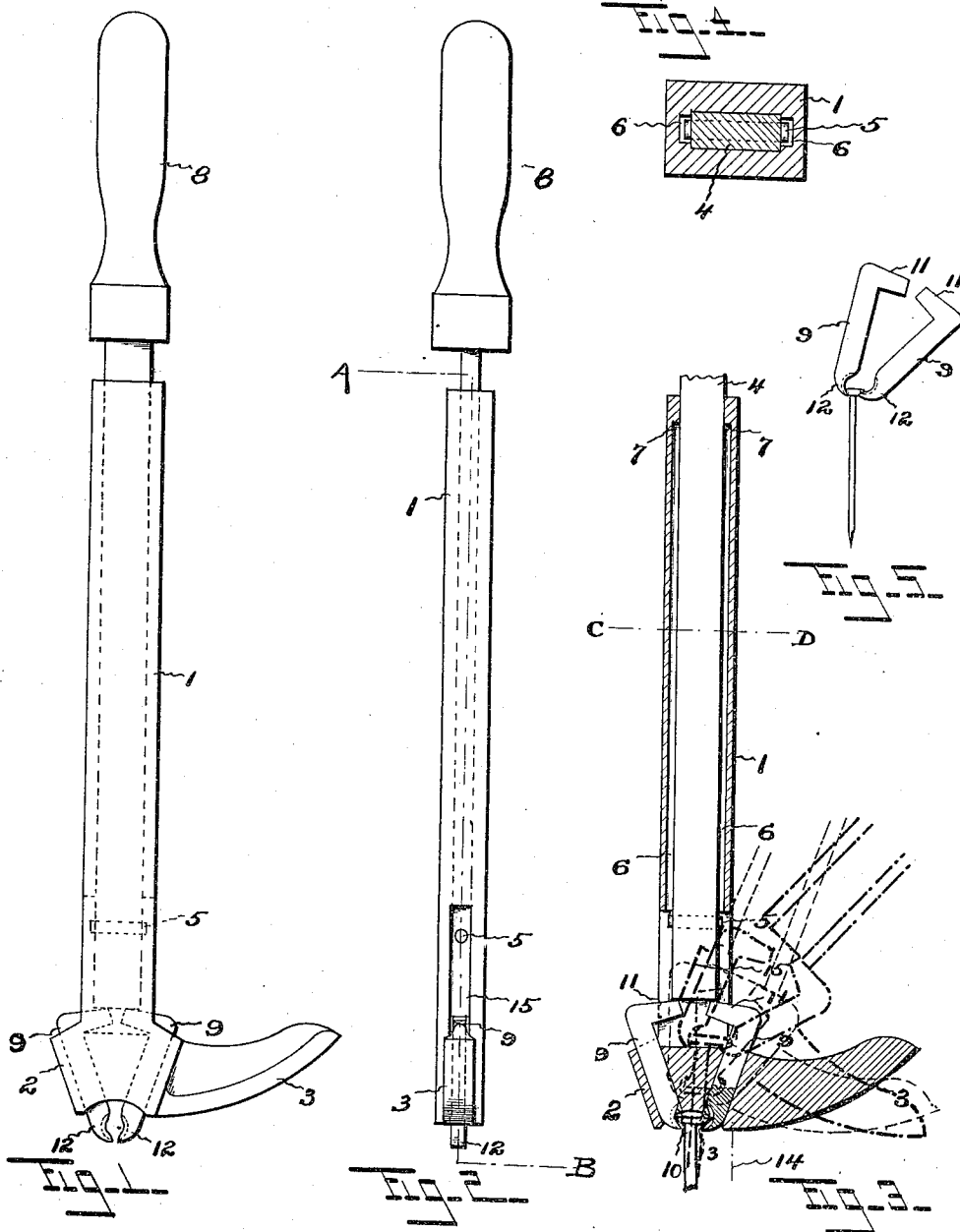
G. A. BARNES.

NAIL PULLER.

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1,004,842.

Patented Oct. 3, 1911.



WITNESSES:

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NAIL-PULLER.

1,004,842.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. BARNES, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Nail-Pullers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in nail pullers, and has for its object, among other things, to provide a simple and convenient device for drawing out embedded nails, or for other similar purposes, without bending the nail, as well as to make the device of few parts so designed as to be economically constructed and readily assembled.

To these, and other ends, my invention consists in the nail puller, having certain details of construction and combinations of parts, as will be hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures: Figures 1 and 2 are elevations of my improved nail puller complete; Fig. 3 is a sectional view upon line A—B of Fig. 2; Fig. 4 is an enlarged sectional view upon line C—D of Fig. 3; and Fig. 5 is a view of the jaws, showing their relative positions at one point during the nail pulling process.

In the nail pullers now in common use the jaws are either pivoted together or to a fixed member so that there is no relative movement of the jaws one with the other, and for this, and other reasons, the nail is bent while being withdrawn. To overcome this and draw the nail without bending, devices have been made, but they have been so cumbersome, complicated and expensive that they have not been universally adopted. In my invention the jaws are not pivotally connected, but slidably mounted, and during the nail drawing operation have a relative movement with each other, whereby the nail is withdrawn without lateral strain to bend or buckle the same.

In the drawings, the numeral 1 designates the body member having the head portion 2 at one end with the laterally projecting fulcrum foot 3 upon one side thereof; and 4 the plunger, having the handle 8 at one end thereof, which is mounted within the

body member so as to move freely therein, and prevented from disengagement therewith by the pin 5, which is driven therein through the opening 15. The ends of the pin 5, during the reciprocation of the plunger, move within the grooves 6 in the body member 1, which terminate at one end in the shoulders 7. The jaws 9, which slide in the converging pockets 10 in said head portion 2, at an angle with each other, are provided at one end with the anvils 11, which project inwardly into the path of the plunger 4 and are cut away at the other end to provide the claws 12 for more convenient engagement of the nail head, said claws having pockets 13 upon the inner faces thereof.

In operation, my device, with the jaws in the relative positions occupied by them in Fig. 3, is placed upon the surface into which the nail is driven and adjacent thereto, with the head of the nail between the claws 13, after which the plunger 4 is moved so as to deliver successive blows upon the anvils 11 to drive the claws into the wood adjacent to the nail head and until they assume substantially the position shown in Fig. 1, in which position the head of the nail will lie within the pockets 13, and the ends of the claws 12 will be under said head. From this position the body member is rocked upon the fulcrum foot 3 and the nail withdrawn by the engagement of the jaws therewith. During this rocking movement the fulcrum point is continually changing from its initial position, substantially designated by the line 14 in Fig. 3, to the end of the fulcrum foot 3, so that at the time when the greatest leverage is required, that is, to start the nail, the distance between the nail and fulcrum point is shortest, and when the nail is substantially withdrawn the fulcrum point is farthest from the nail and the leverage is the least. While in operation, the jaws move within the pockets 10 so that at one point of the drawing operation the jaws will occupy the relative positions shown in Fig. 5. In my device much less power is required to drive the jaws into the wood, as they are free and independent and not fixed to the other parts of more or less weight, as in the type of nail puller in common use.

There are minor changes and alterations that may be made within my invention, and

I do not therefore limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

5 What I claim as new and desire to secure by Letters Patent, is:—

1. In a nail puller, the combination with a plunger; of a body member within which said plunger is slidable, terminating at one
10 end in a head portion, having a fulcrum foot thereon and companion pockets, upon either side of said plunger, that converge toward the bottom of said head; and a jaw, in the path of said plunger, slidably mounted in
15 each of said pockets, out of contact with the jaw in the other pocket, and capable of independent movement in relation thereto.

2. In a nail puller, the combination with a body member, having a plunger opening and
20 jaw pockets therein, located at an angle to each other and said plunger opening; of jaw members, out of contact with and movable independently of each other, within said pockets, having anvils thereon in front of
25 said plunger opening; and a plunger movable in said plunger opening in the path of said anvils.

3. In a nail puller, the combination with a body member, having converging pockets
30 therein, open at both ends, and a plunger opening in a plane between said pockets; of jaw members movable independently of each other within said pockets, and provided with an inwardly projecting anvil upon one end
35 thereof; and a plunger movable in said plunger opening and contacting with said anvils.

4. In a nail puller, the combination with a body member; of a movable plunger therein;
40 jaw members slidably mounted in said body member out of contact with each other, and guided in lines converging toward the point of the jaws, so as to move separately and independently of each other within said body
45 member; and a fulcrum foot connected with said head adjacent to said jaws.

5. In a nail puller, the combination with a body member having a curved fulcrum foot
50 connected therewith at one end and projecting laterally therefrom; of a plunger movably mounted in said body member; and jaw members, out of contact with each other, slidably mounted in said body member so as to converge toward the claw ends thereof,
55 and moving in said head member separately and independently of each other during the nail pulling operation.

6. In a nail puller, the combination with a body member having a curved fulcrum foot

connected therewith at one end and projecting laterally therefrom; of a movable
60 plunger in said body member; and jaw members slidably mounted in said body member, out of contact with each other, and guided therein by walls that converge toward the
65 claw ends of said jaw members which have an independent relative movement.

7. In a nail puller, the combination with a body member, having a plunger opening
70 therein, with a head portion at one end having pockets that converge longitudinally toward the bottom of said head portion; and a jaw slidably mounted in each of said pockets out of contact with the jaw in the adjacent pocket, and having an independent relative
75 movement therewith, each of said jaws having a part thereon that projects into the path of said plunger.

8. In a nail puller, the combination with a body member having a fulcrum foot at one
80 end thereof; of a movable plunger therein; and jaw members slidably mounted in said body member out of contact with each other and movable in relation to each other so that when in contact with the nail to be drawn
85 the initial action is a pull by said jaws upon the nail head from above the nail head, which is gradually transformed to a push by one of said jaws upon the underside of said head that continues until the drawing
90 action is completed.

9. In a nail puller, the combination with a body member; of a movable plunger therein;
95 jaw members having parts thereon that project into the path of said plunger; and means for mounting said jaws so that they will be guided in lines converging toward the point of the jaws and while in contact with the head of the nail during the drawing action, one of said jaws will have an independent
100 movement in relation to said head.

10. In a nail puller, the combination with a body member; of a movable plunger therein;
105 jaw members having parts thereon that project into the path of said plunger; and means for mounting said jaws so that they will be guided in lines converging toward the point of the jaws and while in contact with the head of the nail during the drawing action, the position of each jaw in relation
110 to the said nail head and each other will be continually changing.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. BARNES.

Witnesses:

GEORGE E. HALL,
BARNETT BERMAN.