

No. 712,660.

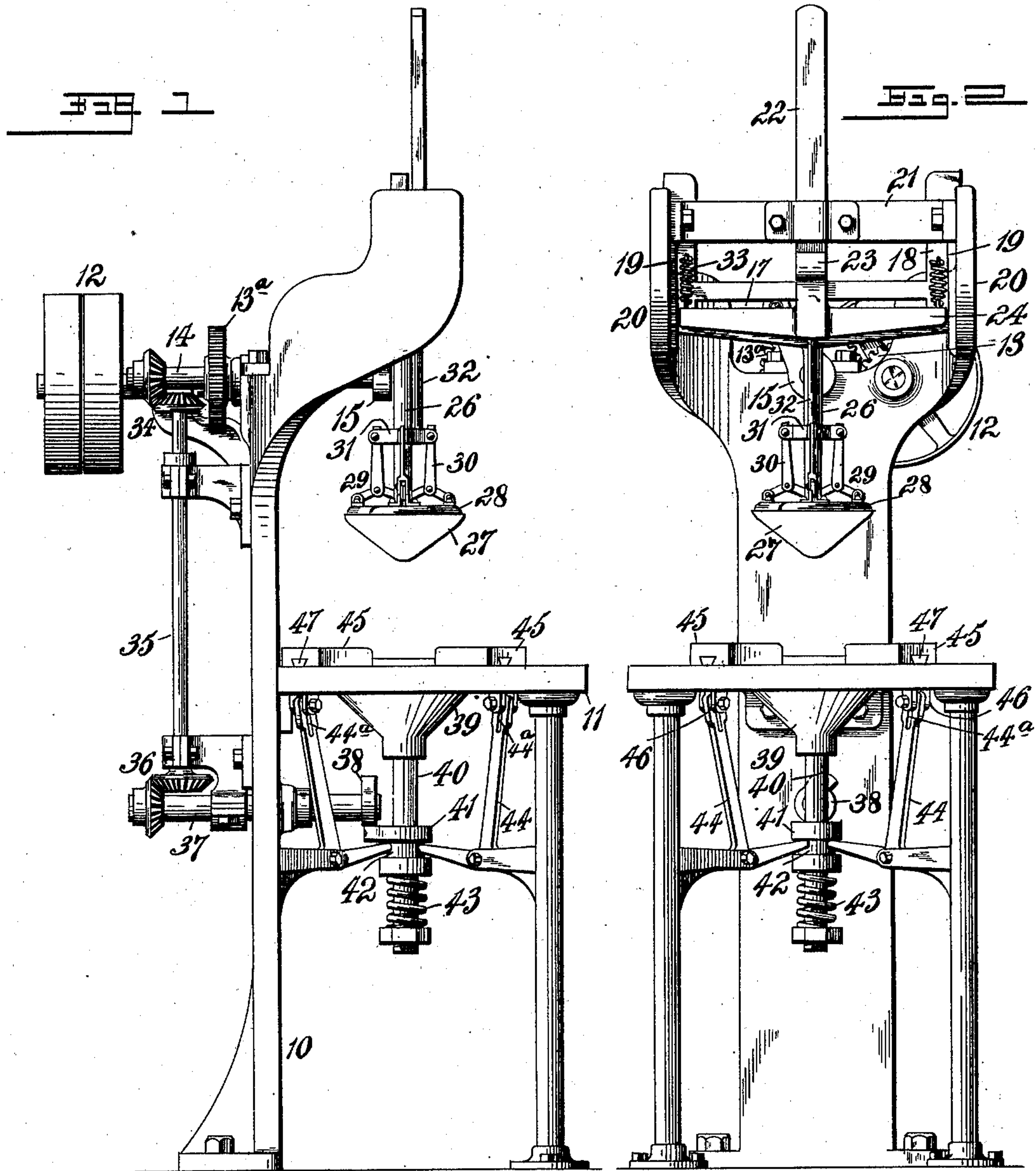
Patented Nov. 4, 1902.

A. P. DOWN.
MACHINE FOR FORMING COVERS.

(Application filed Mar. 27, 1902.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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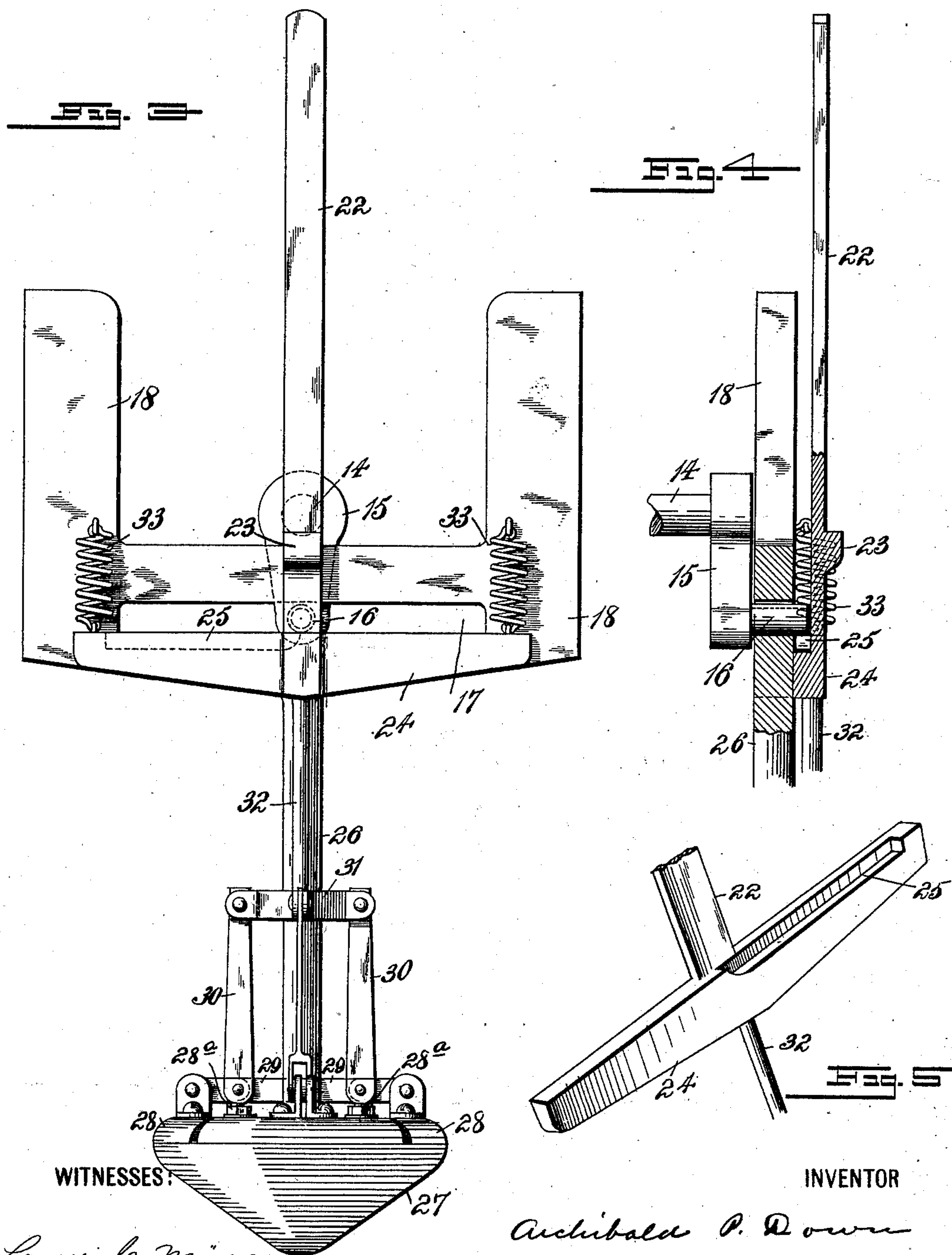
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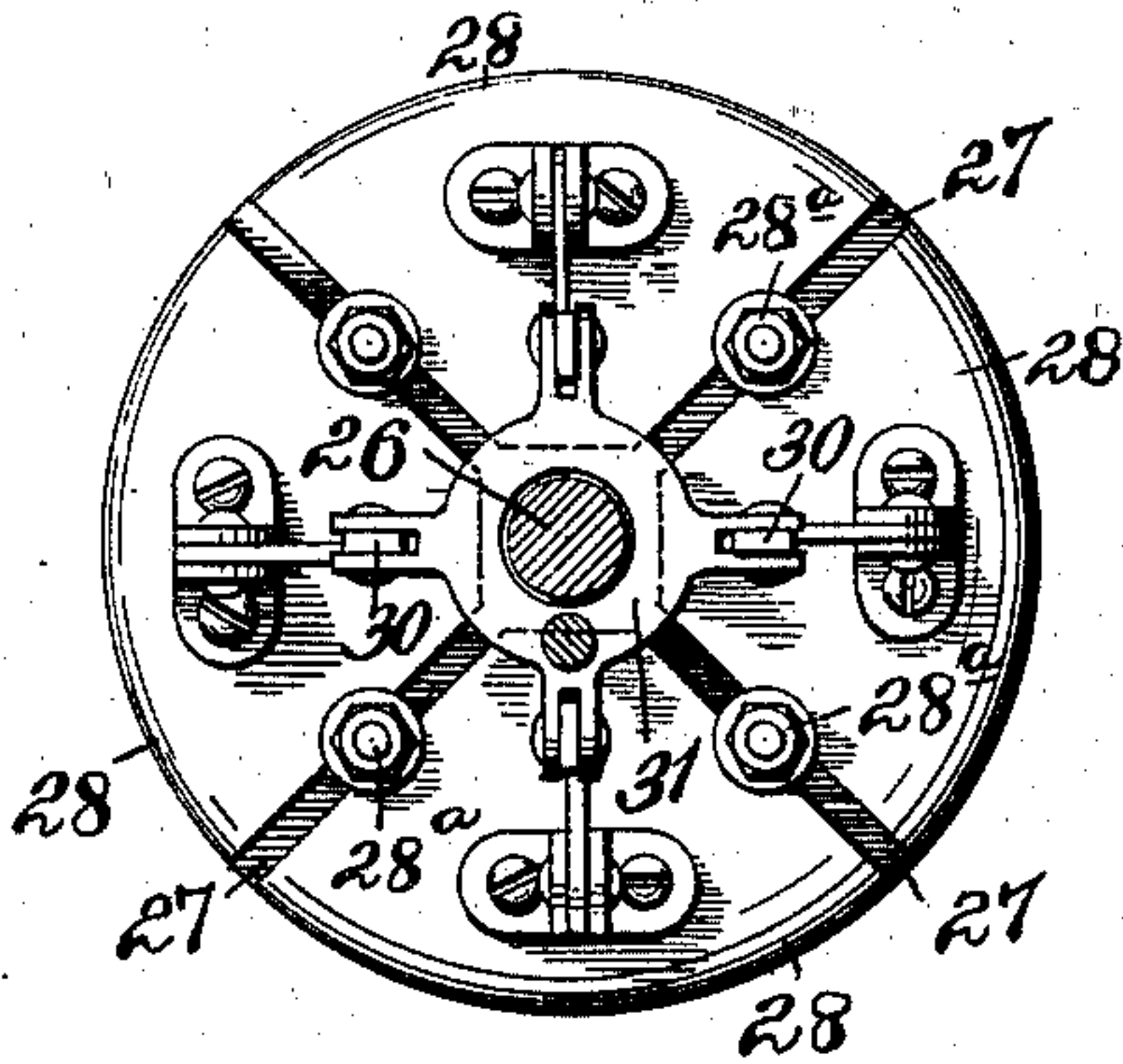


Fig. 9

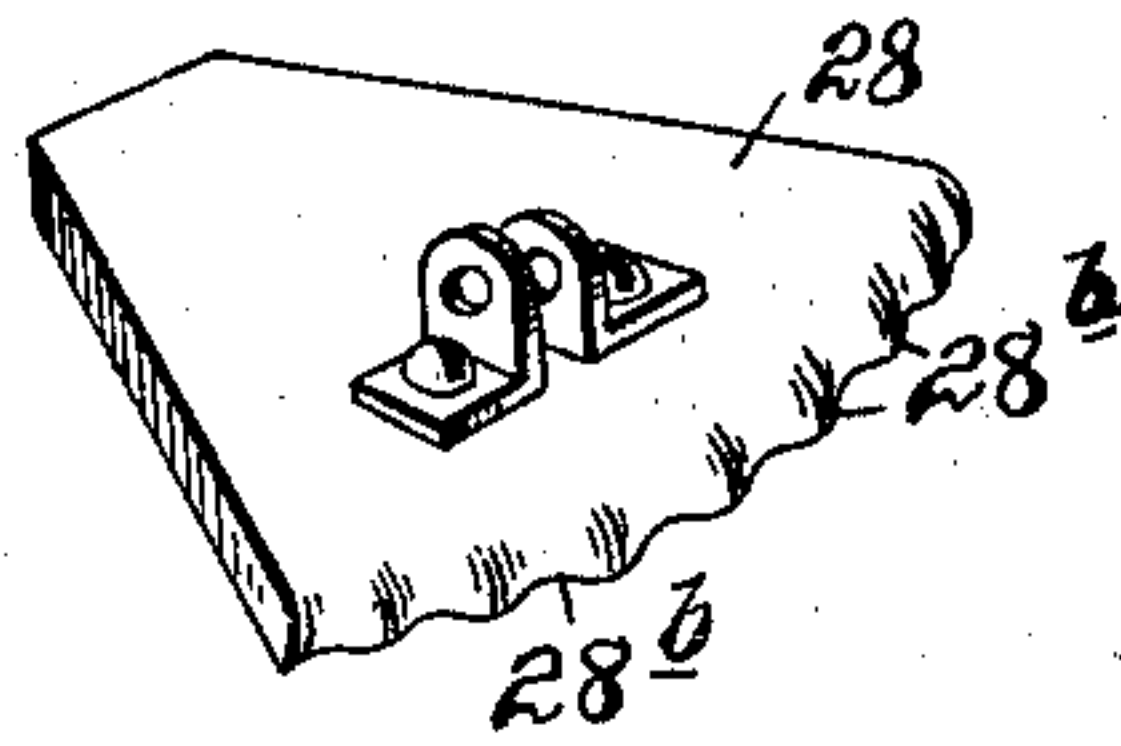


Fig. 10

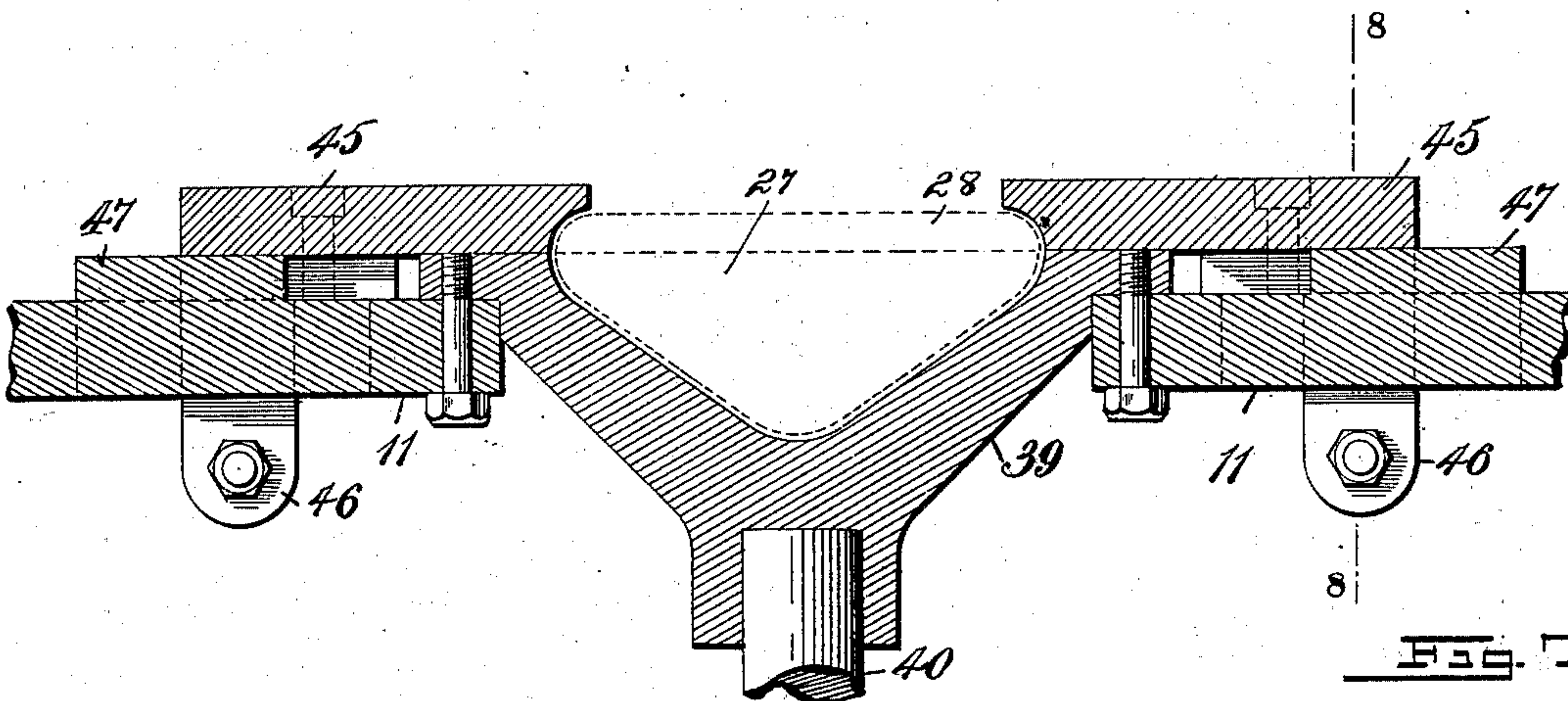


Fig. 7

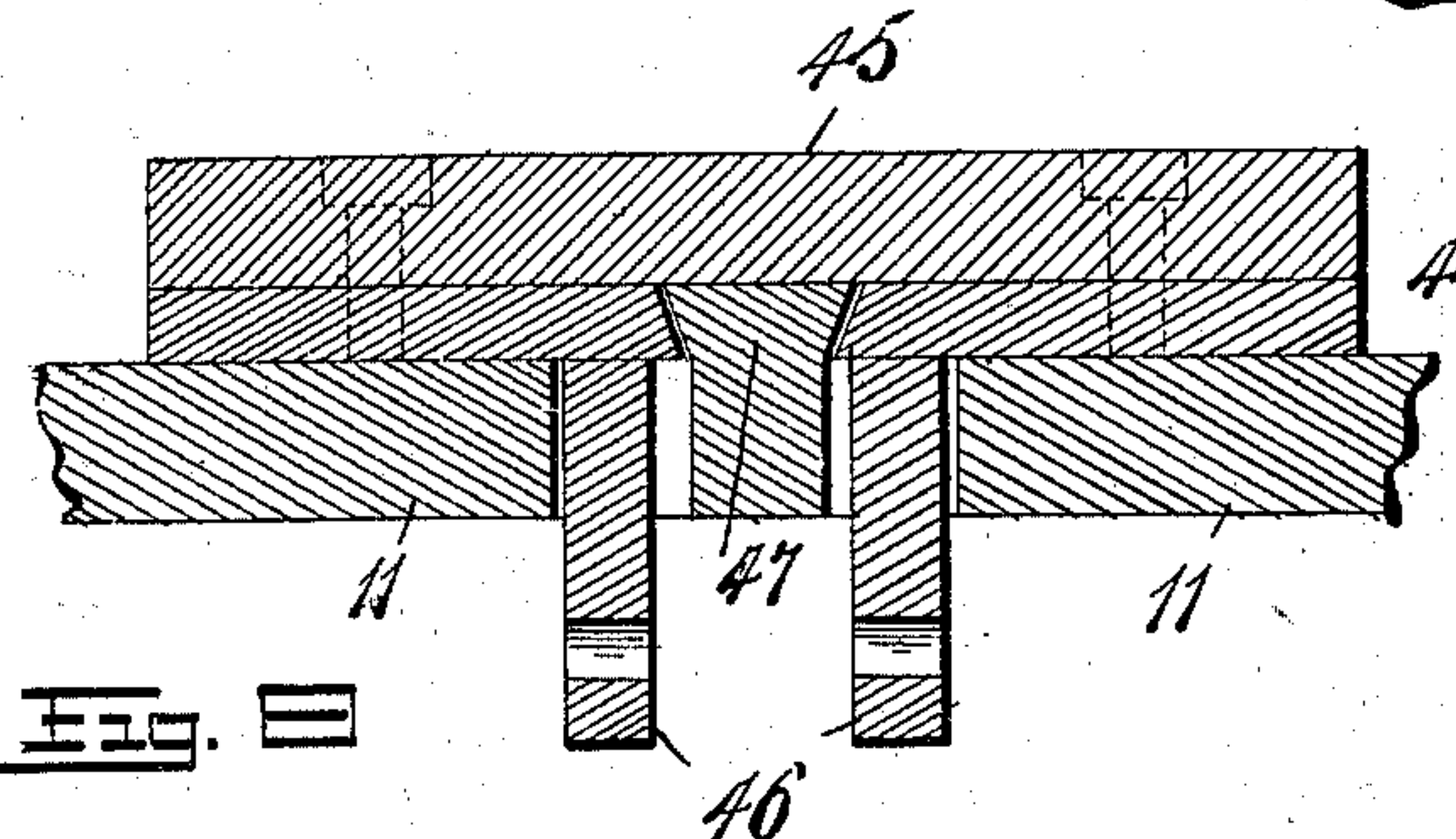


Fig. 8

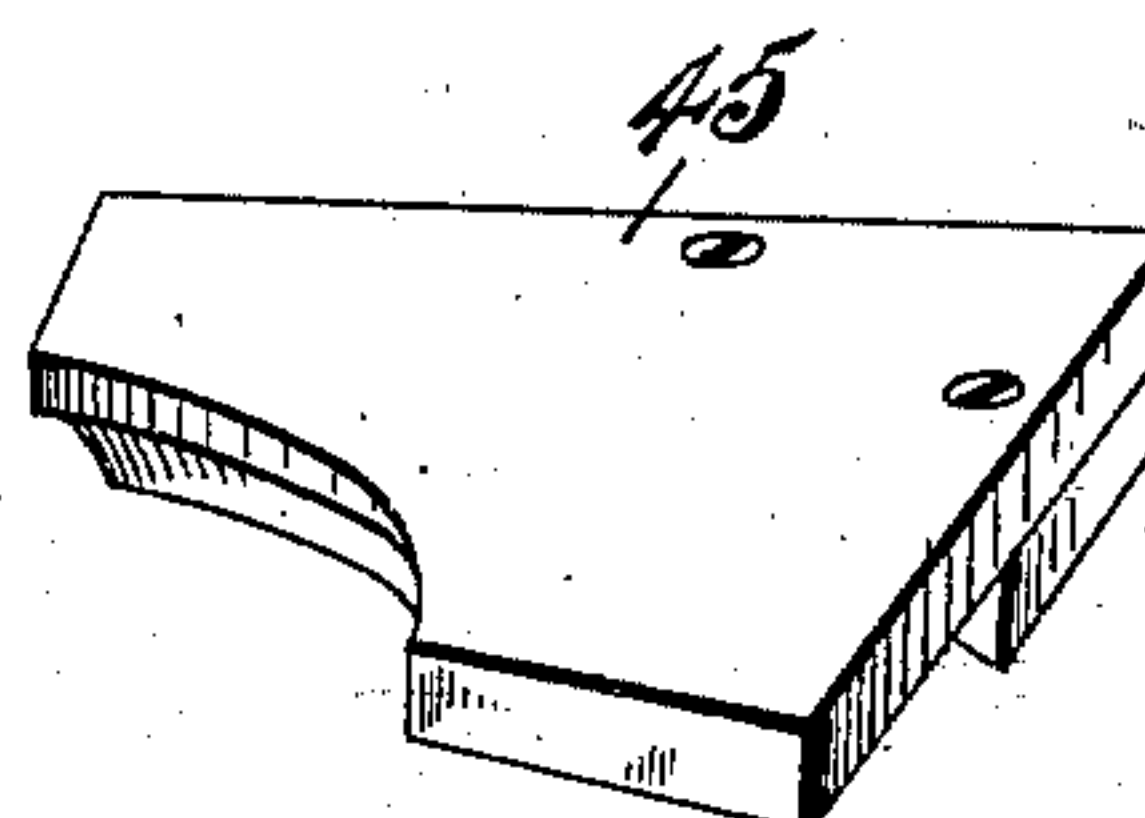


Fig. 6

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UNITED STATES PATENT OFFICE.

ARCHIBALD P. DOWN, OF GERMAN VALLEY, NEW JERSEY.

MACHINE FOR FORMING COVERS.

SPECIFICATION forming part of Letters Patent No. 712,660, dated November 4, 1902.

Application filed March 27, 1902. Serial No. 100,182. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD P. DOWN, a citizen of the United States, residing at German Valley, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Machines for Forming Covers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

This invention relates to a new design of machine for making conical covers of paper or oiled paper and similar material for baskets or similar receptacles of a round shape. For instance, in the case of peach-baskets cotton or bagging is tied over the top and while it prevents losing the fruit does not protect them from being bruised or crushed by the slightest pressure. This can be overcome by a cover of a conical nature made of paste-board or oiled paper or similar stiffened material, and a machine to make covers of this kind is the object of my invention.

The mechanism is illustrated in the accompanying drawings, in which—

Figure 1 is a side view, and Fig. 2 a face view, of my new machine. Fig. 3 is an enlarged front view, and Fig. 4 a section, of a portion of a cross-head and piston of the machine. Fig. 5 is a perspective of a part of the part aforesaid. Fig. 6 is a plan of the die, and Fig. 7 is a section of the mold; Fig. 8, a section on line 8 8 in Fig. 7. Fig. 9 is a perspective of one of the blocks of the pressing mechanism, and Fig. 10 is a modification of a plate of the die portion.

The support 10 and the table 11, which may be supported as shown or in any other usual and well-known manner, form a convenient shape of machine and admit of no hindrance to the insertion of material. A pair of driving-pulleys 12 serve to actuate the entire mechanism and convey the motion to the shaft 14 by gears 13 and 13^a, said shaft being furnished with a crank 15, on the pintle of which is a roller 16. (See Figs. 3 and 4.) The roller works in a slotted portion 17 of the cross-head 18, which in turn works in slides 19 on the

inner sides of the brackets 20 of the support 10. A cross-piece 21 serves as a stiffener and also acts as a bearing for the rod 22, which is provided with a step 23 and a cross-bar 24. The cross-bar is provided at the back with a recess 25, which is seen more particularly in Fig. 5 and the purposes of which will be described hereinafter.

To return to the cross-head, a shaft 26 extends from the bottom and has secured thereto a die 27. A set of plates 28 rest on the top of the die, and by means of the toggles 29, connected by the rods 30 to the slide 31, they are actuated to enlarge or diminish the peripheral circumference. A rod 32, secured to the slide 31 and the cross-bar 24, automatically at certain intervals moves the plates 28, as described above, a set of screws 28^a keeping them from rising. Springs 33 hold the cross-bar normally raised. A pair of miter-gears 34 communicate motion through the shaft 35 and the pair 36 to a shaft 37, on the end of which is a cam 38.

The table 11 holds a mold 39, and screwed or otherwise fastened to the bottom thereof is a rod 40, on which slides the collar 41, with a slot 42, and the collar is held or pressed up by the action of a spring 43, as will be evident.

The cam 38 serves to force the collar down intermittently, and a set of four bell-cranks 44 are simultaneously actuated, and a set of blocks 45 are forced around the mold 39, as in Fig. 7. These blocks are provided with a pair of ears 46, which are in pivotal connection with the slotted end 44^a of the bell-cranks, and dovetailed rib 47 on the table holds the blocks easily in place.

When it is desired to mold a cover, the material is laid over the mold in a blank shape circular in outline, and the male portion 27 descends and forces the material and itself into the female die 39. The blocks 45 have in the meantime been forced inward and forcing the material over the plates 28 a hood is the result. Now when the blocks withdraw the crank 15 is passing the center to raise the cross-head it slips into the recess 25, Figs. 4 and 5, which allows the spring 33 to pull the cross-bar 24, and consequently the plates 28, to a reduced circumference of die, allowing the cover to be removed on the upward stroke

of the die, and as the cross-head rises to the top the step 23 is forced against the cross-piece 21, and the cross-head having a slightly further movement the pintle can pass into the smaller space between the cross-head and the cross-bar in a reverse position to that shown in Fig. 3, where it is leaving that space. The relative positions would be the same, and the plates 28 on the die would also be forced to the edge of the die 27, as will be understood. Consequently the die-plates expand, the die descends, the plates contract, and the die ascends.

The material forming the cover may form its own edge, which will necessarily be creased; but I can use the plate, as shown in Fig. 10, with the corrugations 28^b in its periphery, which will form a neater and more even looking edge; but this feature is not essential.

I have devised in this machine a quick and smooth running machine for manufacturing the articles desired, and I do not wish to limit myself to the exact arrangement of parts as shown in the drawings, as I may depart from them in minor details without departing from the scope of my invention.

Having thus described my invention, what I claim is—

1. A machine for the purposes described, consisting of a mold, a reciprocating die making an expanded descent and a contracted ascent and blocks sliding to complete the mold on the descent of the die, substantially as described.

2. A machine for the purposes described, consisting of a vertically-sliding cross-head, supporting a die, a cross-bar sliding on the cross-head and actuating plates on the die, to expand on the descent and contract on the ascent, means for moving the cross-bar, and a mold to receive the die, substantially as set forth.

3. A machine for the purposes described, consisting of a vertically-sliding cross-head, supporting a die, a cross-bar sliding on the cross-head and actuating plates on the die, to expand on the descent and contract on the ascent, means for moving the cross-bar, a mold to receive the die and blocks sliding to complete the mold on the descent of the die, substantially as set forth.

4. A machine for the purposes described, consisting of a vertically-sliding cross-head, supporting a die, a crank actuating the cross-head, a cross-bar sliding on the cross-head,

and acting to expand a set of die-plates on the descent of the die, and contracting them on the ascent, a mold, a set of blocks surrounding the mold, bell-cranks actuated by a collar, and connected with the blocks to slide them to complete the mold on the descent of the die, and a cam actuating said collar, substantially as set forth.

5. In a machine for the purposes described, a sliding cross-head supporting a die, a slot in said cross-head, a cross-bar sliding on the cross-head, a spring connecting the cross-bar and cross-head, a rod depending from said cross-bar, a set of plates on the die, adapted to be contracted and expanded, actuated by the rod on the cross-bar by means of a set of toggles, a step and a recess on the cross-bar to intermittently move the cross-bar, and a cross-piece and a crank-pin engaging the step and recess, substantially as described.

6. In a machine for the purposes described, a sliding cross-head supporting a die, a slot in said cross-head, a cross-bar sliding on the cross-head, a spring connecting the cross-bar and cross-head, a rod depending from said cross-bar, a set of plates on the die, adapted to be contracted and expanded, actuated by the rod on the cross-bar by means of a set of toggles, a step and a recess on the cross-bar to intermittently move the cross-bar, and a cross-piece and a crank-pin engaging the step and recess, a mold, a set of blocks surrounding the mold, bell-cranks actuated by a collar and connected with the blocks, a cam and a spring for actuating the collar, substantially as set forth.

7. In a machine for the purposes described, a cross-head, a die supported thereby, a cross-bar sliding on said cross-head, a slot in the cross-head receiving a crank-pin, a recess extending part way of the cross-bar, said cross-bar resting on the end of the crank-pin, a step on the cross-bar, a stop for the step on the machine-frame, a rod depending from the cross-bar to operate a set of toggles, a series of sliding plates on the top of the die, all operating intermittently to cause an expanded descent and contracted ascent of the die, substantially as set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 22d day of March, 1902.

ARCHIBALD P. DOWN.

Witnesses:

GEORGE W. DOWN,

WM. H. CAMFIELD, Jr.