(No Model.)

A. H. BRIGHAM.

APPARATUS FOR HEADING NAILS OR TACKS.

No. 589,495. Patented Sept. 7, 1897.

Fig. 1.

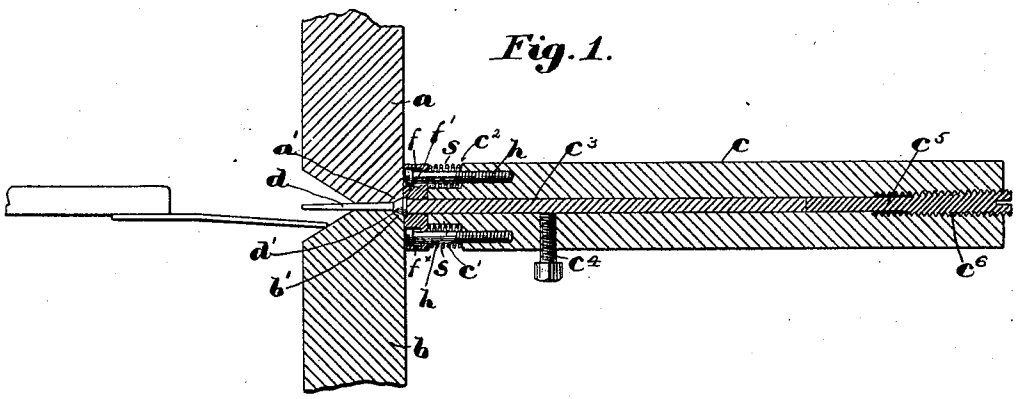


Fig. 2.

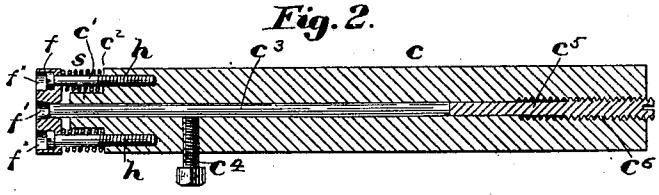


Fig. 3.

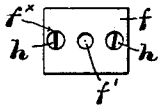
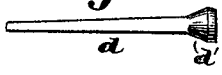


Fig. 4.



Witnesses:
Walter E. Lombard.
Thomas J. Drummond.

Inventor:
Albert H. Brigham,
by Crosby & Gregory Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT H. BRIGHAM, OF WHITMAN, MASSACHUSETTS.

APPARATUS FOR HEADING NAILS OR TACKS.

SPECIFICATION forming part of Letters Patent No. 589,495, dated September 7, 1897.

Application filed June 12, 1896. Serial No. 595,299. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. BRIGHAM, of Whitman, county of Plymouth, and State of Massachusetts, have invented an Improvement in Apparatus for Heading Nails, Tacks, &c., of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of means whereby tacks, nails, and the like may be headed in a rapid and effective manner without necessitating subsequent trimming and polishing to remove the thin fin of metal left by the usual heading operation.

In machines for making headed nails or tacks from metal strips or wire the blank is cut to the proper length and held firmly by two coöperating dies, which serve to form the under side of the head, and while the blank is so held a header is moved toward it in the direction of its length to upset the metal at the end of the blank, crowding it into the recesses in the clamping-dies and into a depression in the face of the header. The metal thus upset is forced out between the faces of the clamping-dies and header in the form of a thin irregular fin, which must be removed by subsequent trimming and polishing to prepare the nail or tack for the market.

By my present invention I do away with the trimming or polishing, as the head is formed without any fin, and a symmetrical smooth-surfaced head is produced.

Figure 1 is a longitudinal sectional view of a sufficient portion of a tack or nail making machine to be understood, with my novel header applied thereto, a tack or nail being shown as headed. Fig. 2 is a similar view of the header detached and in normal position. Fig. 3 is a face view thereof; and Fig. 4 is a side elevation, enlarged, of a nail or tack headed in accordance with my invention.

Referring to Fig. 1, the coöperating dies *a b*, to receive or grip the blank *d* between them, and having suitable depressions *a' b'*, to form or shape the under side of the head *d'* of the blank, are and may be of any well-known construction.

My improved heading-die consists, essentially, of a shank *c*, reduced at one end to leave a central abutment *c'* and a shoulder c^2, the abutment *c'* and shank being longitudinally bored to receive a heading-pin c^3.

The heading-pin is held in adjusted position, as herein shown, by a set-screw c^4, extended through the side of the shank *c* to bear upon the pin, longitudinal adjustment of the latter being effected by a threaded rod c^5, screwed into the threaded enlarged end c^6 of the central longitudinal bore in the shank. Said rod c^5 also serves to take up the end thrust of the heading-pin c^3 when in operation.

A die proper or face-plate *f* has an opening *f'* therein, the outer end thereof being shaped to correspond to the desired shape of the upper portion of the head of the completed nail or tack.

Headed guides, shown as screws *h*, are extended loosely through the die *f* into the end of the shank *c*, and springs *s* are interposed between the inner side of the die and the shoulder c^2, normally maintaining the die in the position shown in Fig. 2, with the end of the heading-pin c^3 extended more or less into the opening *f'*.

The heads of the screws *h* enter counterbored holes $f^\times$, the latter being of sufficient depth to receive the screw-heads when the face-plate or die *f* is pressed back upon the abutment *c'*.

In operation the blank *d*, having been cut from the stock in usual manner, is held clamped between the dies *a b*, as in Fig. 1, and the heading-die is moved toward them. The projecting portion of the blank which is to form the head enters the opening *f'* in the heading-die *f*, which continues to move forward until positively stopped by the dies *a b*, whereupon, as the shank or die-carrier *c* continues to move, the springs *s* are compressed. The heading-pin c^3, moving with the die-carrier, is thus brought up against the end of the blank, compressing or upsetting it into the recess *f'* in the heading-die *f* and into the recesses *a' b'* of the clamping-dies. Inasmuch as the heading-die is brought firmly against the faces of the clamping-dies *a b* before the heading-pin c^3 acts upon the blank the projecting portion of the latter is entirely inclosed prior to and during compression, so

that none of the metal of the blank can work out into a fin or rough lip between the clamp and heading-dies. As the die-carrier *c* is thereafter moved away the matrix is first withdrawn and then the die or face-plate *f*, the springs *s* expanding as the pressure upon them decreases. By mounting the heading-die *f* upon its carrier, as described, it is self-positioning, as it were, against the clamping-dies, and during the final upsetting of the head the abutment *c'* supports the back of the heading-die.

The amount of pressure upon the head, and to some extent its shape, is regulated by adjustment of the heading-pin in the die-carrier.

I prefer to make the walls of the opening *f'* slightly flaring outwardly in order to facilitate the removal of the heading-die, the completed nail or tack being shown in Fig. 4.

My invention is not restricted to the heading of nails or tacks, for it will be obvious that other headed articles may be headed, as hereinbefore described.

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

In a heading-die, a carrier having a longitudinal, partially-threaded bore and a central abutment at one end, headed guides rigidly secured thereto at the sides of said abutment, a spring-controlled die proper freely movable upon the guides and having a head-forming opening, a heading-pin extended into the bore of the carrier, an adjusting-screw in the threaded portion of the bore to bear upon the inner end of said pin, and a set-screw to rigidly retain said pin in adjusted position, the die proper being free to position itself upon the abutment of the carrier, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT H. BRIGHAM.

Witnesses:
HANNAH J. BRIGHAM,
ALBERT T. PINKHAM.