

No. 639,694.

Patented Dec. 19, 1899.

H. H. BUFFUM.

APPARATUS FOR MAKING SLUG OR NAIL STRIPS.

(Application filed Oct. 1, 1897.)

(No Model.)

2 Sheets—Sheet 1.

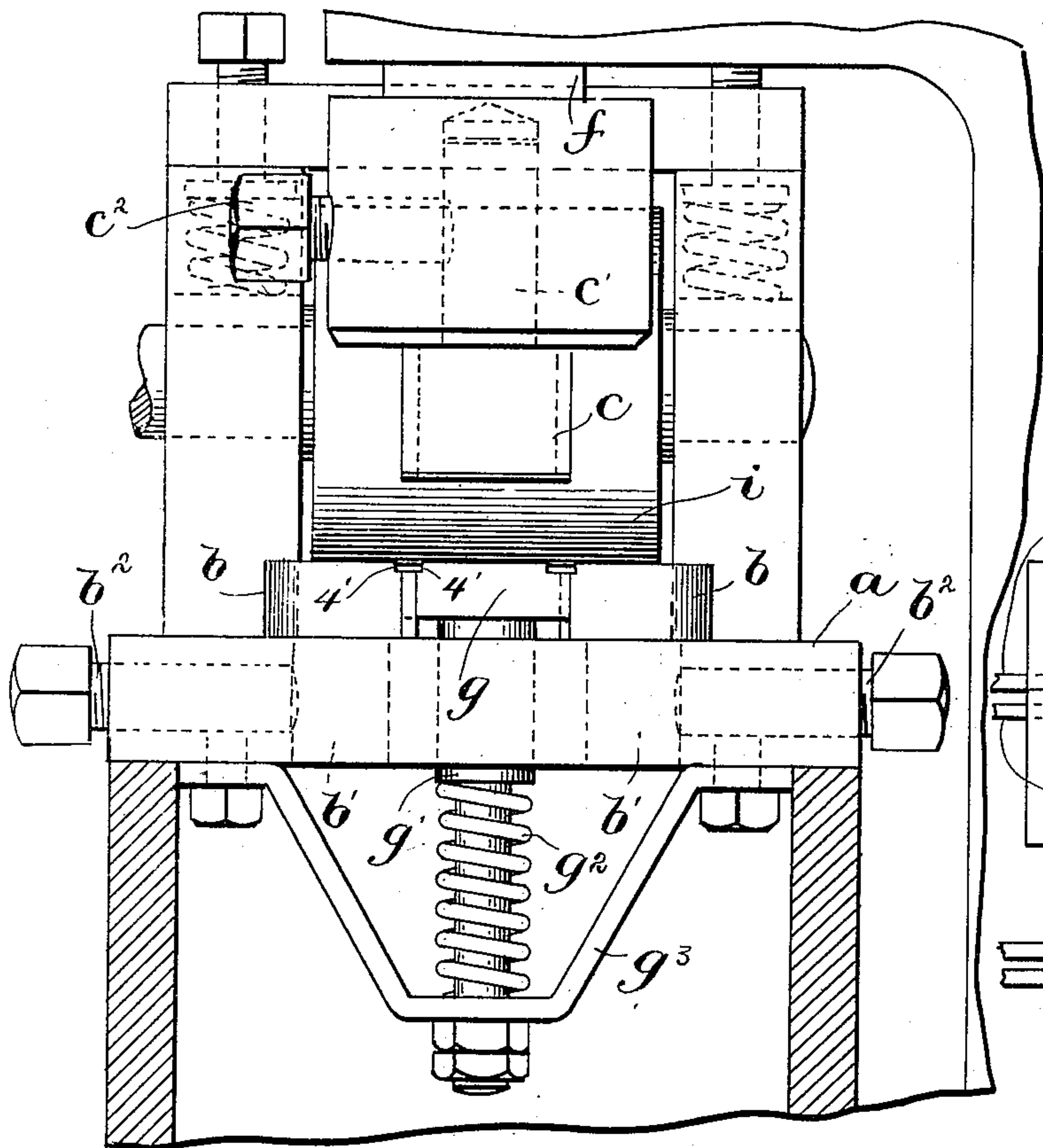


FIG. 1.

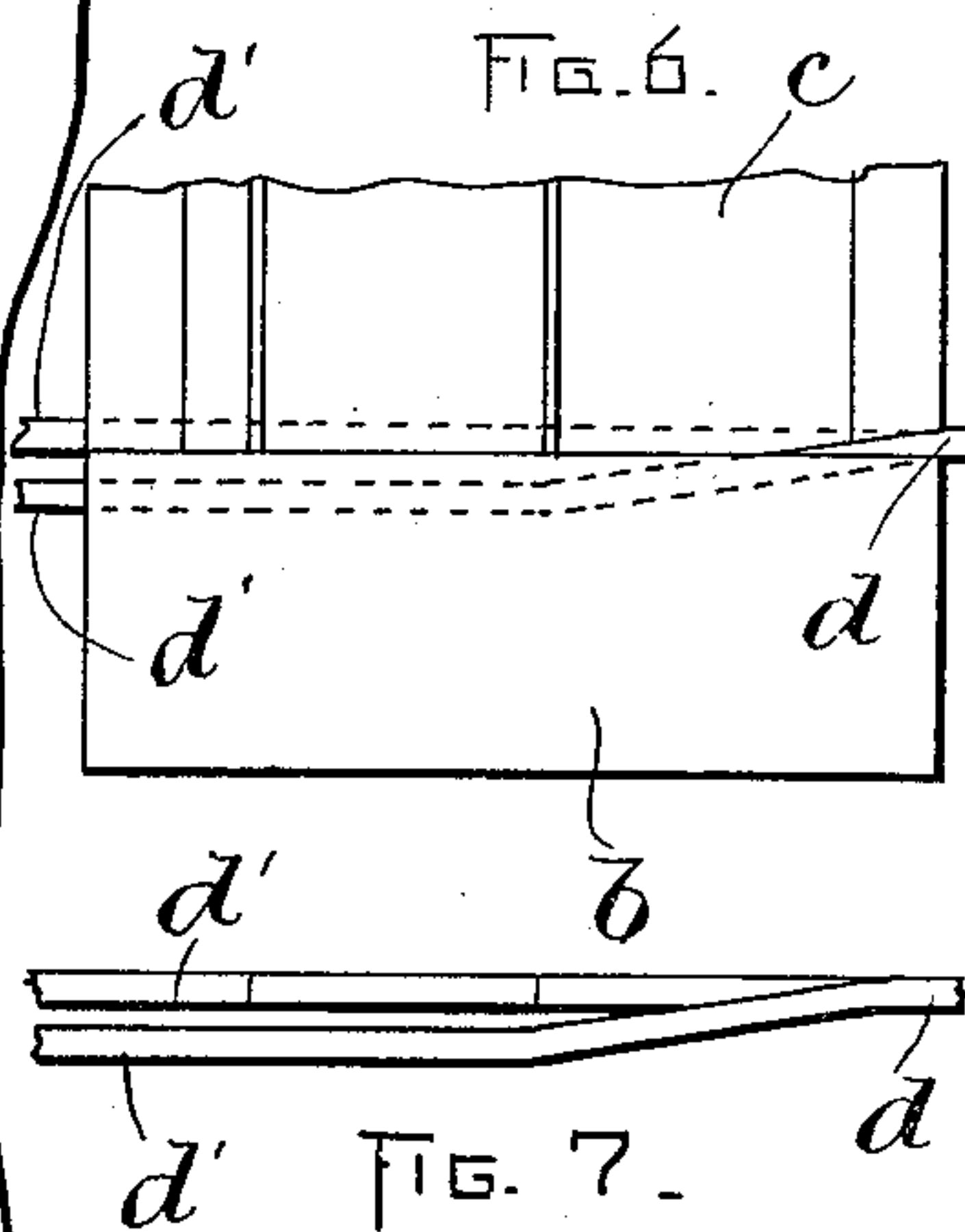


FIG. 6.

FIG. 7.

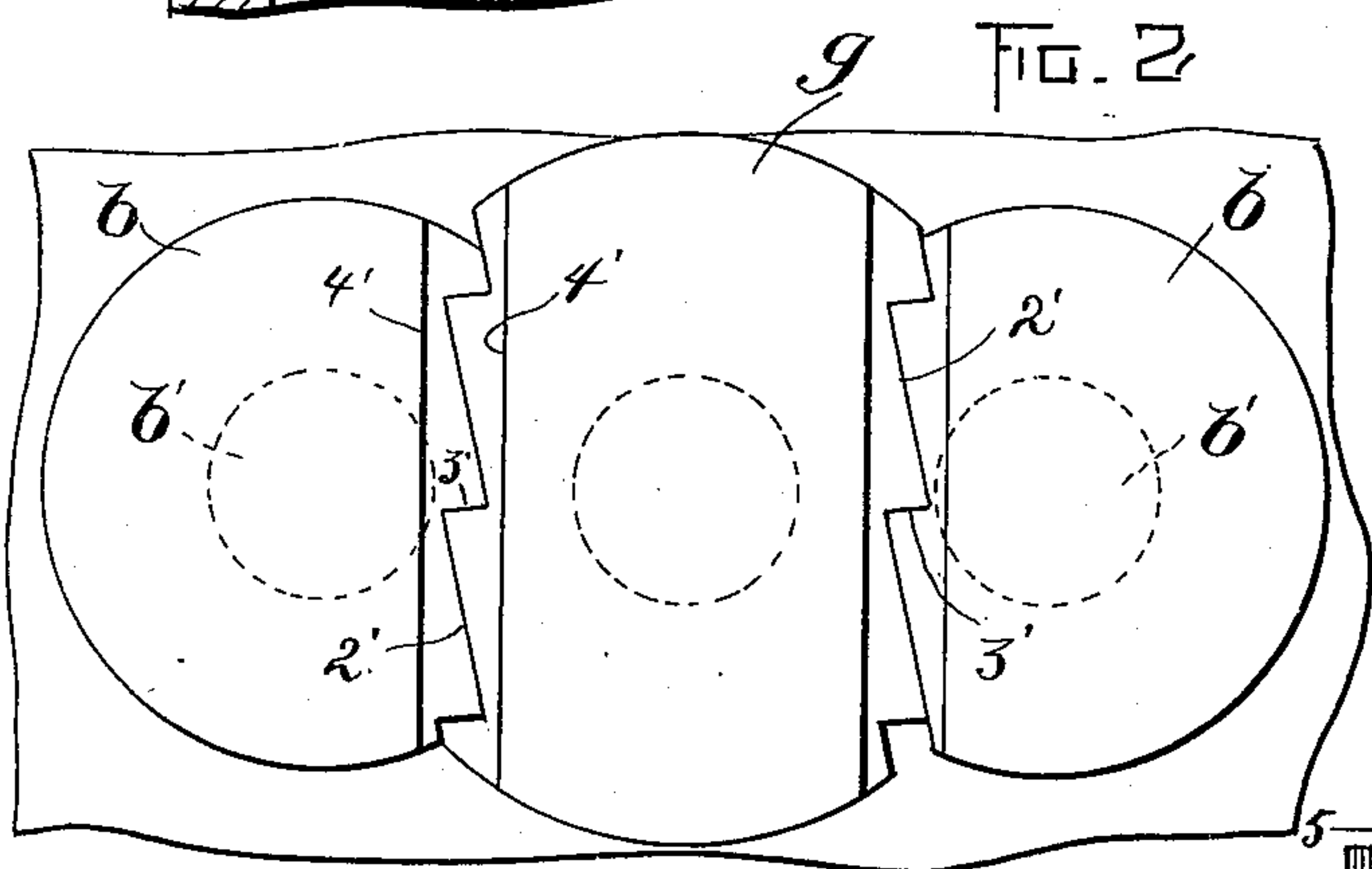


FIG. 2.

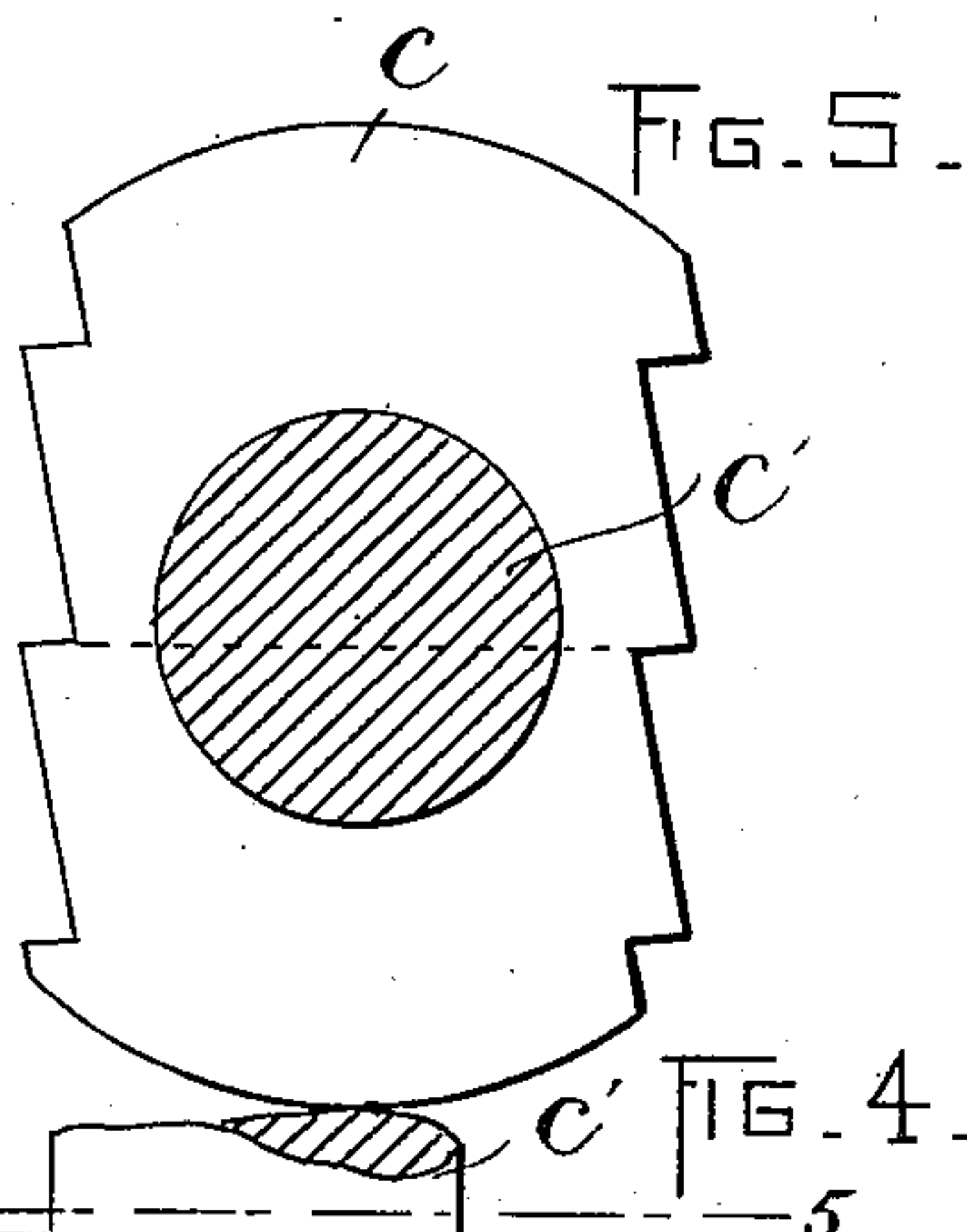


FIG. 5.

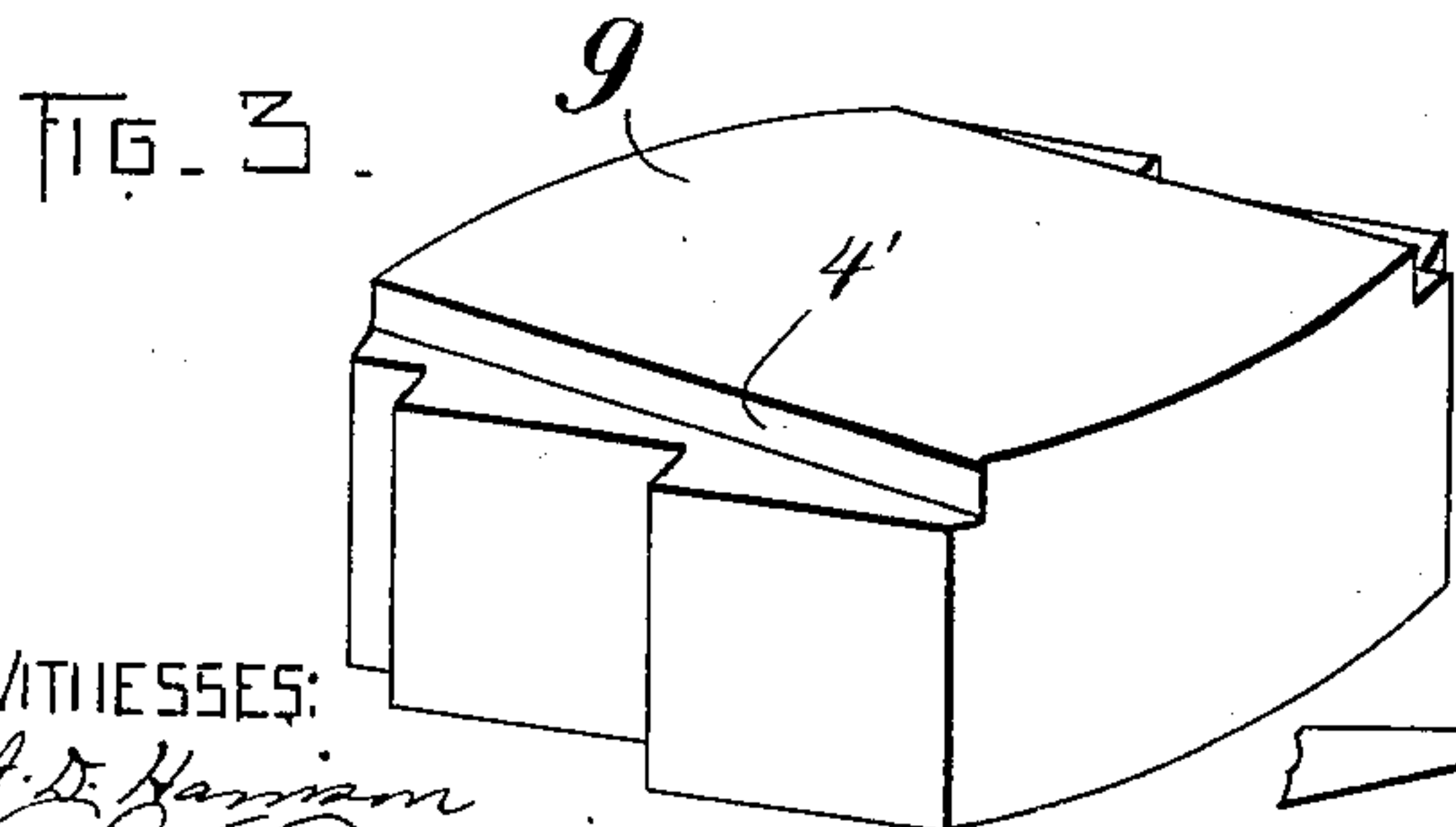


FIG. 3.

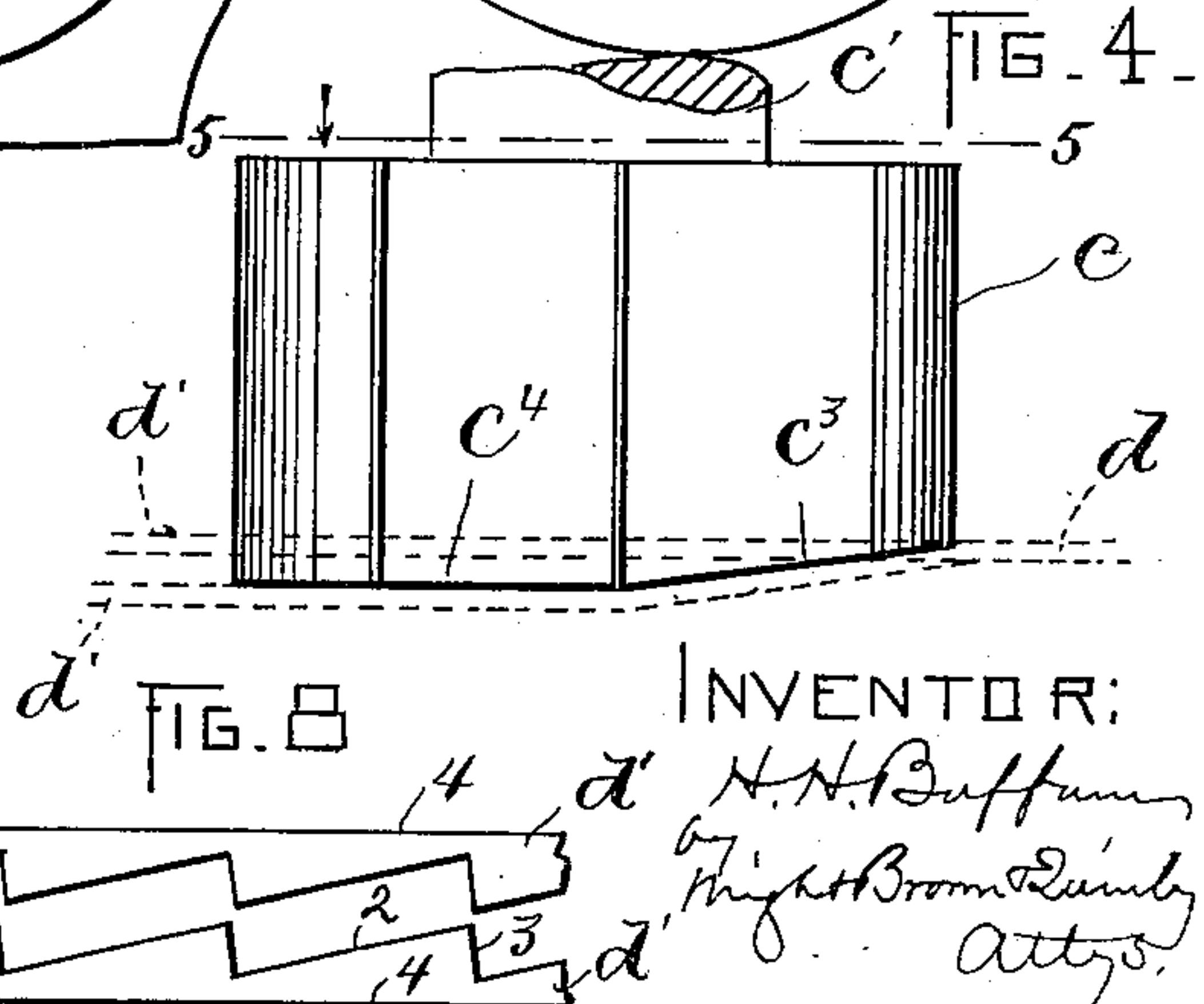


FIG. 4.

FIG. 8.

WITNESSES:  
A. D. Harrison  
P. W. Pezzetti

INVENTOR:  
H. H. Buffum  
By Wright & Brown & Quincy  
Attys.

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2 Sheets—Sheet 2.

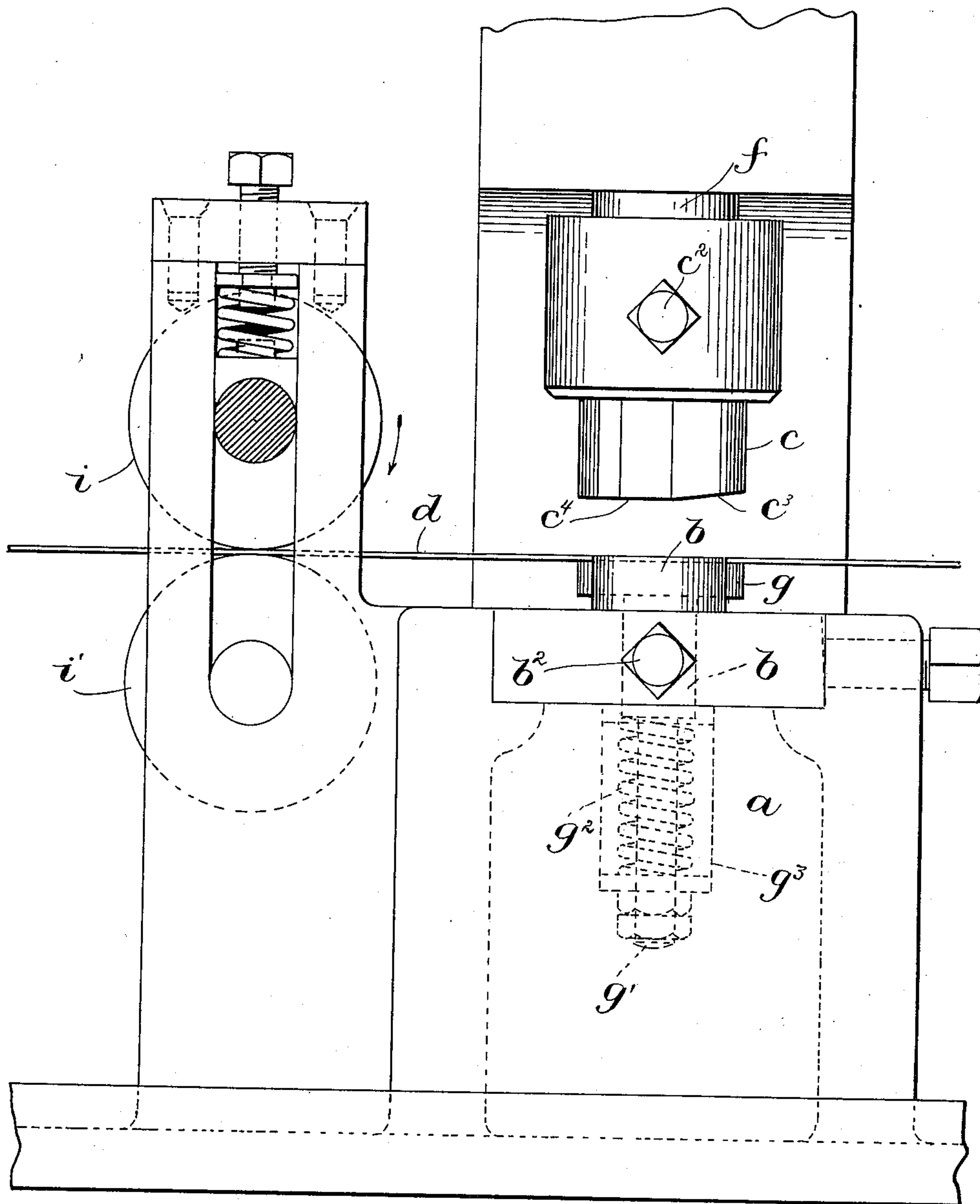


FIG. 9.

WITNESSES:

A. D. Harrison.

P. W. Pazzette.

INVENTOR:

H. H. Buffum  
by Knight Brown & Quincy  
Atty's



# UNITED STATES PATENT OFFICE.

HERBERT H. BUFFUM, OF ABINGTON, MASSACHUSETTS, ASSIGNOR, BY  
MESNE ASSIGNMENTS, TO THE MCKAY SHOE MACHINERY COMPANY,  
OF MAINE.

## APPARATUS FOR MAKING SLUG OR NAIL STRIPS.

SPECIFICATION forming part of Letters Patent No. 639,694, dated December 19, 1899.

Application filed October 1, 1897. Serial No. 653,708. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT H. BUFFUM, of Abington, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Making Slug or Nail Strips, of which the following is a specification.

This invention has for its object to provide simple and effective means for severing a flat strip of metal longitudinally along a zigzag line to convert the same into two slug or nail strips, each strip having a continuous or practically straight edge and an angular or zigzag edge composed of longer faces, each forming one longitudinal edge of a slug, and shorter faces each forming part of the outer end or head of the slug, the continuous edge forming the opposite edges of all the slugs contained in the strip.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of a portion of a machine embodying my invention. Fig. 2 represents a top plan view showing the fixed bed-dies and the intermediate yieldingly-supported stripper, these parts being shown on a larger scale than in Fig. 1. Fig. 3 represents a perspective view of the yielding stripper. Fig. 4 represents a side elevation of a movable top die. Fig. 5 represents a section on line 5 5 of Fig. 4 and a plan view of the top die. Fig. 6 represents a side view of portions of the top die and the bed-die, the top die being shown in its depressed position. Fig. 7 represents an edge view showing the manner in which one of the slug or nail strips is offset from the other by the action of the top die and its beveled face. Fig. 8 represents a top plan view showing portions of the two slug or nail strips formed from a single blank strip. Fig. 9 represents a side elevation, partly in section, of the construction shown in Fig. 1.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents a fixed bed-plate forming a part of the general framework of the machine.

*b b* represent two fixed serrated bed-dies secured to the bed-plate *a* in any suitable manner, preferably by means of shanks *b'*; formed on the dies *b b* and entering sockets in the bed-plate *a*, as indicated by dotted lines in Fig. 1, and set-screws *b<sup>2</sup>*, engaged with the bed-plate and with the shanks *b'*.

*c* represents a movable top die which is positively reciprocated by suitable means and is formed and arranged to cooperate with the fixed dies *b b* in severing a flat metal strip or ribbon *d* into two slug or nail strips *d' d'*, each strip having an angular or zigzag edge composed of longer faces 2, each forming one longitudinal edge of a slug, and shorter faces 3, arranged substantially at right angles with the faces 2 and each forming a part of the outer end or head of the slug, each strip having also a continuous or practically straight edge 4, which forms the opposite edges of all the slugs contained in the strip.

The dies *b b* have serrated sides, each comprising longer vertical faces 2', which cooperate with the top die *c* in forming the longer strip-faces 2, and shorter faces 3, which also cooperate with the die *c* in forming the shorter strip-faces 3, the top die having serrated sides which are correspondingly formed, as shown in Fig. 5. The arrangement of the faces of the dies *b* and *c* is such that when the die *c* descends the faces of its serrated sides cooperate with the faces of the serrated sides of the dies *b* in severing the blank strip *d* in the manner above indicated. The top die *c* is here shown as provided with a shank *c'*, (shown in dotted lines in Fig. 1,) which is affixed by means of a set-screw *c<sup>2</sup>* to a plunger *f*, which is reciprocated in fixed guides in the frame of the machine by suitable operating mechanism. (Not shown.)

*g* represents a stripper, which is yieldingly supported between the dies *b b* and has a flat upper surface which is normally flush with the flat upper surfaces of the dies *b b*, the stripper being serrated and provided with longer and shorter faces, which accurately fit the faces 2' and 3' of the dies *b*. The stripper *g* is here shown as provided with a shank *g'*, which is fitted to slide freely in a guide or socket formed for its reception in the bed-



plate *a* and is yieldingly supported by a spring *g*<sup>2</sup>, the upper end of which bears against a shoulder on the shank *g*<sup>1</sup>, while its lower end bears upon a bracket *g*<sup>3</sup>, affixed to the bed-plate *a*, the lower portion of the shank *g* sliding in said bracket. The stripper *g* is located under the movable top die *c* and is arranged to yield to the downward pressure of the latter, the serrated sides of the top die and stripper accurately coinciding.

The upper surfaces of the dies *b b* and stripper *g* are recessed to form parallel shoulders 4' 4' at opposite sides of the zigzag line formed by the serrated sides of the said dies and stripper, said shoulders 4' being arranged to form guides for the edges 4 4 of the strip or blank *d*, the height of said shoulders being practically equal to the thickness of the strip *d*.

The operation of the machine is as follows: The strips *d* being fed intermittently between the guides 4' 4' by suitable feed-rolls *i i'*, the top die *c* is depressed while the strips are at rest, its serrated sides being thus caused to cooperate with the serrated sides of the fixed dies *b b*, the stripper *g* bearing closely against the under sides of the portions of the nail-strips that are carried down with the top die *c*. When the top die rises, the stripper *g* is pressed upwardly by the spring *g*<sup>2</sup> and raises the depressed portions of the strips, so that they are again flush with the top surfaces of the dies *b*, thus enabling the strips to be again fed forward by the feeding mechanism.

The bottom face of the top die *c* has an inclined portion *c*<sup>3</sup>, which intersects the horizontal portion *c*<sup>4</sup> at an obtuse angle, the higher end of the inclined portion being at such height that when the die *c* is depressed the said higher end will be slightly above the top surfaces of the fixed dies *b b*. The result of this formation of the top die *c* is that the strip *d*, which is depressed by the descent of the die *c*, is bent gradually and gently or at an obtuse angle from the main strip *d*, as indicated in Figs. 6 and 7, without any abrupt angle or offset being formed in the said depressed strip. The depressed strip is there-

fore adapted to be readily forced back to the level of the top surfaces of the fixed dies *b b* by the action of the stripper *g*, there being no abrupt bend or kink left in either strip. This formation of the bottom surface of the top die is an important feature of my invention.

While I have described two fixed dies *b b* and have shown the positively-operated die *c* and stripper *g* as each having two serrated sides to cooperate with the two dies *b*, it is obvious that my invention may be embodied in an apparatus having one die *b*, the top die and stripper having each but one serrated side.

I claim—

1. A slug or nail strip cutting apparatus comprising a fixed serrated die, a movable serrated stripper yieldingly supported beside the fixed die, and a positively-operated serrated top die formed to cooperate with the fixed die in severing a blank into two slug or nail strips each having an inner edge with regular alternating long and short faces and having a bottom surface opposed to the top surface of the stripper, said surface intersecting the serrated face of the top die and having an inclined portion, substantially as and for the purpose specified.

2. A slug or nail strip cutting apparatus, comprising two fixed dies having inner serrated edges, a movable die having outer serrated edges adapted to cooperate with said edges of the fixed dies, and a stripper yieldingly supported below the movable die and between the fixed dies, each of the fixed dies having a shoulder and the stripper having a shoulder near each side thereof to cooperate with the shoulders of the fixed dies for guiding two strips or blanks.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of September, A. D. 1897.

HERBERT H. BUFFUM.

Witnesses:

C. F. BROWN,  
A. D. HARRISON.