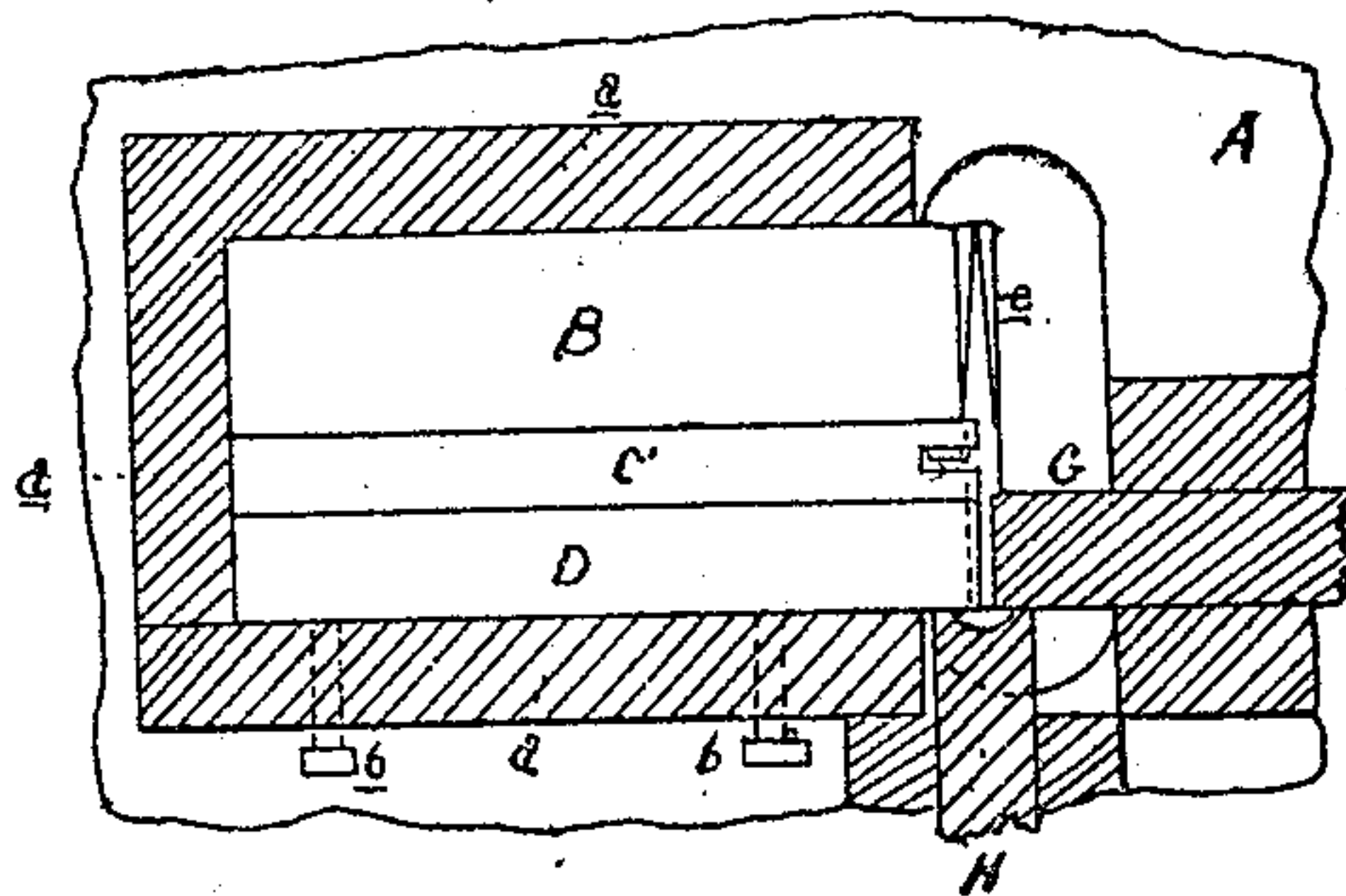
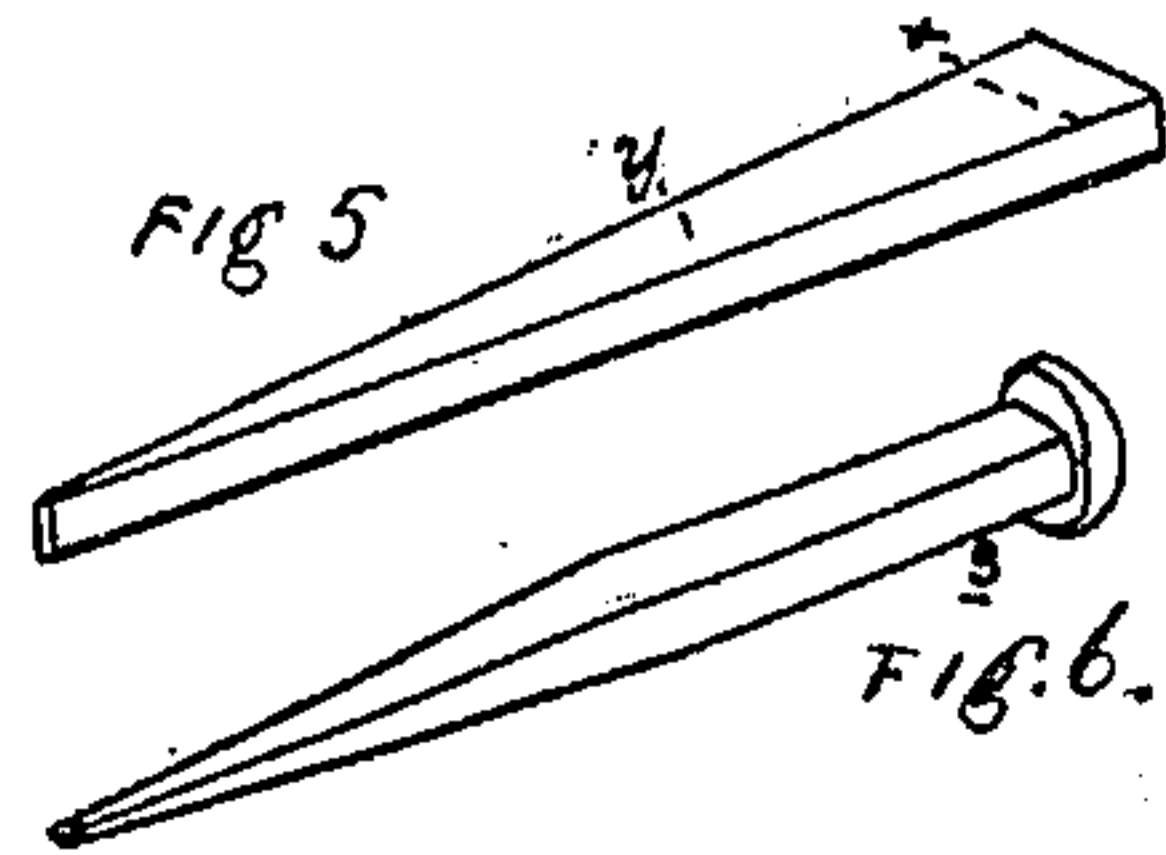
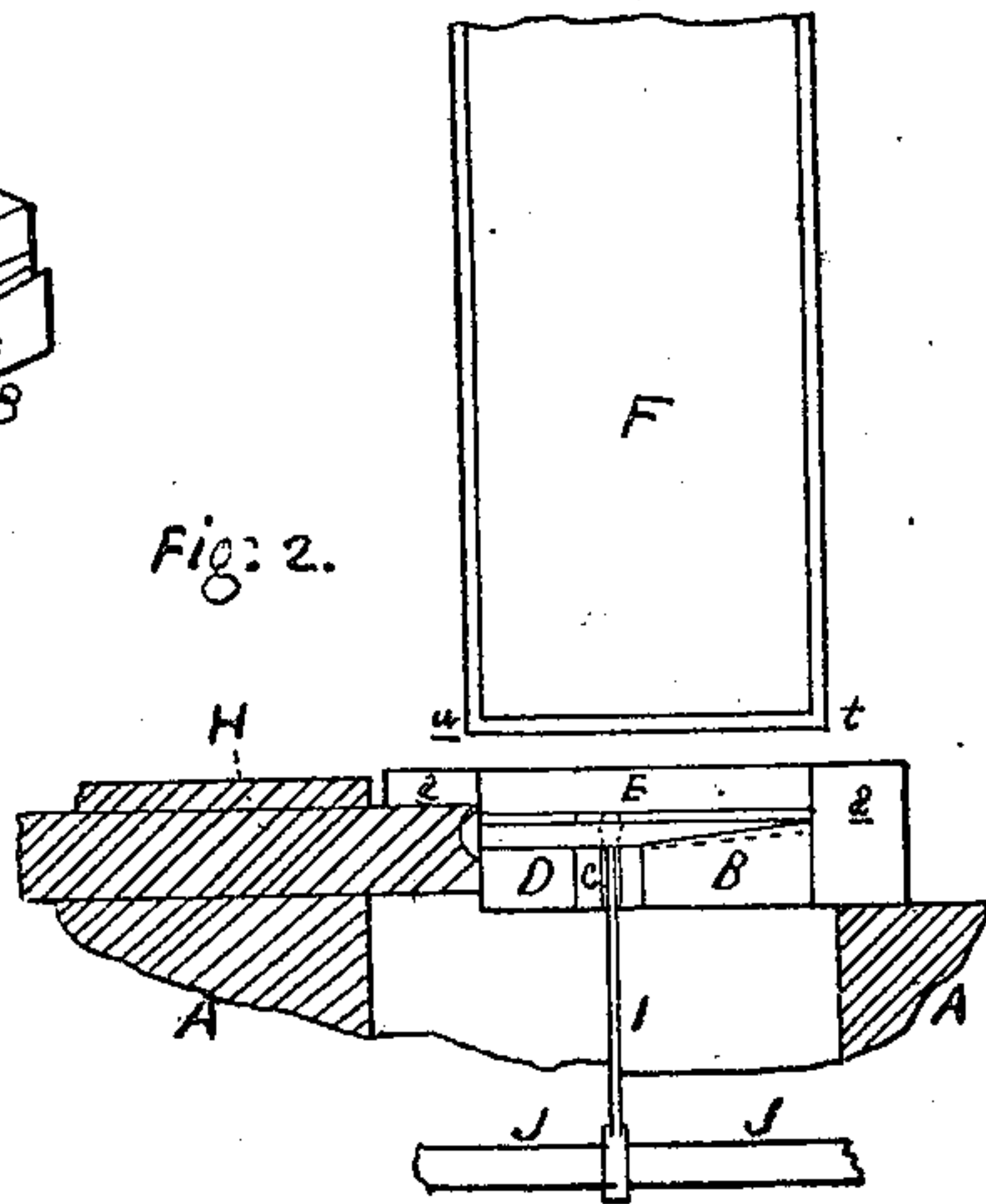
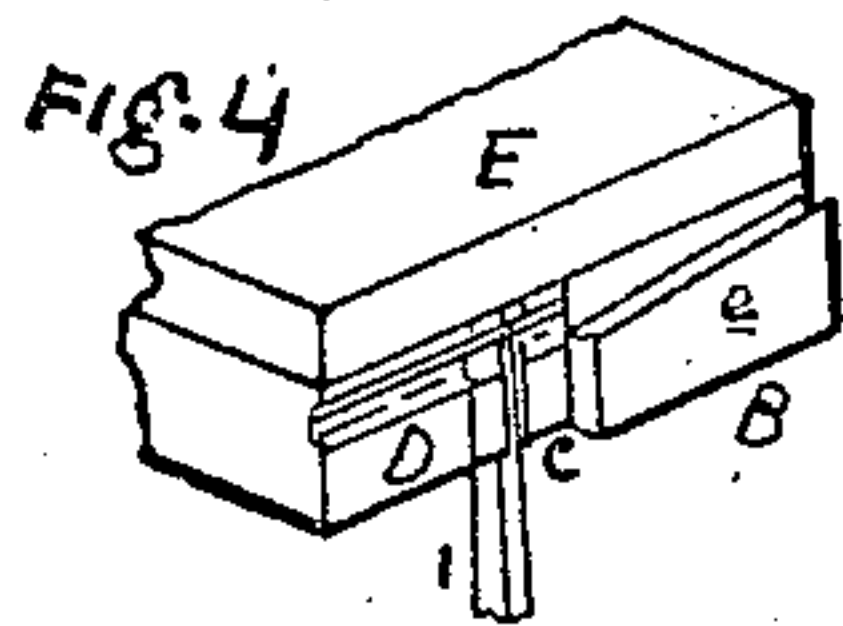
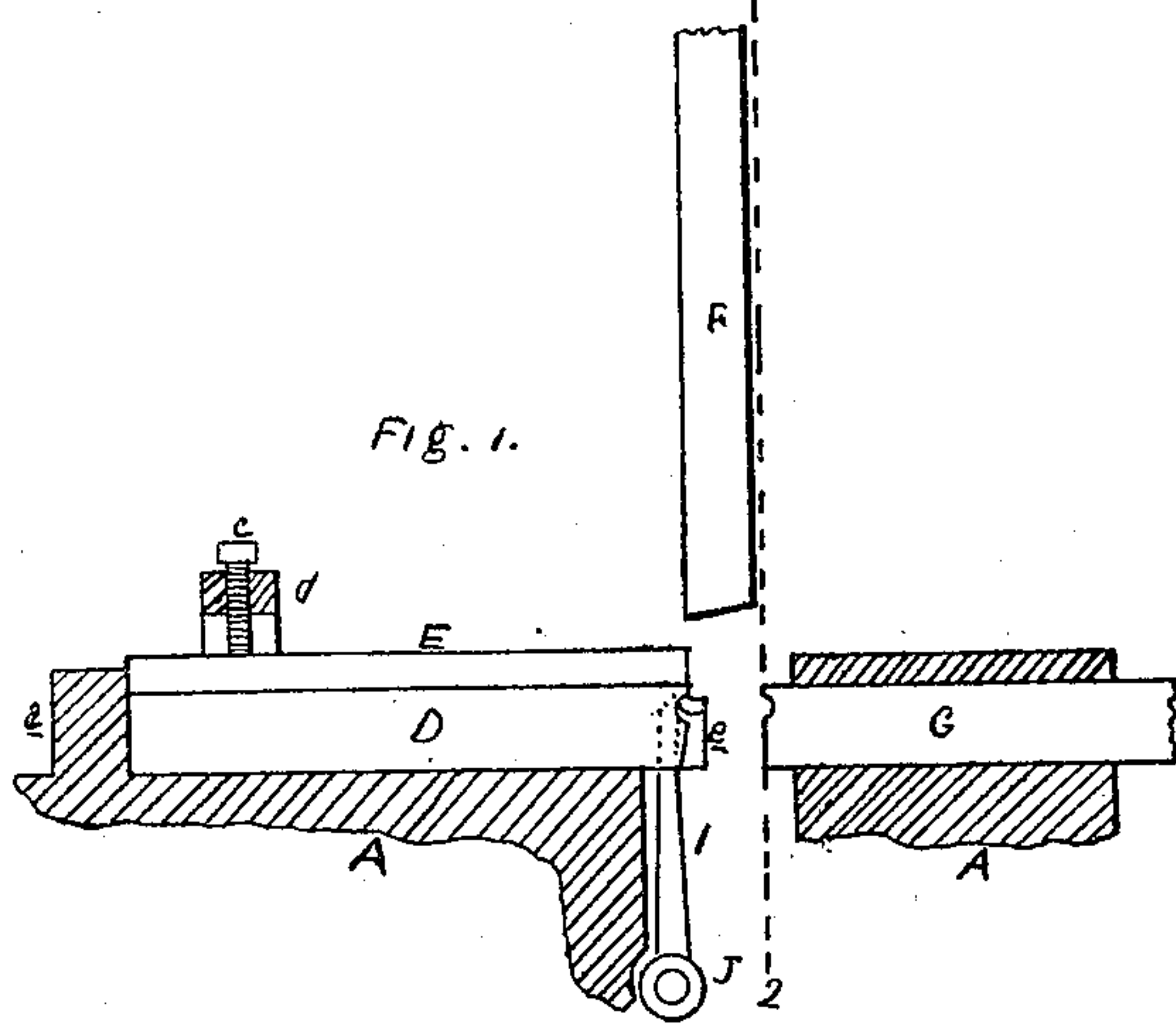


Rock Lario. Nail Mach.

No 42,993.

Patented May 31. 1864.



Witnesses:

{ Chas. Houston
Charles E. Foster

Inventor:

Henry Houston
Atty for B Lario & the Allegans

UNITED STATES PATENT OFFICE.

ROCK LARIO, OF READING, PENNSYLVANIA, ASSIGNOR TO SEYFERT,
McMANUS & CO., OF SAME PLACE.

IMPROVEMENT IN NAIL-MACHINES.

Specification forming part of Letters Patent No. 42,993, dated May 31, 1864.

To all whom it may concern:

Be it known that I, ROCK LARIO, of Reading, Berks county, Pennsylvania, have invented certain new and useful Improvements in Nail-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to improvements in the well known machines for cutting from a plate angular strips of iron and forming the strips into nails; and my improvement consists of a device for discharging the nails from the bed-piece, between which and an upper knife the points are formed.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of sufficient of a nail-machine to illustrate my improvements; Fig. 2, a transverse vertical section on the line 1 2, Fig. 1; Fig. 3, a ground plan, with the upper movable knife and lower stationary knife removed; Fig. 4, a perspective view of part of the machine; Fig. 5, a perspective view of the unformed nail as it is cut from the plate, and Fig. 6 a perspective view of the finished nail.

Similar letters refer to similar parts throughout the several views.

The class of nail-machines to which my improvements relate are of that ordinary construction so well known to those familiar with this class of machinery, and so generally used that it has not been deemed necessary to show in the accompanying drawings any more of the operating parts than such as are immediately connected with my improvements.

A represents a portion of the frame-work of an ordinary nail-machine, in the front portion of which are ribs *a a*, forming a box or chamber for receiving the bed-pieces, which in the present instance is composed of the three pieces B, C, and D, Fig. 3, fitted close to each other and confined laterally to the box by the set-screws *b b* or other suitable appliances. Above the bed-pieces (which will be more particularly alluded to hereinafter) and within the same box is placed the horizontal stationary knife E, which is secured to its place by a set-

screw, *c*, passing through a cross-bar, D, secured to the opposite sides of the box.

F is a vertical reciprocating knife, or, as is more usual in nail-machines, a knife secured to the end of a vibrating lever, the front edge of the lower end of this knife being arranged to coincide with the edge of the horizontal stationary knife E.

G and H are horizontal reciprocating bars, moving in guides on the frame-work, and operated through the medium of any suitable appliances from the driving-shaft of the machine, or the bars may be secured to the end of vibrating arms.

The peculiar duties of my improvement will be best understood by reference to the perspective views, Figs. 5 and 6. A piece of iron of the tapering form represented in Fig. 5 is first cut from a plate. In order to form this into the desired nail, it first has to be compressed laterally from about the point *x* to the point *y*, thus forming the opposite partially-rounded edges of the nail as seen at *s*, Fig. 6, thus contracting the taper piece in width and leaving the head partially formed, the completion of the head being effected by another process. In order to finish the nail it has to be compressed at the point so as to be reduced from the form represented in Fig. 5 to that shown in Fig. 6, and after this it has to be discharged clear of the dies.

My improvements relate especially to compressing of the point of the nail and to the clearing of the latter from the dies after it has been completed.

It will be observed on reference to the perspective view of Fig. 4 that the end of the piece D is furnished with a projection, *e*, the upper surface of which is recessed and inclined. The end of the piece D has a horizontal concave recess corresponding with a similar recess on the reciprocating bar G, and the intermediate piece, C, has a vertical recess for the reception of the upper end of the arm I, which is secured to the shaft J, the latter being hung in suitable boxes attached to the frame-work of the machine and operated through the medium of any suitable system of rods or levers in connection with the driving or any other rotating shaft of the machine. The plate from which the nails have to be made being subjected to the action of the knives F and E, the

latter cut from the said plate the tapering piece represented in Fig. 5. The severed piece of iron falls with its taper edge onto the recessed and inclined ledge formed by the projection *e* on the portion B of the bed-piece, and at the same time the bar G advances so that the angular piece of iron is confined and compressed between the concave recess of the said bar and that of the piece D, thereby producing the necessary contraction of the taper-piece between the points described above in reference to Fig. 5. The head is completed by the advancing bar H, and the compression of the point of the nail alluded to above in reference to Fig. 6 is completed by being compressed between the lower edge of the knife F and the inclined recessed ledge of the projection *e* on the end of the piece B, for it should be understood that the lower edge of this knife is slightly inclined, the corner A, Fig. 2, being lower than the corner *u*, so that the knife and ledge may impart to the point of the nail the desired taper. As the bars G and H and knife F begin to recede, it is important that the completed nail should be at once removed clear of the dies, to which, through

the pressure received, it is apt to adhere. This clearance is effected by the arm I of the shaft J, to which such a sudden movement is given from some operating part of the machine that the upper end of the arm moves quickly within the vertical slot of the portion C of the bed-piece and pushes the nail clear away from the recessed ledge of the piece B, thus making way for another tapering strip of metal to be acted upon as above.

Although I have shown the bed-piece as being made of three bars, B, C, and D, it may be made in one solid plate.

I claim as my invention and desire to secure by Letters Patent—

Discharging the finished nail from the dies by means of the arm I, operating within a slot in the bed-piece, as set forth, and actuated by any moving part of the machine, as specified.

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

ROCK LARIO.

Witnesses:

HORATIO MORRIS,
JOHN QUIMBY.