

No. 785,924.

PATENTED MAR. 28, 1905.

W. J. WATTERS.
BINDER FRAME.

APPLICATION FILED SEPT. 26, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

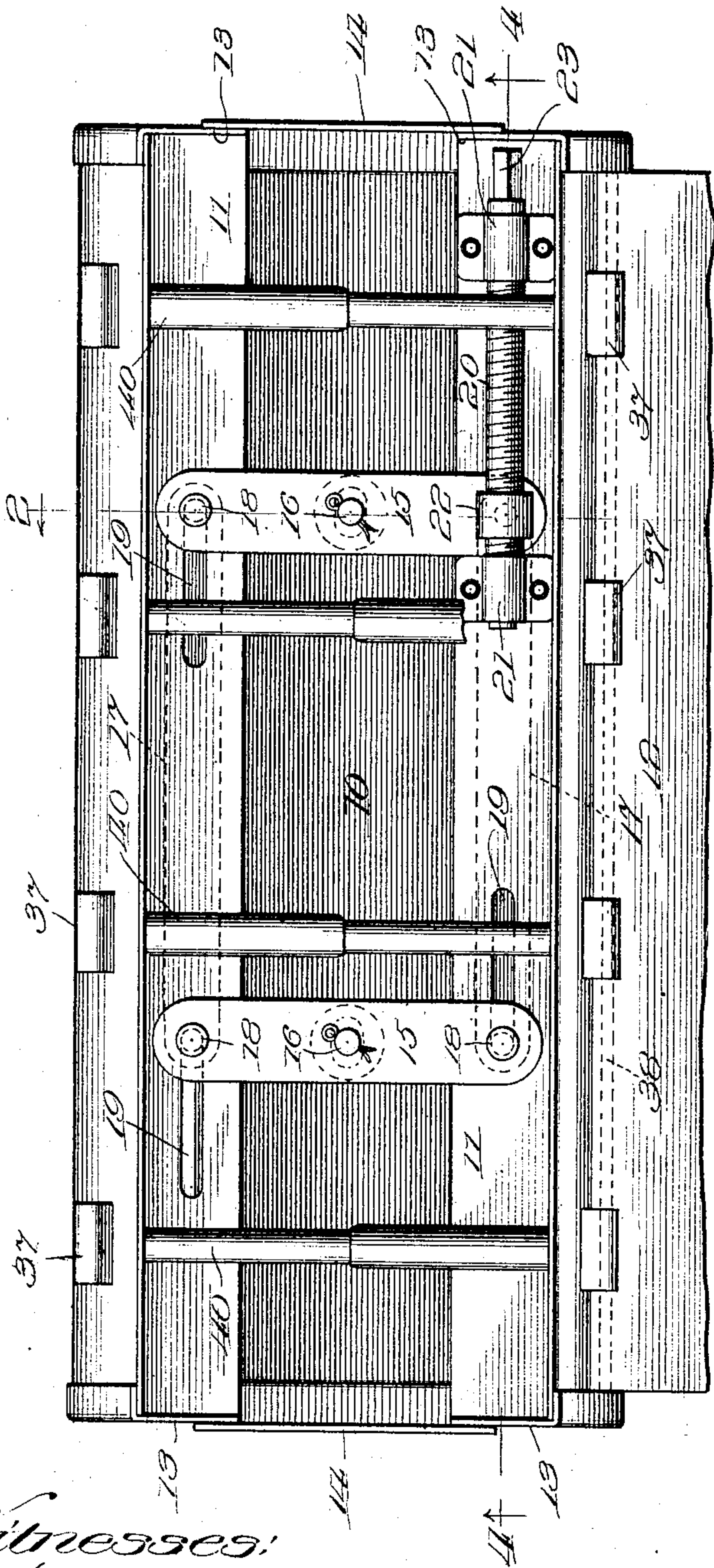


Fig. 2.

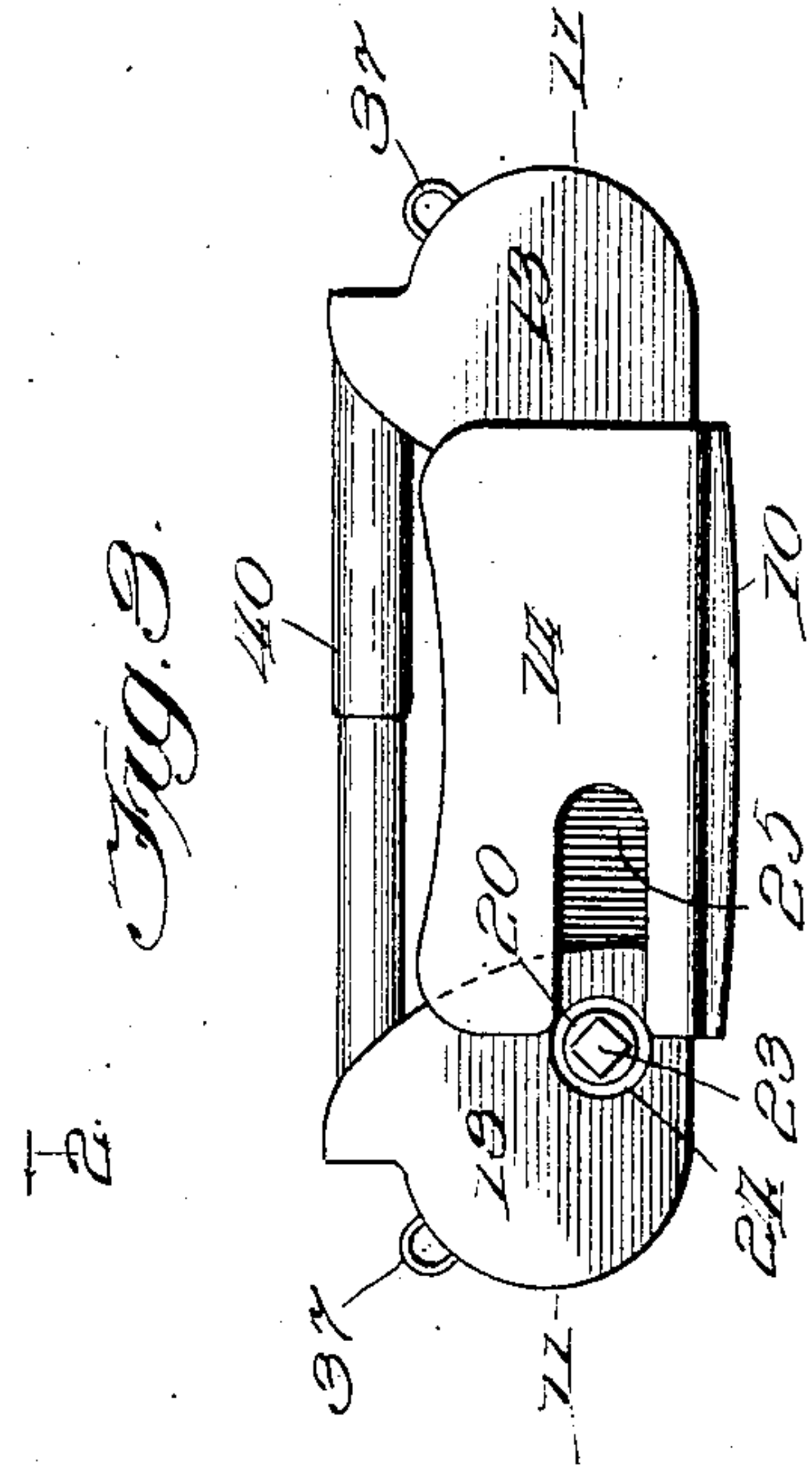
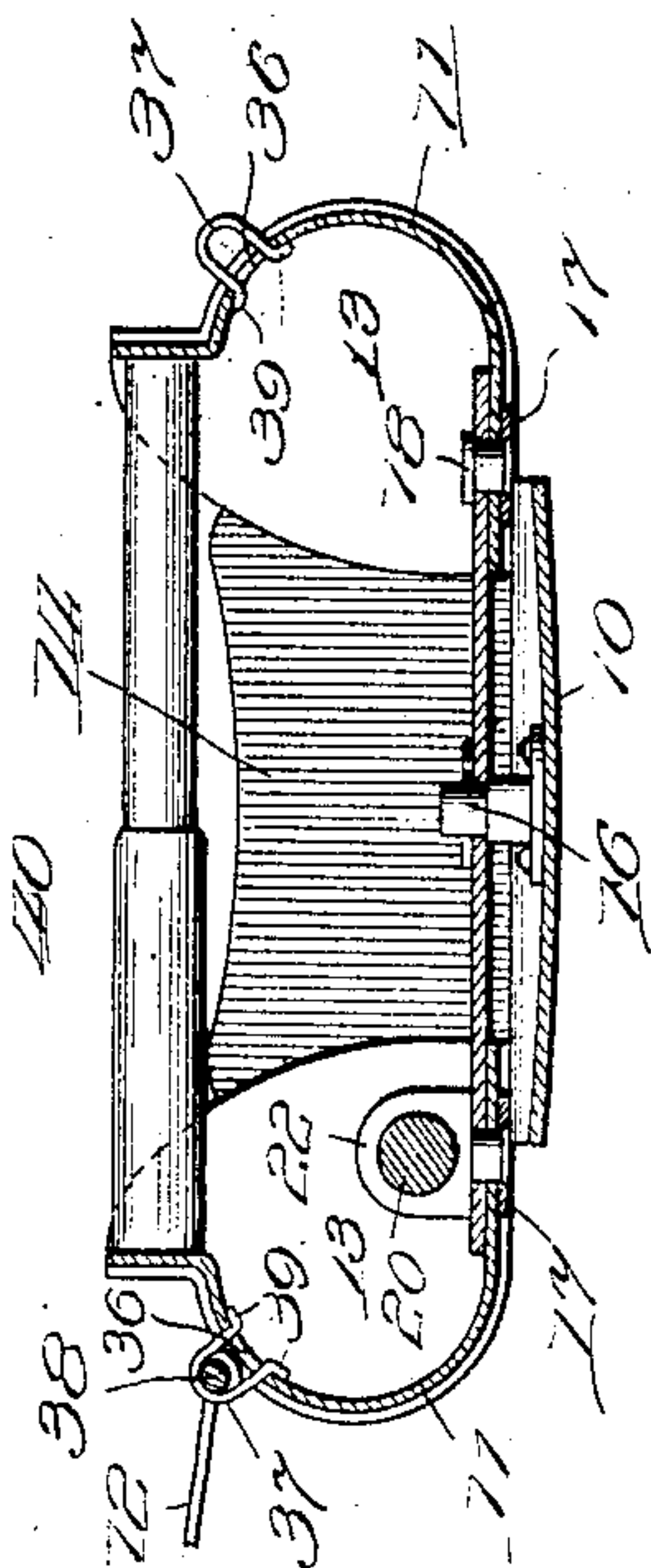


Fig. 3.



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Fig. 1.

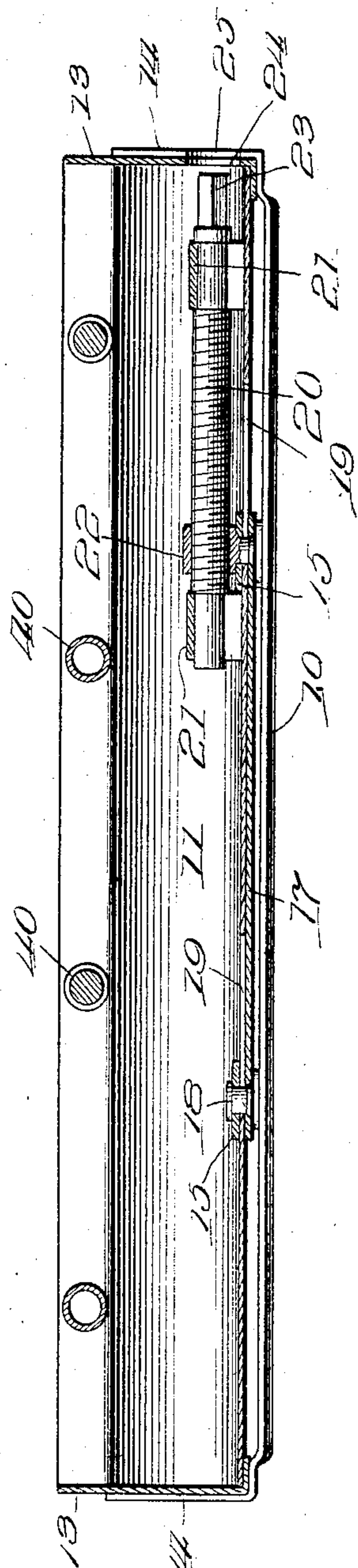


Fig. 2.

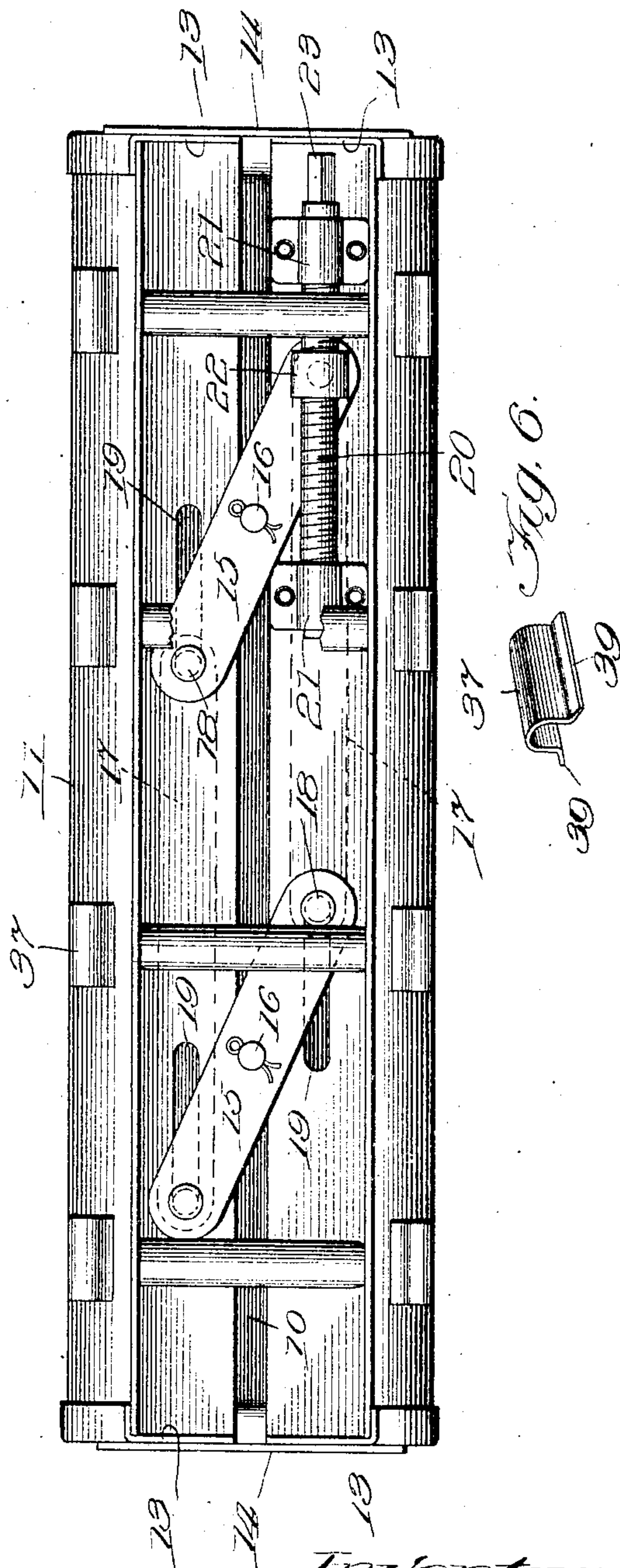


Fig. 3.



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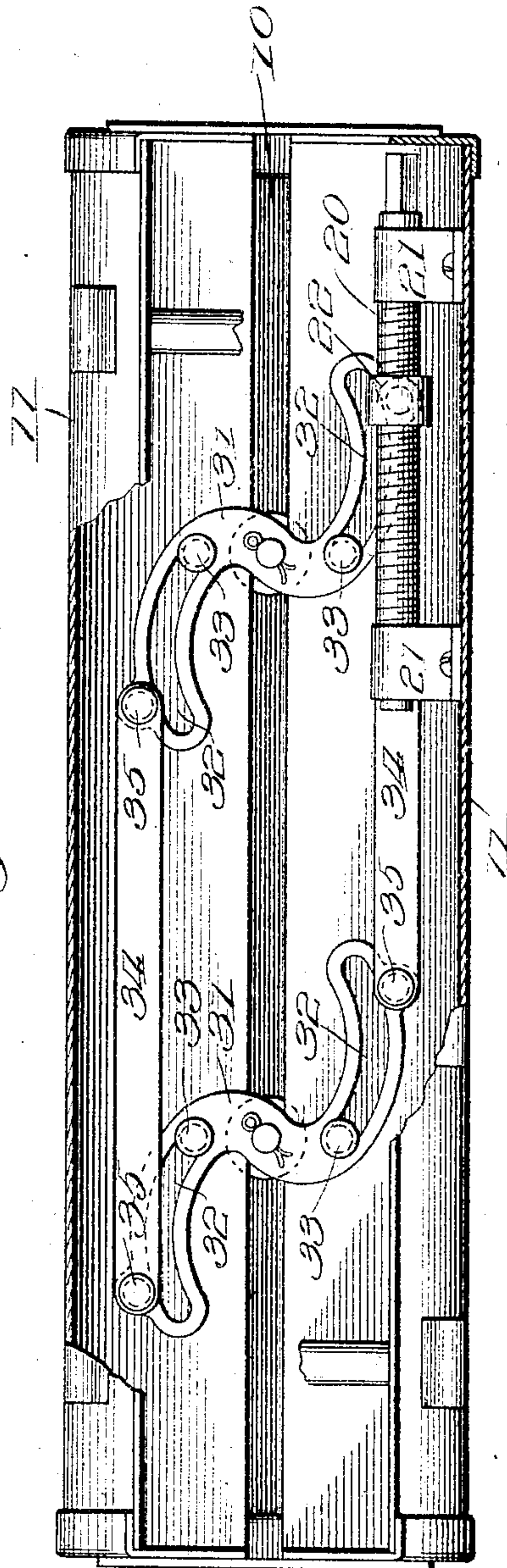
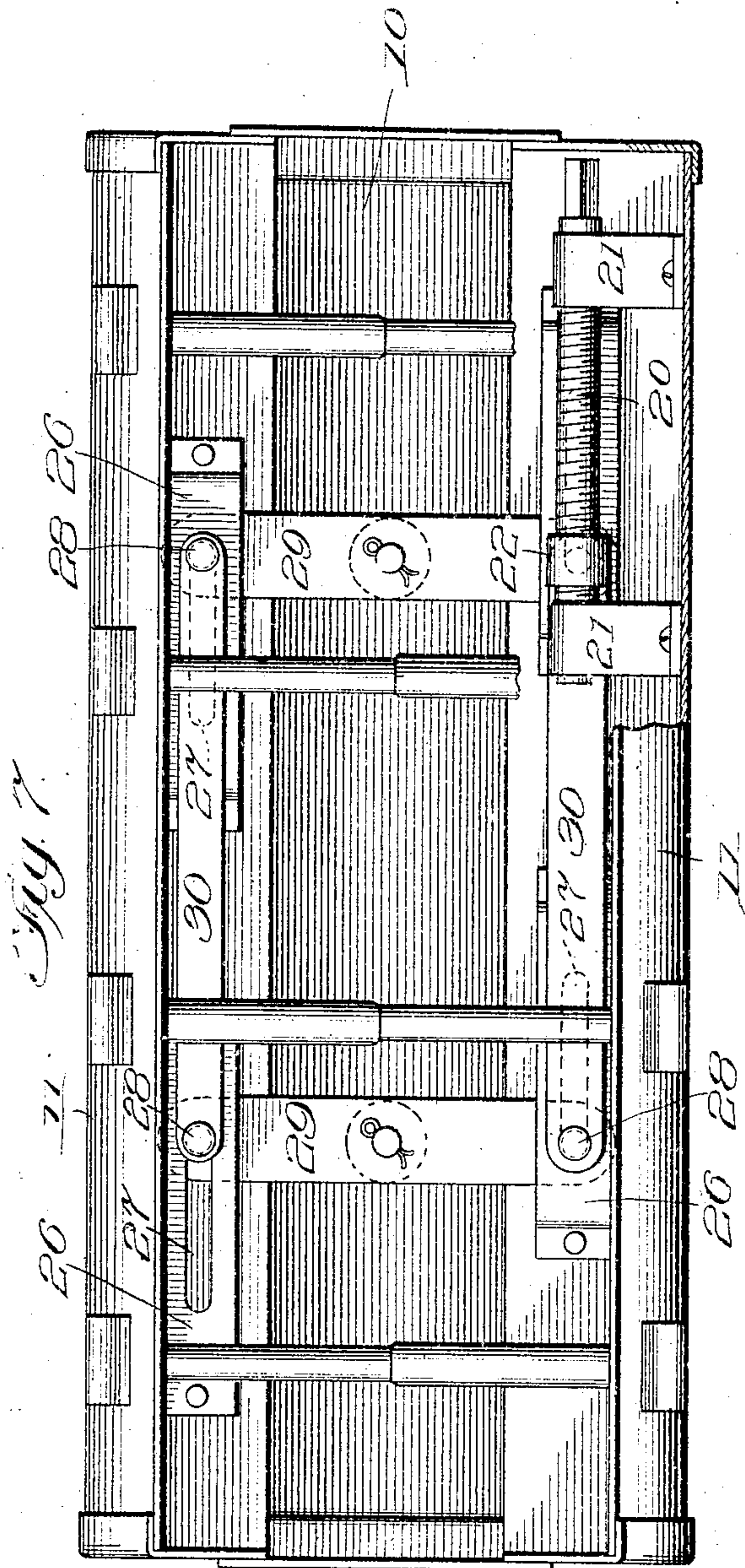
No. 78,924.

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BINDER FRAME.

APPLICATION FILED SEPT. 26, 1904.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM J. WATTERS, OF CHICAGO, ILLINOIS.

BINDER-FRAME.

SPECIFICATION forming part of Letters Patent No. 785,924, dated March 28, 1905.

Application filed September 26, 1904. Serial No. 225,931.

To all whom it may concern:

Be it known that I, WILLIAM J. WATTERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Binder-Frames, of which the following is a specification.

The object of this invention is to provide a loose-leaf binder-frame of simple but strong and substantial construction which is adapted to be readily adjusted to permit the insertion or removal of leaves and which will tightly hold the leaves and permit them to lie as nearly flat as possible when the book is open.

A further object of the invention is to provide a binder-frame of comparatively few parts which will operate evenly and can be manufactured at low cost.

In the accompanying drawings I have shown several embodiments of the invention.

Referring to the drawings, Figure 1 is a plan view of the frame extended to its greatest width and showing a portion of one of the covers. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is an end view. Fig. 4 is a sectional view on the line 4 4 of Fig. 1. Fig. 5 is a plan view showing the frame closed to its smallest size. Fig. 6 is a detail view of one of the hinge connections. Figs. 7 and 8 show other embodiments of the invention.

In the drawings, 10 is a back member, and 11 represents relatively movable members to which the covers (a portion of one, 12, being shown) are attached. The ends 13 of the movable members are arranged to work within and close to the ends 14 of the back member, and these ends thus act as guides for the movable members and assist in maintaining the members in proper relative position. Two or more parallel cross-pieces 15 are pivotally mounted on studs 16 rigid on the back member, and these cross-pieces are connected at their ends to bars 17 by pivot-pins 18, which work in slots 19 in the movable members. The movable members are thus connected together and to the back member so that they may be moved relatively to the back member and uniformly with each other, and this adjustment is accomplished by means of a screw-rod 20, which is mounted in brackets 21 on one

of the movable members and operates in the threaded collar 22 on one of the pivot-pins 18, Fig. 2. One end 23 of the screw-rod is shaped to receive an operating-key, (not shown,) and the adjacent end of the movable member is provided with an opening 24, and the adjacent end of the back member is provided with a slot 25, registering with the opening 24 to permit the key to be inserted therethrough to engage the screw-rod at any time.

It will be readily understood that by turning the screw-rod the collar 22 will be caused to travel thereon to move the movable members toward or from each other, and this movement is uniform because of the manner in which the parts are connected. Turning the screw causes the cross-pieces to swing together on their pivots, and the pins 18, working in the slots 19 and carried by the cross-pieces, move the movable members uniformly in the direction corresponding to the movement of the cross-pieces. In Fig. 1 the movable members are shown spread apart to the limit of their movement, and in Fig. 5 they are shown in close position.

In Figs. 1 to 5 the connecting-bars are located on the under side of the movable members, which are slotted to receive the pins 18; but I may employ the construction shown in Fig. 7, in which plates 26 are fastened to the movable members and provided with slots 27 to receive the pivot-pins 28, which connect the cross-pieces 29 and the bars 30. In this construction the bars 30 are connected to the upper ends of the pivot-pins and work on top of the slotted plates 26, and the cross-pieces are connected to the lower ends of the pivot-pins, and their ends work beneath the slotted plates. The slotted plates 26 are rigidly connected to form a permanent part of the movable members, and these members are therefore slotted or provided with slots in the same sense as the movable members shown in the construction of Fig. 1, but in another way.

In Fig. 8 the cross-pieces 31 are reversely curved and have the form substantially of an inverted letter S. The ends of these curved cross-pieces are provided with slots 32 to receive the pins 33, rigidly mounted on the movable members, and bars 34 are pivotally con-

connected by pins 35 to the ends of the cross-pieces. The movement of the several parts in this construction is substantially the same as in the constructions shown in Figs. 1 and 5 7. As the cross-pieces are swung on their pivots the pins 33 will travel in the curved grooves 32 and move the movable members uniformly.

As a convenient and inexpensive way of pivotally connecting the covers 12 to the movable members I form the movable members with openings 36, Fig. 2, and insert therein the U-shaped hinge member 37, Fig. 6, which is adapted to receive the pivot-rod 38, which 15 carries the cover 12. This hinge member is stamped out from a sheet of metal and provided with flanges 39 at its edges to engage beneath the edges of the openings 36 in the movable members to prevent said hinge mem- 20 bers from being disengaged from the movable members.

Telescopic posts 40 are provided to receive the leaves in the usual manner.

My improved binder-frame is simple in construction and comprises comparatively few 25 parts, which are adapted to be operated evenly and uniformly and without binding. The novel construction and arrangement of parts permit the frame to be made low in height, 30 so that the leaves will lie nearly flat when the book is open.

Without limiting myself to the exact construction and arrangement of parts herein shown and described, what I claim, and desire to secure by Letters Patent, is—

1. A binder-frame comprising a back member and two relatively movable members, parallel cross-pieces pivotally mounted on the back member and connected at their ends to 40 each other and operatively engaged with the movable members, and means for swinging said cross-pieces on their pivots to move the movable members toward or away from each other.

2. A binder-frame comprising a back member and two relatively movable members, parallel cross-pieces pivotally mounted on the back member and operatively engaged with the movable members, bars connecting the ends of said cross-pieces, and means for swing- 50 ing said cross-pieces on their pivots to move the movable members toward or away from each other.

3. A binder-frame comprising a back member and two relatively movable members, parallel cross-pieces pivotally mounted on the back member, pivot-pins working in slots in the movable members and connected to the ends of the cross-pieces, bars connected to said pivot-pins, and means for swinging said cross- 60 pieces on their pivots to move the movable members toward or away from each other.

4. A binder-frame comprising a back member and two relatively movable members, parallel cross-pieces pivotally mounted on the 65 back member and operatively engaged with the movable members and connected together at their ends, and a screw-rod mounted on one of the movable members and operatively connected with one end of one of the cross-pieces. 70

5. A binder-frame comprising a back member and two relatively movable members, parallel cross-pieces pivotally mounted on the back member, pivot-pins at the ends of said cross-pieces arranged to work in slots in the 75 movable members, bars connected to said pivot-pins to connect the ends of the cross-pieces, a threaded collar on one of said pins, and a screw-rod mounted on one of the movable members and operating in said threaded 80 collar to swing said cross-pieces on their pivots to move the movable members toward or away from each other.

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