J. C. DAWSON.

LOOSE LEAF BINDER.

APPLICATION FILED JAN. 14, 1910.

967,336. Patented Aug. 16, 1910.

Fig. 1.

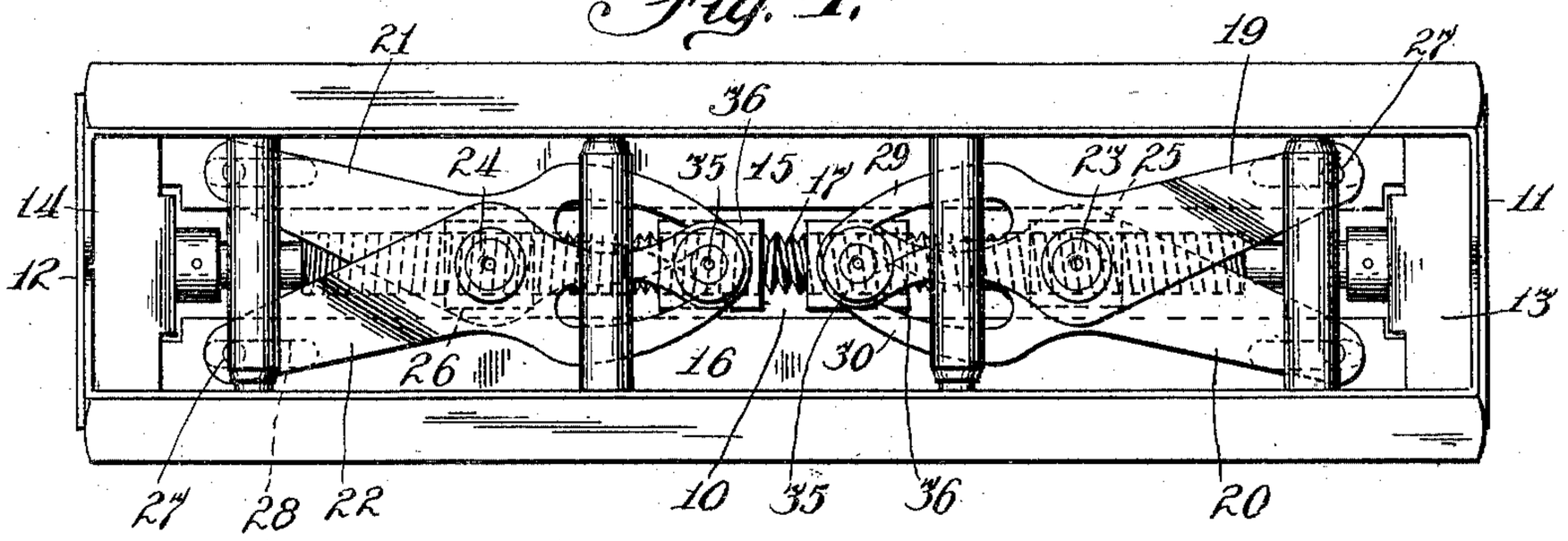

Fig. 2.

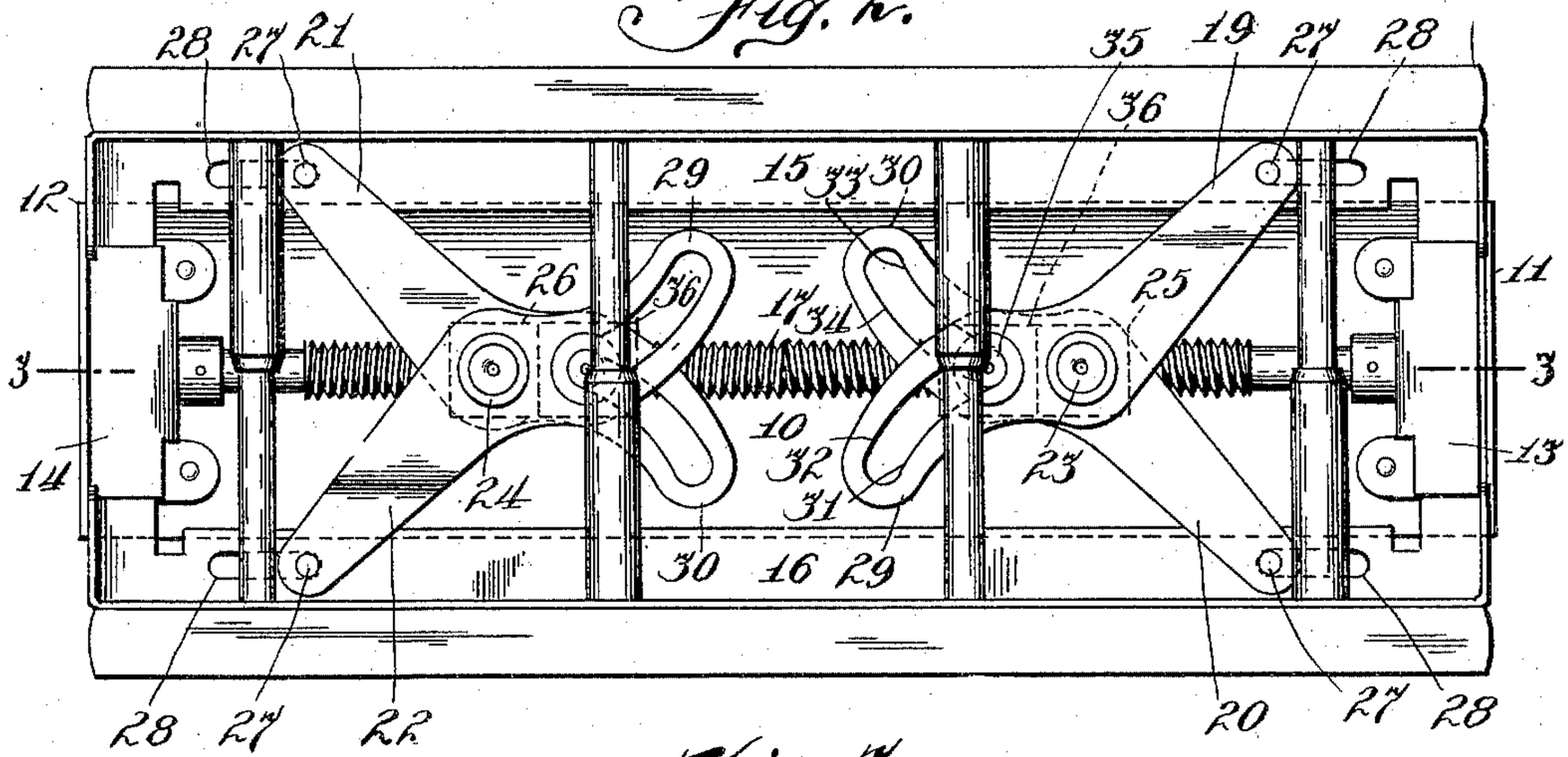

Fig. 3.

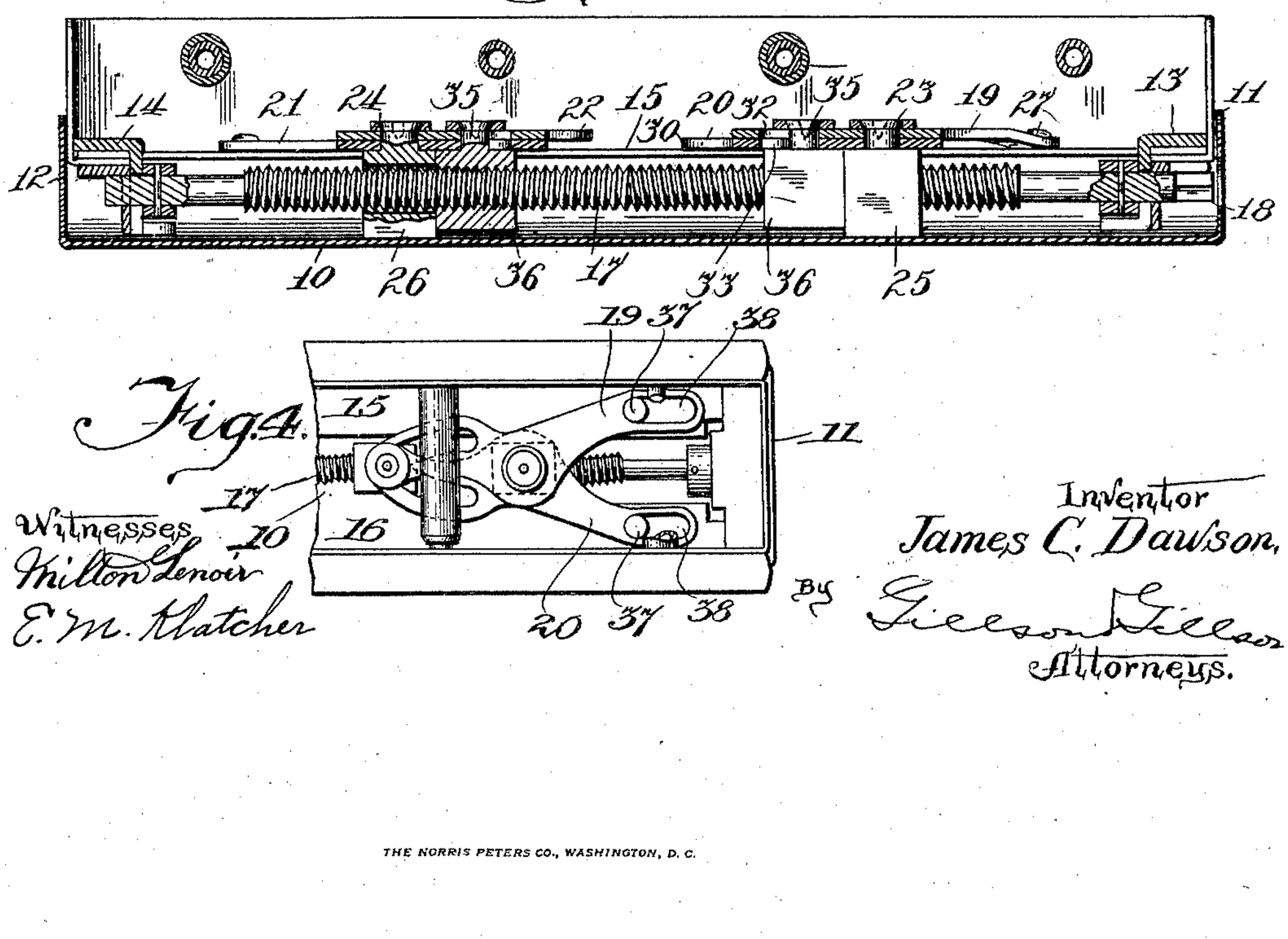

Fig. 4.

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UNITED STATES PATENT OFFICE.

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LOOSE-LEAF BINDER.

967,336. Specification of Letters Patent. **Patented Aug. 16, 1910.**

Application filed January 14, 1910. Serial No. 538,107.

To all whom it may concern:

Be it known that I, JAMES C. DAWSON, a citizen of the United States, and resident of Webster Groves, county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to that type of binders comprising a back plate, a pair of opposed clamping plates, and mechanism for controlling the latter plates.

The object of the invention is to simplify and improve the controlling mechanism; and it consists of a structure such as is hereinafter described, in which—

Figure 1 is a plan view of the binder when closed; Fig. 2 is a similar view, the binder being open; Fig. 3 is a longitudinal sectional view on the line 3—3 of Fig. 2; and Fig. 4 is a detail plan view showing a modified form of construction.

A back plate is shown at 10, and has the usual upstanding end portions 11, 12, and the usual guide plates 13, 14, under which the instanding leaves 15, 16, of the side or clamping plates slide. There is also present a threaded controlling rod 17, journaled upon the median line of the back plate 10 and having one of its ends squared, as shown at 18, for receiving a key.

The clamping plates are actuated by the rod 17 through the medium of two pairs of crossed levers 19, 20, 21, 22, each pair of levers being pivoted, as shown, respectively, at 23, 24, upon blocks 25, 26, fixed to the back plate 10. One end of each lever is connected to one of the clamping plates by means of a stud, as 27, fixed in the lever and sliding in a longitudinal slot, as 28, in the instanding leaf of the plate. The inner ends of the levers of each pair extend beyond the securing pivots 23,24, and project toward the side of the binder opposite to that from which the outer end of the lever is secured, such projecting lever ends 29, 30, being slotted to form cam faces 31, 32, 33 and 34, for engagement by a stud 35 carried by a nut 36 running on a threaded portion of the rod 17.

The two pairs of levers are alike, except that their outer ends are oppositely directed, preferably projecting toward the adjacent end of the binder. The threads on the rod 17 coöperating with the two ends are, therefore, inclined oppositely, to the end that the spreading action of the two pairs of levers may be simultaneous. When the rod 17 is rotated to carry the stud 35 to the outer ends of the cam slots of the levers, as shown in Fig. 1, the side or clamping plates of the binder are drawn together. When the rod is turned in the opposite direction, carrying the nut to the inner ends of the cam slots, the binder is opened.

While the several levers are shown as having their inner ends projecting toward the opposite side of the binder from that to which their outer ends are attached, it is obvious that such inner ends may project in either direction, it being necessary only that their cam slots be oblique to the controlling rod.

In the modification shown in Fig. 4 of the drawings, the levers are secured to the side or clamping plates by means of studs 37, fixed in the plate and engaging slots, as 38, in the lever. The action is substantially the same except that the leverage is increased as the binder closes.

I claim as my invention—

1. In a loose leaf binder, in combination, a back plate, a threaded rod journaled thereon, a pair of clamping plates, a pair of levers secured to the back plate by a fixed pivot and having their inner ends provided with intersecting cam faces, the outer end of each lever being in sliding engagement with one of the clamping plates, and a nut in threaded engagement with the rod and carrying a stud engaging the several cam faces of the levers.

2. In a loose leaf binder, in combination, a back plate, a laterally movable side plate, a lever pivoted on the back plate and having one of its ends in sliding engagement with the side plate, its opposite end being longitudinally slotted, a threaded rod journaled on the back plate, and a nut running on the rod and carrying a stud projecting through the lever slot, such slot being oblique to the rod.

3. In a loose leaf binder, in combination, a pair of reciprocable clamping plates, a back plate, two pairs of crossed levers pivoted on the back plate, each lever having

one of its ends in sliding pivotal engagement with one of the clamping plates and having its other end longitudinally slotted, a rod journaled on the back plate and having right and left threaded portions, nuts running on the two threaded portions of the rod, each of such nuts being provided with a stud engaging the longitudinal slots of one of the pairs of levers.

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