(No Model.)

E. N. GILFILLAN.

NAIL PULLER.

No. 594,202. Patented Nov. 23, 1897.

Fig. 1.

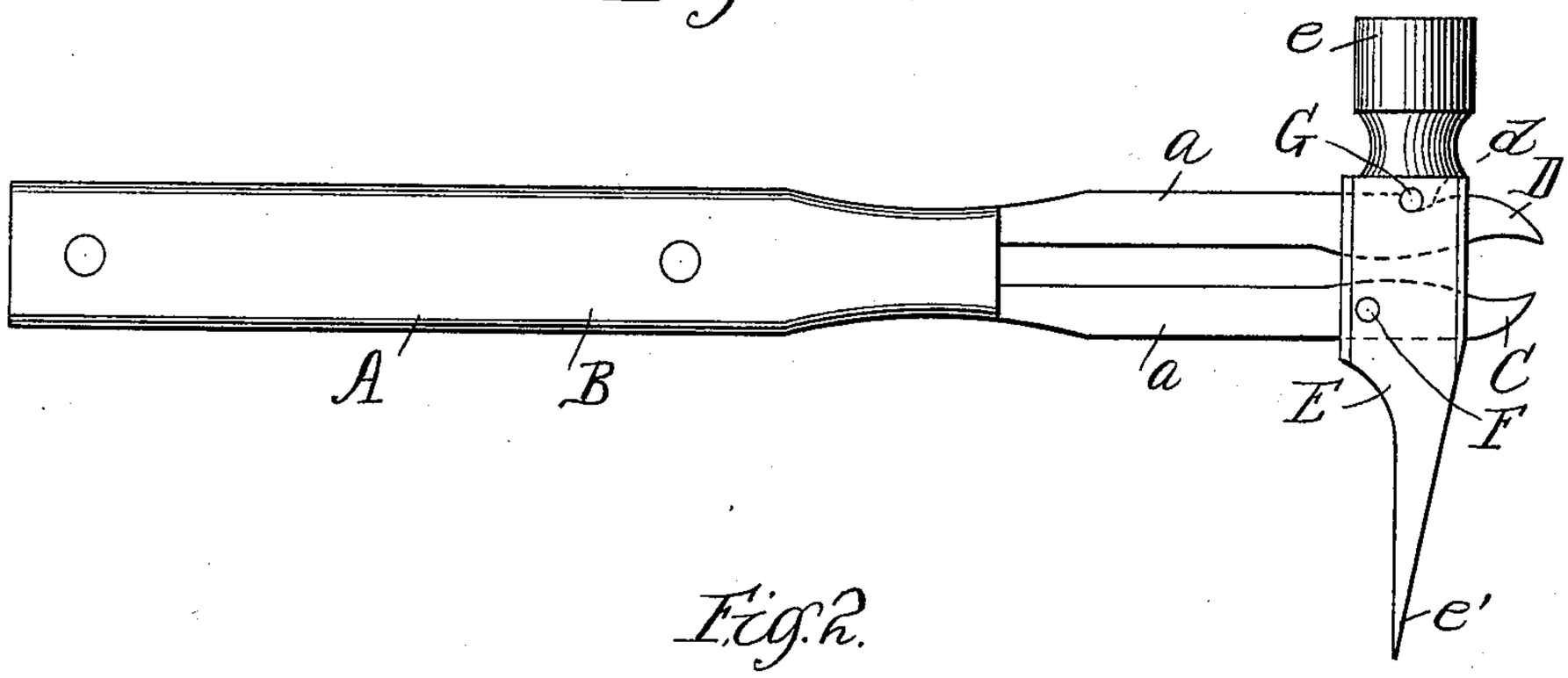


Fig. 2.

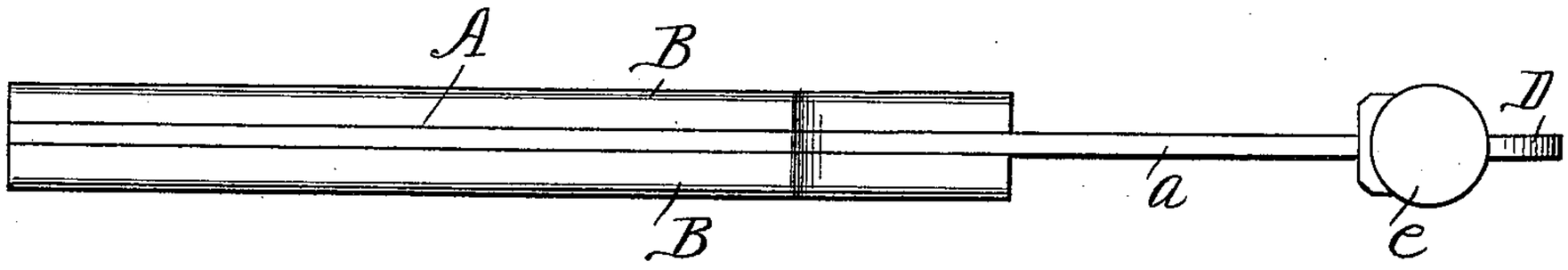
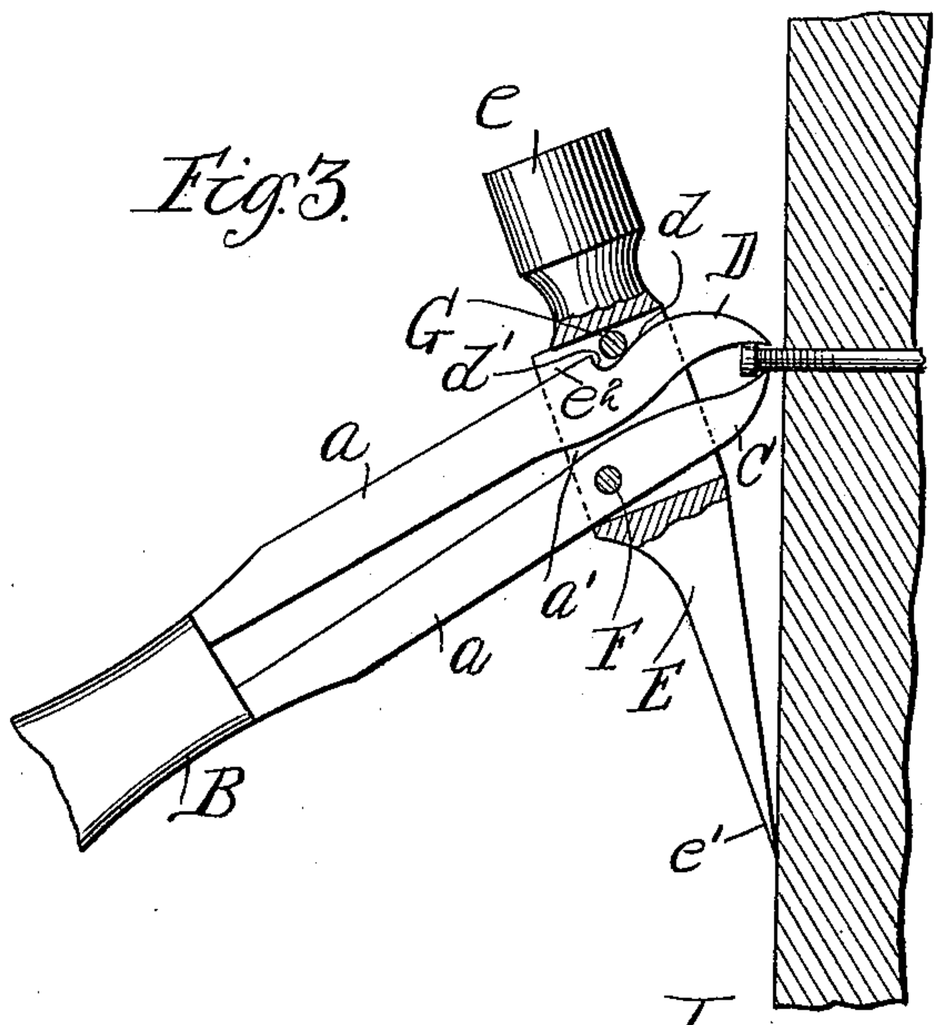


Fig. 3.



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NAIL-PULLER.

SPECIFICATION forming part of Letters Patent No. 594,202, dated November 23, 1897.

Application filed April 19, 1897. Serial No. 632,805. (No model.)

To all whom it may concern:

Be it known that I, ESSINGTON N. GILFILLAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Nail-Pullers, of which the following is a full, clear, and exact specification.

My invention relates to that class of nail-pullers in which a pair of gripping-jaws are caused to sink into the wood below the head of the nail and to close upon or grip the nail when pressure is applied to the handle of the device like a lever, using a second lever or foot which rests upon the box or board as a fulcrum.

The primary object of my invention is to provide a nail-puller in which the jaws will remain normally separated and will firmly hold the fulcrum lever or foot against oscillation, whereby the latter may be employed as a hammer.

A further object of my invention is to provide a durable and effective nail-puller consisting of the minimum number of simple members.

With these ends in view my invention consists in certain features of novelty described herein with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of my improved nail-puller. Fig. 2 is an edge view thereof, and Fig. 3 is a sectional view showing the device in operation.

Like signs of reference indicate like parts throughout the several views.

In carrying out my invention I employ a pair of spring-separated gripping-jaws which are suitably connected to or formed on the handle of the device, and to one of these jaws I connect in some suitable manner a lever which is provided with or constitutes a fulcrum-foot and which is adapted to act upon the other of said jaws for causing the jaws to grip the nail when the handle is borne upon in the usual manner. The jaws being spring-separated, they will automatically return to their open position and also cause the fulcrum-lever to assume its normal position with reference to the jaws, and in which position it will be firmly held by the jaws, whereby one end of the lever may be provided with a hammer-head and thus make it perform a two-fold useful purpose.

The spring-separated gripping-jaws may be best constituted by slitting or bifurcating a plate or bar A, so that one end thereof may be used as the handle, it being, if desired, provided on either side with the usual handle-pieces B to provide a better handhold, while the extremities of the bifurcated end are sharpened or formed into suitable gripping-jaws C D, respectively, the bifurcation being of such extent as to make the stem *a* of the jaws sufficiently elastic to permit the jaws to be squeezed together.

The fulcrum-lever E is preferably made in the form of an ordinary hammer, having the head *e* for driving purposes and the usual flat portion *e'*, which constitutes the fulcrum-foot, upon which the device is fulcrumed when the handle A is utilized as a lever in drawing nails and which may also be employed for any of the purposes to which a hammer of like construction has heretofore been or may be employed. This hammer is provided with the usual handle passage or hole e^2, in which the jaws are arranged and from which they slightly protrude. One of the jaws C is suitably secured to the fulcrum-lever in such a way that the latter will be capable of independent oscillation. This may be best accomplished by passing a pin or rivet F through the fulcrum-lever and such jaw. The other jaw D is provided with a rounded or bevel edge *d*, which acts as a cam-surface upon the fulcrum-lever or hammer for returning it to its former position when the pressure compressing the jaws is released. In order that this movement may be accomplished and that the opposite movement of the fulcrum-lever or hammer with reference to the jaw D may cause such jaw to approach the jaw C, I provide the fulcrum-lever or hammer within the opening e^2 with a projection against which the rounded edge *d* bears, and which projection is arranged diagonally opposite the rivet or pivot F, so that the spring-pressure of the jaw D thereupon will be more effective in returning the hammer or fulcrum-lever to its former position. This said projection is pref-

erably constituted by means of a pin G, which is driven through the fulcrum-lever or hammer. The cam-surface or bevel *d* at a point below the projection G extends across and below the arc which such projection G describes when said projection moves downward relatively to the pivot F, and this edge *d* of the jaw D, which bears against the projection G, is so formed that it does not incline toward the other jaw C, for if it did it is readily seen that the spring-pressure would cause the inward incline thus formed to force the projection G downward, and consequently depress instead of raise the hammer-head *e*. The said edge *d*, however, is preferably inclined or curved away from the jaw C, whereby the spring-pressure will be more effective in throwing the hammer-head upward. In other words, the opening provided for the insertion of the jaws is so proportioned relatively to such jaws that one of the jaws when the nail-puller is tilted toward the pivoted jaw will impinge some part of the hammer adjacent to the edge of the opening, whether that part be the edge of the hammer itself or the pin or projection G, and when the pressure is released such jaw will act to throw the hammer-head upward, so as to bring the hammer at substantially right angles to the stems or shanks *a a*.

In order that the return movement of the fulcrum-lever or hammer induced by the pressure of the jaw D against the pin G may be limited and the hammer-head *e* firmly held against undue flexure when being used as a hammer, I provide the jaw D with a notch *d'*, in which the pin G engages and which, together with such pin, constitutes a stop for the purposes described, such notch being located at the upper terminal of the beveled or rounded surface *d*.

The jaw D is made slightly longer than the jaw C in order that when the device is tilted in the act of drawing the nail, as shown in Fig. 3, the jaw D will not be raised above the head of the nail, but will stand diametrically opposite the point of the jaw C.

In order that the movement of the jaws toward each other may be limited and cutting off the nail-head thus avoided, the inner edge of either or both at their upper portions may be slightly enlarged, as shown at *a'*, which enlargements come together before the jaws come in contact.

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

1. A nail-puller having in combination a hammer provided with an opening, spring-separated shanks projecting through said opening and having gripping-jaws at their protruding ends, said hammer being pivoted to one of said jaws and adapted to impinge against and deflect the other toward its mate when the hammer is oscillated in one direction, and a stop for limiting the oscillation of the hammer in the other direction, the protruding end of said deflectable jaw being extended below and across the arc described by a part of the hammer when the hammer is oscillated, substantially as set forth.

2. A nail-puller having in combination a pair of spring-separated shanks terminating in gripping-jaws, a hammer having an opening through which said jaws pass, one of said jaws being pivotally connected to said hammer and the other of said jaws being provided with an edge adapted to engage with a projecting part of the hammer, the part of said edge that is located below said projecting part being extended outwardly or away from the opposite jaw, the upper end of said edge being provided with a notch or shoulder for engaging with said projecting part of the hammer; whereby the oscillation of the hammer will be limited in one direction by the notch or shoulder and in the other direction by the said edge of said jaw, and when said projecting part of the hammer is moved away from said notch or shoulder, said edge will act to again return the hammer to its normal position with its said projecting part resting against said notch or shoulder, substantially as set forth.

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