

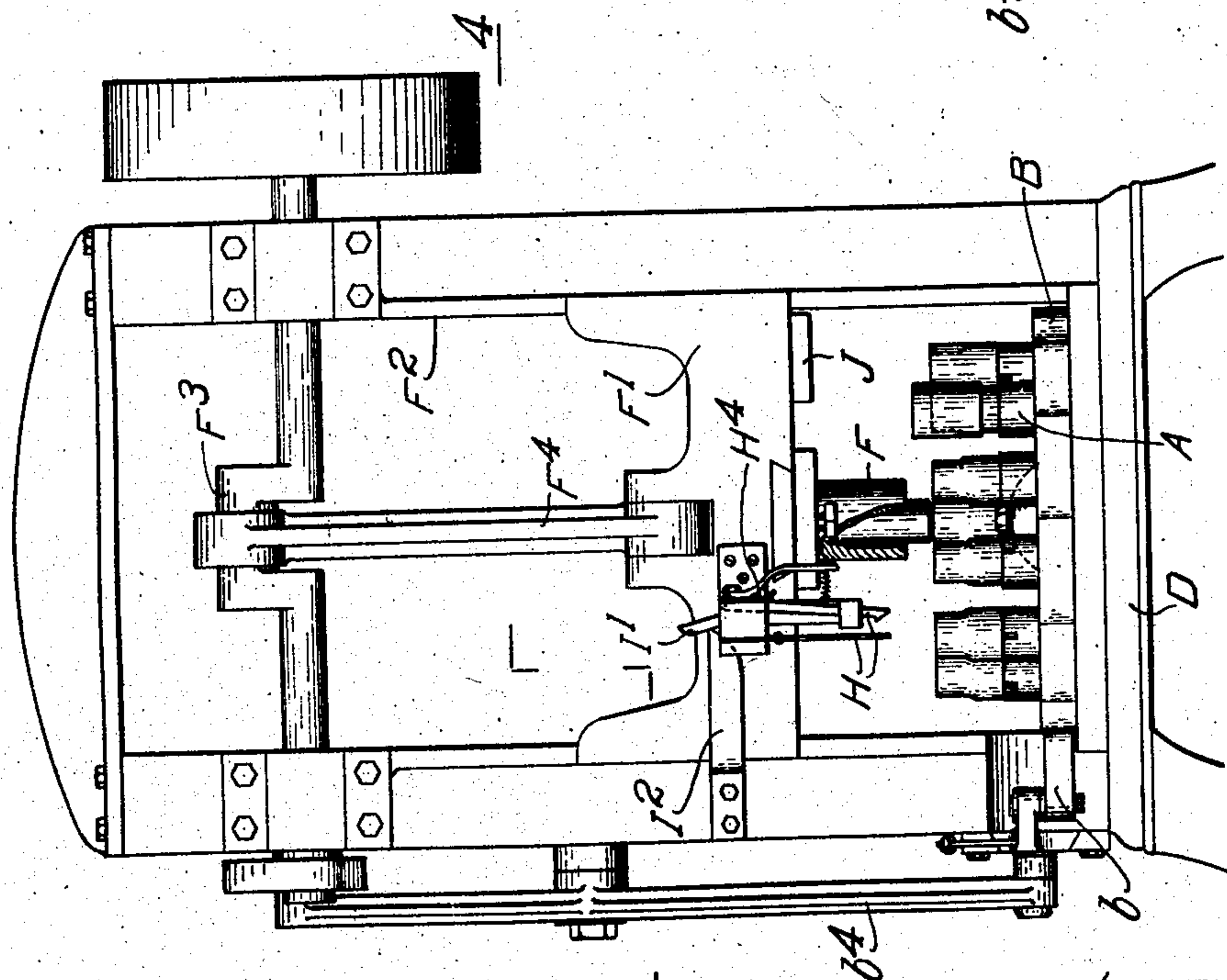
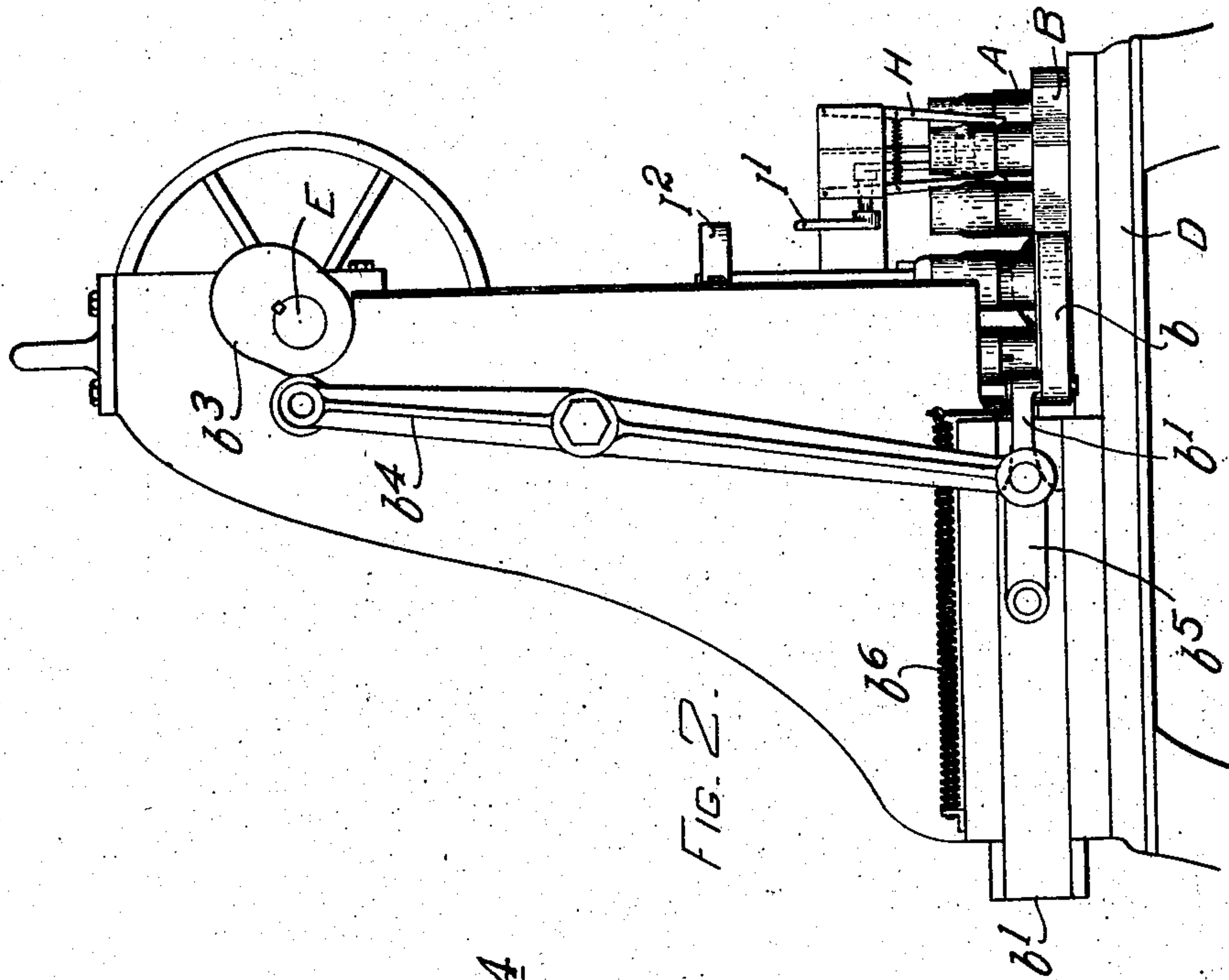
No. 815,362.

PATENTED MAR. 20, 1906.

N. MARSHALL.  
MACHINE FOR SHAPING TUBULAR ARTICLES.

APPLICATION FILED JUNE 27, 1903.

2 SHEETS—SHEET 1.



WITNESSES

A. J. Palmer

Katharine A. Dugan

INVENTOR

Norman Marshall

By Ira L. Fish  
Atty.

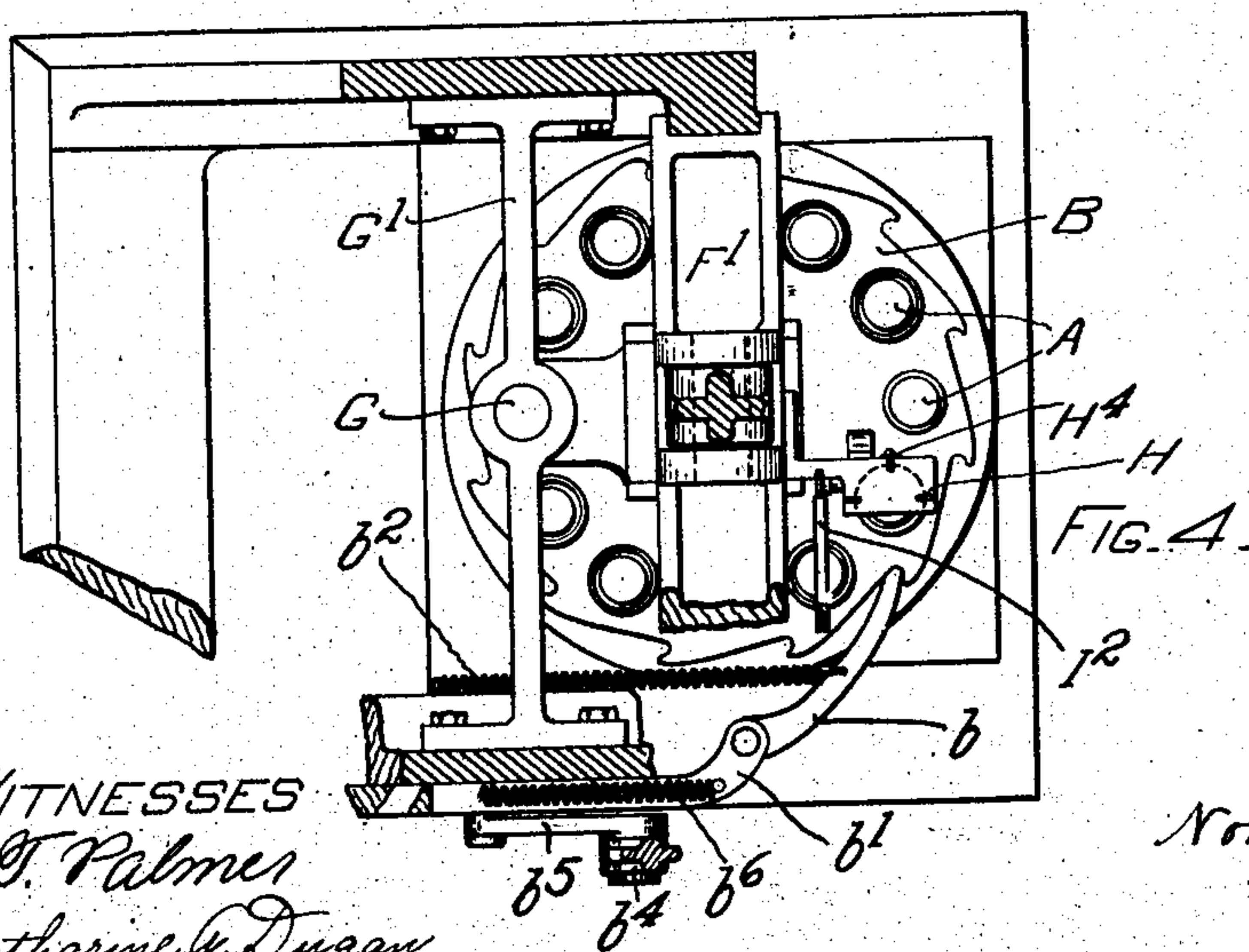
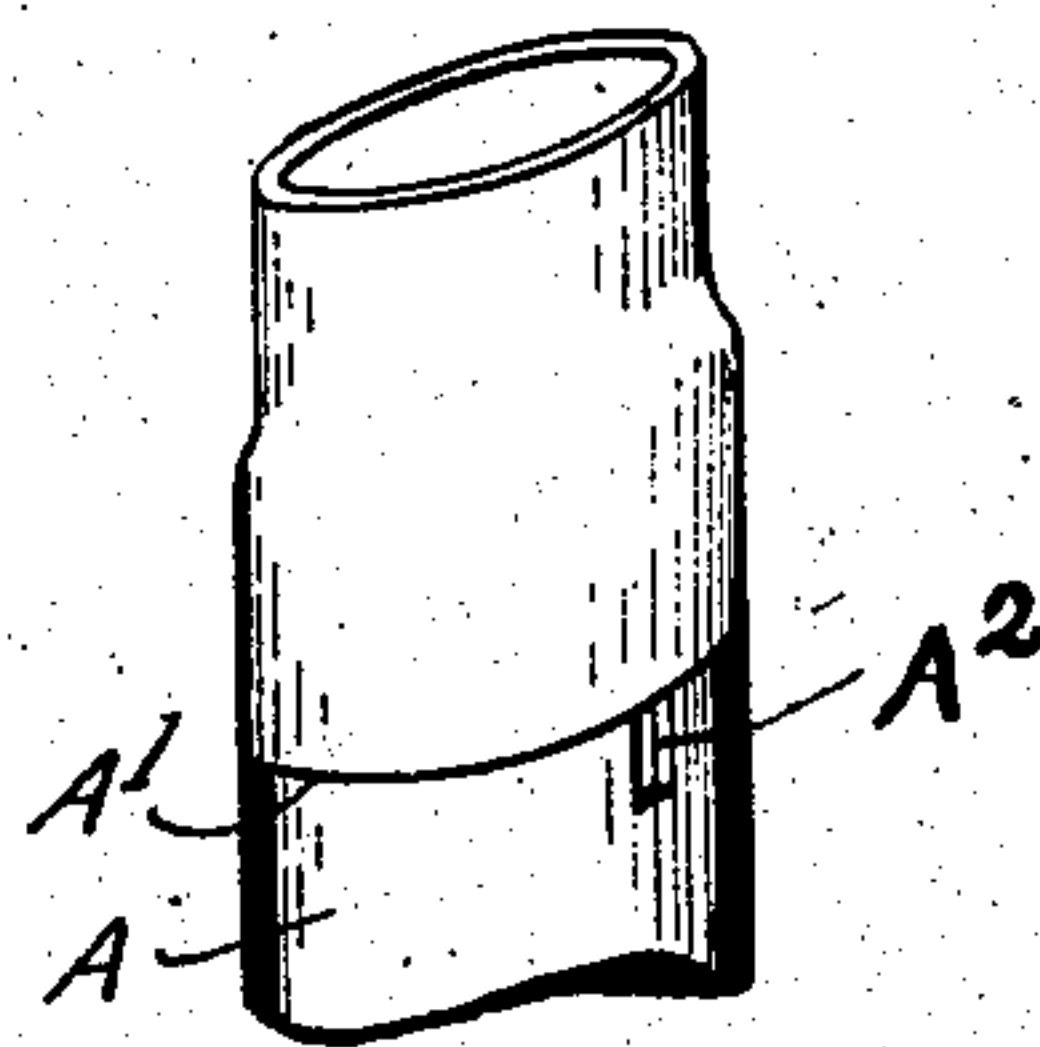
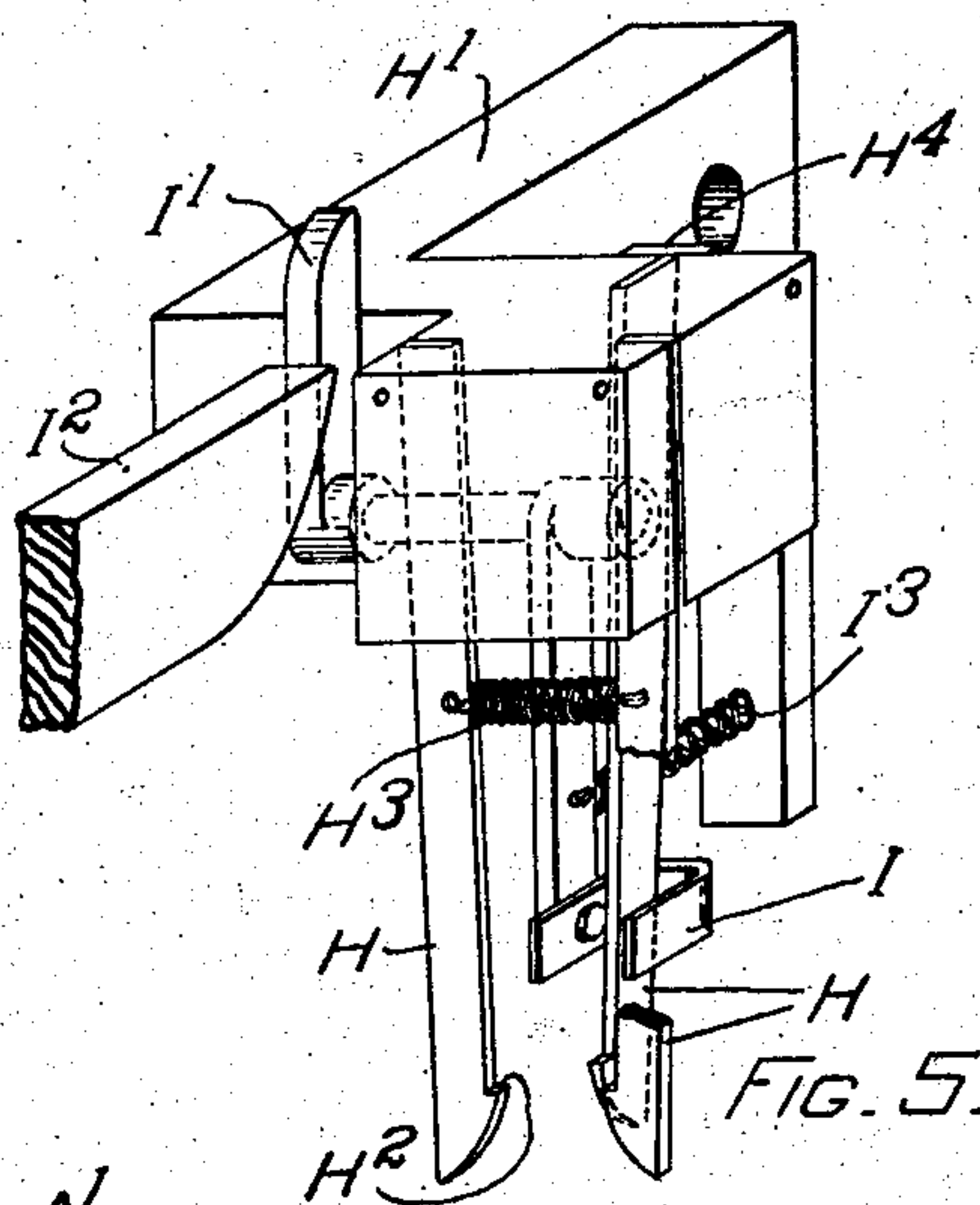
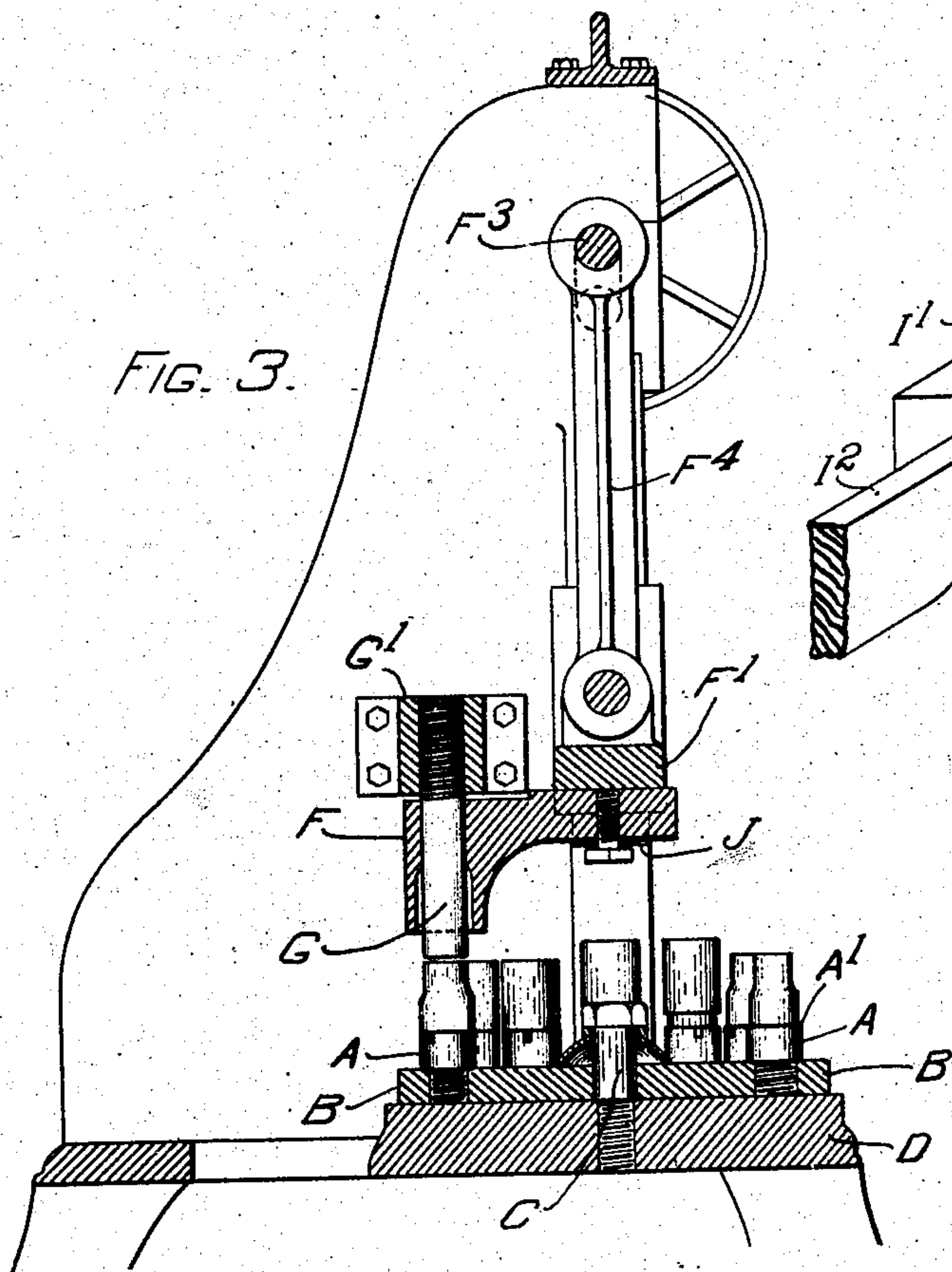
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# UNITED STATES PATENT OFFICE.

NORMAN MARSHALL, OF NEWTON, MASSACHUSETTS.

## MACHINE FOR SHAPING TUBULAR ARTICLES.

No. 815,362.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed June 27, 1903. Serial No. 163,295.

*To all whom it may concern:*

Be it known that I, NORMAN MARSHALL, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Shaping Tubular Articles, of which the following is a specification.

The invention relates to a machine for shaping tubular articles, such as insulating-linings for incandescent-lamp sockets, in which the article is shaped by the action of dies consisting of a die-post corresponding in size and shape to the interior of the article to be formed and a die-sleeve corresponding in size and shape to the exterior of said article.

In the machine embodying the various features of the invention the blanks from which the articles are to be made are presented to one of the dies and by it are carried into position to be operated on by the cooperating die and are then carried into position to be acted upon by an ejector mechanism, which removes the article from the die and discharges it from the machine.

To enable the different operations performed on each blank to be performed concurrently on different blanks, thereby increasing the capacity of the machine, a series of dies may be, and preferably are, mounted upon a carrier which brings each die into position to receive the blank, then into position to cooperate with the other die, and then into position to cooperate with the ejector mechanism.

The blanks may be presented to and carried by either the die-post or the die-sleeve, and in case the machine is provided with a series of dies each of which cooperates with a single die the series may consist either of die-posts or die-sleeves, the cooperating mechanisms being correspondingly modified.

In the drawings, in which a machine is shown embodying the features of the invention in the preferred forms, Figure 1 is a front elevation of the machine. Fig. 2 is a side elevation looking toward the right, Fig. 1. Fig. 3 is a central vertical section. Fig. 4 is a horizontal section on the line 4-4, Fig. 1. Fig. 5 is an enlarged detail of the extractor mechanism.

The machine shown is intended for shaping the insulating-linings for incandescent-lamp sockets, which are provided with end portions of different diameters, and the die-post and die-sleeve, which cooperate in shaping the linings, are of a form to give the blank

from which the lining is shaped the desired form. The machine is provided with a series of die-posts A, mounted upon a carrying-plate B, mounted to rotate about a stud C and supported upon the bed-plate D of the machine. The carrier-disk B is provided on its periphery with a series of ratchet-teeth corresponding in number to the number of die-posts on the carrier, and the carrier is intermittently advanced by a pawl b, pivoted to the end of a slide b' and held in engagement with the ratchet-teeth by a spring b<sup>2</sup>. The slide b' is reciprocated by means of a cam b<sup>3</sup>, secured to the driving-shaft E and engaging the end of a lever b<sup>4</sup>, connected with the slide by means of a link b<sup>5</sup> and held in engagement with the cam by a spring b<sup>6</sup>.

By the rotation of the carrier B the die-posts A are brought successively into position beneath a die-sleeve F, which is secured to a cross-head F', mounted upon vertical guideways F<sup>2</sup> and reciprocated by a crank F<sup>3</sup> on the driving-shaft, which is connected with the cross-head by a rod F<sup>4</sup>. On the downward stroke of the die-sleeve F this sleeve cooperates with the die-post A, which is in position beneath it to shape the blank carried by the die-post, and on the upward stroke of the die-sleeve the shaped blank is stripped from the die-sleeve by the stripping-post G, which extends through the die-sleeve above the blank on the die-post and prevents the upward movement of the blank with the die-sleeve. The stripping-post is secured in fixed position in a cross-bar G', secured to the frame of the machine.

The rotation of the carrier B also brings the die-posts A successively into position beneath the extractor mechanism carried by the cross-head F', which acts to remove the shaped blanks from the die-posts and discharge them from the machine. This extractor mechanism consists of three fingers H, pivoted in a bracket H', secured to the cross-head F' and provided with hooks H<sup>2</sup> for engaging the lower end of the blank. Two of the fingers H are drawn toward each other by a spring H<sup>3</sup>, and the other finger is pressed forward by a leaf-spring H<sup>4</sup>. The lower ends of the fingers are inclined outwardly, so that as the cross-head descends the inclined surfaces on the ends of the fingers will ride over the end of the blank, thereby spreading the fingers against the tension of the springs. When the hooks H<sup>2</sup> have passed below the lower end of the blank, the springs will draw



the fingers inward into the slots A<sup>2</sup> in the posts A, so that on the upward stroke of the cross-head F the hooks will engage the lower end of the blank and draw the blank off of the die-post. As the cross-head approaches its upper position the blank carried by the ejector-fingers is discharged from between said fingers by a discharger I, pivoted in the bracket H' and provided with an operating-arm I', which strikes a stationary cam I<sup>2</sup>, secured to the frame of the machine. The discharger I is held normally in a position where it will not strike the blank by means of a spring I<sup>3</sup>.

The blanks from which the linings are to be shaped are placed by the operator upon the die-posts A as they come into position at the front of the machine, and in case the blanks are not forced onto the posts far enough to engage the shoulders A' they will be forced against these shoulders when they come into position beneath the cross-head F' by means of a block J, which is arranged to engage such blanks and force them into position on the downward stroke of the cross-head.

During the operation of the machine a blank is placed upon each of the die-posts and is carried by said posts into position beneath the die-sleeve and stripper-post, where it is acted upon by the dies and retained upon the die-post by the action of the stripper-post and then is carried into position beneath the ejector mechanism, where it is removed from the die-post and discharged from the machine.

What I claim, and desire to secure by Letters Patent, is—

1. A machine for shaping tubular articles having in combination a die-post and a die-sleeve for shaping the article, an ejector mechanism, and means for moving one of said die members into position to receive the blank, then into position to cooperate with the other die member and then into position to cooperate with the ejector mechanism, substantially as described.

2. A machine for shaping tubular articles having in combination a traveling die-post, a die-sleeve for cooperating therewith to shape the articles, an ejector mechanism, and means for moving the die-post into position to cooperate with the die-sleeve and then into position to cooperate with the ejector mechanism, substantially as described.

3. A machine for shaping tubular articles having in combination, a carrier, a series of die members on said carrier, a die member to

which the die members on the carrier are successively presented by the carrier, said cooperating die members comprising a die-sleeve and die-post, and an ejector mechanism to which the die members on the carrier are successively presented, substantially as described.

4. A machine for shaping tubular articles having in combination, a carrier, a die-sleeve to which the posts are successively presented by the carrier, and an ejector mechanism to which the posts are successively presented, substantially as described.

5. A machine for shaping tubular articles having in combination, a carrier, a series of die-posts thereon, a reciprocating die-sleeve, and a stripper-post extending through said sleeve, substantially as described.

6. A machine for shaping tubular articles having in combination, a carrier, a series of die-posts thereon, a reciprocating die-sleeve, a fixed stripper-post extending through said sleeve, and an ejector mechanism, substantially as described.

7. The combination of a reciprocating die-sleeve, a fixed stripper-post extending through said sleeve, a die-post movable into and out of line with the die-sleeve and stripper-post, substantially as described.

8. The combination with a die-post of a series of ejector-fingers for engaging and removing the shaped article therefrom, substantially as described.

9. The combination with a die-post of a reciprocating ejector provided with a series of spring-fingers for engaging and removing the shaped articles, substantially as described.

10. The combination with a die-post, of a series of ejector-fingers for engaging and removing the shaped article therefrom, and means for discharging the article from said fingers, substantially as described.

11. The combination with a die-post, of a reciprocating ejector provided with a series of spring-fingers for engaging and removing the shaped article, and a discharger operated by the movement of the ejector for disengaging the article from said fingers, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

NORMAN MARSHALL.

Witnesses:

IRA L. FISH,  
KATHARINE A. DUCAN.