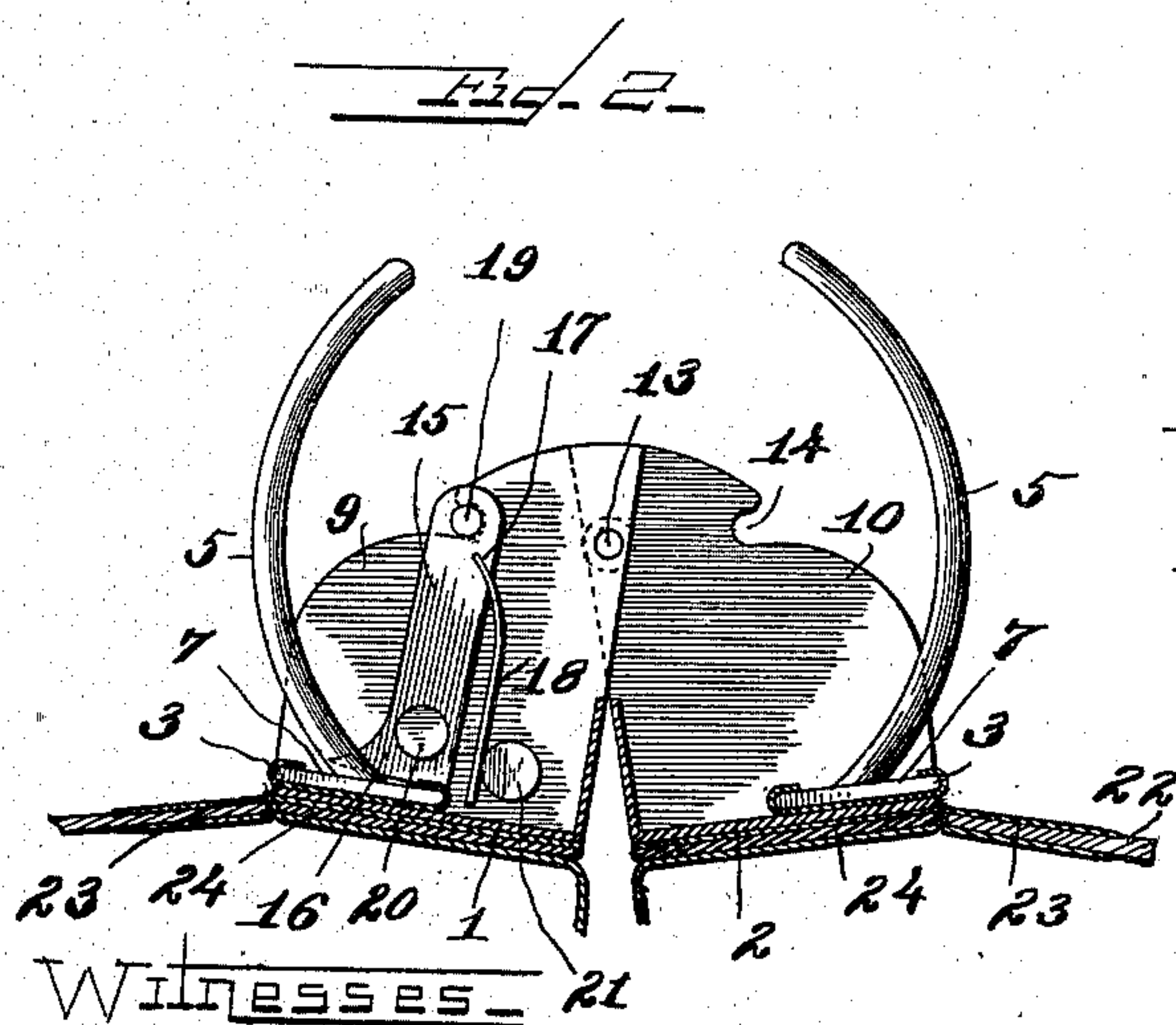
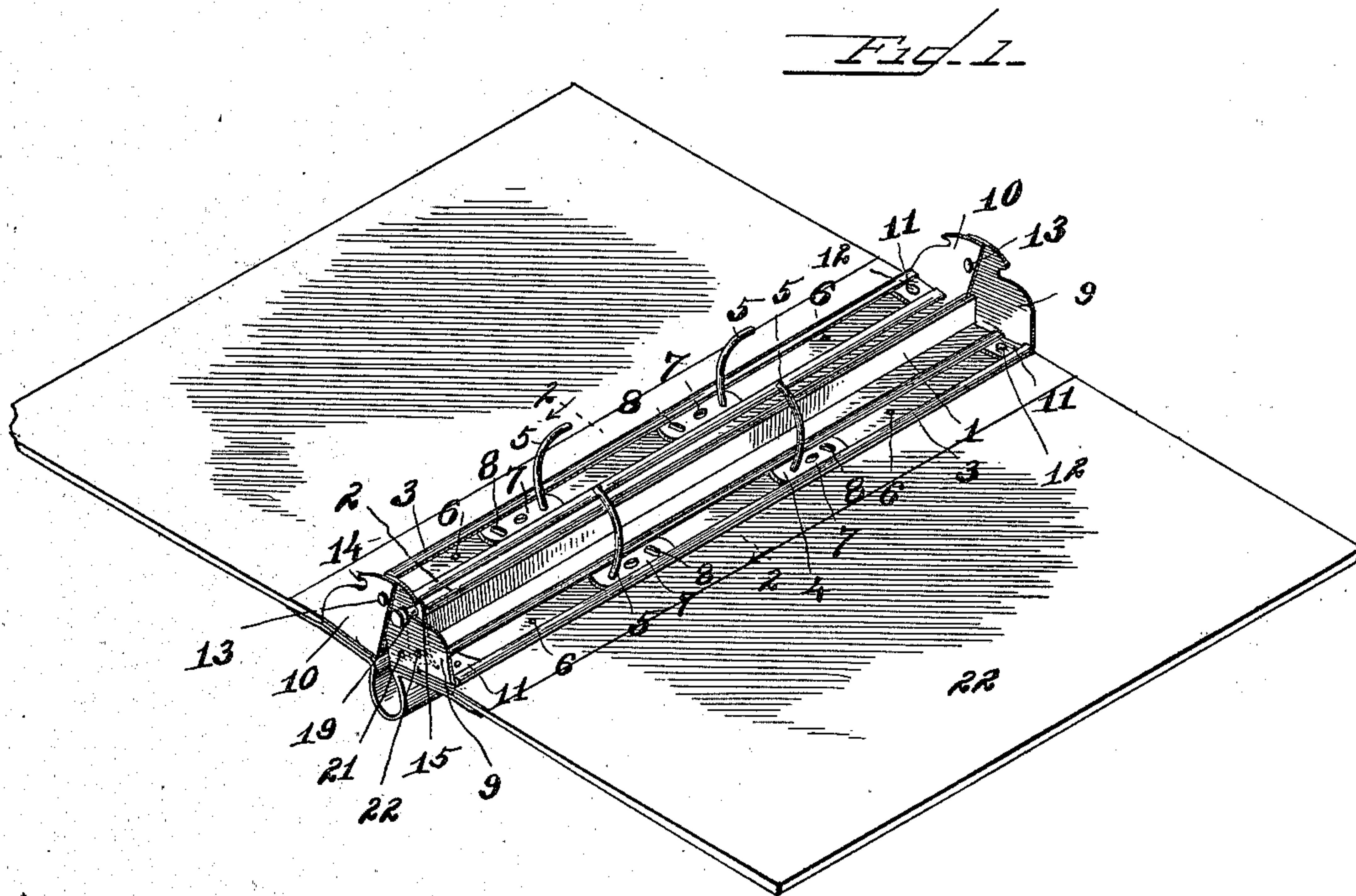


No. 731,579.

PATENTED JUNE 23, 1903.

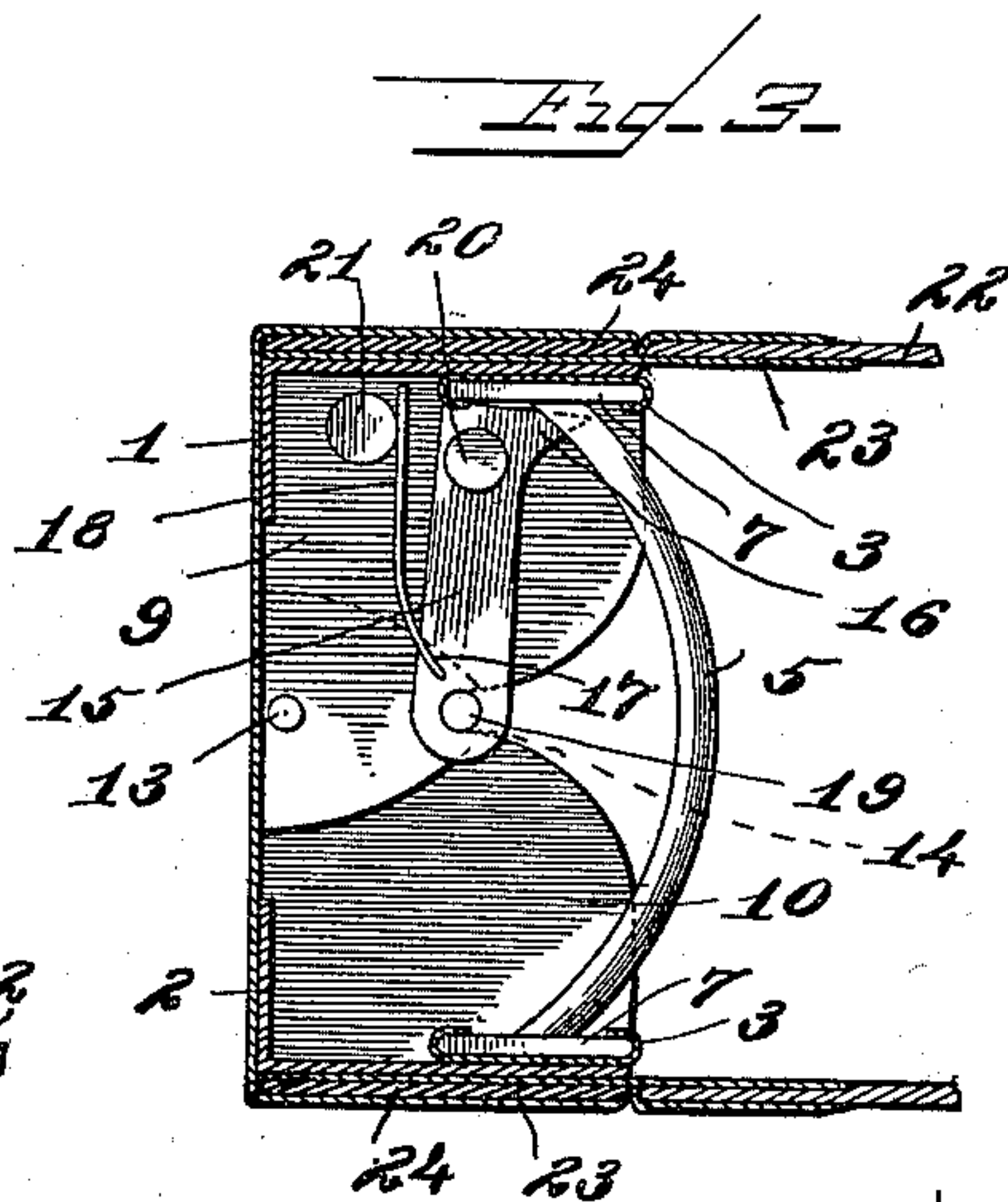
E. L. KRAG.
LOOSE LEAF BINDER.
APPLICATION FILED JUNE 16, 1902.

NO MODEL.



WITNESSES

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Geo. L. Chindahl



INVENTOR

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UNITED STATES PATENT OFFICE.

ERIK L. KRAG, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 731,579, dated June 23, 1903.

Application filed June 16, 1902. Serial No. 111,865. (No model.)

To all whom it may concern:

Be it known that I, ERIK L. KRAG, 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 Loose-Leaf Binders, of which the following is a specification.

One of the objects of this invention is the production of an improved loose-leaf binder.

A further object of the invention is to provide an improved locking device for use in binders.

The invention further relates to an improved means for securing the cover-boards to the binder-back, and, further, to an advantageous construction of the two-part back and its hinge connection.

In the accompanying drawings, Figure 1 is a perspective view of a loose-leaf binder embodying the features of my invention. Fig. 2 is a transverse section through the binder-back on dotted line 2 2 of Fig. 1. Fig. 3 is likewise a transverse section taken on the same plane as is Fig. 2, the binder being closed.

In the embodiment herein shown of this invention I provide a two-part back comprising the members 1 and 2, said members in this instance being formed from plates bent at a right angle on a line parallel with their length, being therefore L shape in cross-section. Near the upper edge of each of said back members and on the inner face thereof I secure a channel-strip 3, the upturned edges of which are bent over to form an undercut groove for holding the base-blocks 4 of the curved impaling-pins 5. The channel-strips 3 are secured to the back members by any suitable means—as, for instance, by the rivets 6.

The base-blocks 4 are slidable longitudinally of the binder-back within the undercut groove of the channel-strips 3, being locked in any desired position by means of the binding-screws 7, which pass through screw-threaded openings in said blocks and impinge upon the bottoms of said channel-strips. Each base-block 4 carries a single impaling-pin 5 and is also provided with an opening 8 for the reception of the point of the impaling-pin on the opposite side of the binder. The impaling-pins 5 are bent on the arc of a circle con-

centric with the hinge-joint between the two back members, which hinge-joint will be described hereinafter.

At opposite ends of the back members 1 and 2 are the end pieces 9 and 10, the former being secured to the back member 1, the latter to the back member 2. These end pieces are each provided with a securing-ear 11, bent at a right angle with the plane of the body of the end piece, which ear is of a width just sufficient to slide into the undercut groove of the channel-strip 3 and be held therein under the overturned edges of said strips. A rivet 12, passing through suitable openings in the ear 11, the channel-strip 3, the back member, and a cover-strip to be hereinafter described, holds the end piece in position. The end pieces at each end of the binder are pivotally connected by means of the rivets 13, said rivets forming a hinge connection between the two back members 1 and 2 of the binder. Both end pieces 9 and 10 are also provided with coinciding locking-notches 14, the purpose of which will appear hereinafter.

The end piece 9 at the lower end of the binder is provided with a locking-latch 15, having a widened lower end 16, a slot 17 near its free end for holding the flat spring 18, and the transversely-extending stud 19, which stud is adapted to lie in the notch 14 of the end piece 9, to which its supporting-latch is pivoted, also to engage the similar notch 14 of the coinciding end piece 10. The latch is pivotally mounted upon the rivet 20, the widened rear end of said latch lying near to the holding-ear 11 of said end piece, so near, in fact, that the pivotal movement of said latch is limited in both directions by the striking of the widened end of the latch against said ear. The flat spring 18, slightly bent, lies at the rear side of the latch, one end of said spring being held within the slot 17 in said latch, the free end of the spring lying between the latch and the rivet 21, set in the end piece 9. The latch is operated by raising the stud 19 out of the notch 14 of the end piece 10. This movement rocks the latch upon its pivot 20 and flexes the flat spring 18, compressing said spring between the latch and the rivet 21. The outward movement of the latch is limited by the impingement of its foot against the ear 11 of the end piece 9.

Cover-boards 22 of the finished binder are secured to the back members 1 and 2 by means of the attaching-strips 23, of canvas or other suitable material, and these strips 5 are held in position by means of the cover-strips 24, of board, leather, or other suitable material, through which the rivets 6 for securing the channel-strips 3 in position also extend.

10 In use the binder is unlocked by raising the stud 19 from the notches 14 and the binder opened upon its pivotal joint. The impaling-pins 5 are set at any desired position in the channel-strips 3, care being taken that the 15 openings 8 in the base-blocks 4 of said pins coincide with the points of the impaling-pins upon the opposite side of the binder. The base-blocks 4 are secured in position by tightening the binder-screws 7 of said blocks. 20 Leaves suitably perforated are inserted in the binder upon the impaling-pins 5. When the proper arrangement of leaves has been obtained, the binder is closed and locked in its closed position by the stud 19 entering the 25 notches 14. The adjustability in the position of the impaling-pins of this binder permits the use of leaves perforated for use in any other binder.

Various slight changes may be resorted to 30 in the general form and arrangement of the several parts herein described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to limit myself to the pre- 35 cise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

I claim as my invention—

40 1. In a locking device for binders, in combination, two hinged members, one of which members is provided with a locking-notch; a locking-latch pivotally mounted with relation to the other of said members and being adapted to engage said locking-notch, said locking- 45 latch having a rear end widened in the direction of the plane of its pivotal movement and

adapted to engage a relatively stationary portion of the binder and limit the pivotal movement of the locking-latch in both directions; 50 and a spring for holding the locking-latch toward one extremity of its pivotal movement.

2. In a locking device for binders, in combination, two hinged members having coinciding locking-notches; a locking-latch pivotally mounted with relation to one of said members and having a stud adapted to normally lie within the notch of the member on which it is pivotally mounted and to engage the notch of the other member to lock the binder, 60 said locking-latch having a widened rear end adapted to engage a relatively stationary portion of the binder and limit the pivotal movement of the latch in both directions, said locking-latch also being provided with an opening to receive a spring; and a spring for said opening adapted to hold the locking-latch toward one extremity of its pivotal movement. 65

3. In a locking device for binders, in combination, two hinged members; and a locking-latch pivotally mounted with relation to one of said members, one end of said latch lying near to a relatively stationary part of the binder, and there being of a width in the direction of the plane of the pivotal movement 70 of said latch sufficient to engage said stationary portion, and thereby limit the pivotal movement of the latch.

4. In a locking device for binders, in combination, two hinged members; a locking-latch pivotally mounted with relation to one of said members, and being adapted to engage the other member, one end of said latch lying near to a relatively stationary part of the binder, and there being of a width in the 80 direction of the plane of the pivotal movement of said latch sufficient to engage said stationary portion, and thereby limit the pivotal movement of the latch; and a spring for moving the latch in one direction. 85

ERIK L. KRAG.

Witnesses:

GEO. L. CHINDAHL,
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