

J. G. MEYERS.
LOOSE LEAF BINDER.
APPLICATION FILED FEB. 16, 1911.

997,311.

Patented July 11, 1911.

2 SHEETS-SHEET 1.

FIG. 1

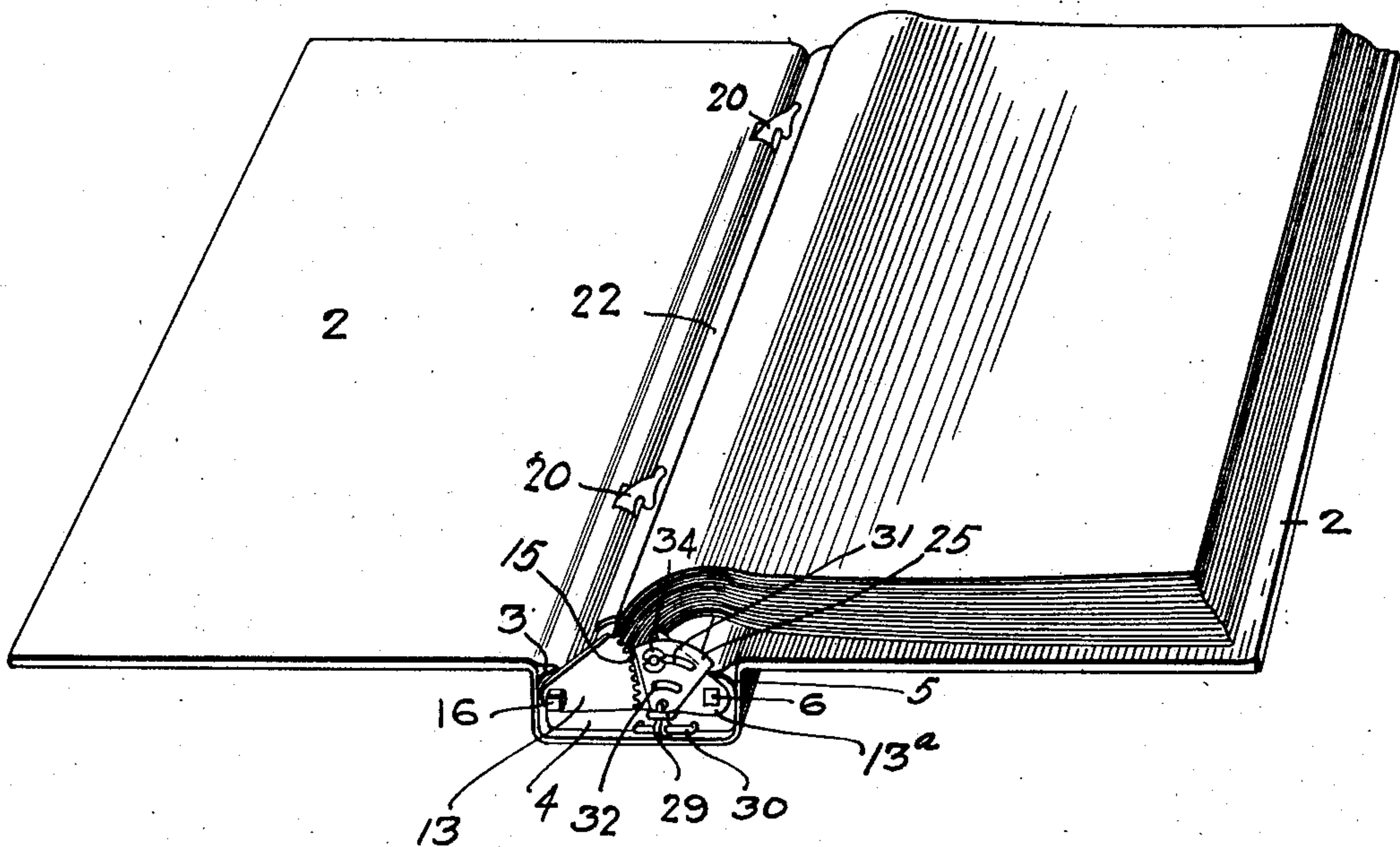


FIG. 2

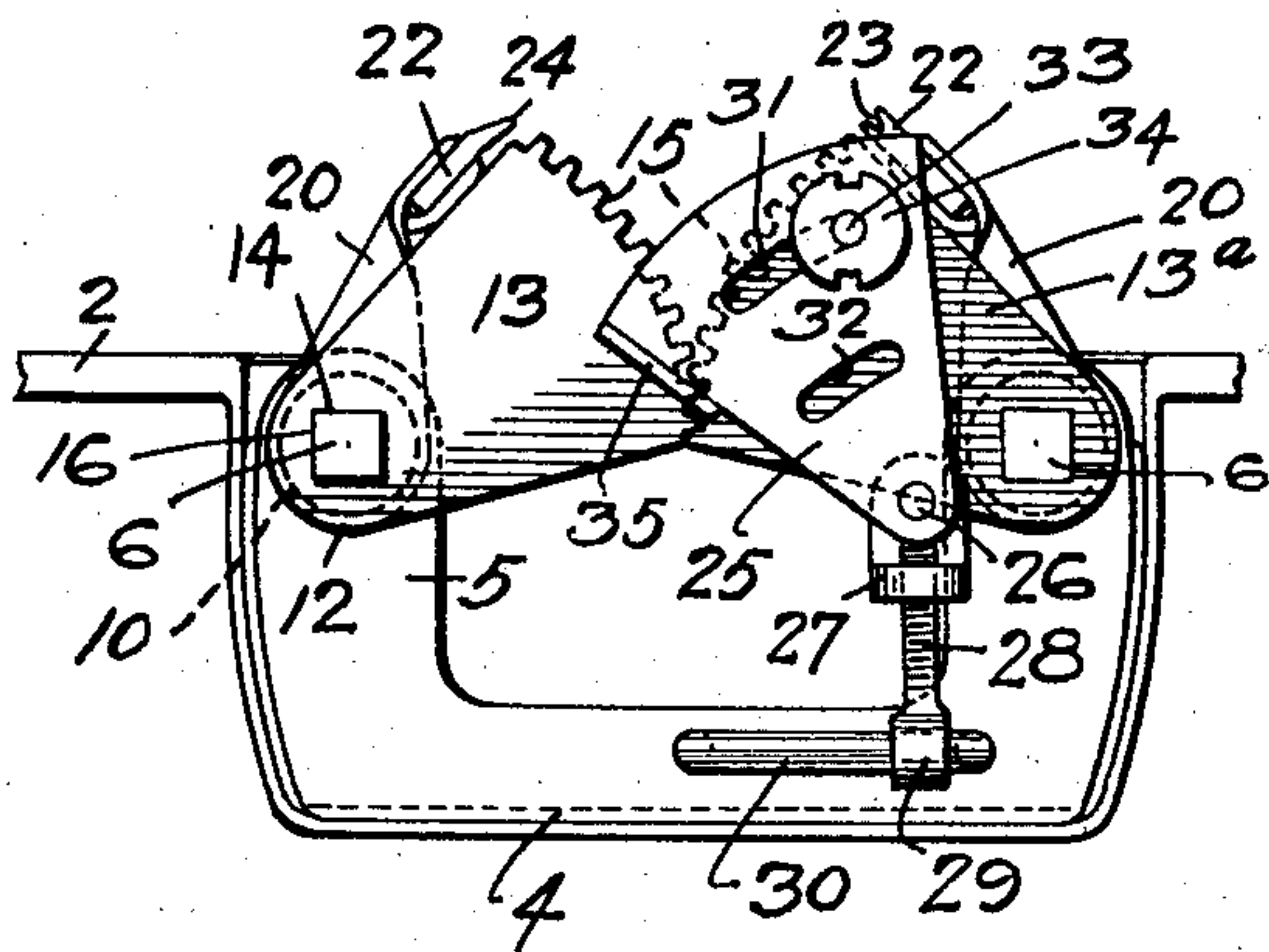
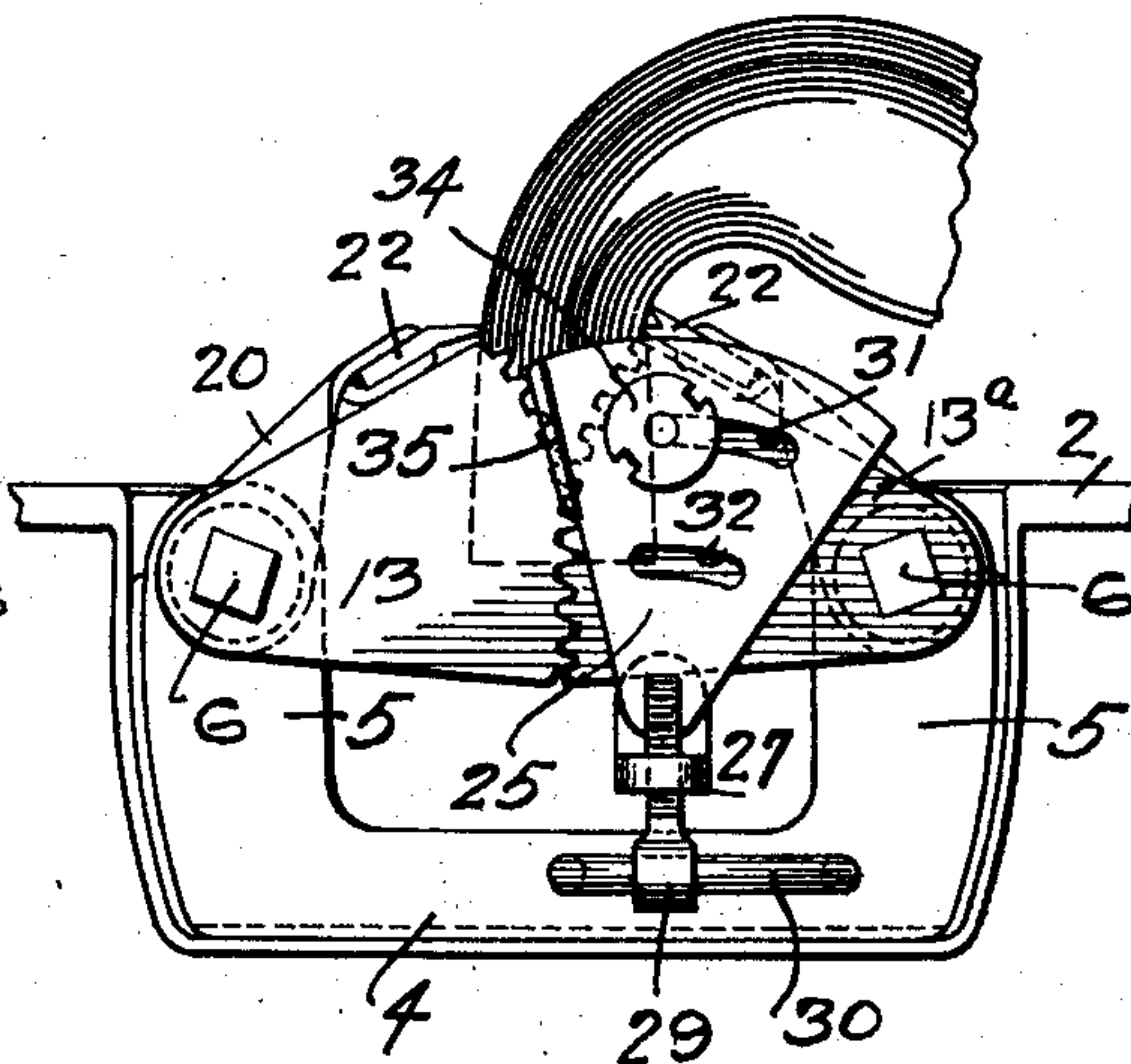


FIG. 3



WITNESSES.

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2 SHEETS—SHEET 2.

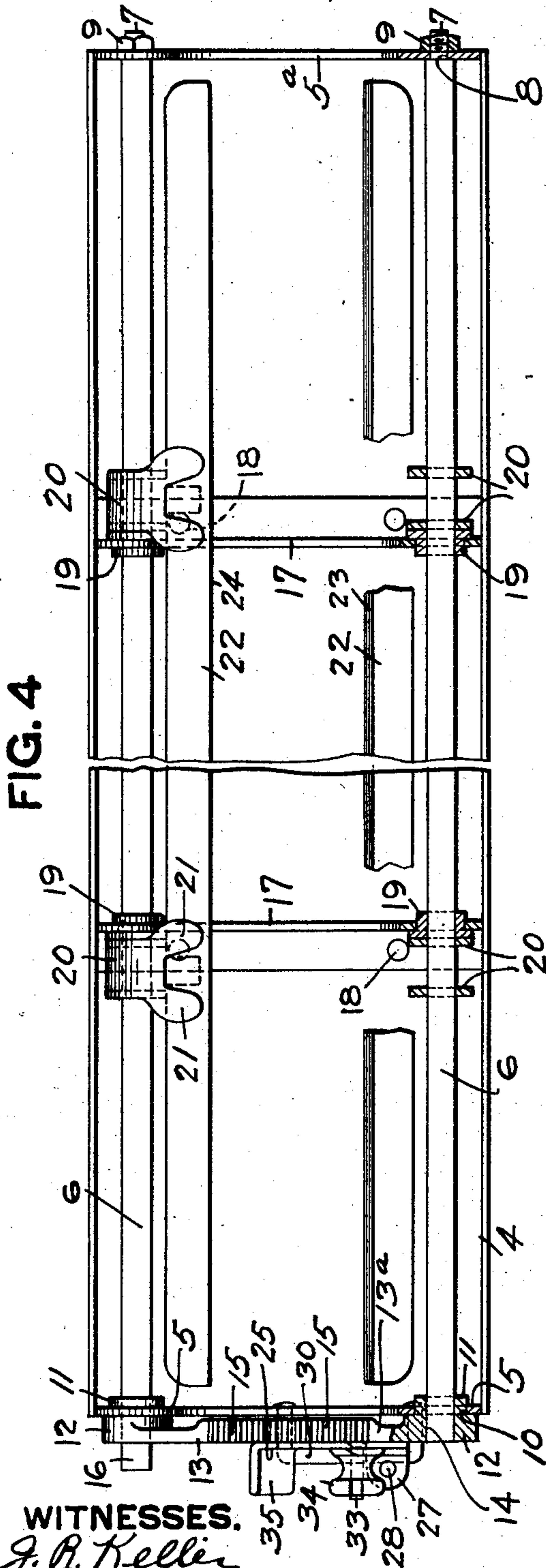
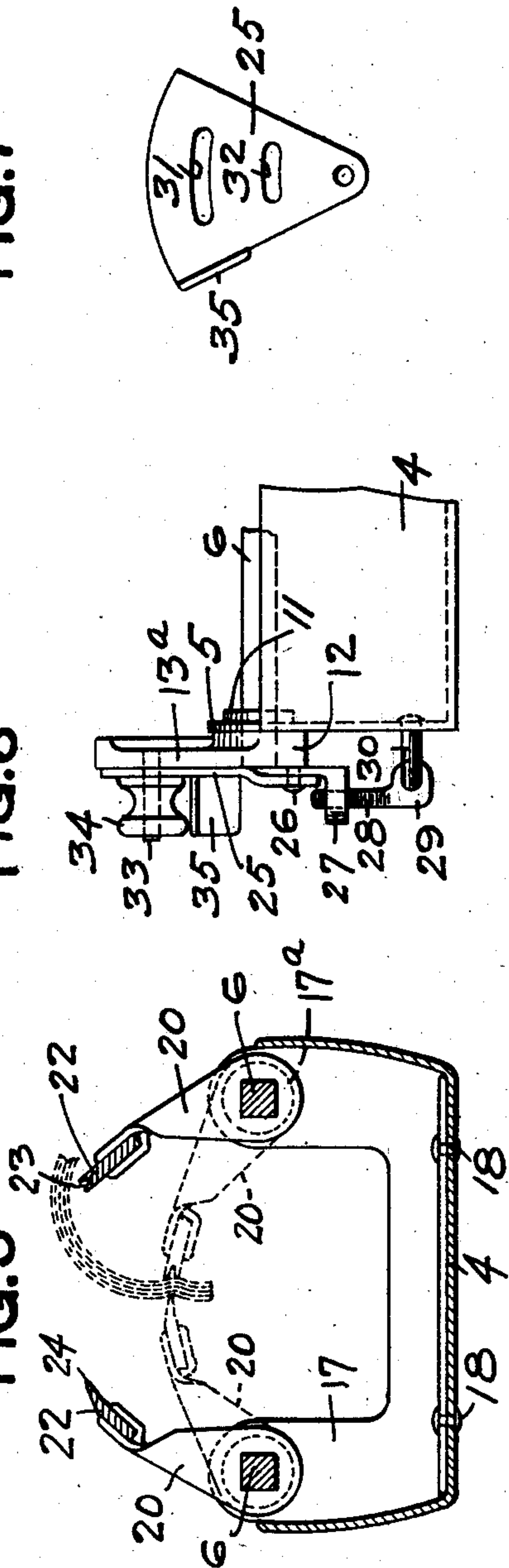


FIG. 4

FIG. 7

FIG. 6

FIG. 5



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UNITED STATES PATENT OFFICE.

JOHN G. MEYERS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF FORTY-FIVE ONE-HUNDREDTHS TO PETER M. LIPPERT, OF PITTSBURG, PENNSYLVANIA.

LOOSE-LEAF BINDER.

997,311.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed February 16, 1911. Serial No. 608,976.

To all whom it may concern:

Be it known that I, JOHN G. MEYERS, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful *Improvement in Loose-Leaf Binders; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to loose-leaf binders for temporarily binding various kinds of manifest sheets, way bills, tissue copies, etc.

The object of my invention is to provide a simple and efficient binder of this character in which a large number of sheets, or a single sheet, may be bound and held with equal facility, so as to be securely held in place against removal until the binder has been unlocked for this purpose.

To these ends my invention comprises, generally stated, in conjunction with a folding cover, of clamps for holding the sheets, oppositely arranged gears connected to said clamps and by means of which the clamps are moved toward and from each other, and mechanism for locking said clamps in their adjusted position.

My invention further comprises other novel features all of which will be more fully hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a perspective view of my improved binder showing the cover open; Fig. 2 is an enlarged end view showing parts released; Fig. 3 is an enlarged end view showing the parts locked; Fig. 4 is a plan view of the device with the clamping jaws open and the leaves removed; Fig. 5 is a cross section showing different positions of the clamping jaws; Fig. 6 is a side view of the gears and locking mechanism; and Fig. 7 is a detail of the locking plate.

Referring to the drawings the numeral 2 designates a suitable cover formed of some stiff material covered with canvas or other substance having the proper wearing qualities. Within the recess 3 formed at the mid-portion of the cover is the back 4 of sheet-metal, said back extending from the top to the bottom of the cover, and the ends of the said back are cut to form the end-portions 5 which are bent up at right angles to the main-portion of the back as clearly shown in Fig. 2. Rods 6 extend from one end-plate 5 to the opposite end plate of the

back 4, and said rods are square or angular in cross section. At one of their ends the rods 6 are reduced to form the threaded studs 7 which pass through the round opening 8 in the upper end plate 5^a and nuts 9 are secured to said threaded studs 7. In this manner provision is made for the turning of the square rods 6 in the upper end-plate 5^a.

The lower end-plate 5 has round openings 10 and said openings receive the inner ends 11 of the hub-portions 12 of the segments 13. The hub-portions 12 have square openings 14 to receive the lower end of the rod 6. The segments 13 and 13^a have the teeth 15 which are adapted to mesh with each other. One of the rods 6 projects beyond the hub of the segment 13, as at 16 in Fig. 4, and to this projecting portion a wrench or other suitable tool may be applied to operate the gear-segments as fully hereinafter set forth.

Intermediate the ends 5 and 5^a of the back are the bearing-plates 17 which are secured by rivets 18 to the back 4. These bearing plates 17 have the round openings 17^a to receive the bushings 19, said bushings having square openings to receive the rods 6. Secured to the rods 6 so as to turn therewith, are the clips 20 with the fingers 21 adapted to receive and hold the clamps 22. By inserting the clamps 22 between the fingers 21 of the clips in the manner clearly shown in Fig. 5 the clamps may be securely adjusted in the clips, and at the same time may be removed when desired without difficulty for the purpose of inserting clamps of a different size or for other reasons. These clamps 22 in the present instance consist of bars, one of which has the groove 23 formed therein and the edge 24 of the other clamp is slightly reduced so as to be adapted to enter the groove 23 of the opposite clamping member. Where only one or a few sheets are to be bound the locking of the clamping members in this manner will act to bind the sheets more securely as will be readily apparent.

The numeral 25 designates a locking-plate which is pivotally secured as at 26 to the swivel-lug 27. This lug 27 is provided with the threaded opening which is engaged by the threaded stem 28 of the movable member 29 which engages the staple 30 secured to the end-piece 5. Provision is thus made for the movement of the member 29

to different positions on the staple 30 for the purpose more fully hereinafter set forth. The locking-plate 25 has the slots 31 and 32 formed therein to receive the stud or pin 33 on the segment 13^a. A jam-nut 34 is adapted to engage the threaded pin 33 and when tightened up the said nut will lock the locking-plate 25 against movement. The locking-plate 25 is provided with the tongue or projection 35 by grasping which the locking-plate may be moved from one side to the other as desired.

When my improved binder is in use the leaves to be bound are inserted between the clamping jaws 22, said clamping jaws having been opened to the position indicated in Fig. 5 by applying a wrench to the projecting portion 16 of one of the rods 6, whereupon said rod is turned and through the connection of the segmental-gears the other rod is rotated so as to open the clamps as indicated. The clamps will be opened to the extent necessary to receive the number of sheets to be bound, and when the sheets have been inserted in this manner the wrench will be again employed to bring the clamping-jaws together to grasp or bite the sheets as indicated in Fig. 5. As soon as the proper force has been applied to bring the clamps into such position as to thoroughly bind the sheets the locking-plate is then brought into play to lock or hold the gear segments in this position. During the bringing of the clamping jaws into clamping position the locking plate 25 assumes substantially the position shown in Fig. 2, the jam nut 34 having been released to allow of the free movement of the locking-plate. When, however, the clamping jaws have been adjusted in clamping position, the operator then takes hold of the locking plate by means of the tongue 35 and throws said locking plate over into the position indicated in Fig. 3 and then tightens up the jam-nut 34 so as to secure the locking plate to the segmental-gear 13^a. As the locking plate is connected to the end frame through the swivel lug 27, the member 29 and the staple 30 on said end plate, said segment will be likewise secured, and all movement of said segment is prevented and consequently any movement of the rods carrying the clamping jaws. Where a smaller number of sheets are to be secured, it will be necessary to have the pin 33 engage the slot 32 and in such case the locking plate 35 can be adjusted by turning the swivel lug 27 to which said locking plate is pivotally secured.

In this manner I provide a simple and efficient form of temporary binder in which the loose sheets are bound securely in the cover so that they can be withdrawn therefrom without releasing the locking plate 25, and provision may be made, if desired, for sealing the jam-nut 34 by a seal similar to a

car seal, so that no sheet can be removed from the binder without breaking the seal and thus giving notice that the binder has been tampered with. Furthermore by my invention, a small number of sheets are bound with equal security as a large number, and the punching of holes in the sheets is dispensed with, the sheets being held at all points throughout their length, so that there is no danger of pulling one end of the sheet from its position as in cases where the perforating of the sheets is necessary.

What I claim is:

1. In a binder, the combination with a suitable cover of a frame, rotary rods carried by said frame, clamps on said rods, gears connecting said rods, and means for locking said gears in adjusted position.

2. In a binder, the combination with a suitable cover of a frame, rotary rods mounted in said frame, clamps carried by said rods, gears connecting said rods, a locking plate connected to said frame, and means for securing said locking plate to one of said gears.

3. In a binder, the combination with a cover, of a frame, rotary rods mounted in said frame, clamping bars parallel with said rods and mounted thereon, gears connecting said rods, and means for locking said gears in adjusted position.

4. In a binder, the combination of a suitable cover of a frame, rotary bars mounted on said frame, clamps carried by said bars, gears connecting said bars, a pivotally mounted locking plate on said frame, and means for connecting said locking plate to one of said gears.

5. In a binder, the combination of a suitable cover, of a frame, rotary rods mounted therein, clamps carried by said rods, gears connecting said rods, a projection on one of said gears, a pivotally mounted locking plate supported by said frame having a slot with which said projection engages, and means for securing said plate to said gear.

6. In a binder, the combination with a suitable cover of a frame, rotary rods mounted on said frame, clamps carried by said rods, gears connecting said rods and projecting on one of said gears, a pivotally mounted locking plate supported by said frame, having a slot with which said projection is adapted to engage, and a jam nut engaging said projection.

7. In a binder, the combination with a suitable cover, of a frame, rotary rods mounted in said frame, clamps carried by said rods, gears connecting said rods, a locking plate, a support to which said locking plate is pivotally connected, said support being carried by said frame and movable thereon, and means for securing said locking plate to one of said gears.

8. In a binder, the combination of a suit-

able cover, of a frame, rotary rods mounted on said frame, clamps carried by said rods, gears connecting said rods, a locking plate, a vertically adjustable support in which said locking plate is pivotally mounted, said support being carried by said frame and movable thereon, and means for securing said locking plate to one of said gears.

9. In a binder, the combination of a suitable cover, of a frame, rotary bars carried by said frame, clamps carried by said bars, gears connecting said bars, a locking plate, a swivel-nut on which said locking plate is pivotally mounted, a threaded member engaged by said nut, a staple on said frame with which said member engages, and means for securing said locking plate to one of said gears.

10. In a binder, the combination of a suit-

able cover, of a frame, rotary rods mounted on said frame, clamps carried by said rods, said clamps having interlocking edges, and means for rotating said bars to move said clamps toward and from each other.

11. In a binder, the combination of a suitable cover of a frame, rotary bars mounted therein, clamps carried by said bars one of said clamps having a recess adapted to receive the other clamp, and means for rotating said bar to move said clamps to and from each other.

In testimony whereof, I the said JOHN G. MEYERS have hereunto set my hand.

JOHN G. MEYERS.

Witnesses:

ROBERT C. TOTTEN,
JOHN F. WILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."