

No. 666,141.

Patented Jan. 15, 1901.

J. JACKSON.

MOLD FOR PRESSING PLASTIC MATERIAL.

(Application filed Mar. 8, 1900.)

2 Sheets—Sheet 1.

(No Model.)

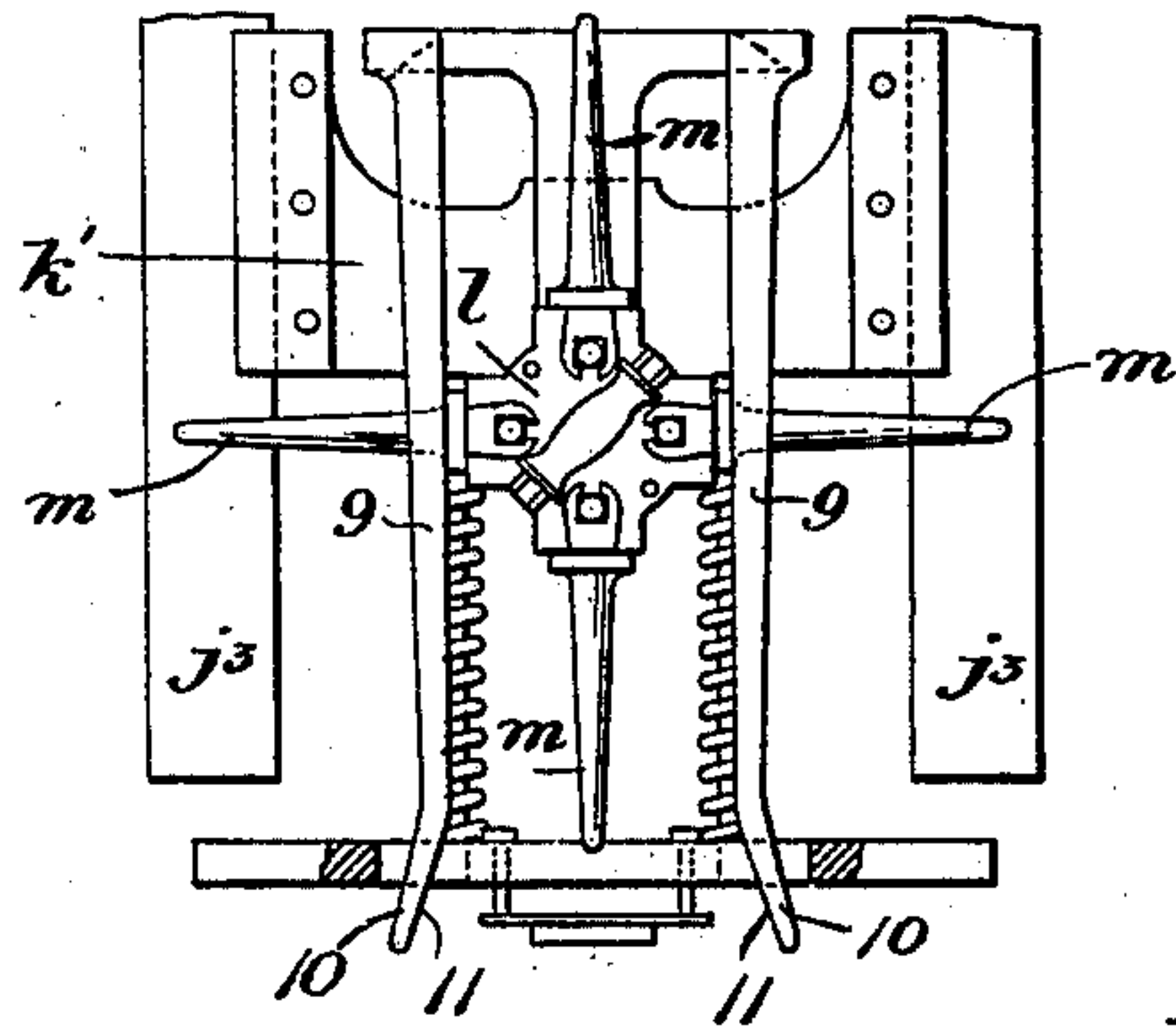
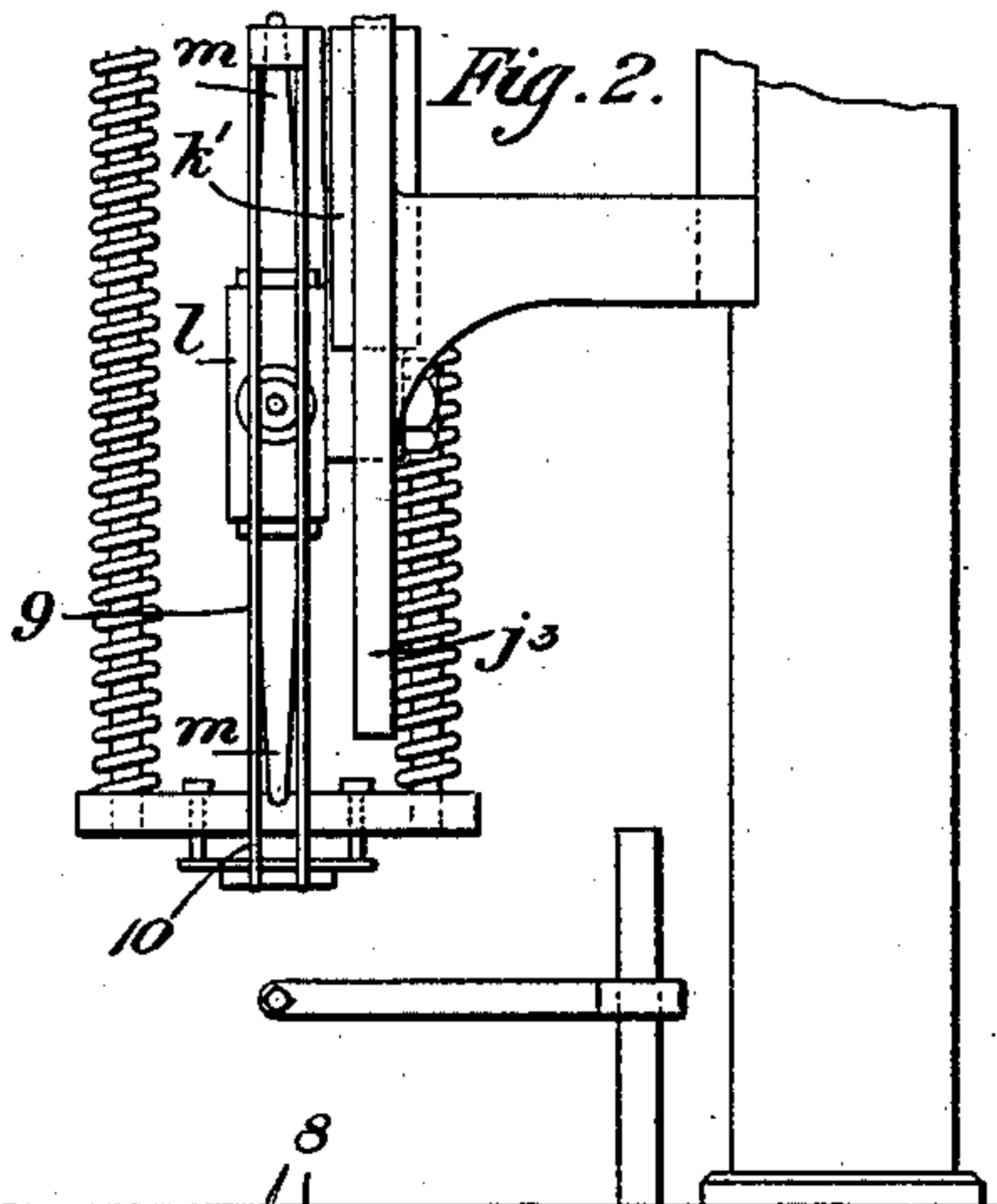


Fig. 1.

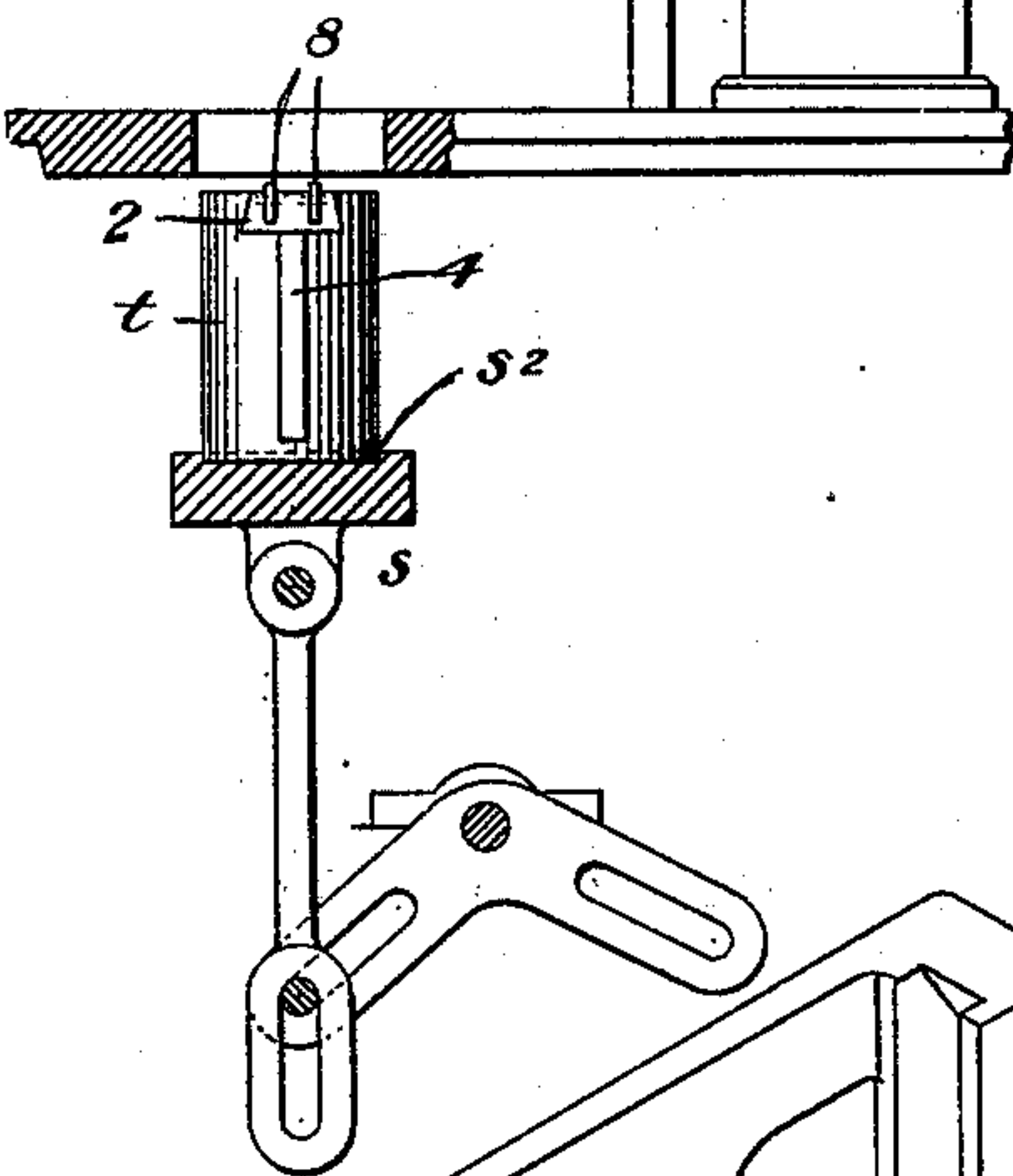


Fig. 5.

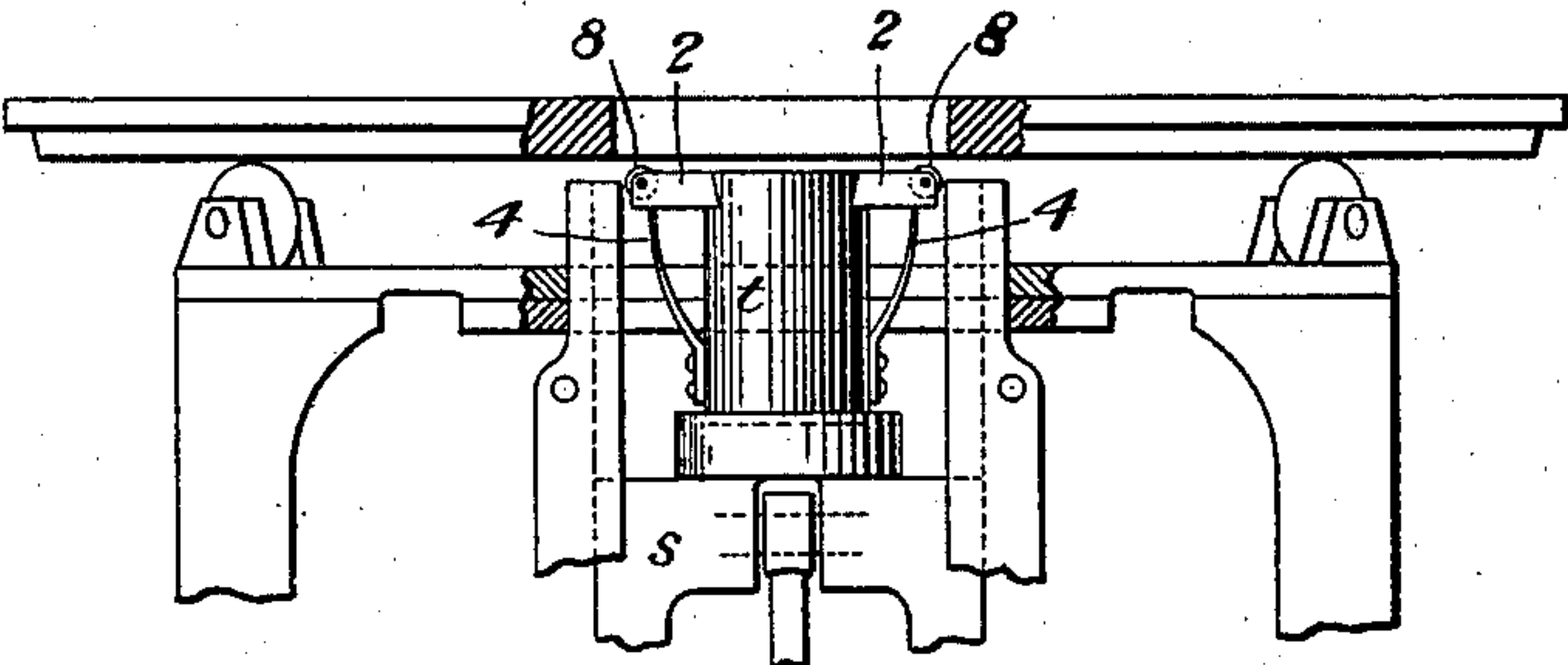
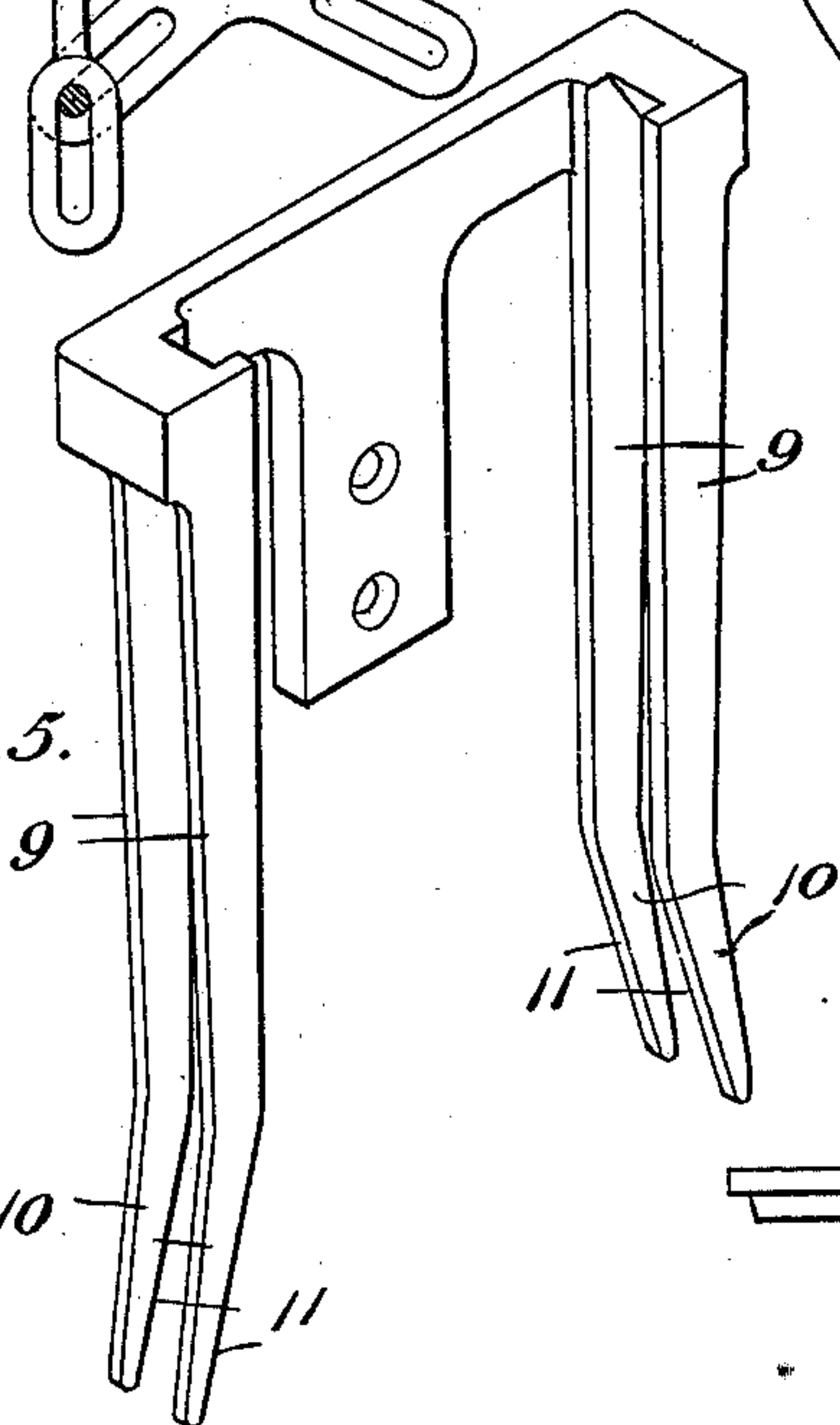


Fig. 3.

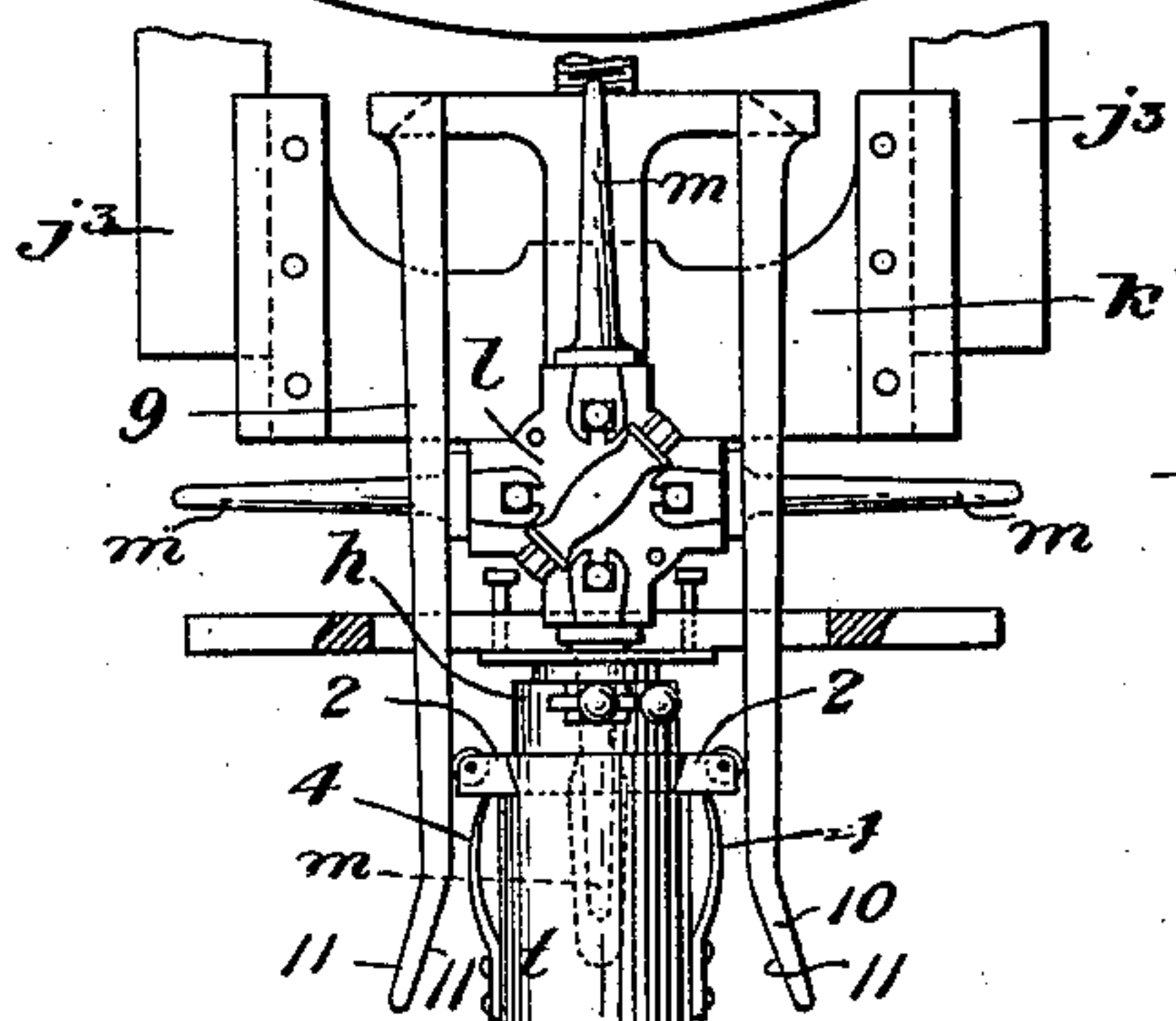


Fig. 4.

Witnesses:

R. H. Jayman
J. Edwards

Inventor:

John Jackson
by E. M. Clarke
his Attorney

J. JACKSON.

MOLD FOR PRESSING PLASTIC MATERIAL.

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2 Sheets—Sheet 2.

(No Model.)

Fig. 7.

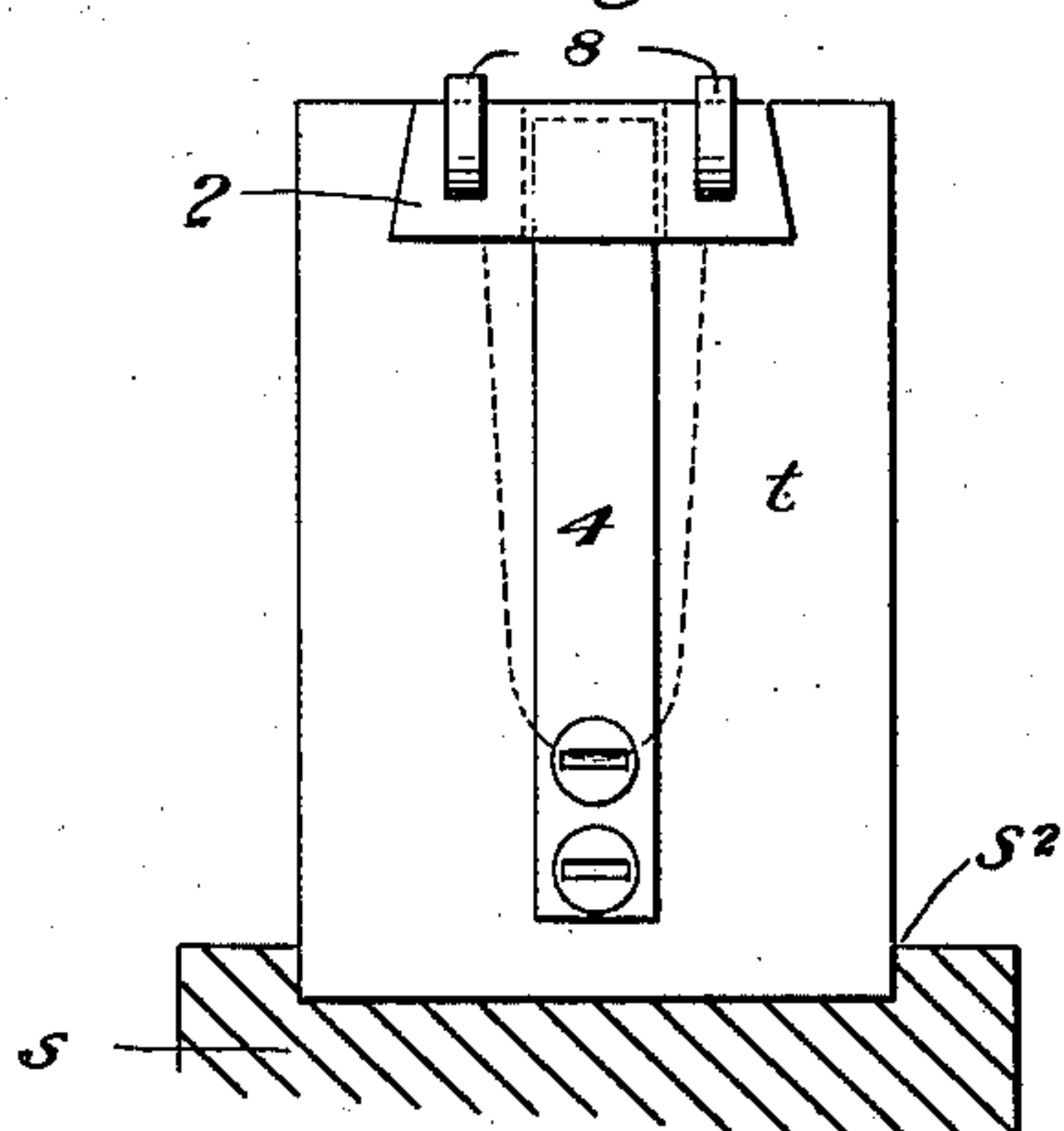


Fig. 6.

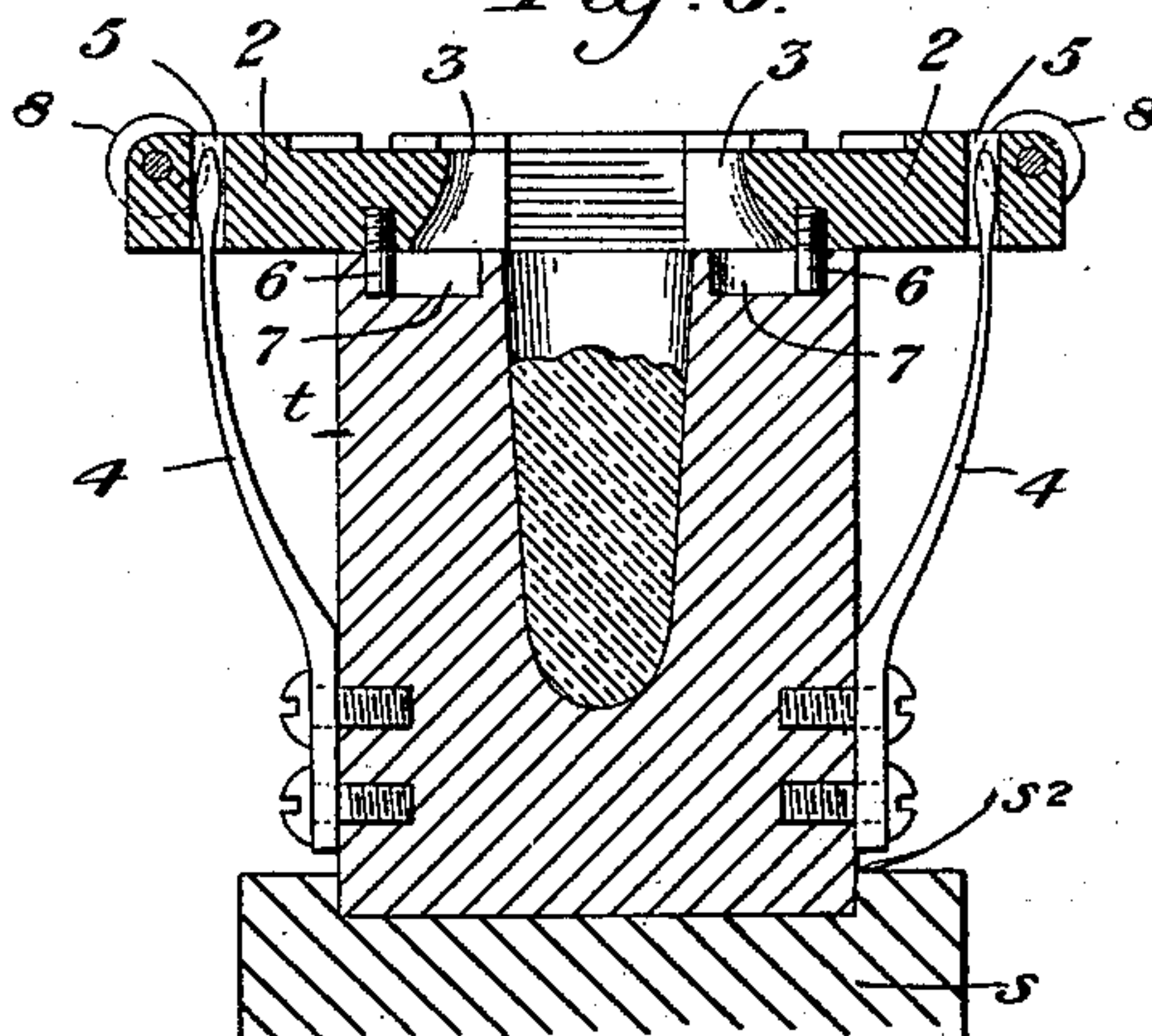


Fig. 9.

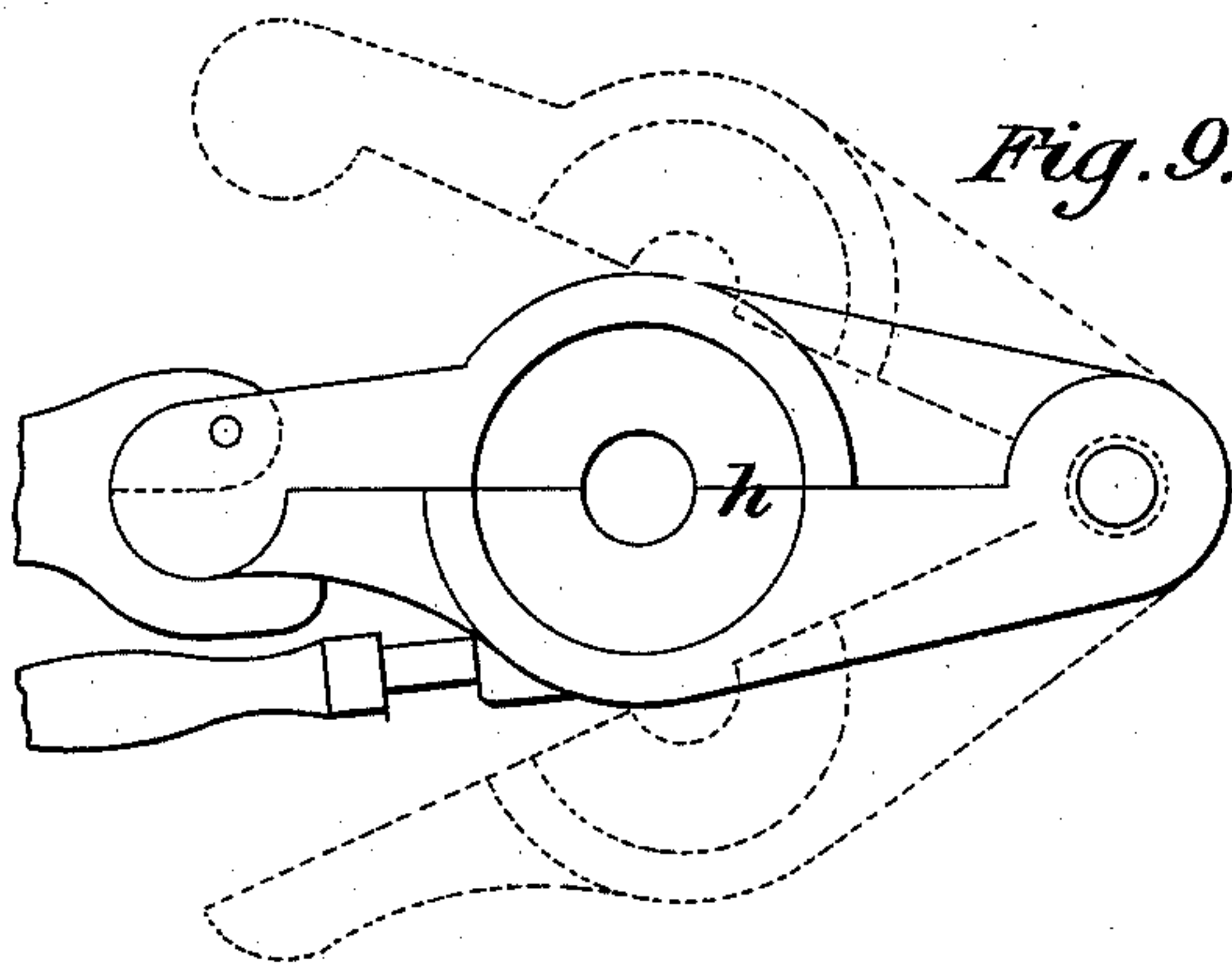


Fig. 8.

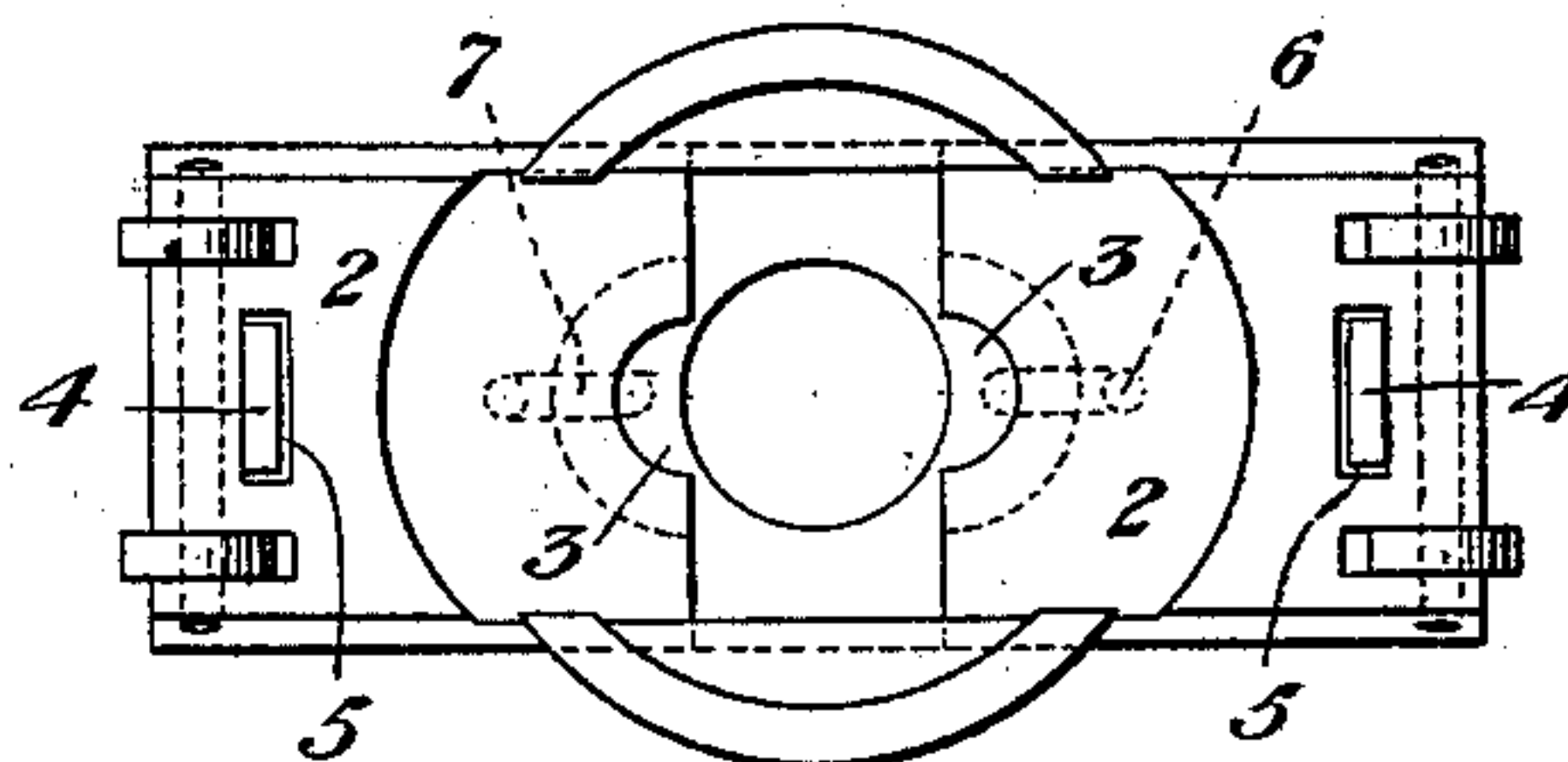


Fig. 11.

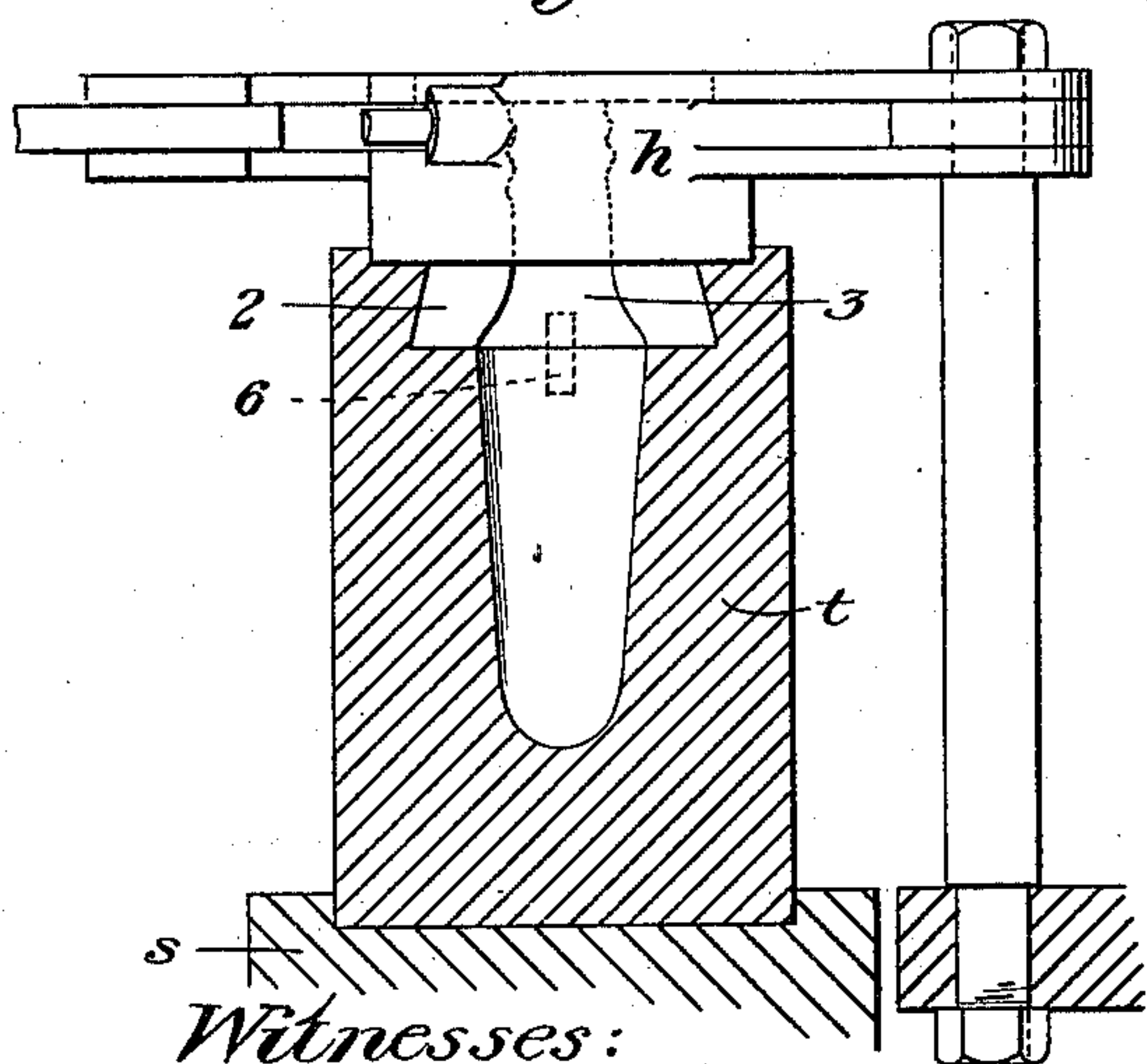
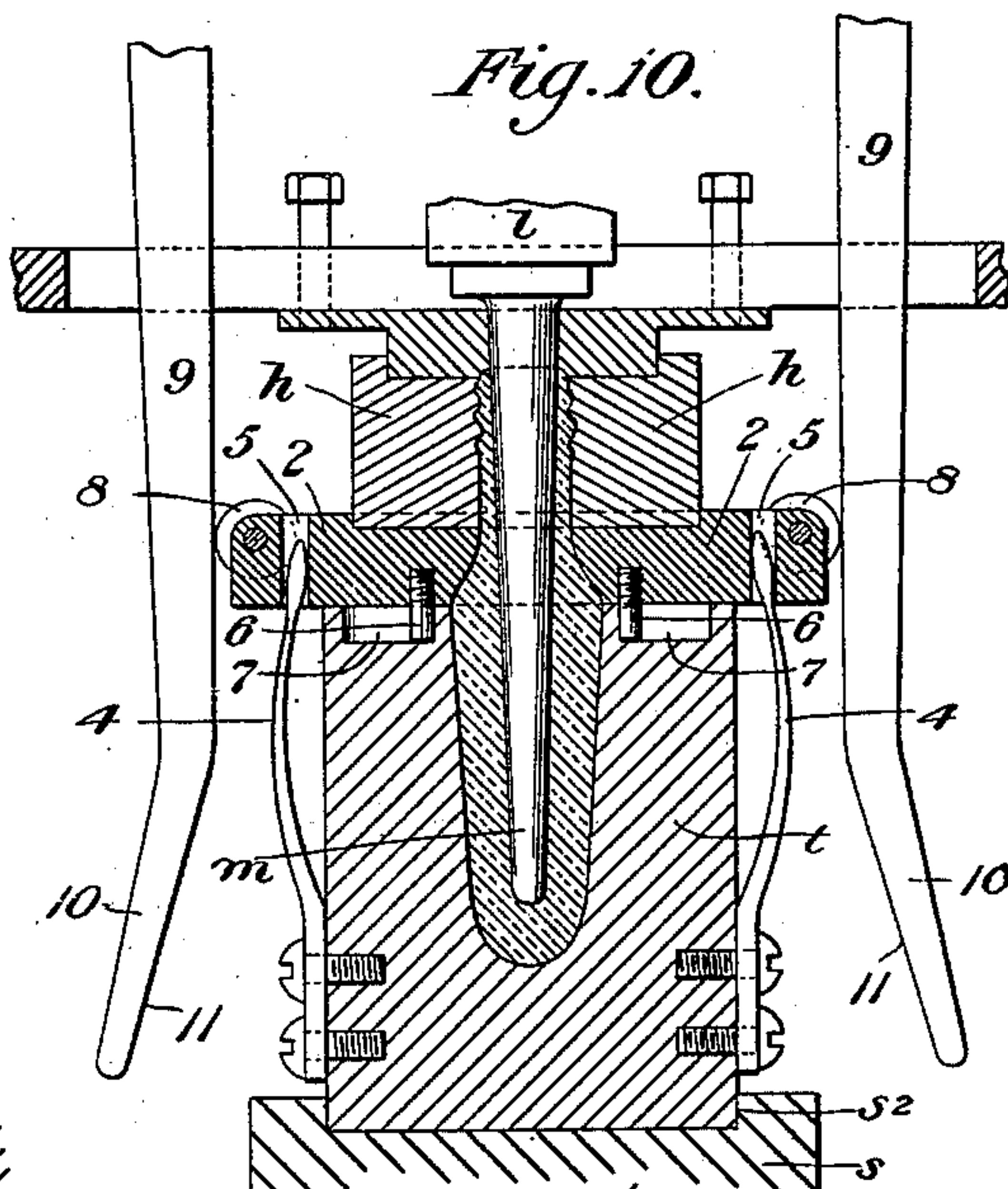


Fig. 10.



Witnesses:

R. H. Jayman
D. Edwards

Inventor:

John Jackson
by C. M. Clarke
his attorney

UNITED STATES PATENT OFFICE.

JOHN JACKSON, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO BIDDLE ARTHURS, OF PITTSBURG, PENNSYLVANIA.

MOLD FOR PRESSING PLASTIC MATERIAL.

SPECIFICATION forming part of Letters Patent No. 666,141, dated January 15, 1901.

Application filed March 8, 1900. Serial No. 7,895. (No model.)

To all whom it may concern.

Be it known that I, JOHN JACKSON, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Molds for Pressing Plastic Material, of which the following is a specification, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a partial front view of a glass-machine provided with my improvement. Fig. 2 is a similar view from the side. Fig. 3 is a partial plan view of the table and neck-mold in position. Fig. 4 is a view similar to Fig. 1, but showing the press-mold raised and cross-head lowered, with one of the plungers inserted in the press-mold. Fig. 5 is a perspective detail view of the cam-forks for operating the press-mold slides. Fig. 6 is a vertical sectional view of the press-mold with the slides extended. Fig. 7 is a side elevation of the press-mold. Fig. 8 is a plan view of Fig. 6. Fig. 9 is a plan view of the neck-mold. Fig. 10 is a sectional view through the press-mold with the slides thrown in, the neck-mold and press-plate in position, and the plunger inserted. Fig. 11 is a sectional view through the press-mold, showing the neck-mold in position.

My invention relates to a machine for pressing glass articles; and it consists of a press-mold having an extensible top to admit of the entrance of the charge of glass and the withdrawal of the parison or blank after the pressing operation, and means for automatically closing such extensible top and for opening the same.

My device is designed to be used in that class of machines wherein a press-mold is used to form the blank operating in conformity with a vertically-acting plunger and an independent neck-mold adapted to sustain the blank after the pressing operation.

I have illustrated my invention as incorporated with and operating in combination with the plunger and certain other features of an apparatus for forming glass articles patented by John J. Power February 14, 1899, No. 619,694, and reference to the specification thereof will give the general construction and

mode of operation of this machine, with which my improvement is well adapted to cooperate, although it is equally applicable to other forms of apparatus wherein a press-mold and plunger are used to form a blank either with or without a neck-mold.

Referring now to the drawings, *s* represents a slide provided with an upper supporting-base, having a recess *s*² adapted to receive and support the initial or press mold *t*, the slide and mold being raised and lowered by suitable mechanism (not shown) adapted to operate in conformity with the cross-head carrying the plungers. This cross-head *k*¹ is mounted in vertical slides *j*³ and is raised and lowered by suitable mechanism (also not shown) operating in conformity with the press-mold support. The plungers *m*, of which there are several to permit of cooling, are mounted on a rotatable head *l*, carried by the cross-head and adapted when in operative position to aline with the press-mold.

In the use of solid press-molds, especially for that class of articles where the upper portion is proportionately much smaller in diameter than the body portion, as with narrow-necked bottles, or where the interior of the press-mold is for other reasons necessarily contracted, considerable difficulty is experienced in introducing the molten glass to the interior, and in all cases it is necessary to have the top of the mold of a diameter equal to that of the widest portion of the mold to permit of the blank being removed. This practical difficulty precludes the use of solid press-molds for many articles and renders its use for others extremely difficult, while a further objection is that by reason of the abrupt shoulder formed by the neck-mold the glass is necessarily much thicker at certain points, as in necks of bottles, in the finished article, it being impossible to properly distribute it by the blowing operation, especially when partially cooled by the plunging operation. My invention is designed to provide a press-mold which by widening the top is better adapted to receive the molten glass and to provide movable or contractible upper portions so shaped on their interior as to taper and form the glass approximating to the finished article. To this end I have provided in

the upper portion of the mold *t* laterally-sliding gates 2, mounted in dovetail or other suitable slideways, the gates when closed meeting at the center, each being cut out with a half-round opening 3, forming an aperture corresponding to the outside diameter of the neck of the bottle. These half-round openings are curved and widened at the bottom, so as to conform to the shape desired and to the upper edges of the blank-mold cavity when the gates are closed, as clearly shown in Figs. 4 and 10. The upper faces of the gates are provided with semicircular recesses adapted to receive the neck-mold *h*, which, with the press-plate and other portions of the mechanism, is similar to those shown and described in the patent referred to. The gates 2 are normally held outwardly extended, as shown in Fig. 6, by springs 4, secured to the mold and engaging the ends of the sliding gates by means of transverse slots 5 or in any other convenient or suitable manner. The gates are each provided with pins or abutments 6, projecting into slots 7 in the mold, the ends of which slots limit the inward and outward movement of the gates, so that each one is forced into the center and no farther and so that when retracted by the springs they will not leave the mold, both gates meeting at the central line in alinement with the plunger and the mold-cavity.

Mounted on pivotal bearings at the outer ends of the gates are pairs of rollers 8, and upon the upper cross-head *k'* are secured the downwardly-projecting cam-forks 9, two at each side of the center to permit of the rotation of the plungers *m* between them, the forks terminating in outwardly-directed extremities 10, having oblique inner faces 11.

In the operation of the machine the mold *t* is first charged with molten glass, as in Fig. 6, when in the lowered position, such charging operation being facilitated by reason of the full opening of the cavity, as shown in Fig. 8, and the neck-mold being thrown to one side, as in Fig. 3. The neck-mold is then thrown around to position, and in the operation of plunging the press-mold is raised and the cross-head *k'* lowered simultaneously. Before the plunger enters the top of the mold the faces 11 of the cam-fork extremities come into contact with rollers 8, forcing the gates inwardly and closing the aperture around the plunger to the reduced diameter, whereby the glass as it is forced upwardly by the plunger will conform to such reduced diameter, being forced upwardly into the neck-mold, in which it will be suspended when the mold is lowered. It will be understood that

the cross-head rises first, releasing the gates, which will be thrown outwardly by the springs, thus permitting the mold to be lowered away from the blank in the same manner as practiced in the Power machine referred to without interference with the edges of the apertures of the gates.

The device is applicable to any construction of pressing machinery wherein a plunger is lowered into a solid mold, and I do not desire to be limited to the form shown nor to the arrangement of auxiliary mechanism shown and described, as it is evident that various other changes or modifications may be embodied with the invention by the skilled mechanic, and all such are included as within the scope of the claims.

What I claim is—

1. In combination, a press-mold, gates in the top of the press-mold and sliding transversely thereof, and a neck-mold above said sliding gates.

2. In combination, a press-mold, gates in the top of the press-mold and sliding transversely thereof, means for forcing said gates inwardly and means for limiting their inward movement, and a neck-mold above said sliding gates.

3. In combination, a press-mold, gates in the top of the press-mold and sliding transversely thereof, means for forcing said gates inwardly, means for opening the gates and holding them in an open position, and a neck-mold above said sliding gates.

4. In combination, a press-mold; a neck-mold above the same; and gates in the press-mold sliding transversely of the top thereof, and having interior faces adapted to conform to the interior faces of the neck and press molds.

5. In apparatus for pressing glass, the combination of a press-mold provided with sliding gates on its upper side having interior faces adapted to conform to the interior cavity of the mold, springs engaging the gates and adapted to normally hold them open, rollers mounted in the outer ends of the gates, a reciprocating plunger adapted to enter the mold-cavity and cam-forks adapted to cooperate with the plunger and to engage the rollers to close the gates, substantially as set forth.

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

JOHN JACKSON.

Witnesses:

PETER J. EDWARDS,
C. M. CLARKE.