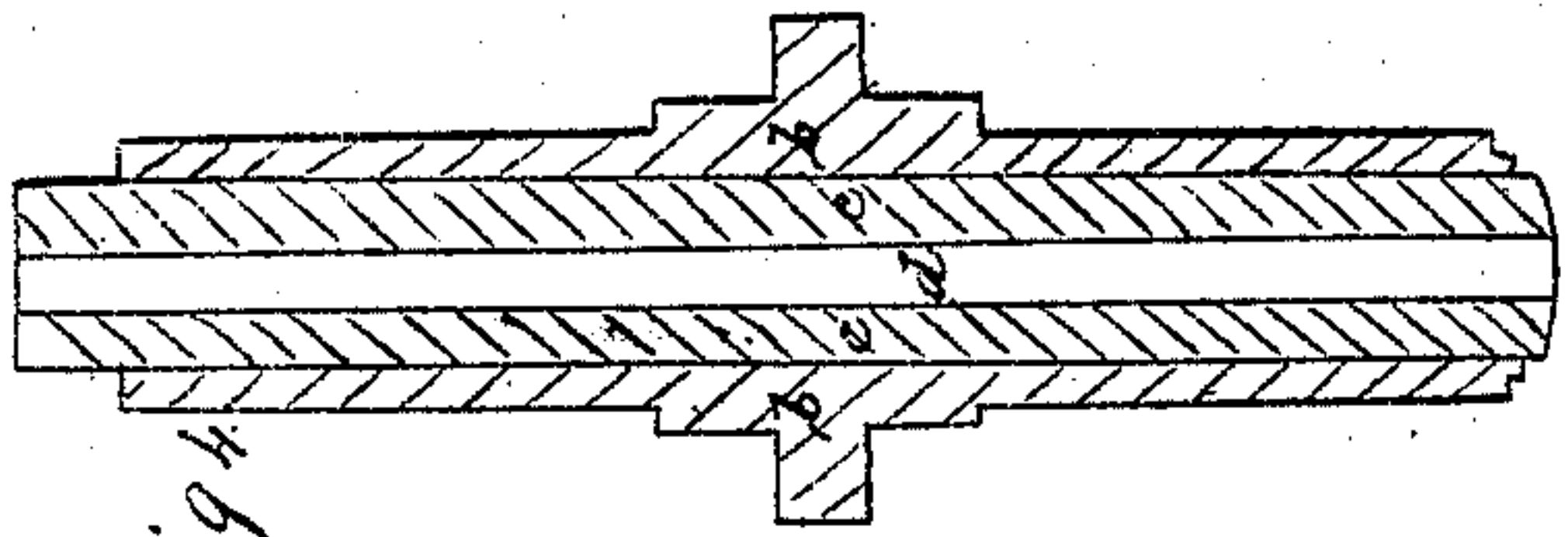


A.C. Arnold.
Button Mach.

Patented Apr. 23. 1842

$N_{\pi}^0 2580.$



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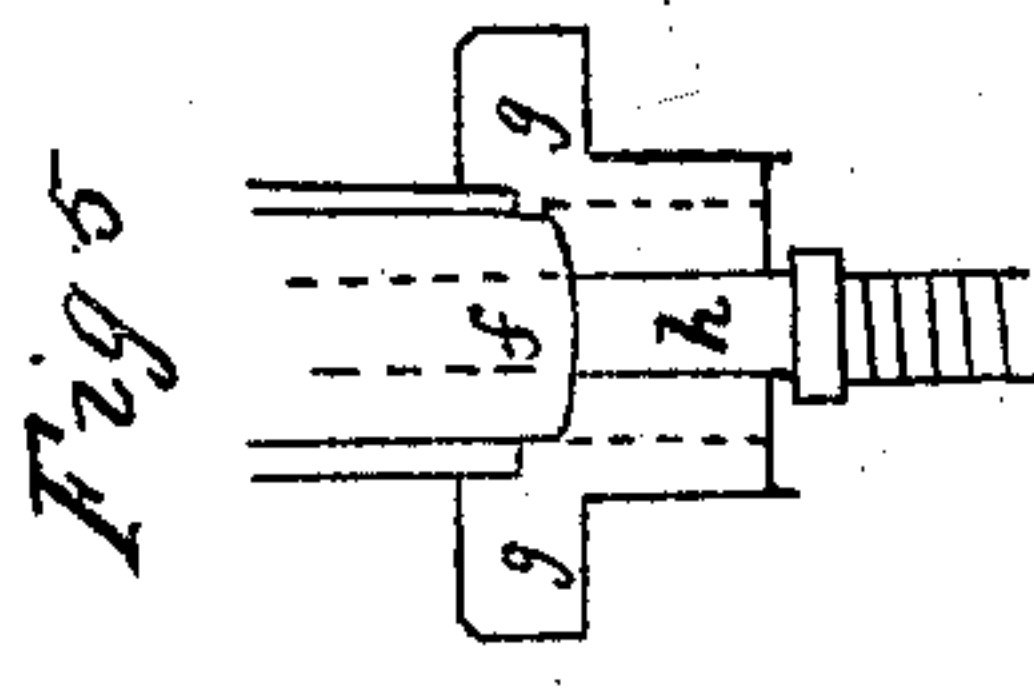


Fig 5

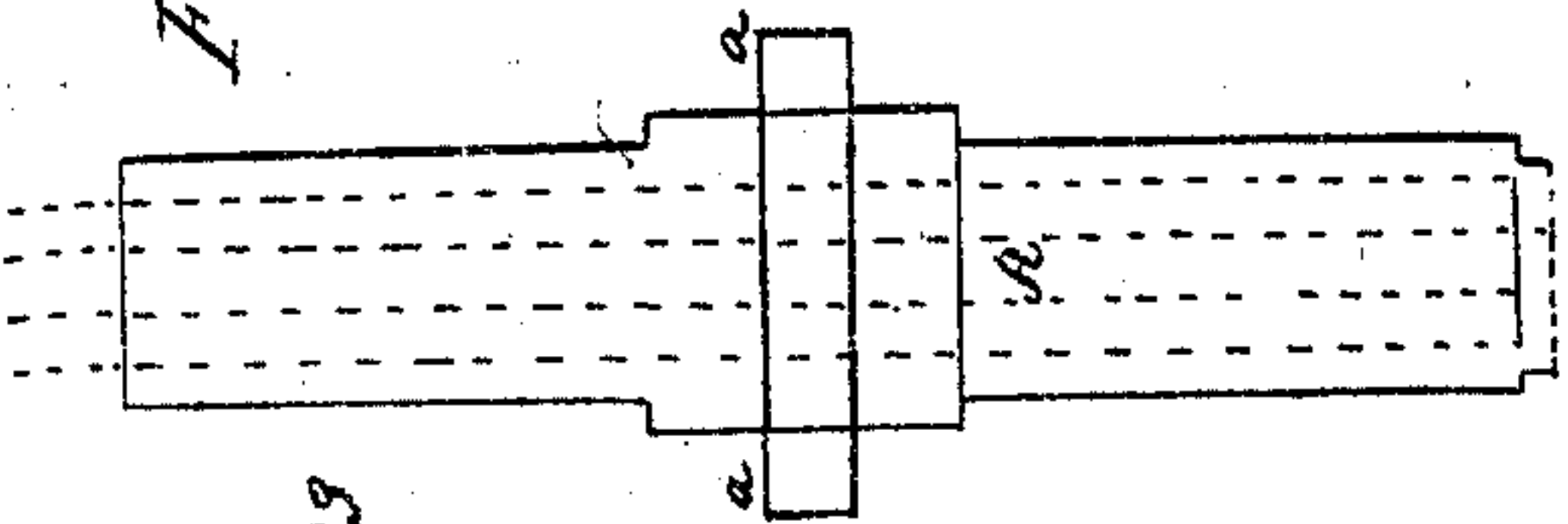


Fig 98

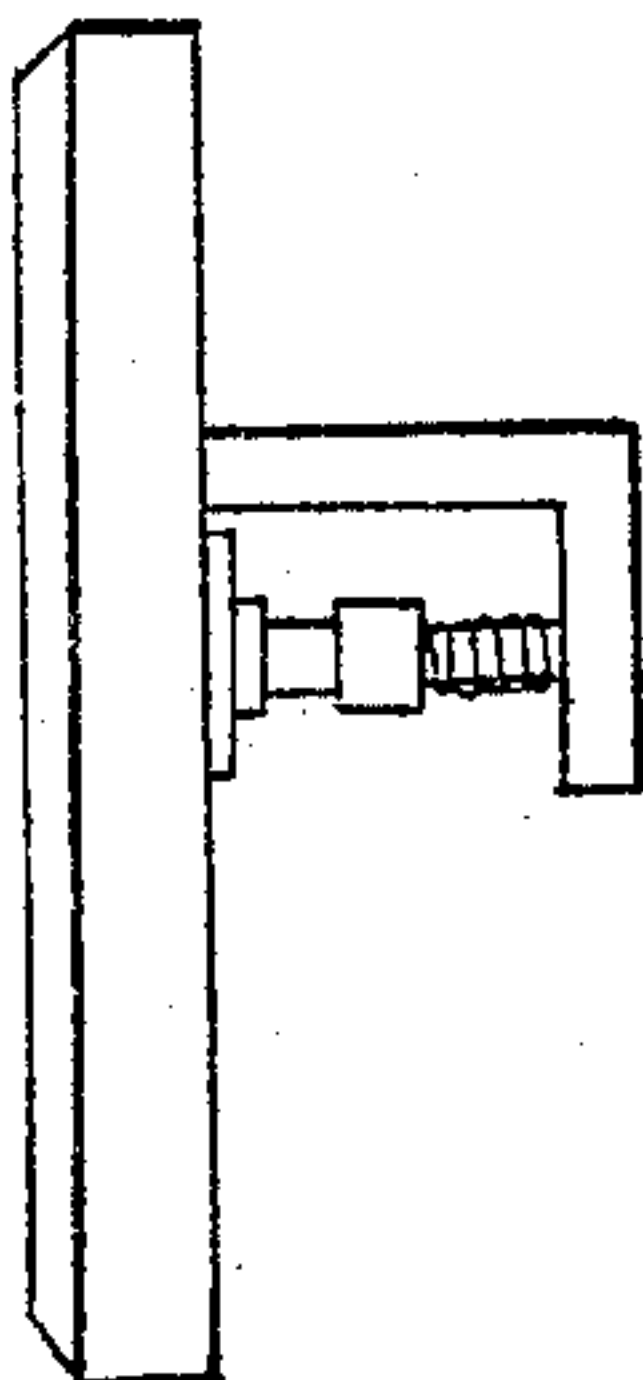
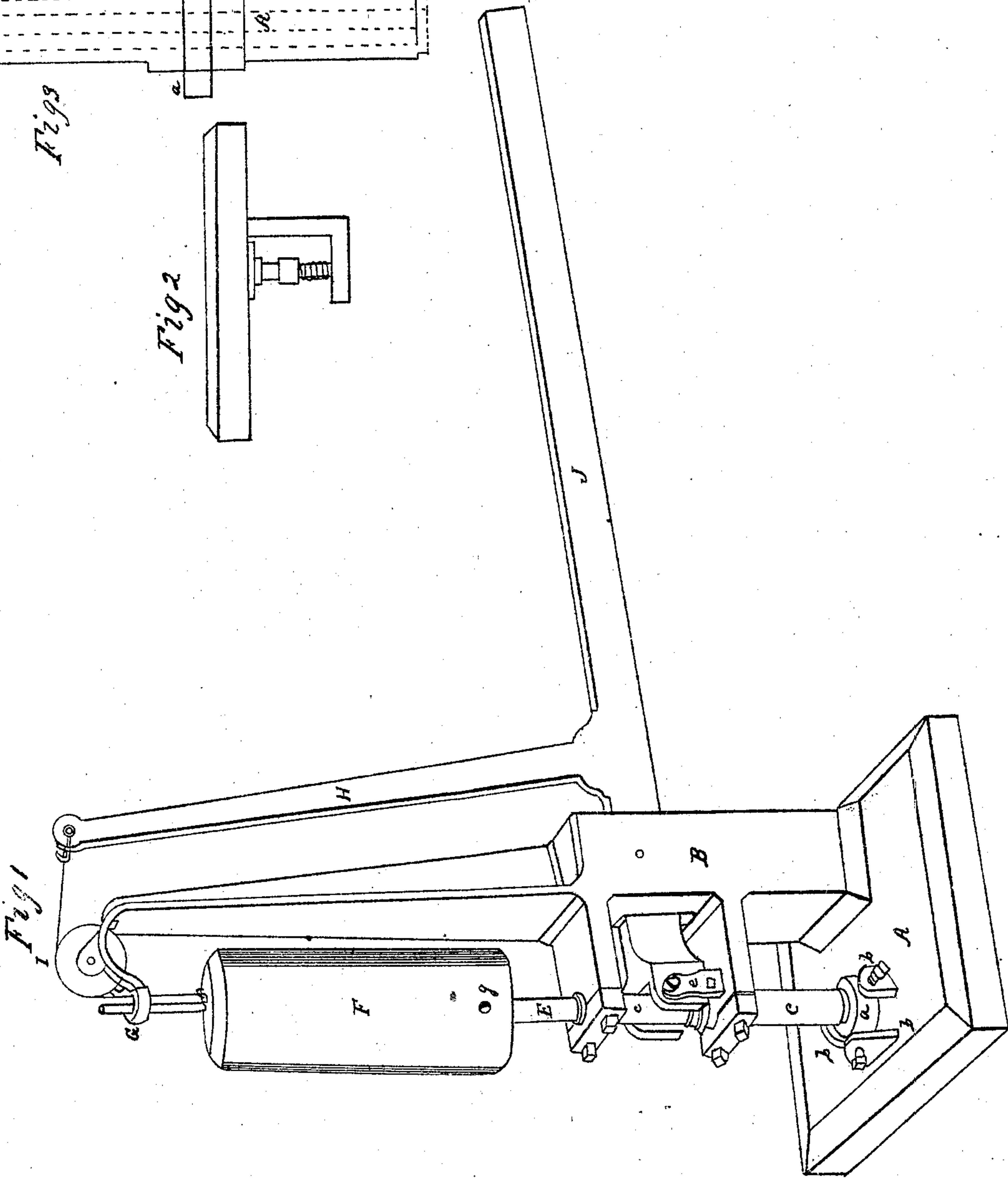


Fig 2



1927

UNITED STATES PATENT OFFICE.

ALONZO C. ARNOLD, OF NORWALK, CONNECTICUT.

PUNCHING MACHINE FOR THE MANUFACTURE OF COVERED BUTTONS.

Specification of Letters Patent No. 2,580, dated April 23, 1842.

To all whom it may concern:

Be it known that I, ALONZO C. ARNOLD, of Norwalk, in the county of Fairfield and State of Connecticut, have invented a new and useful Machine for Forming by Punching and Otherwise the Tin or Other Metallic Parts of Buttons Preparatory to Their Being Covered With Cloth, and I do hereby declare that the following is a full and exact description of the same, reference being had to annexed drawings, making part of this specification.

It will be proposed previously to giving a description of the machine to designate the nature of the operation it is to perform. The buttons to be formed consist of two circular plates of tin or other metal. The outer one is flat or convex, to suit the form of the button intended to be made, with a small rim around it by turning its edge up at right angles. The other plate is for the back or inner part of the button, and is concave, having also a rim similar to the first, with a hole in the center.

Figure 1 is a perspective representation of the machine entire.

A is the platform or foundation; B, the upright or stand; C C, the outer punch, which cuts the circular plates, or pins, by its bottom, operating in conjunction with the edges of the circular hole in the die *a*, which is adjusted exactly to fit it by the set screws *b b b* and a shoulder at a small distance above the bottom, prevents its entering farther than necessary. This punch is furnished with a collar, to which it is attached by the coupling *e* to the lever J by operating which it is raised and lowered. E is another punch operating through the first and sufficiently less in size, that the difference may be equal to the width of the ring raised around the plate, cut by the outer punch, so that when the piece is cut by the outer punch, the inner punch forces it immediately down into the small part of the die, thereby raising the edge to the height required. To the top of the punch E is attached the weight F, the weight of which, when it descends, produces the effect last described, and a rod projecting upward from the weight, and passing through the eye of the projecting arm G steadies the weight in rising and falling. A cord is attached to the weight, passing over the pulley and is attached to the top of the arm H, which arm is attached to

the lever J, so that when the lever is forced down to raise the outer punch *c c*, the weight is raised by the same operation. When the lever is raised by a quick motion the weight descends accordingly and with it the punch E, which raises the edge of the piece cut out by the outer punch, as above described.

When the pieces punched are for the inner or back part of the button, and a hole is of course wanted in the center, it is made as follows. A strong step is attached to the underside of the bedplate, as seen in Fig. 2, on which is placed a punch, in size corresponding to the hole required, and also a hole in the end of the punch E, which last mentioned hole extends through the length of said punch E, increasing a little in size as it extends upward, till it meets a hole in the weight F, the opening of which is seen at *g*, Fig. 1, the use of which opening will be shown below. The small punch shown in Fig. 2 is of such length that when standing on the step, the top reaches a small distance beyond the point of contact between the punch E, Fig. 1, and the die, passing of course into the hollow of the said punch, and on pressing the circular piece into the die, to raise the edge, the said small punch pressing upward makes the hole required, and as the punch which presses the piece into the die descends the small punch being raised by a spring around the lower end, and having a small shoulder very near the top, the circular pieces are raised above the die to be thrown off and the small pieces punched upward in making the hole are carried upward through the punch E and finally discharged through the hole *g* in the weight.

When the pieces to be punched are for the front of the button, and require no hole, the small punch is removed from the bottom, and the pieces drop through and are discharged underneath.

Instead of placing the pulley as in the drawing it may be attached to some part of the building, overhead or in any other convenient way to produce the effect.

Fig. 3 represents the main or outside punch; A, the outside of the punch; *a a*, the gudgeons or bearings. The outer row of dotted lines show the situation occupied by the inner punch. The inner row show the place of the hollow through the inner punch. Fig. 4, shows a sectional view of the punches; *b b*, the outer punch and bearings; *c c*, the

inner punch; *d*, the hollow space through the inner punches. Fig. 5, the die, into which the bottom of the outer punch enters, cutting out a circular piece of tin, and the bottom of the inner punch entering at the same time, forced down by the weight *F*, Fig. 1, into a deeper cavity in the die, but of smaller diameter, the rim around the piece is raised by the sides of said smaller cavity; and the small punch, resting at the bottom upon the step, Fig. 2. The said small punch is thereby forced up through the plate of tin, making a hole in the center, and the piece punched upward is forced upward by the succeeding piece, which operation repeated, they finally pass out as above stated through the hole *g* in the weight *F*; *f*, the bottom of the inner punch; *g*, the die; *h*, the small punch.

20 What I claim as my invention, and desire to secure by Letters Patent, is—

1. The entire combination herein de-

scribed of punches, one within the other, operating in a die as described, so as to produce the effect of cutting a circular piece of tin, of raising a rim around the edge, and of punching a hole in the center when necessary, all by a single operation, which it has heretofore required three distinct operations to effect.

2. I claim each and every part of said apparatus when combined as above to effect the above purpose. I do not claim the said combination nor any part thereof for any other purpose, except the punches, but I claim the outer and inner punches operating in the same die and the small punch which operates through the die, however they may be differently combined to effect said purposes.

ALONZO C. ARNOLD.

Witnesses:

W. H. HARNED,

J. BLOGDONBROUGH.