No. 636,147

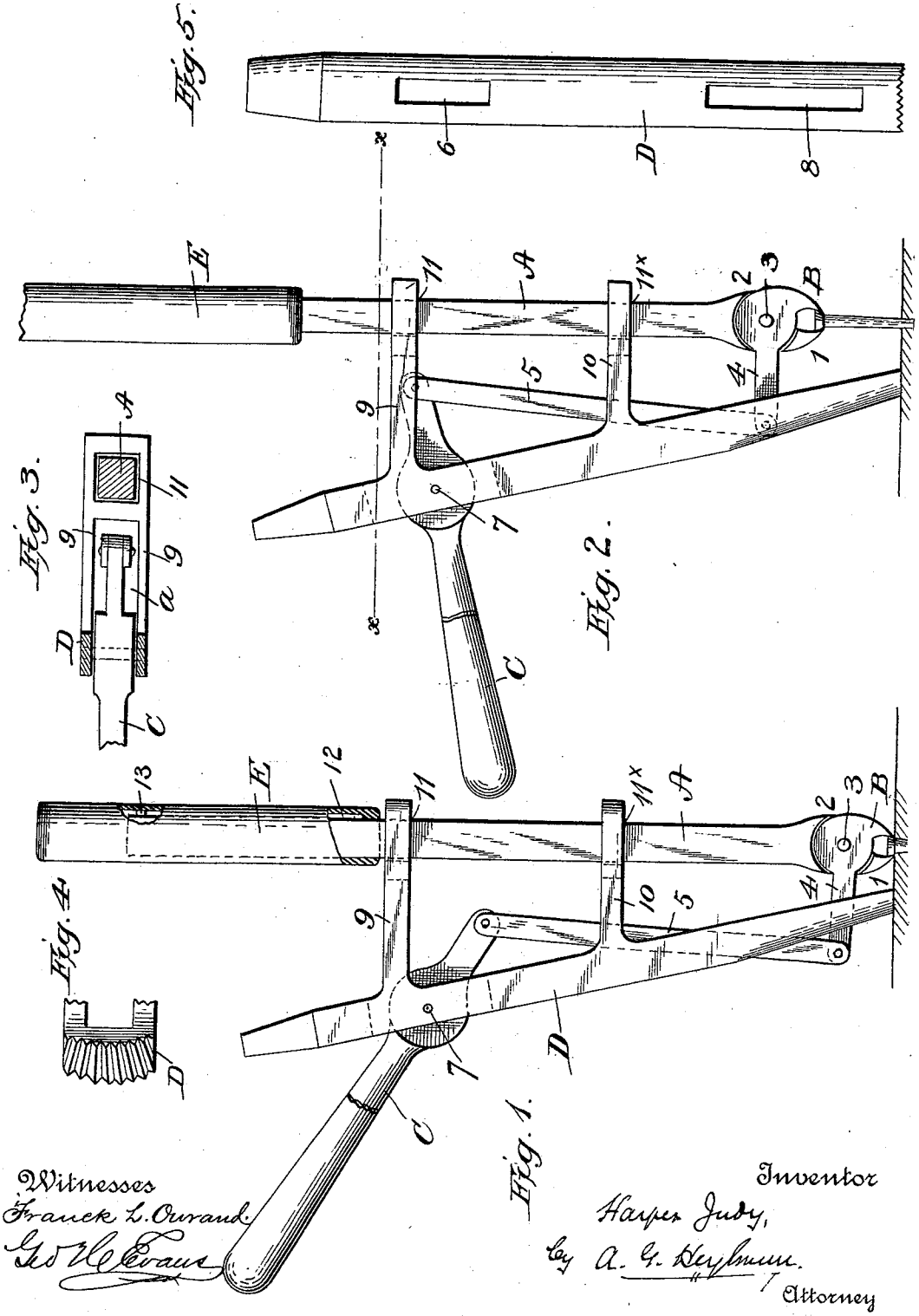
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H. JUDY.

NAIL EXTRACTOR.

(Application filed Feb. 27, 1899.)

(No Model.)



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HARPER JUDY, OF CIRCLEVILLE, WEST VIRGINIA, ASSIGNOR TO ROBERT I. DIGGES, OF LA PLATA, MARYLAND.

NAIL-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 636,147, dated October 31, 1899.

Application filed February 27, 1899. Serial No. 707,047. (No model.)

To all whom it may concern:

Be it known that I, HARPER JUDY, a citizen of the United States of America, residing at Circleville, in the county of Pendleton, in the State of West Virginia, have invented certain new and useful Improvements in Nail-Extractors, of which the following is a specification.

My invention has relation to improvements in nail-extractors of that class or kind having nipper or jaw engagement with the head or shank of a nail by means operating to move the jaws to grip and pull the nail; and the object is to improve and simplify existing constructions and mechanisms by providing an implement of the kind named and for the purposes intended which is simple in construction and durable, certain, and efficient in operation. The invention therefore consists in the novel construction of parts and their combination, as will be hereinafter fully described and then particularly pointed out in the claims.

I have fully and clearly illustrated the invention in the accompanying drawings, to be taken as a part hereof, and wherein—

Figure 1 is a side elevation, showing the implement in the position assumed when placed to engage a nail preliminary to extracting it. Fig. 2 is a side view in elevation, showing the implement in the position assumed when the nail has been extracted. Fig. 3 is a plan view of one of the slotted guide-arms broken away from the standard. Fig. 4 is an end view of the bottom face of the standard, showing the radial corrugations. Fig. 5 is a rear edge view of the lever-standard.

Referring to the drawings, A designates a vertically-movable jaw-bar which carries the fixed jaw 1 of the extractor. The stem of this jaw-bar A consists of a suitable rod of metal, preferably round in cross-section and of such length as may be desired to adapt it to the work intended. The lower end of the jaw-bar is formed with a fixed jaw 1, curved inward and terminating in a biting edge, against which the movable jaw presses the nail in operation. In the lower end portion of the jaw-bar A is formed a circular seat 2, extending half-way across the metal of the jaw, in which seat the movable jaw B is fitted and pivotally secured by a pivot pin or bolt 3, let through the bearing-disks of the jaws. The movable jaw B is curved in opposition to the fixed jaw 1, as indicated in the drawings, and is formed with an arm 4, having its outer end pivotally connected to the lower end of a connecting-rod or pitman 5, the upper end of which is pivotally connected to the inner end and short arm of the operating-lever C. The lever C is suitably fulcrumed in the slot in the standard, as shown and hereinafter specified of the standard D. The standard D is of such length as may be required and is formed, as stated, in its upper portion with a vertically-arranged slot 6, through which the lever C projects and is held on its fulcrum-pin 7. The lever C at that part adjacent to its fulcrum is enlarged into a disk-shaped bearing-surface in order that it may be held in its operative movements against lateral displacement by reason of such enlargement, the side surfaces of which act against the walls of the slot in which the lever is pivoted between. The standard D at its lower portion is formed with a vertical slot 8 to take in and provide room for the lower portion of the pitman and the arm of the movable jaw, so that they will swing and may project through and be guided in their movements by the walls of the slot. By this construction and arrangement the lower part of the pitman and the outer end of the arm of the movable jaw are held and guided by the walls of the slot.

From the standard D project upper and lower arms 9 10, integral with the standard and formed with slots or openings *a*, the front portions of the arms being solid and provided with apertures 11 $11^{\times}$, through which and in which the reciprocating jaw-bar is disposed and is guided. The arm 9 is longer than the arm 10, so that the standard D stands in its relation to the vertical jaw-bar at an outward incline from bottom to top, as indicated in the drawings, in order that the standard will be pushed down on its foot in the direction of the pressure, and the lever will draw the jaw-bar in vertical alinement with the apertures in the arms of the standard. This construction brings the foot of the standard close to the jaws and point where or to the object

the jaws are to engage. The implement thus occupies but little space at the base and may be set on narrow surfaces. The construction also enables the implement to be set and utilized to draw a nail at any angle by simply manipulating the standard to suit the purpose and location. The top part of the standard is formed to be conveniently grasped and held by the hand.

The lower end of the standard D is formed concavo-convex, substantially as shown in the drawing in Fig. 4, and the end face is serrated with radial grooves, a form and construction which most firmly hold the standard in the position that it may be disposed in, since the corners of the arc and the edges of the serrations take hold in the floor or other surface to which the implement is set.

On the upper end of the jaw-bar A is slidingly placed the plunger or hammer E, consisting of a substantial piece of metal formed with a socket of suitable length and depth, which takes over the stem of the bar A. To prevent the hammer from being drawn from the bar, a slot 12 of suitable length is formed therein, and a stop-pin 13 is projected through the slot and fastened in the bar, substantially as indicated in the drawings.

It will be perceived from the foregoing description, taken in connection with the drawings, that the function of the implement is to extract the nail straight and in a direction in which it was driven and does not bend or distort the nail in the least, so that it may be again used without having to be straightened, the contrary result being common with the implements which pull in an angle to the direction to that in which the nail was driven.

The operation is as follows: The implement is grasped by one hand holding the hammer or plunger and the other hand grasping the standard and then set with the jaws straddling the head or end of the nail to be extracted, the hammer is then lifted and forced down to drive the nipper ends of the jaws to engage the nail, and then the engagement is effected and perfected by the operation of the lever, which, being pressed down, results in a bite and force sufficient to hold and extract the nail.

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

1. A nail-extractor, comprising a vertically-reciprocating jaw-bar formed with a fixed jaw at its lower end, a movable jaw pivoted to said bar to coact with the fixed jaw and formed with an arm, a pitman pivotally connected to the outer end of said arm, a standard relatively inclined outward from bottom to top to said jaw-bar and formed with slotted arms having apertures in their free ends in which the jaw-bar is slidingly held, and a vertically-arranged guide-slot at its lower end portion in which the lower end of the pitman and the outer end of the arm on the movable jaw extend and are guided, a lever fulcrumed in the standard and connected to the upper end of the pitman, and a sliding hammer on the upper end of the jaw-bar.

2. The nail-extractor herein described, comprising a vertically-reciprocating jaw-bar, formed with a fixed jaw at its lower end, a movable jaw pivoted to the said jaw-bar to coact with the fixed jaw and formed with an arm, a pitman pivotally connected to the outer end of said arm, a standard inclined outward from bottom to top arranged with its foot adjacent to the jaws, and formed with slotted upper and lower arms through which the pitman plays and apertures in their free ends in which the jaw-bar is arranged and guided, and having a vertical slot at its lower portion into which the pitman and arm of the movable jaw extend and are guided, a lever, having an enlarged disk-shaped fulcrum-surface adjacent and about its fulcrum, fulcrumed in the standard and connected to the upper end of the pitman, and a sliding hammer on the upper end of the jaw-bar.

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

HARPER JUDY.

Witnesses:
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