

APPLICATION FILED OCT. 1, 1912.

Patented June 3, 1913.

2 SHEETS—SHEET 1.



WITNESSES.

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LA RUE R. COPPAGE.
 TEMPORARY BINDER.
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1,063,243.

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2 SHEETS—SHEET 2.

Fig. 3.

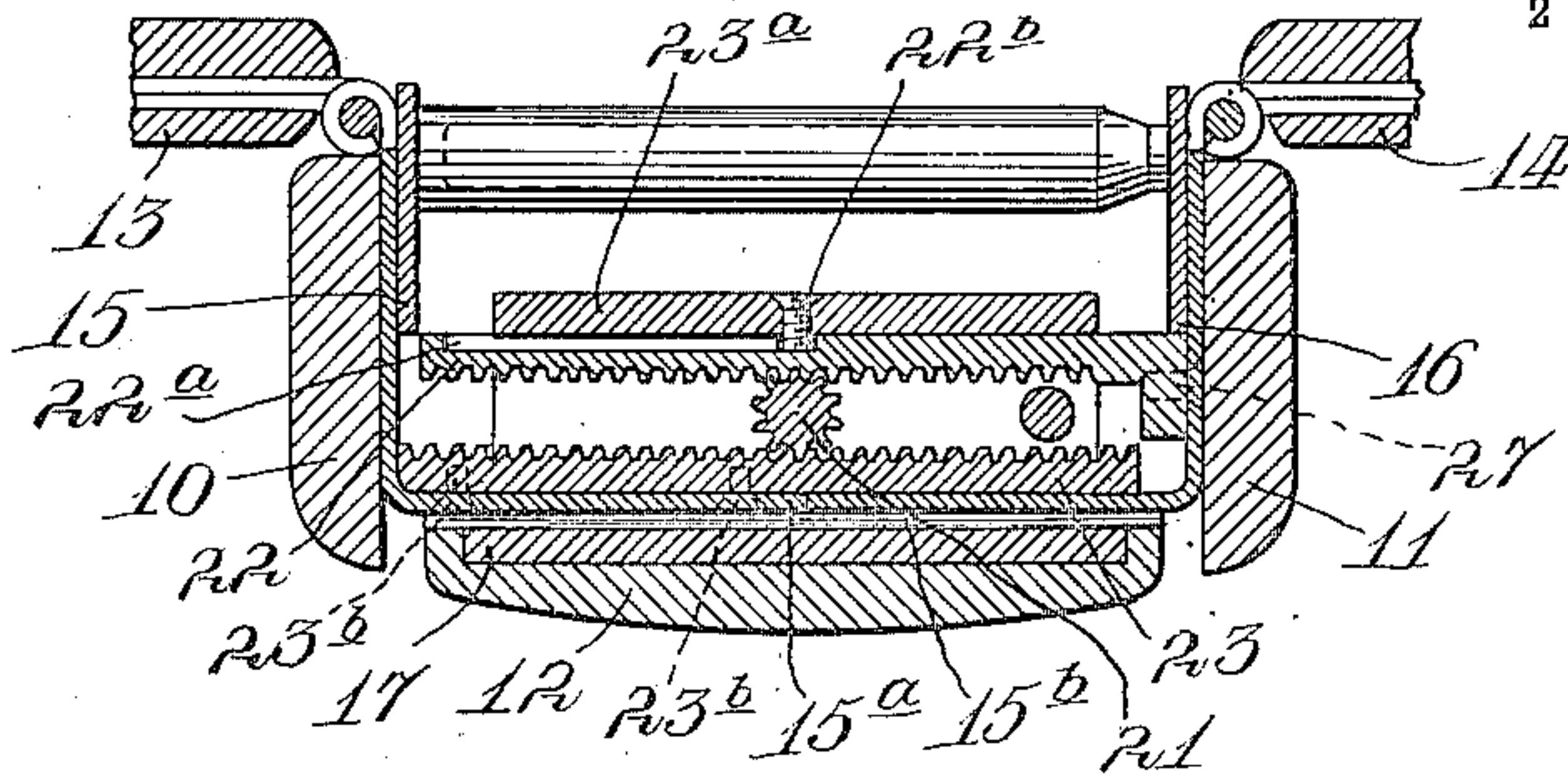


Fig. 4.

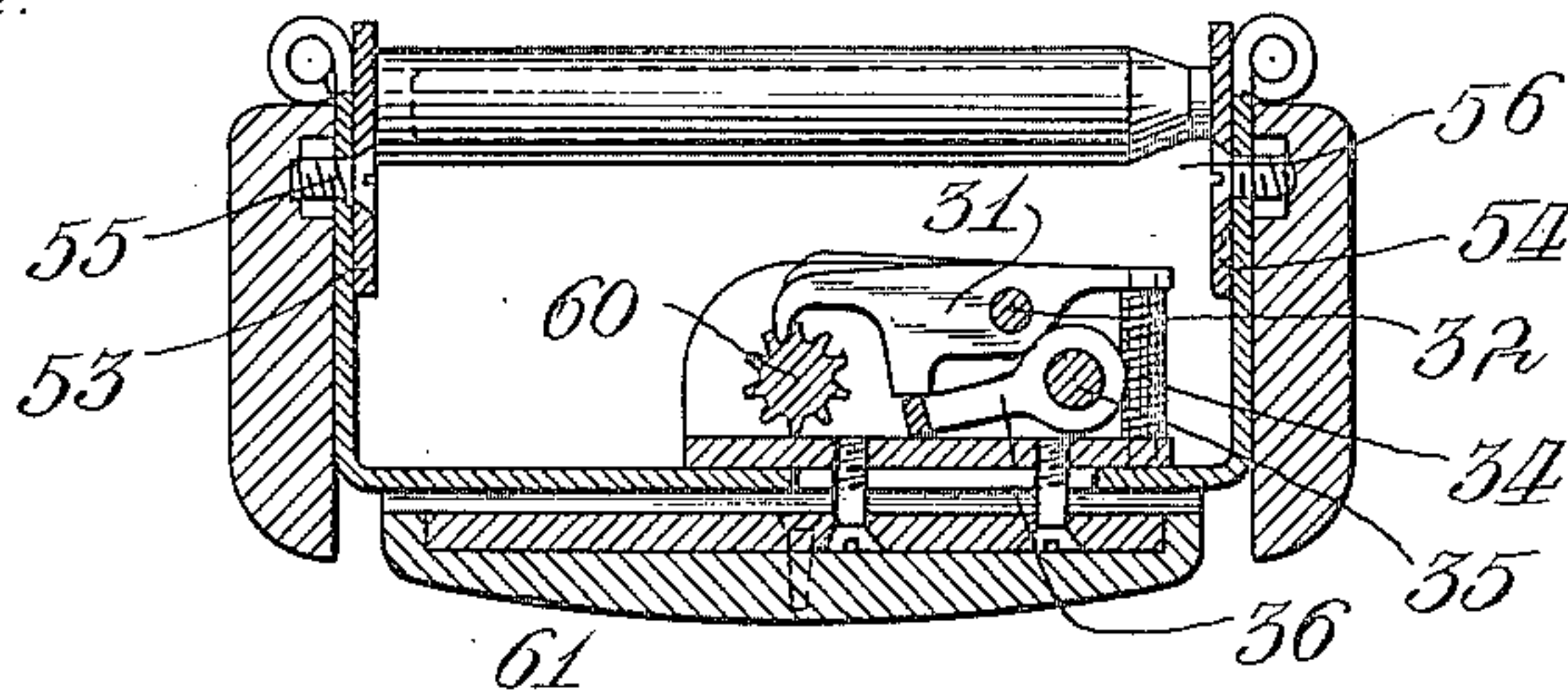


Fig. 5.

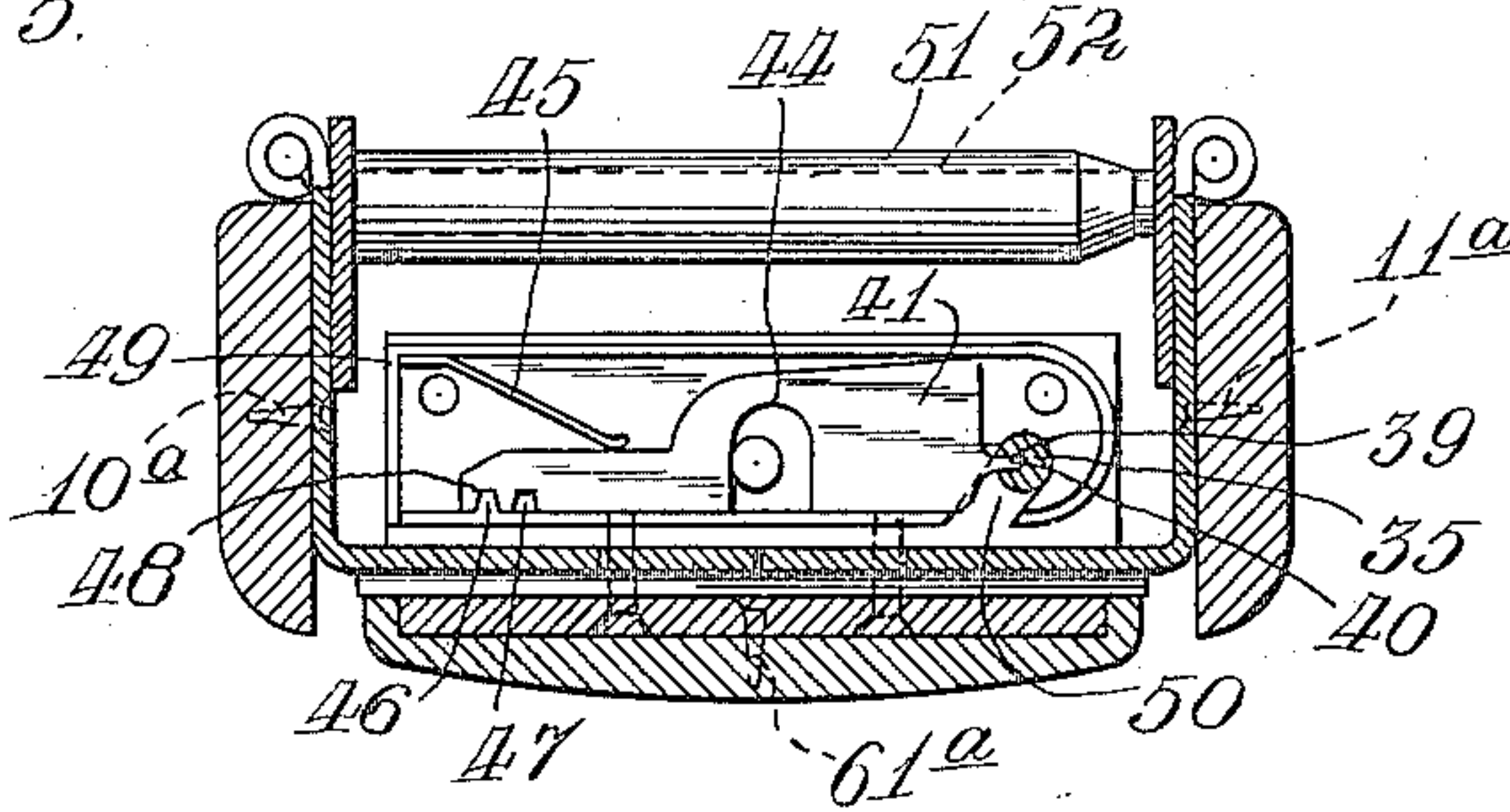


Fig. 6.

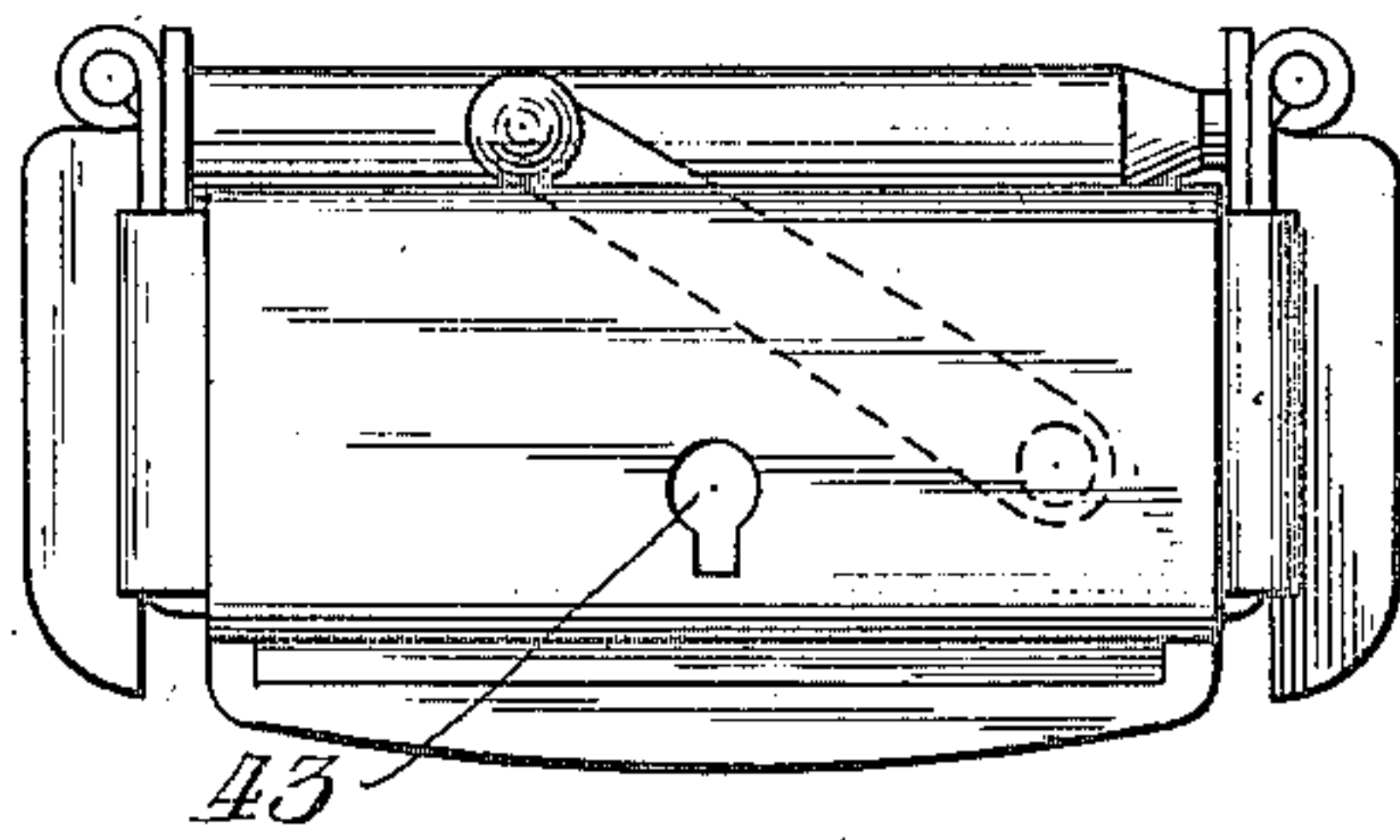
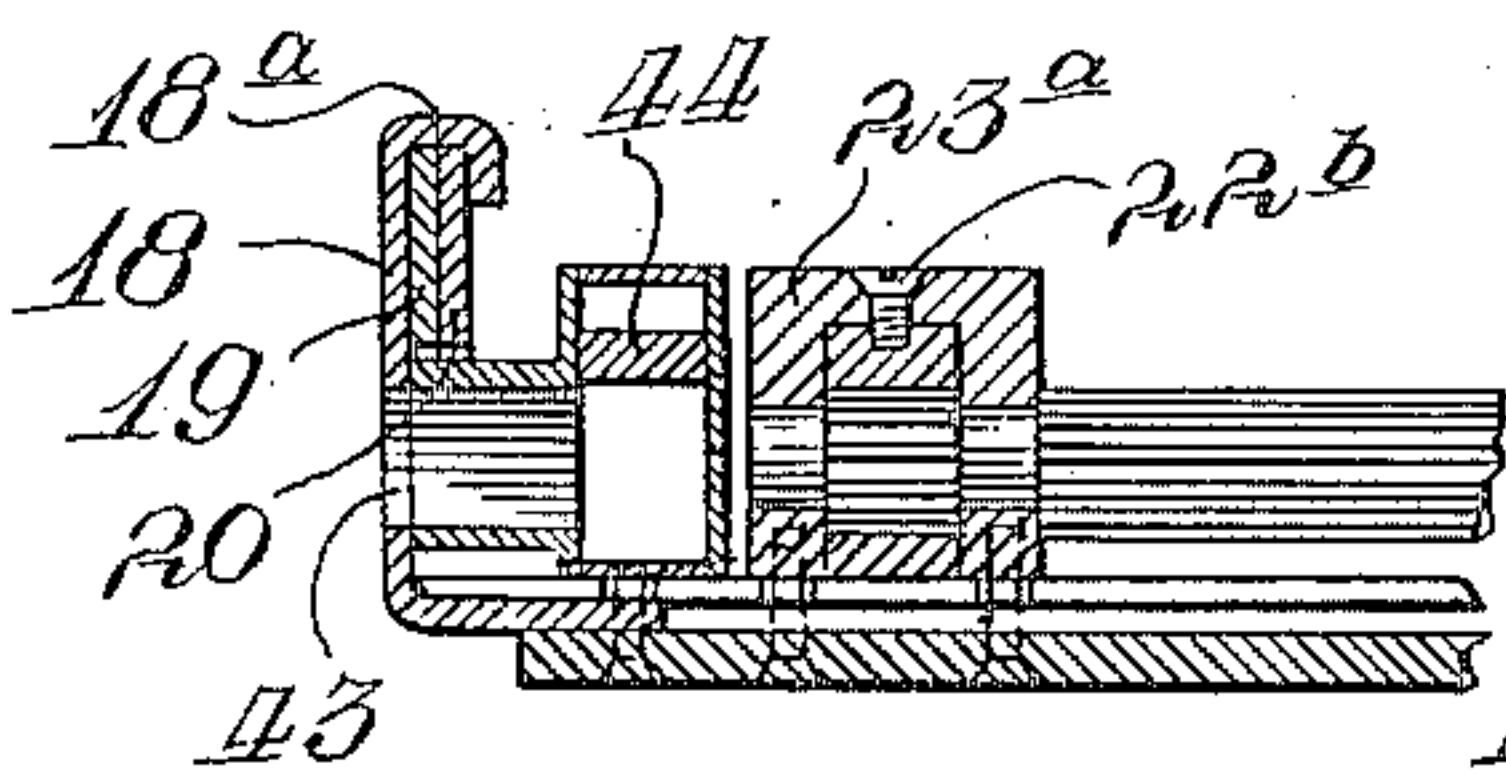


Fig. 7.



WITNESSES

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TEMPORARY BINDER.

1,063,243.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed October 1, 1912. Serial No. 723,353.

To all whom it may concern:

Be it known that I, LA RUE R. COPPAGE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Temporary Binders, of which the following is a specification.

This invention relates to new and useful improvements in temporary binders for loose leaves or sheets. Its object is to provide a simple, compact, and efficient device for this purpose, and to provide a binding mechanism which may be expanded or contracted without the use of a separate key as has been the custom with devices heretofore used. I accomplish this by means of a lifting device for the locking pawls which is operated by a crank or arm giving great leverage and which is disposed in a convenient position. By this means it is unnecessary to release the tension of the binder in any way before operating the device. I also provide means for securely locking the device against its use by unauthorized persons. This locking means coöperates with the releasing means above described, thereby providing a secure device when locked as well as a very convenient device for daily use.

Among the features of my present invention are a longitudinal rotatable shaft disposed in the back portion of the cover in parallel relation to the reciprocating side members; simple means for converting the rotary motion of this shaft to a reciprocating motion and imparting the same to the movable side members, said means consisting of racks and pinions; a locking device for said shaft of a very simple form which engages the teeth of the pinion on said shaft and which may be released from their locking position by a second shaft disposed in parallel relation to said first-named shaft and compactly arranged in the back member; a simple and efficient locking device for said second shaft; and removable binding strips for said cover members.

Other objects and advantages of my improved temporary binder will become appar-

ent in the following specification when taken in connection with the accompanying drawings and the novel features and combinations thereof will be set forth in the claims.

In the drawings Figure 1 is a plan view of the back member of the binder showing my improvements disposed therein. Fig. 2 is a longitudinal section of one end portion of said back member taken along the line 2, 2 of Fig. 1. Fig. 3 is a cross section of the same taken along the line 3, 3 of Fig. 1. Fig. 4 is a cross section taken along the line 4, 4 of Fig. 1. Fig. 5 is a cross section taken along the line 5, 5 of Fig. 1. Fig. 6 is an end view of the back. Fig. 7 is a detail of the releasing yoke.

Referring more particularly to Figs. 1 and 3 of the drawings, it will be seen that the back member of the binder is composed of removable cover pieces 10 and 11 which are attached to the reciprocating metal plates 15 and 16 preferably of angular form, the inner flanges or body portions 15^a and 15^b having their inner edges adjacent or in contact when the members are in their closed positions. To these reciprocating members I attach the racks 22 and 23 which are oppositely disposed with relation to pinions 21. The pinions 21 mesh with and drive these racks, said pinions being integral with or carried by the shaft 21^a which extends longitudinally of the binder. I also provide a back cover element 12 which is secured to a metallic plate 17 extending longitudinally of the binder. The said plate is provided with upwardly turned end plates 18 having flanged or grooved upper edges 18^a which serve as guides for the side members.

The side cover members are provided with projecting tongues or bars 19 and 20 which work in the above described guides and which insure accurate parallel movements of said side members relatively to each other. The shaft 21^a is provided with bearings 23^a which are secured to the back plate 17 by screws or other suitable means. The end of the shaft is provided with a square end to

receive a removable operating crank 25. By means of this crank the operator may rotate the shaft and thereby cause reciprocating movements in either direction of the side cover members 10 and 11.

The racks 22 may be secured to the side member plates by suitable screws 27 which are threaded into the flanged ends 27^a of said racks. The racks 23 which lie below the pinion may be secured to the opposite side cover plates 15 by screws 23^b or other suitable means. One of the upper racks 22 is provided with a groove 22^a in which slides the end of a screw 22^b, said screw serving as a stop to prevent the over-travel of said racks and thereby prevent the accidental complete separation of the side cover members. A helical spring 28 is disposed around the shaft 21^a being attached to said shaft at one end and to one of the bearings 23^a at the other end. This spring is given a tension such as will have the constant tendency to cause a separating movement of the side cover members.

At the middle portion of the length of the shaft I provide a pinion 60 which is engaged by a series of pawls 29, 30 and 31 of slightly different lengths. These pawls are pivotally supported upon a pin 32 mounted in a frame 33 secured to the back cover member. These pawls are held in engagement with said pinion 60 by springs 34. The varying lengths of said pawls cause a more accurate locking of the shaft and reduce the lost motion.

I provide a releasing shaft 35 for these pawls, this shaft being given a position parallel to the shaft 21^a and mounted in the bearings supported by the back frame. This shaft is provided with a yoke 36 which lies beneath the pawls 29, 30 and 31 and is adapted to raise said pawls out of engagement with the pinion 60 when said shaft is rotated. The outer end of this shaft is provided with the small end crank 37 by which the operator may rotate it and thereby cause disengagement of the pawls and pinion 60. A helical spring 38 is disposed around the shaft 35 having one end fixed to said shaft and the other to the frame. This shaft is given a tension such as will cause the yoke 36 to be held out of engagement with the pawls. The shaft 35 is provided with a notch 39 into which a locking member 40 enters, said locking member being integral with a block or bolt 41 which may be operated by a key 42 inserted in the aperture 43 in the end of the back member. The bolt 41 is provided with a notch 44 so shaped that the key 42 will first lift said bolt and then move it toward the left, as viewed in Fig. 5. In lifting the bolt the notch 48 in one end thereof is lifted upwardly and out of engagement with the lug 46 and the movement

to the left causes the notch 47 to come into engagement with said lug. The said lug will therefore lock the bolt 41 in either extremity of its movement. A spring 45 normally holds the block 41 in its proper position. The reverse motion of the bolt 41 is very similar to that above described. The casing 49 incloses said locking bolt and a portion of the shaft 35 and may be secured to the back cover element. A notch 50 in said casing permits easy removal thereof from the shaft 35. The usual telescoping posts and sleeves 51 and 52 are attached to the side cover members and provided for holding the loose sheets. The said telescoping posts and sleeves are attached to the removable plates 53, 54 which are secured to the side cover plate members 15 and 16 by the screws 55 and 56. The main body of the cover elements 13 and 14 are hinged to the movable members 15 and 16 in the usual manner.

In the use of my improved binder it will be seen that the operator may remove a sheet by first unlocking the shaft 35 by means of a key 42 after which he is free to operate the crank 37 and lift the pawls 29, 30 and 31. This will cause the shaft 21^a to be free to rotate. The spring 28 will cause rotation of said shaft in such a direction as to cause the pinions 21 to drive the racks 22 and 23 outwardly and hence the side cover members will be caused to separate. After a new sheet has been inserted the side cover members may be moved toward each other by the pressure of the operator's hands, or said movement may be brought about by the crank 25. When the cover members move toward each other they are retained in their innermost positions by one of the pawls 29, 30 and 31. The cover or binding strips 10, 11, 61 may be removed at any time by loosening the screws 10^a, 11^a, 61^a and new strips may be put in their places. The telescoping posts may also be quickly removed from the metal cover members and others that are spaced differently may be substituted.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit of my invention.

I claim:

1. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, means for manually rotating said shaft in one direction, a spring operatively con-

connected with said shaft for rotating the same in the other direction, and means for controlling the rotation of said shaft by said spring.

2. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, and resilient means associated with said shaft for rotating it in one direction and causing said cover members to separate.

3. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, resilient means associated with said shaft for rotating it in one direction and causing said cover members to separate, and locking means which engage said shaft and prevent rotation thereof and motion of the cover members.

4. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, resilient means associated with said shaft for rotating it in one direction and causing said cover members to separate, locking means which engage said shaft and prevent rotation thereof and motion of the cover members, and a rotatable shaft adapted to release said locking means.

5. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, resilient means associated with said shaft for rotating it in one direction and causing said cover members to separate, locking means which engage said shaft and prevent rotation thereof and motion of the cover members, a rotatable shaft adapted to release said locking means, and means for preventing the operation of said shaft.

6. The combination of a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, resilient means associated with said shaft for rotating it in one direction and causing said cover members to separate, and removable means associated with said shaft by which the operator may rotate said shaft.

7. The combination of a back member, a rotatable shaft mounted on said back member, cover members movable relatively to said back member and operated by said shaft, ratchet teeth on said shaft, a plurality of independently spring actuated pawls co-

operating with said ratchet teeth to prevent the rotation of said shaft in a direction to separate said cover members, and means simultaneously lifting all of said pawls out of engagement with said ratchet teeth.

8. The combination of a pair of cover members movable relatively to each other, a rotatable member, rack and pinion mechanism by which said rotatable member may actuate said cover members, ratchet teeth on said rotatable member, a pawl cooperating with said ratchet teeth to prevent the rotation of said rotatable member in a direction to separate said cover members, means for disengaging said pawl from said ratchet teeth, and a lock for controlling the operation of said means.

9. The combination of a pair of cover members movable relatively to each other, a back member, a rotatable member mounted on said back member, rack and pinion mechanism by which said rotatable member may actuate said cover members, ratchet teeth on said rotatable member, a pawl cooperating with said ratchet teeth to prevent the rotation of said rotatable member in a direction to separate said cover members, a releasing shaft for disengaging said pawl from said ratchet teeth, and means for oscillating said releasing shaft.

10. The combination of a pair of cover members movable relatively to each other, a back member, a guide block on said back member, racks fixed to said cover members one to each and sliding in said guide block, a pinion mounted on said back member and meshing with both said racks, a shaft engaging said pinion for rotating the same, ratchet teeth on said shaft, a pawl cooperating with said ratchet teeth to prevent the rotation of said shaft in a direction to separate said cover members, a releasing shaft for disengaging said pawl from said ratchet teeth, means for oscillating said releasing shaft, and a key controlled lock for preventing the oscillation of said releasing shaft.

11. The combination of a pair of cover members movable relatively to each other, a rotary member, rack and pinion mechanism by which said rotary member may actuate said movable cover members, a spring for automatically actuating said rotary member to move said cover members apart, and means for positively actuating said rotary member to move said members toward each other.

12. The combination with a pair of cover members movable relatively to each other, of a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, means associated with said shaft for rotating it in a direction to separate said cover members, locking means engaging said

shaft to prevent rotation thereof, and a rotatable shaft adapted to release said locking means.

13. The combination with a pair of cover members movable relatively to each other, a rotatable shaft mounted between said cover members, means by which said shaft may impart a reciprocating motion to said members, means associated with said shaft for rotating it in a direction to separate said cover members, locking means engaging said

shaft to prevent rotation thereof, a rotatable shaft adapted to release said locking means, and means for preventing the operation of said releasing shaft.

In testimony whereof, I have subscribed my name.

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LA RUE R. COPPAGE.

Witnesses:

HENRY A. PARKS,
GEO. L. WILKINSON.