(No Model.)

G. J. CAPEWELL.

NAIL EXTRACTOR.

No. 444,948. Patented Jan. 20, 1891.

Fig. 1

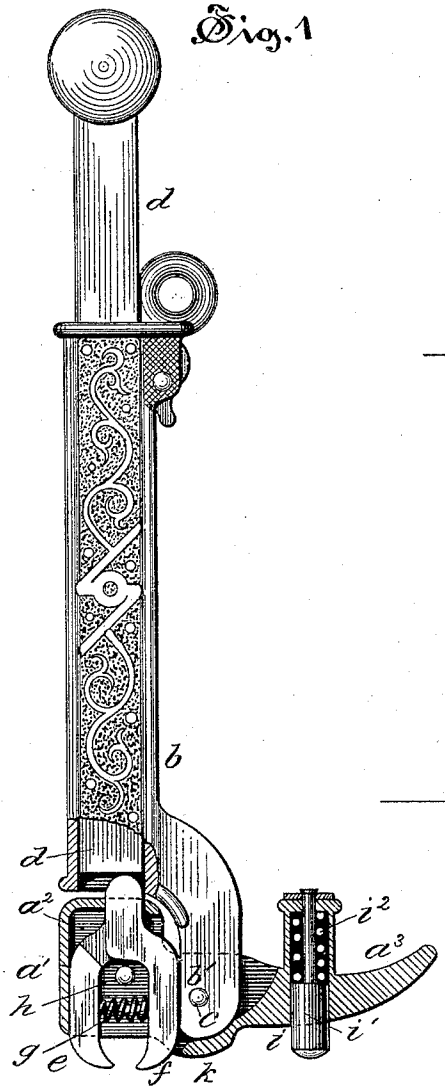

Fig. 2

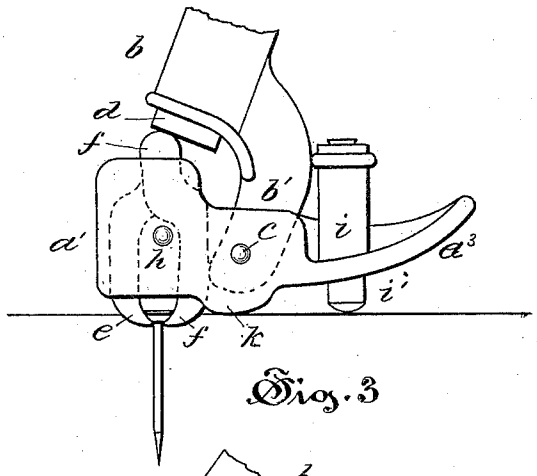

Fig. 3

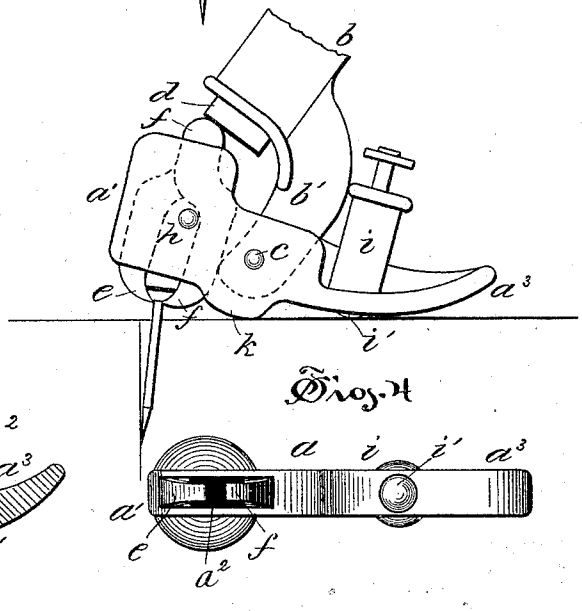

Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE J. CAPEWELL, OF HARTFORD, CONNECTICUT.

NAIL-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 444,948, dated January 20, 1891.

Application filed June 21, 1890. Serial No. 356,188. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CAPEWELL, of Hartford, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Nail-Extractors, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the class of nail-pullers in which the nail-holding jaws are supported independently of the percussive device; and the object of the invention is to provide a nail-puller in which the biting power of the jaws shall be comparatively uniform and one in which a great leverage is obtained for pulling the nail.

My invention consists in details of the several parts making up the device as a whole and in their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view in elevation, showing parts cut away in vertical section to show construction. Fig. 2 is a detail view of the lower part of the nail-puller, illustrating the operation in closing the jaws upon a nail-head. Fig. 3 is a detail view illustrating the position of the parts in pulling a nail. Fig. 4 is a bottom view of the foot-piece.

In the accompanying drawings, the letter *a* denotes a foot-piece that forms the immediate jaw-support, and *b* the jaw-lever, that is hinged or pivoted to the foot-piece by means of a pivot *c*, and supports the percussive device or hammer *d*, that is preferably a bar or rod fitted within the hollow stock, in which it has a limited sliding movement, the lower end of the hammer overlying the upper part of the foot-piece directly over the jaws. The foot-piece, that is preferably made of metal cast to shape, has in the end *a'* the jaw-socket a^2, within which the jaws *e* and *f* are supported in such manner as to be capable of a limited vertical movement, as well as a movement toward and from each other. In this regard the jaws may be said to be loosely supported within the jaw-socket. The lower end *b'* of the jaw-lever extends within the foot-piece *a*, and its front edge is in contact with the back edge of the jaw *f*, so that the latter by a swinging movement of the former is thrust outward toward the outer jaw *e*. The jaws are each formed, preferably, of steel, with a shank portion of about half the thickness of the rest, so that the two jaws overlap each other as they lie in the socket and present their upper ends side by side to the impact of the hammer. The jaws are normally thrust apart by means of a spring *g*, that is supported between the jaws, a pin *h*, passing through and through the foot-piece and the jaw-socket, serving merely to prevent the accidental removal of the jaws. The points of the jaws are hook-shaped, convex on the outer and lower edge, and concave on the inner near the point, so as to adapt them to grasp a nail and allow room back of the points to receive the head of the nail and enable them to grasp the shank of the nail below the head. In case there is any irregularity of shape at or below the head of the nail the jaws are supported in the socket loosely enough to allow either of them to slide lengthwise far enough to secure a firm hold on the nail at a point that may not lie just opposite to the point of the other jaw, and this permits an extremely firm grasp of the nail.

On the bottom of the foot-piece *a*, and as near the jaws as available, there is formed a fixed fulcrum *k*, that preferably projects slightly from the lower surface of the foot-piece, and in the fulcrum-arm a^3, that projects from the side of the foot-piece, there is located a yielding fulcrum *i*. This consists of a spring-seated sliding plunger *i'*, with its lower end projected below the lower surface of the fulcrum-arm a sufficient distance to form a rest or support for the foot-piece that when the nail-puller is set upright upon the bottom surfaces of the two fulcrums the jaws are held practically upright and while the jaw-lever is used to close the jaws upon a nail.

As soon as the nail has been grasped by the jaws, a continued rocking motion of the lever throws a pressure upon the plunger, and the spring i^2 yields and allows the foot-piece to rock on the fixed fulcrum, so as to bring the lower surface of the fulcrum-arm in contact with the surface of the board from which the nail is being withdrawn. The first stress in pulling the nail comes upon the fixed fulcrum, and that is so near the jaws that a very large

leverage is obtained. The spring in the yielding fulcrum is not of sufficient strength to offer any serious obstacle to the rocking of the lever by means of which the nail is withdrawn.

I claim as my invention—

1. In a nail-puller, in combination, the jaw-lever, the foot-piece hinged to said lever, the nail-jaws, and the yielding fulcrum located back of the main fulcrum, all substantially as described.

2. In combination, in a nail-puller, a foot-piece having a jaw-socket, the sliding jaws located and supported in said socket in the line of movement of a percussive device, the jaw-lever hinged to the foot-piece independently of the nail-grasping jaws, and the percussive device supported on the jaw-lever, all substantially as described.

3. In combination, in a nail-puller, a foot-piece having a jaw-socket, the sliding jaws located in said socket in the line of movement of a percussive device, and a yielding fulcrum located outside of the main fulcrum, all substantially as described.

4. In combination with the foot-piece having the jaw-socket and a fulcrum-arm, the independently-movable nail-grasping jaws wholly supported within said socket, the jaw-lever hinged to the foot-piece and forming a back support for one of the jaws, and the percussive device supported on the jaw-lever, all substantially as described.

5. In combination with the foot-piece having the nail jaw-socket and the fulcrum, the independently-movable jaws located in said socket and halved together at their outer end, the spring located between the inner edges of the jaws, the jaw-retaining pin, the percussive device supported on the jaw-lever, and the jaw-lever, all substantially as described.

GEORGE J. CAPEWELL.

Witnesses:
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