

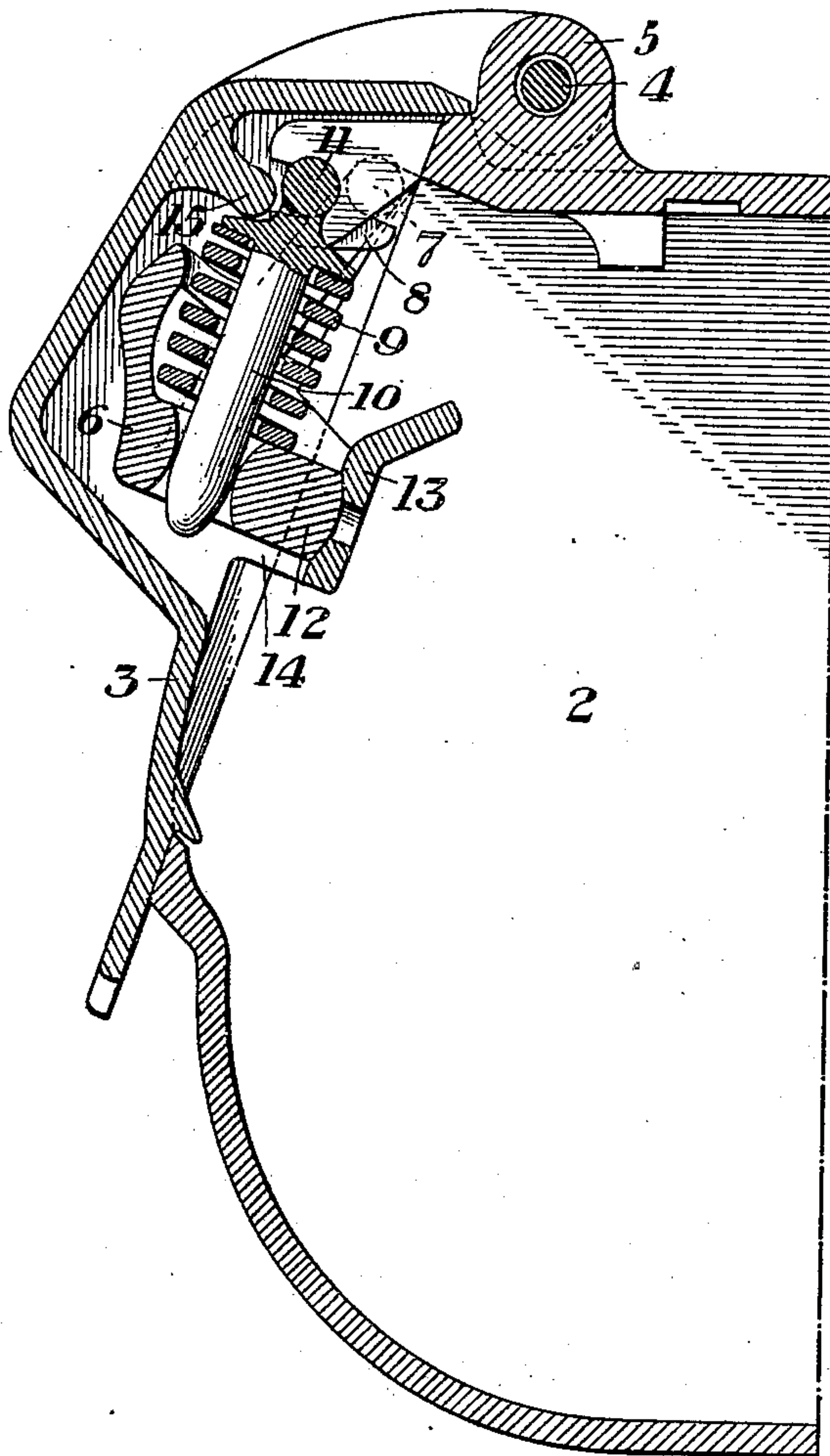
No. 863,560.

PATENTED AUG. 13, 1907.

J. W. STEPHENSON.
JOURNAL BOX LID.
APPLICATION FILED JAN. 15, 1907.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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4 SHEETS—SHEET 2.

Fig. 2.

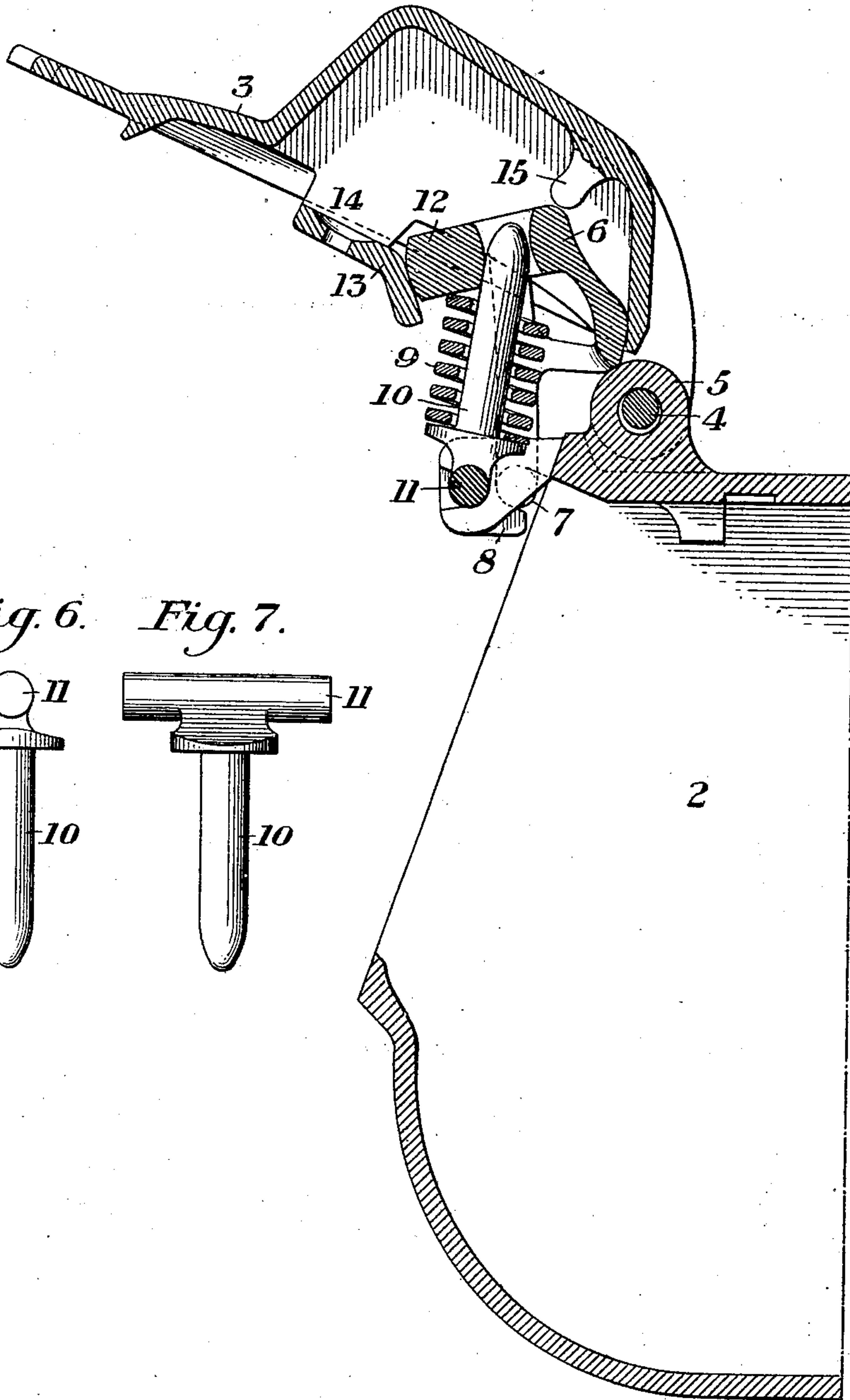


Fig. 6.

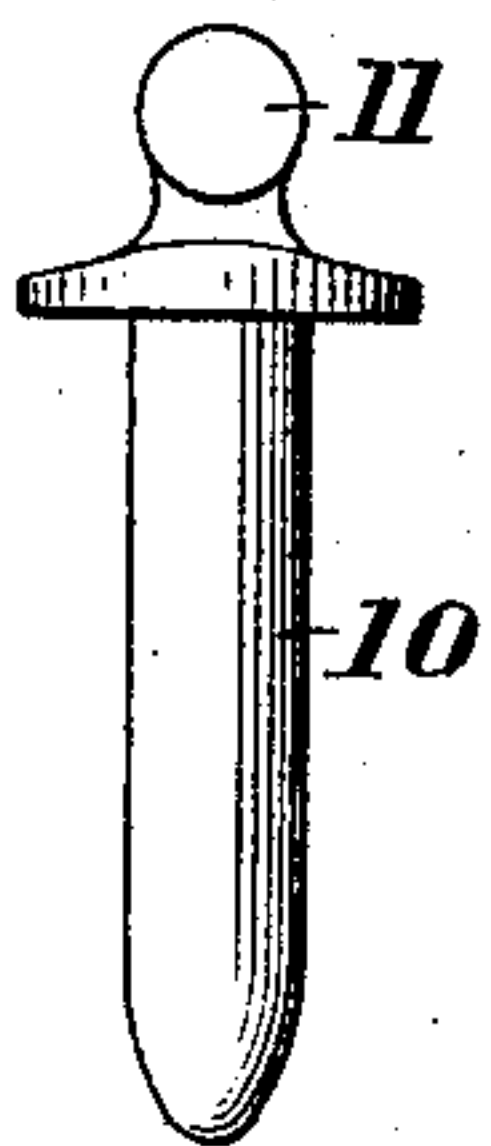
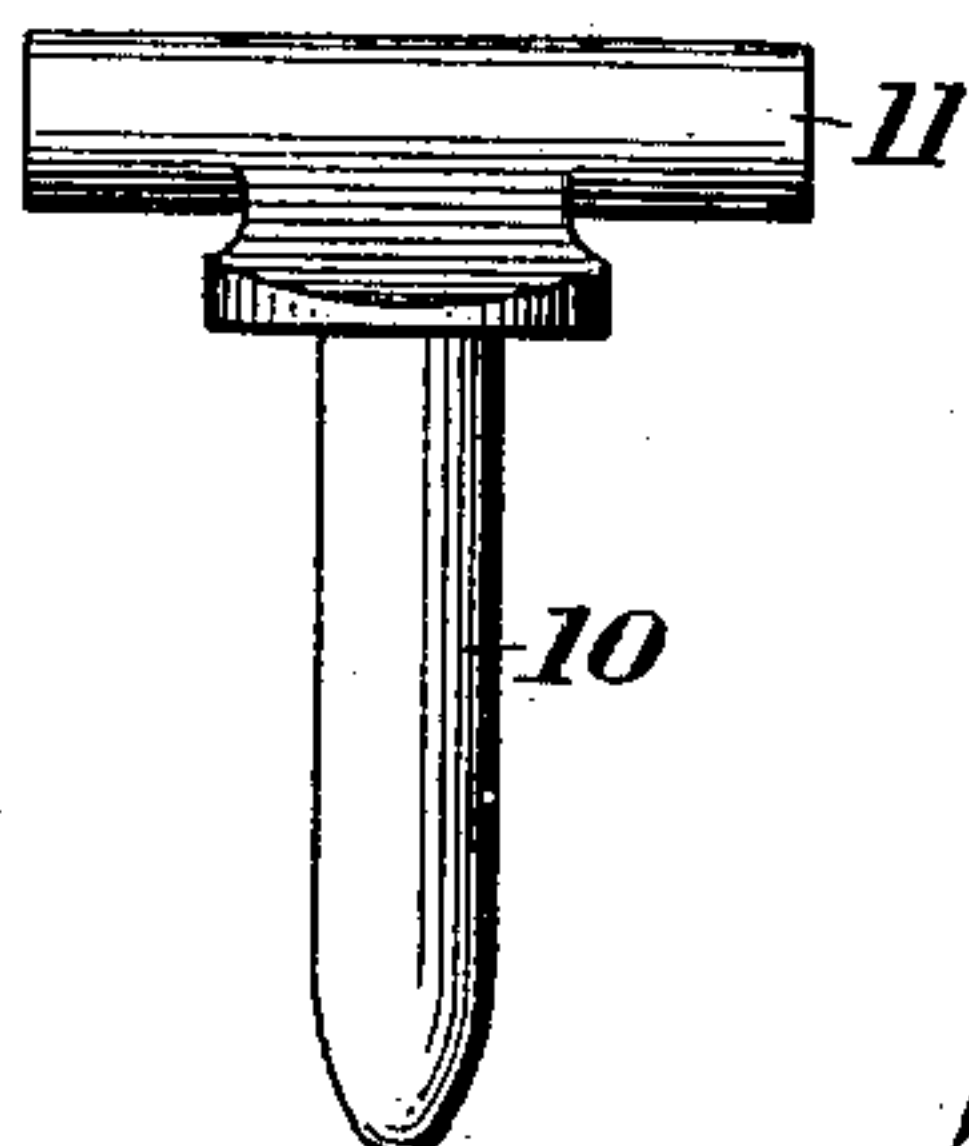


Fig. 7.



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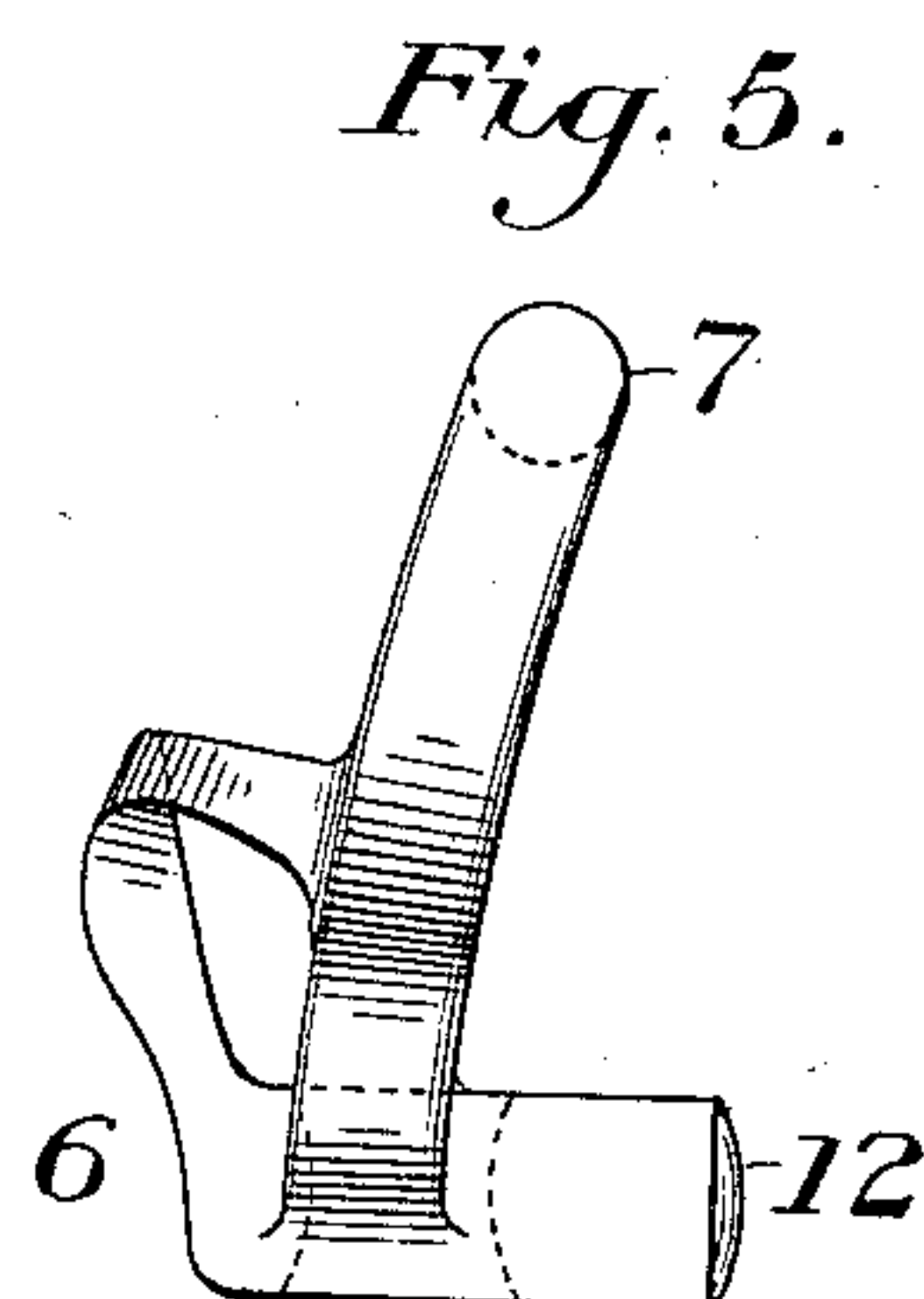
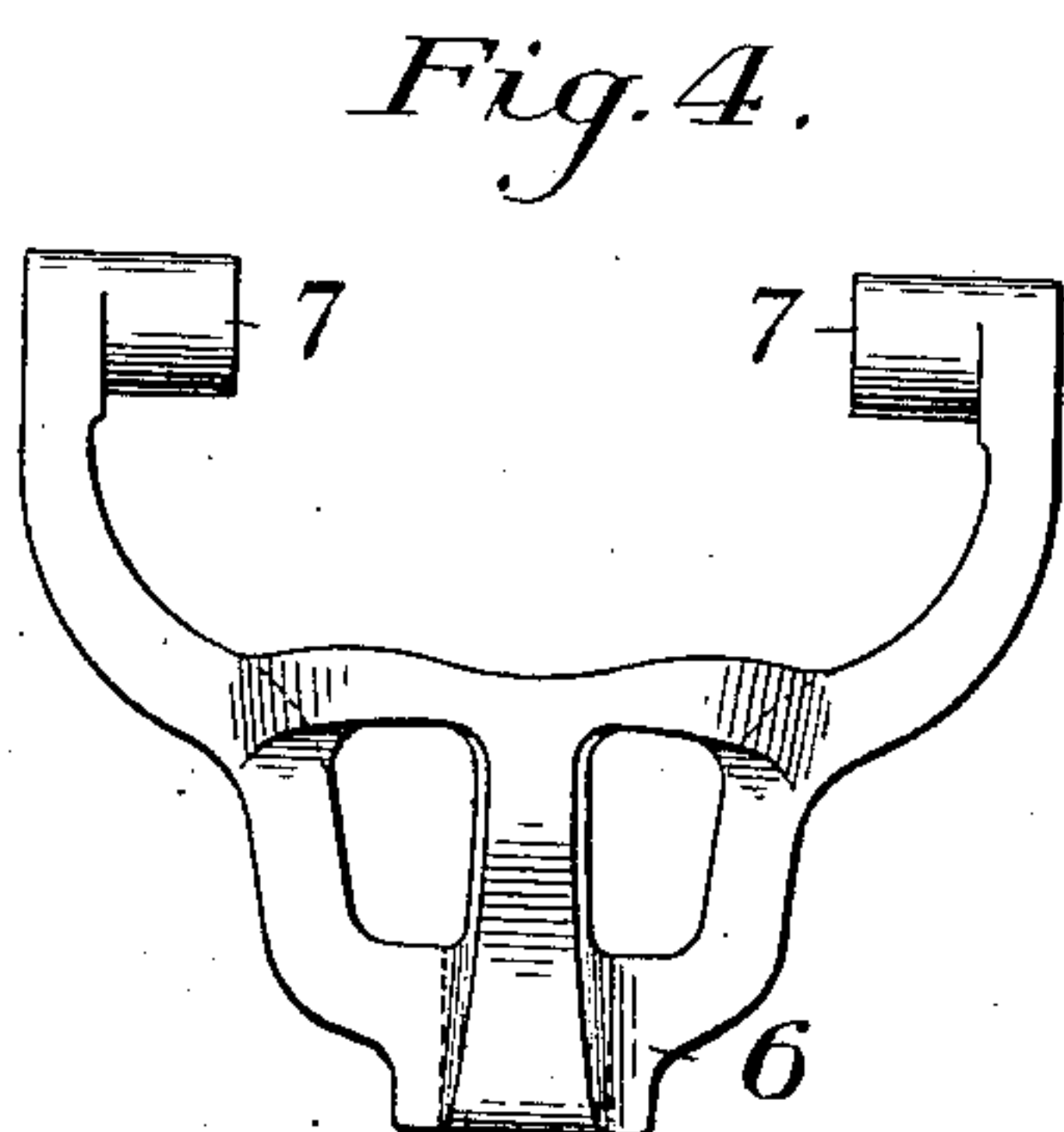
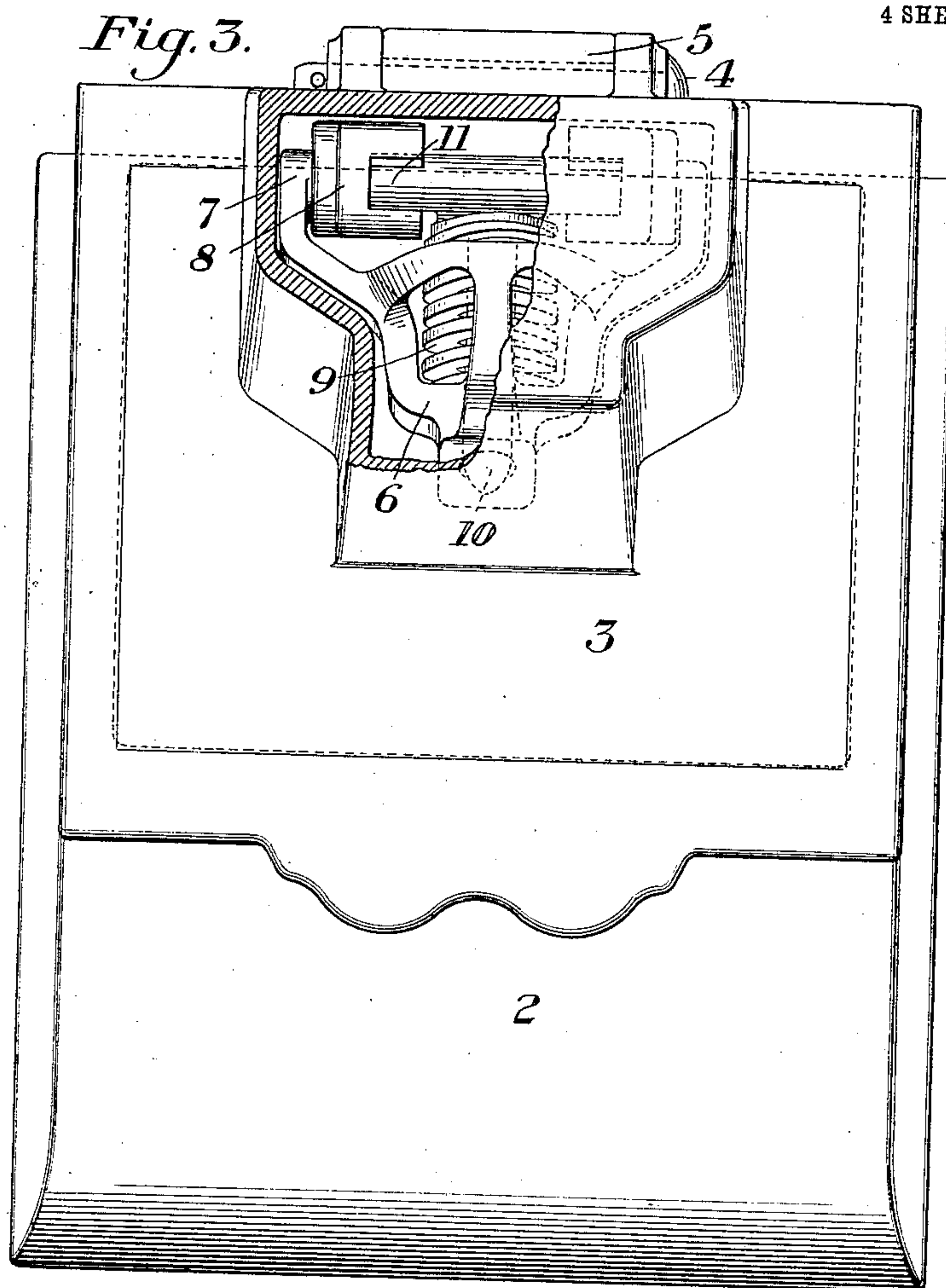
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4 SHEETS—SHEET 3.



WITNESSES

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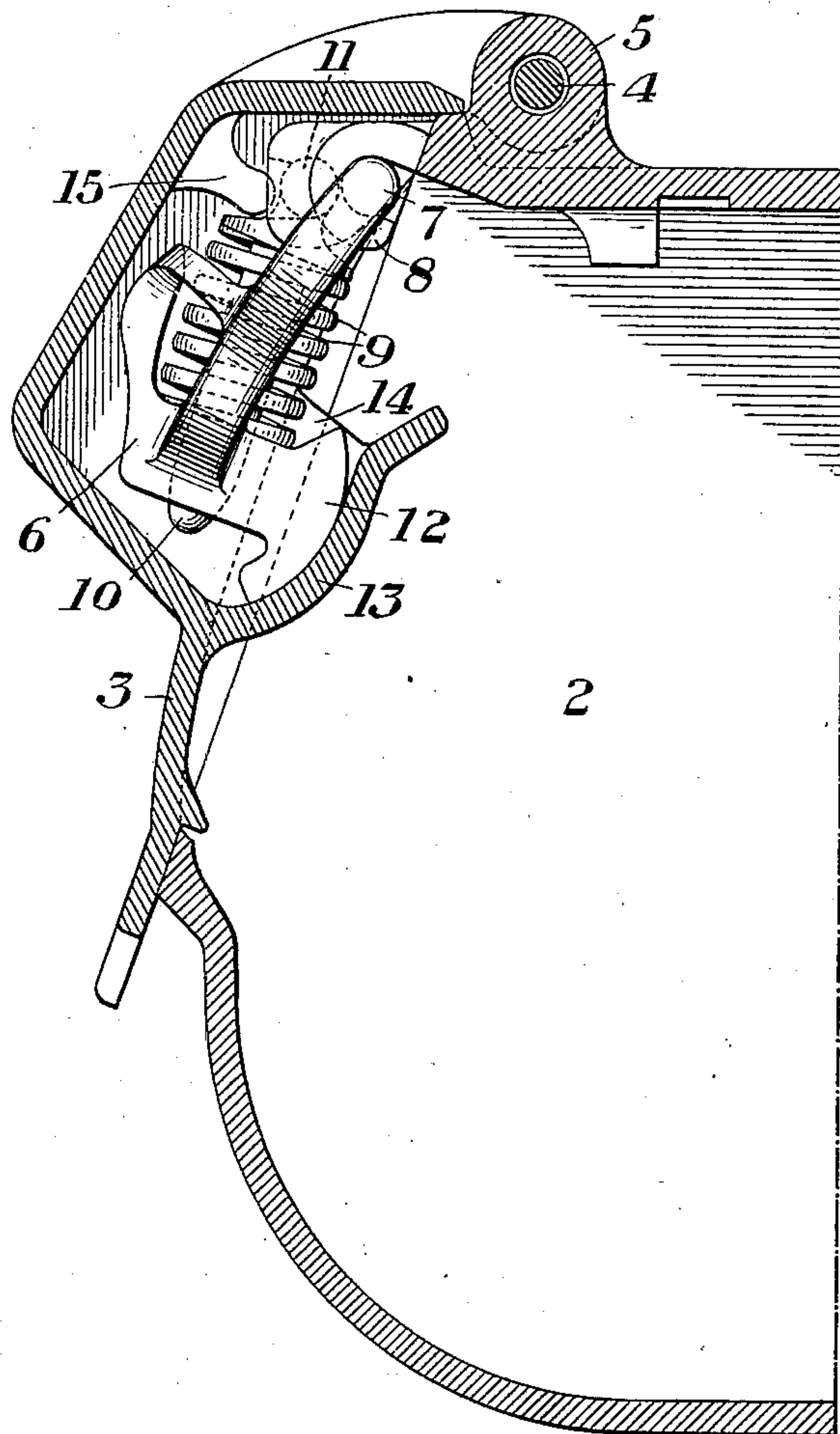
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4 SHEETS—SHEET 4.

Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN W. STEPHENSON, OF TOLEDO, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

JOURNAL-BOX LID.

No. 863,560.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed January 15, 1907. Serial No. 352,388.

To all whom it may concern:

Be it known that I, JOHN W. STEPHENSON, of Toledo, Lucas county, Ohio, have invented a new and useful Journal-Box Lid, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical central section through the box and lid, showing the lid in closed position; Fig. 2 is a similar section, showing the lid fully opened; Fig. 3 is a front elevation of the lid when closed, part of the lid being broken away for the purpose of illustration; Fig. 4 is an elevation of the stirrup, detached; Fig. 5 is a side elevation thereof; Figs. 6 and 7 are, respectively, side and front elevations of the pivotal bolt for the spring; and Fig. 8 is a view similar to Fig. 1, showing a modified construction of the bearing between the end of the stirrup and the lid.

The purpose of my invention is to provide a journal box lid which will seat itself accurately upon the face of the box, and will be held in closed position by spring pressure transmitted to the lid in a direction which may be substantially at right angles to the face of the box, and thus will be most effective in holding the lid closed.

In carrying out my invention I employ, in combination with the hinged lid, a pivoted stirrup or carrier and a spring which bears upon the stirrup or carrier and is pivoted on an axis different from the axis of the stirrup or carrier, so that the spring pressing upon the stirrup or carrier will tend to produce an axial rotation thereof, and this rotation will be transmitted as a closing pressure to the lid of the box.

In the drawing, 2 is the axle-box and 3 is the lid which is pivoted by a pintle 4 to the box-like lug 5.

6 is a stirrup or spring carrier which is pivoted, preferably by trunnions 7 fitting within recesses in lugs 8 of the box, the axis of these trunnions being forward of the pivotal axis 4 of the lid. This stirrup or spring carrier has a coiled spring 9 which is mounted upon a stem or bolt 10 having trunnions 11 which are pivotally mounted on the box on an axis different from the axis of the stirrup, this axis being preferably constituted by the trunnions 11, which fit within open recesses on the same lug of the box in which the recesses for the trunnions of the stirrup are formed. The spring bears at one end against the head of the bolt 10 and at the other end bears against the face of the stirrup, and the bolt 10 passes through the hole at the end of the stirrup.

The stirrup has a portion, preferably the inwardly-projecting portion 12 at its base, which bears against a part of the lid, preferably against a saddle 13 which extends across a part of the inner face of the lid and is connected

with the lid by webs 14. The consequence is that when the spring is under compression it will press downwardly upon the base 12 of the stirrup, and, by reason of the relative eccentricity of the axes of the stirrup and spring, it will tend to cause a rotation of the stirrup around its axis 7, which will be in a direction inwardly and substantially at right angles to the face of the box.

The lid has, on its inner face, a projection 15 which bears against the stirrup, and when the lid is in open position, it occupies to the stirrup the relative position shown in Fig. 2. The parts being in this position, the lid is free to rock, for it is not under spring tension, and the pintle 4 is preferably made of less diameter than the hole through which it passes as shown in Fig. 2. By thus giving freedom and independence of rocking motion to the lid, it is enabled to adjust itself to a correct bearing on the face of the box when closed. Taking the parts in the position shown in Fig. 2, when it is desired to close the lid, the operator seizes the end of the lid and presses it downward, thus causing the lid to turn on its pivotal axis and by pressing the projection 15 against the stirrup, it turns the stirrup on the axis 7. As the stirrup turns on its axis, because of the eccentricity of said axis with the axis 11 of the spring, the spring is put under compression, and when the stirrup passes its central position, the tension of the spring being free to act, will force the stirrup inward with great pressure, pressing through the base of the stirrup against the saddle 13 so as to force the lid against the face of the box.

To permit free adjustment of the lid with the box, I prefer to make the bearing surfaces between the parts 12 and 13 of ball form, so as to afford a free rocking bearing; or they may be simply of curved form, as shown in the modification illustrated in Fig. 8.

It will be noticed that the pressure of the spring is thus exerted upon the box in a manner that will produce the most efficient result. The pressure is inward on the box instead of being in a downward direction.

In designing the parts of the device, the degree of pressure to be applied to the lid by the spring can be determined both by the strength of the spring chosen for the purpose, and also by the extent of eccentricity between the axes of the spring and the stirrup; for the greater the difference between these axes, the greater the leverage between the spring and the stirrup and the more powerful will be the closing effect.

My device is very easy to assemble by hand without need of employing any special tools, for when the lid is open there need be no tension exerted between the spring and the lid, and therefore the parts can be easily separated and put together.

Those skilled in the art will be able to modify my invention in various ways within the scope of the claims, since

What I claim is:

- 5 1. A pivotally mounted journal box lid having a stirrup or spring carrier pivoted eccentrically to the axis of the lid, and a spring pivoted independently of and eccentrically with respect to the axis of the carrier and bearing against said carrier or stirrup substantially as described.
- 10 2. A pivotally mounted journal box lid having a stirrup or carrier pivoted to the box on an axis different from that of the lid, situated on the inner side of the lid and having a bearing upon the lid, and a spring which is also pivotally mounted upon an axis different from that of the stirrup or carrier and bears upon the latter substantially as described.
- 15 3. A pivotally mounted journal box lid having a stirrup or spring carrier pivoted eccentrically with respect to the axis of the lid and having a rocking bearing against said lid, and a spring pivoted independently of and eccentrically with respect to the axis of the carrier and bearing against said carrier, substantially as described.
- 20 4. A pivotally mounted journal box lid having a stirrup or spring carrier pivoted eccentrically to the axis of the lid, and a spring bearing upon said carrier or stirrup and also pivoted eccentrically to the axis of the stirrup or carrier, said stirrup or carrier having a bearing against a saddle on the inner face of the lid substantially as described.
- 25 5. A pivotally mounted journal box lid having a stirrup or spring carrier pivoted eccentrically to the axis of the lid, and a spring bearing upon said carrier or stirrup and also pivoted eccentrically to the axis of the stirrup or carrier, said lid having a portion which bears upon the outer side of the stirrup or carrier when the lid is open substantially as described.
- 30 6. A pivotally mounted journal box lid having a stirrup or spring carrier pivoted eccentrically to the axis of the lid, and a spring bearing upon said carrier or stirrup and also pivoted eccentrically to the axis of the stirrup or carrier, said lid having a portion which bears upon the outer side of the stirrup or carrier when the lid is open substantially as described.
- 35 7. A journal box having a pivotally mounted lid, a bolt at the inner side of the lid journaled in open recesses in the box, a stirrup which is also journaled in recesses in the box, and a spring carried by the bolt and bearing on the stirrup, substantially as described.
- 40 8. A journal-box lid pivoted on an axis having capacity for loose lateral motion, and a coiled spring and a stirrup acting upon the lid the spring and stirrup being mounted to swing from separate points substantially as described.
- 45 9. A pivoted journal box lid in combination with a pivotally mounted spring and a stirrup with which the lid has loose connection on opposite sides enabling the lid to move the stirrup in both directions substantially as described.
- 50 10. A journal box lid pivoted on an axis having capacity for loose lateral motion, and a pivotally mounted coiled spring and pivoted stirrup acting upon the lid the spring and stirrup being pivoted at separate points substantially as described.
- 55 11. The combination of a swinging journal box lid, a swinging carrier mounted independently of the lid and having a loose engagement therewith to swing with said lid, and a swinging spring mounted independently of the carrier and lid and eccentric thereto, said spring bearing against the carrier in a manner to normally hold the lid closed, substantially as described.
- 60 65 70

In testimony whereof, I have hereunto set my hand, January 11th, 1907.

JOHN W. STEPHENSON.

Witnesses:

THOMAS W. BAKEWELL,
GEORGE H. SONNEBORN.