

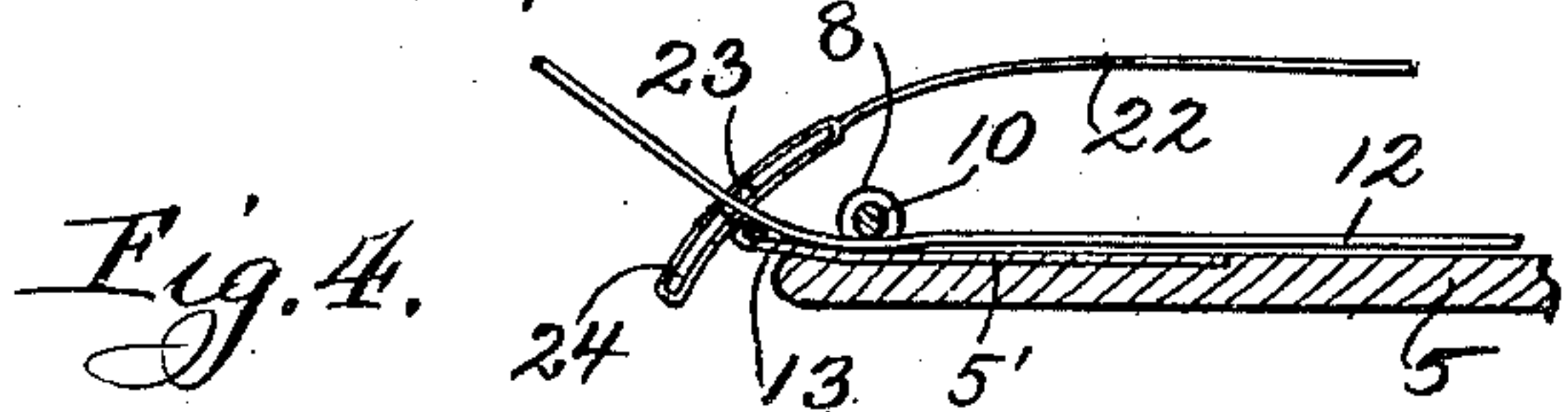
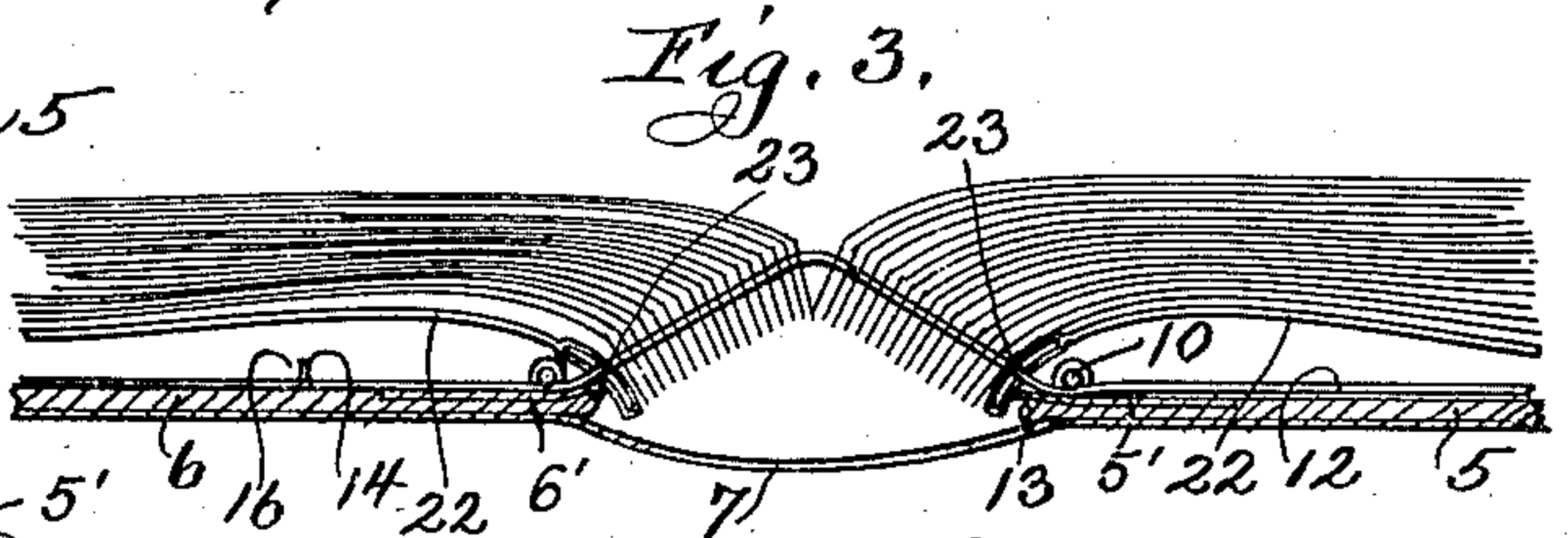
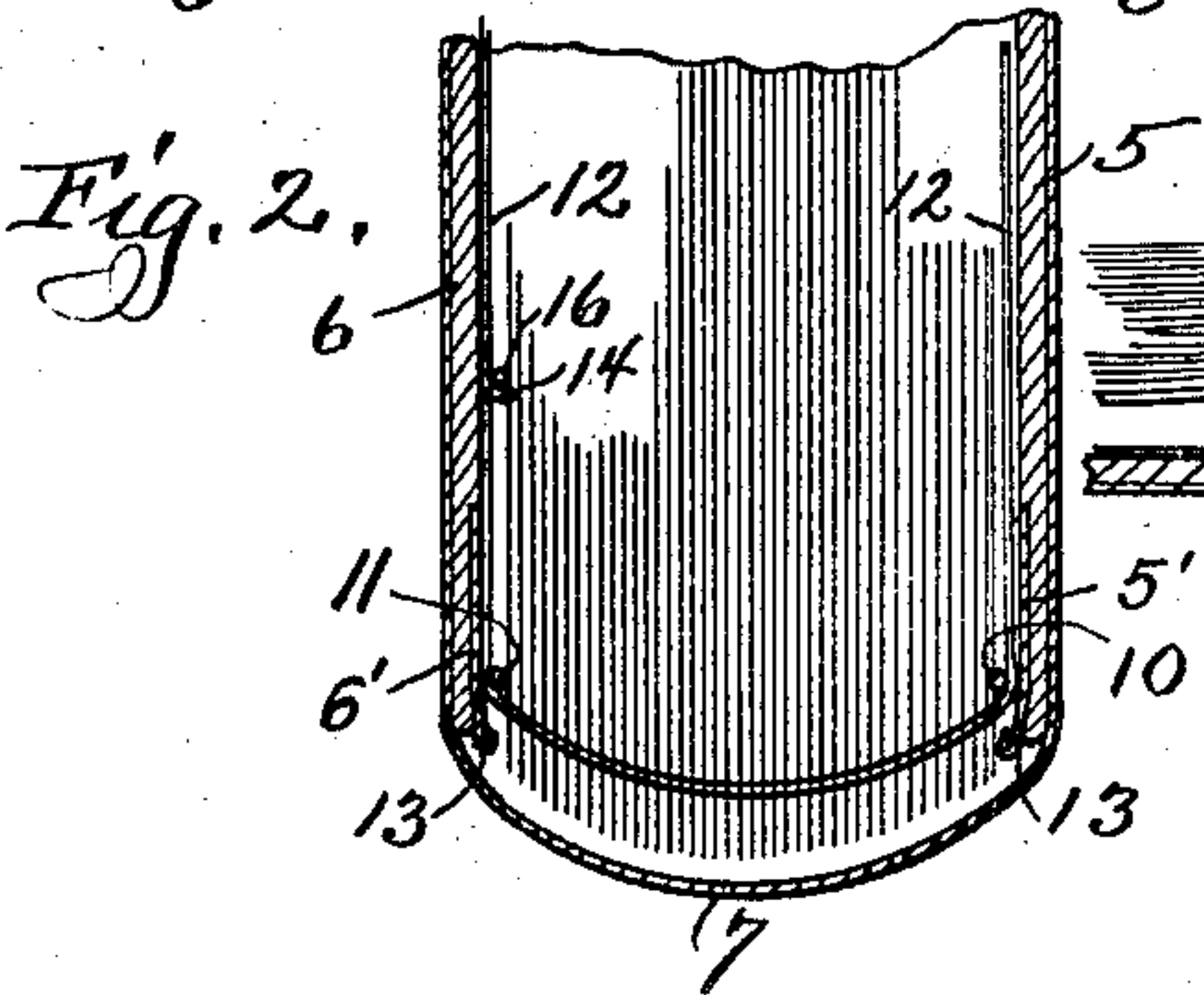
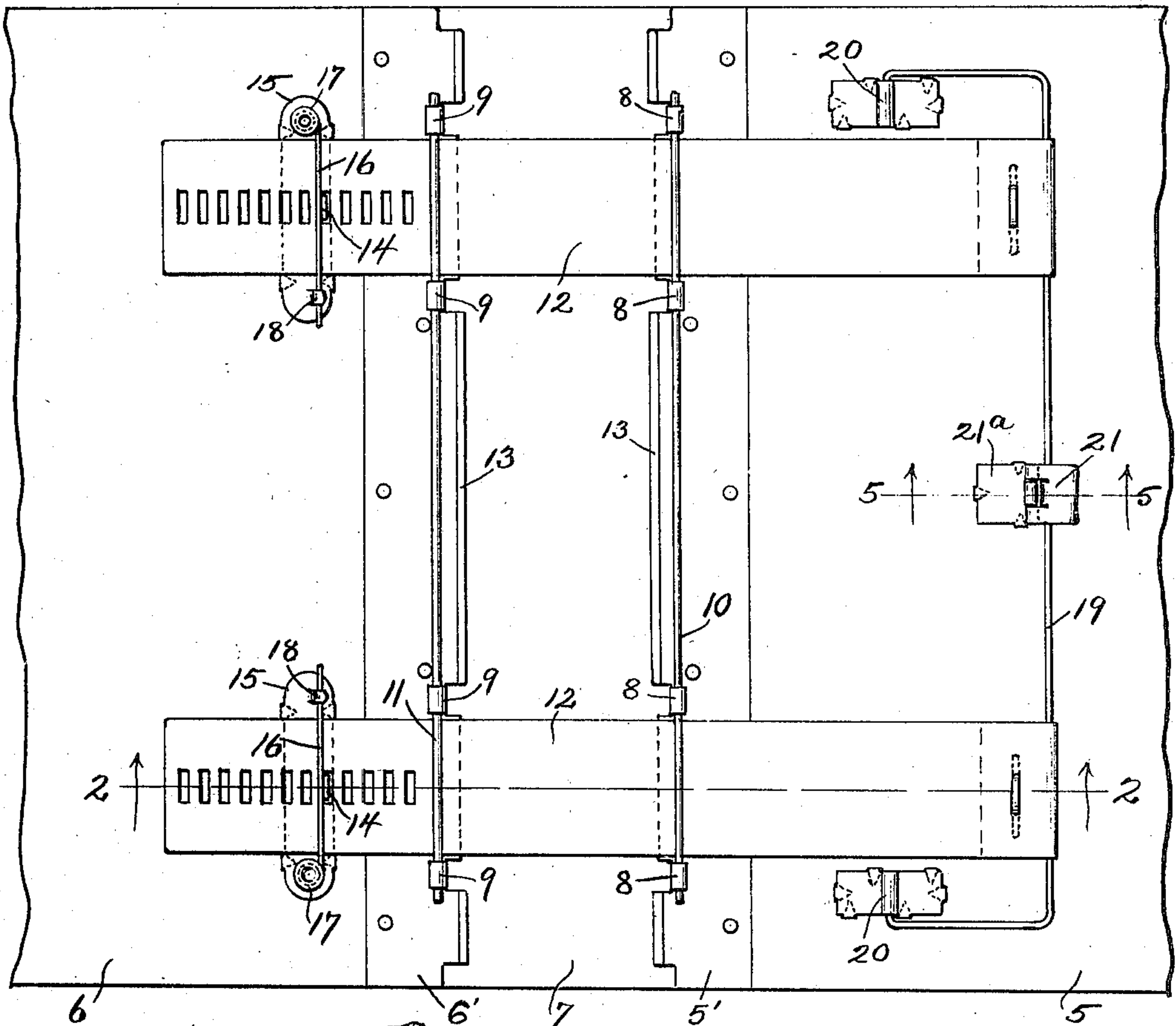
W. S. PROUDFIT, JR.
LOOSE LEAF BINDER.
APPLICATION FILED JULY 29, 1907.

958,171.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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Chas. W. Lutz

Inventor:

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2 SHEETS—SHEET 2.

Fig. 5.

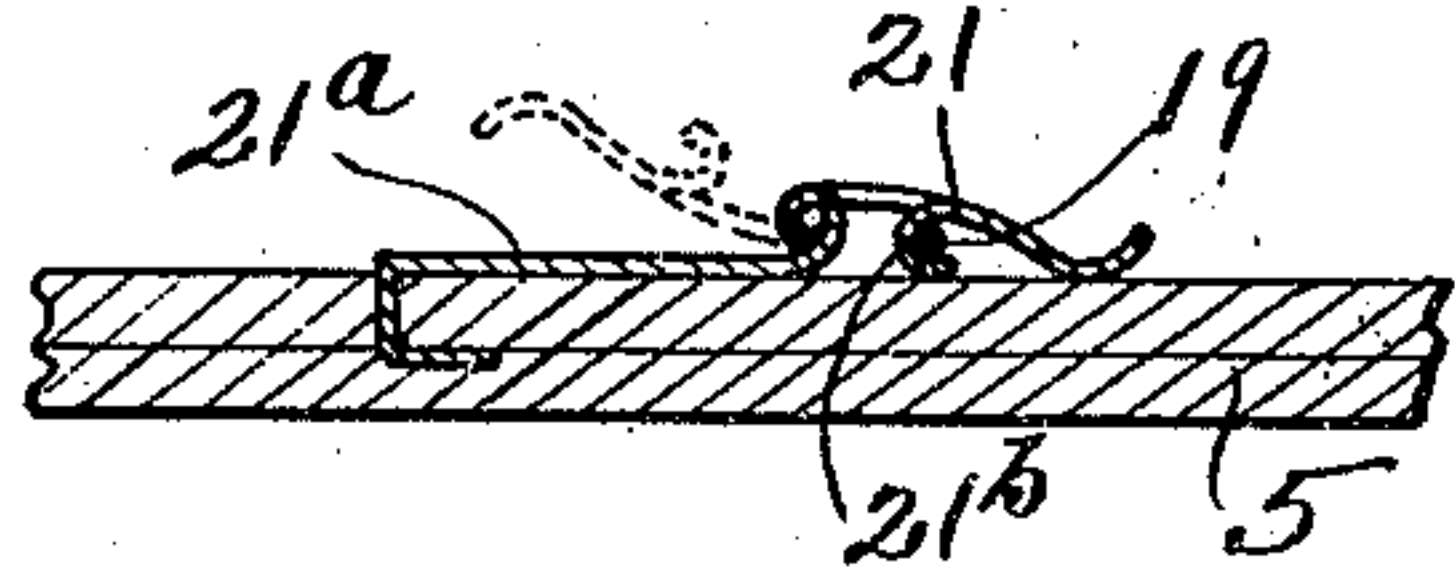


Fig. 6.

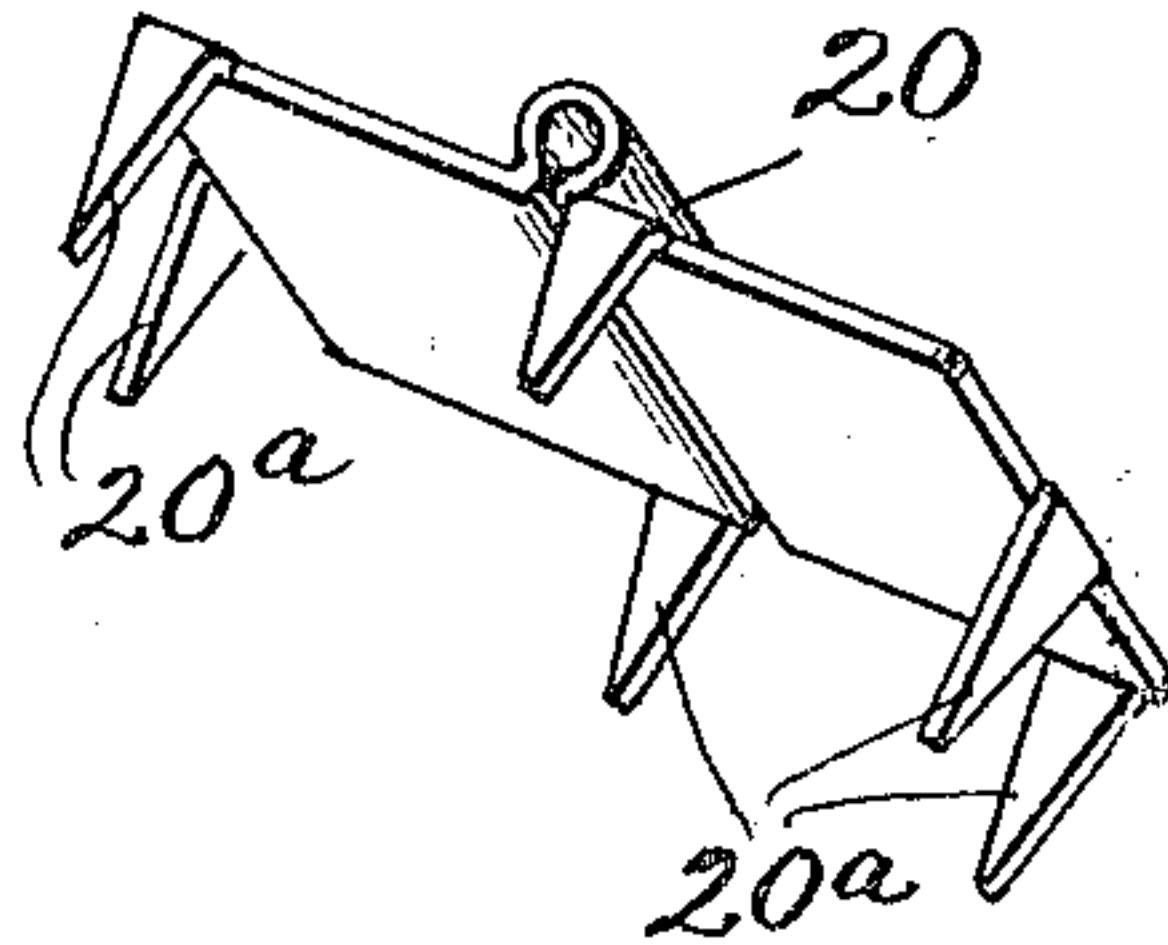


Fig. 8.

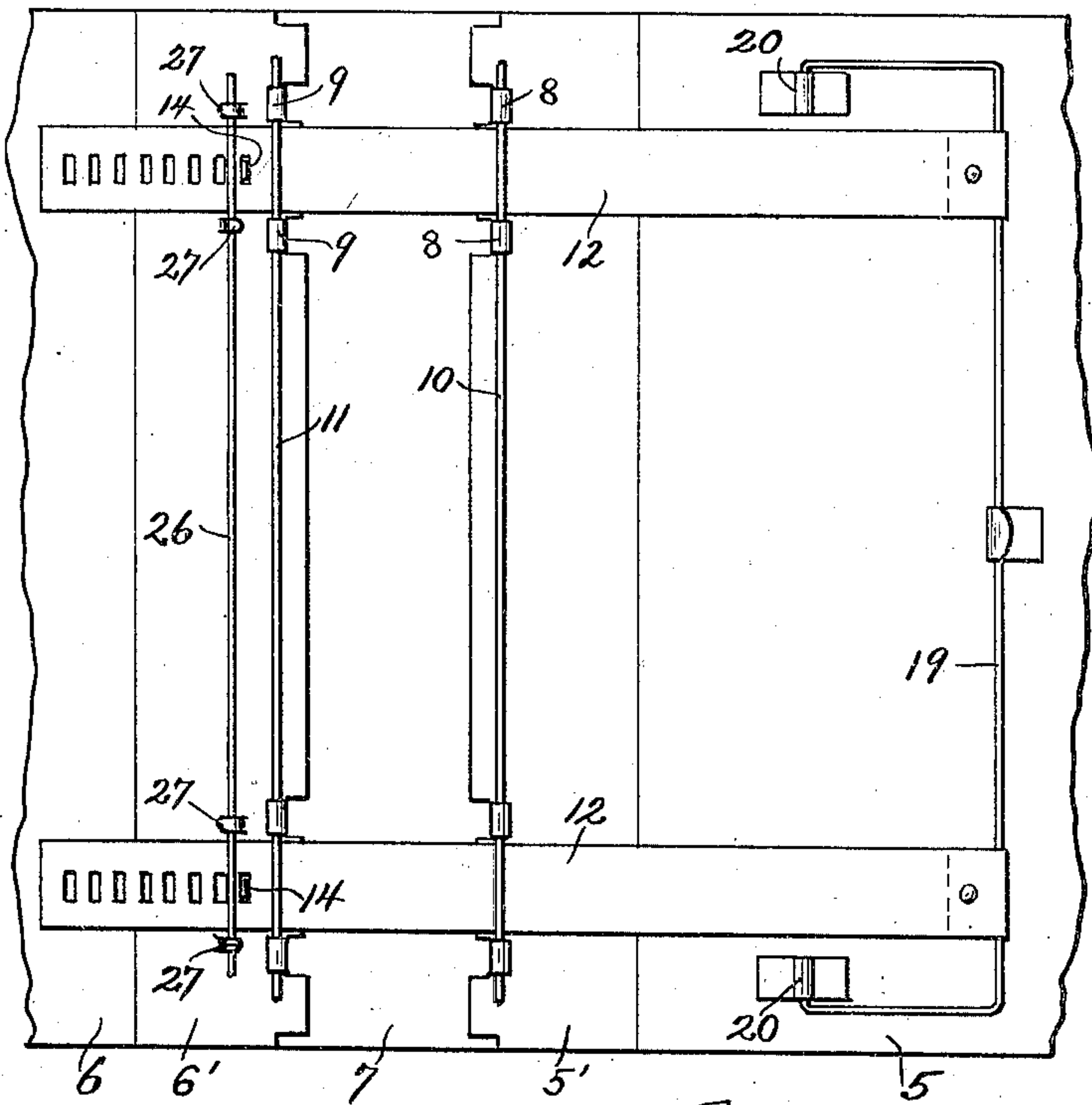


Fig. 7.

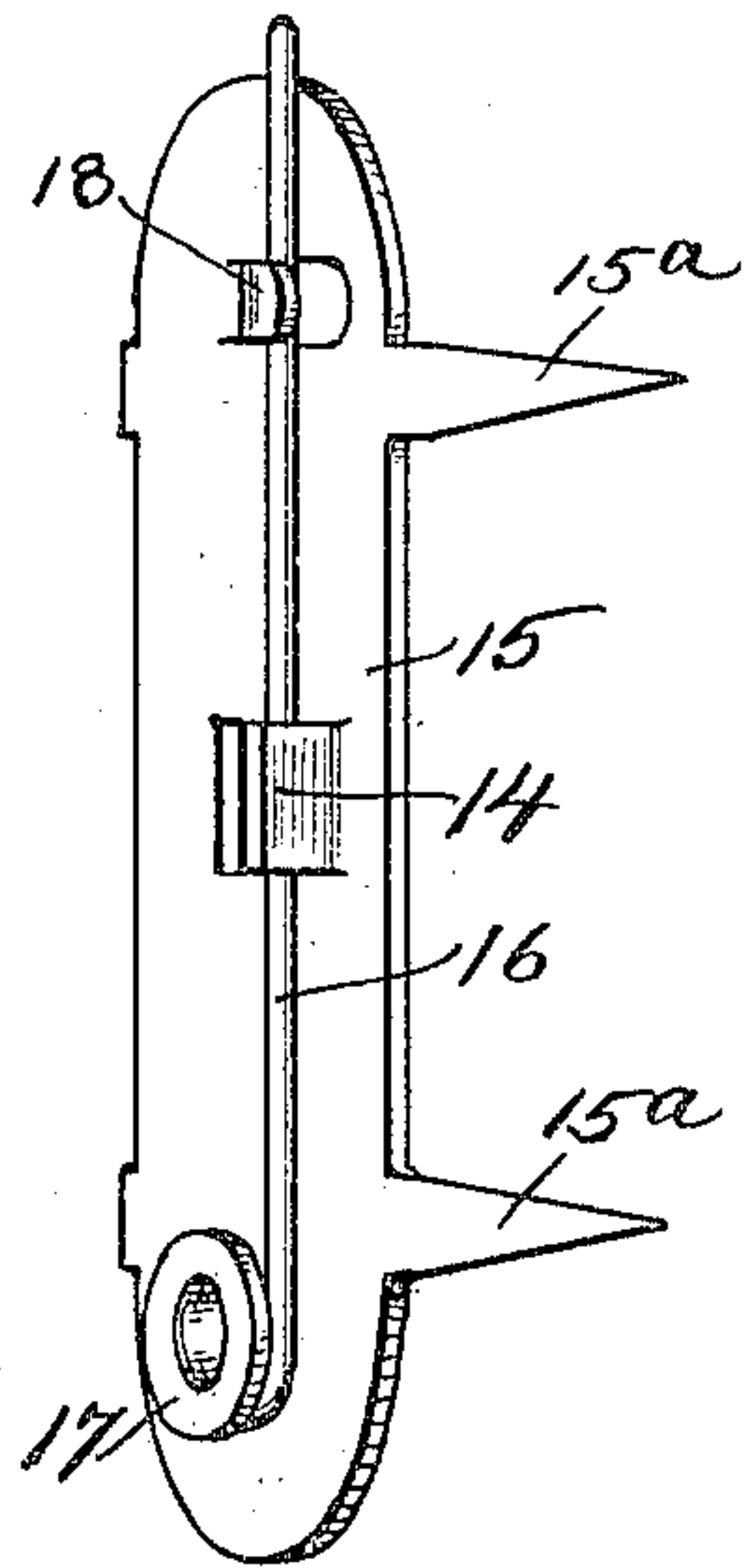
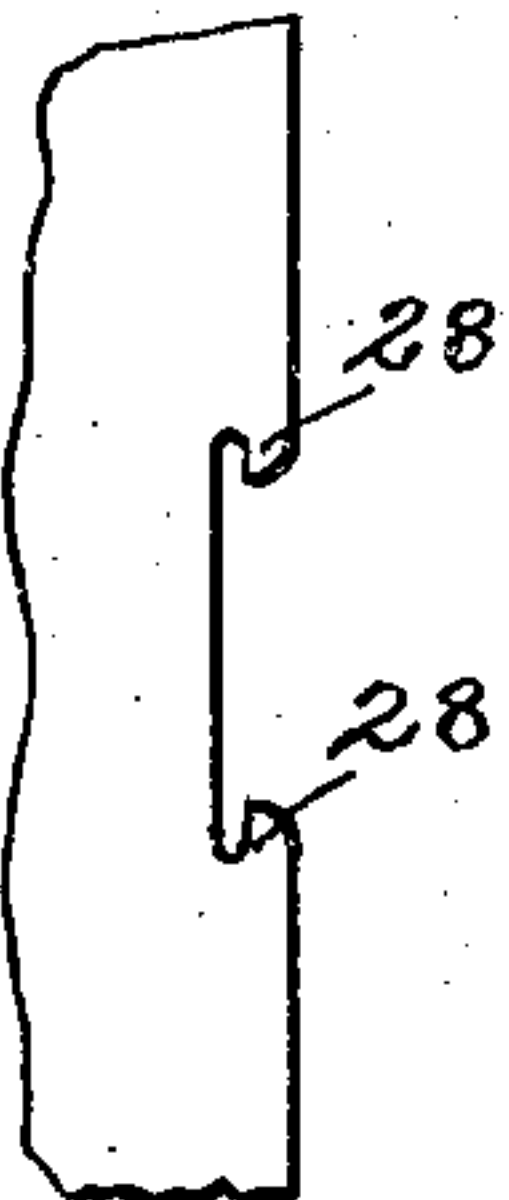


Fig. 9.

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UNITED STATES PATENT OFFICE.

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LOOSE-LEAF BINDER.

958,171.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed July 29, 1907. Serial No. 386 134

To all whom it may concern:

Be it known that I, WILLIAM S. PROUDFIT, JR., a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Loose-Leaf Binder, of which the following is a specification:

My invention relates to binders having one or more leaf holding strips to which the leaves are removably secured, and the objects of my invention are first, to have a free and complete action of the covers; second, to afford a flexible and substantial flat opening binding; third, to provide a convenient means for attaching and detaching leaves; fourth, to provide a novel means for adjusting the leaf holding bands; fifth, to make a cheap and durable construction and other objects to become apparent from the description to follow.

The binder comprises two covers preferably hinged a short distance from their binding edge to a back, and leaf holding bands connected to the covers and adjusted thereon in a novel manner. The covers are provided with eyes near their binding edge through which a rod is placed parallel with the binding edge of the covers but some distance therefrom. Leaf holding bands are passed between the rods and the covers and attached thereto in such a manner that they will extend along the surface of the covers and over the binding edge when the binder is opened, and will be deflected from the surface of the cover, when they emerge from beneath the rod, by the swinging of the cover when the binder is closed.

The leaves are attached to the leaf holding bands by suitable notches in their binding edge. These notches are so placed that a short stub end of each leaf will lie below the bands when the leaves are in position. When the binder is closed, that portion of the binding edge of the covers extending beyond the rods which hold the bands will be approximately parallel with the leaves. When the binder is opened the binding edge of the covers will swing against the leaves, thus pressing them more firmly when the binder is opened than when it is closed. The bands are flexible; preferably, flat and of resilient material and are adjustably attached to the covers in a manner hereinafter described.

To describe my invention so that others versed in the art to which it pertains may

make and use the same I have illustrated it on the accompanying sheet of drawing forming a part of this specification in which;

Figure 1, is a plan view of a binder embodying my invention with both covers open and all the leaves removed. Fig. 2, is a cross section on line 2—2 of Fig. 1, but with the covers closed; Fig. 3, is a similar view with the covers open; Fig. 4 is an enlarged detail view; Fig. 5, is a perspective of a catch used on the binder; Figs. 6 and 7 are perspectives of sheet metal fastening plates used on the binder; Fig. 8, is a modification and Fig. 9, is a portion of the binding edge of a leaf showing the aperture for the leaf holding band.

Similar reference characters refer to similar parts throughout the several views.

The covers 5 and 6 are flexibly connected to the back 7 and are preferably provided at their binding edges with metal plates 5' and 6' having a portion curled back into the eyes 8 and 9 through which are placed the rods 10 and 11 respectively. The plates 5' and 6' may be extended to form the complete covers and any suitable material may be used, although I prefer to use sheet metal. The eyes 8 and 9 are positioned to act as guides to the leaf holding bands 12, which are passed between the rods 10, 11, and the metal plates 5' and 6' and are then connected to the covers, so that the connected ends swing with the covers, and the intermediate portion lying between the rods 10 and 11 may be deflected from the covers by the swinging of the covers when closing the binder. The rods 10 and 11 are not necessarily round but I prefer to make them so to provide a smooth round surface for the bands to bend back and forth upon at this point.

A portion 13, of the plates on which the eyes 8 and 9 are formed extends beyond the eyes 8 and 9. This extension 13, lies approximately parallel with the leaves when the covers are in a closed position, the binding force of the covers against the leaves being exerted at or near the point where the leaf holding strips emerge from the opening under the rods 10 and 11, as seen in Fig. 2. When the covers are opened the extension 13 swings around against the leaves, the binding force then being exerted where the extremity of the extension 13 engages the leaves as seen in Fig. 3. This results in the leaves being somewhat more loosely

bound when the covers are closed than when they are opened. Heretofore in books of this description the greatest strain on the leaf holding bands occurred when the covers were closed, but by the use of my invention as described above, the strain on the bands is relieved when the covers are closed, because the length of the intermediate or leaf holding portion of the band is then increased by the sum of the distances from the rods 10 and 11 to the ends of the extensions 13, thus equalizing the tension on the bands when the covers are opened and closed, and permitting free and complete action of the covers.

When the covers of the binder are opened the leaf holding intermediate portions of the bands 12 are thrown up away from the back 7 thus permitting the leaves to lie flat; when the covers are closed the bands recede into the back.

I prefer to make a slight bend inward in the extension 13 which serves to give the bands 12 a greater upward direction when the covers are opened. This bend may be made so that the binding edge of the covers will engage the leaves either above or below the line of the bands 12.

The extension 13 may extend along the entire binding edge of the covers 5 and 6, or along a part of the binding edge only, without changing its action on the leaves. I prefer to make that part of the extension 13 under the bands 12 somewhat shorter than the remainder of the extension, thus leaving a little space between the extremity of 13 at this point and the leaves, as this serves to relieve the strain on the bands 12 when the covers are swung.

Each leaf holding band 12 has one end adjustably secured to cover 6 by means of a small metallic extension or lug 14 fastened to cover 6. The lug 14 can be formed on a part of the cover, but I prefer to make it on a separate plate 15, to which is also loosely attached the small rod 16 which serves to hold the band 12 close to plate 15 with the lug 14 extending through one of the series of openings in said band. The rod 16 is bent around the eyelet 17 to swing about the same loosely and when in position to hold the band 12 its free end is sprung under the hook 18 formed on plate 15. The relative positions of the eyelet 17, the lug 14 and the hook 18 is such that the rod 16 is held under the hook 18 by the lug 14. The plate 15 is secured to the cover by clenching down the prongs 15^a. The other end of each leaf holding band 12 is pivotally connected to the center strand of a U shaped bail 19 which has its extremities pivotally secured to the cover 5, by the eye plates 20 in such manner as to swing the center strand toward and away from the binding edge of the cover. Obviously the

bands 12 will be slack when the bail 19 is swung to a position near the binding edge of the cover and will be held taut when said bail 19 is swung to a position away from the binding edge of the cover. To normally retain the bail 19 in a position farthest from the binding edge of the cover the center strand is sprung under the catch 21 secured to cover 5. It is understood that the pivoted member above described is not necessarily a U shaped bail, but may be of any form permitting pivotal connection with the cover 5 and pivotal connection with the band 12 at a point not in line with the pivotal connections with the cover 5, so that the pivotally connected end of the band 12 may be swung toward and away from the binding edge of the cover 5.

The eyed plate 20, which is shown in detail in Fig. 6, is provided with a plurality of prongs 20^a which pierce the cover 5 and are clenched to secure it to the said cover. The catch 21 is pivoted to a small plate 21^a, which is secured to cover 5 in a similar manner *i. e.* by prongs. The catch 21 has formed thereon a hook 21^b, in which the bail 19 normally rests. It will be noted as seen in Fig. 5, that the hook 21^b is slightly nearer the cover than the pivot on which the catch 21 swings, so that the pull exerted by the bands 12 will tend to hold the catch 21 with its free end against the cover 5.

When it is desired to remove a leaf from the binder it is necessary to have considerable slack in the bands 12 between the covers which is provided by swinging the bail 19 toward the binding edge of the cover. It may be stated here that each leaf as shown in Fig. 9, is provided with suitable shaped notches in its binding edge to receive each band 12 in the usual manner.

To remove or insert a leaf the bail 19 is first released from the catch 21 and then the cover 5 is pulled away from the leaves in the binder, which is accomplished by holding the leaves or preferably the fly leaf in one hand and the cover 5 in the other hand and pulling apart. By thus manipulating the binder the leaves or at least some of them are liable to be torn at their binding edge; I therefore provide a heavy fly leaf 22 adjacent to each cover and provide slots 23 in the binding edges of said leaves for the reception of the leaf holding bands 12.

In the binding edge of each fly leaf 22 a strip 24 preferably of sheet metal is mounted, having suitable perforations for the bands 12 to pass through. The fly leaves 22 serve to prevent abrasion of the leaves in the binder since they are interposed between the covers and the leaves and are also used as a strap to be pulled upon instead of the leaves when the cover 5 is separated from the sheets by swinging the bail 19.

In Fig. 8, is shown a modification in

which a hook 25 is provided on cover 5 to hold the bail 19 in a position away from the binding edge of the cover, and the means for securing the ends of the bands 12 to cover 5 6 comprises a rod 26 and a plurality of small hooks 27 provided on cover 6. The hooks as will be seen are alternately faced in opposite directions, so that the rod 26 will be held under said hooks 27 and serve to hold the bands 12 next to cover 6 with the lug 14 extending through one of the series of openings in the band 12.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a loose leaf binder, covers, leaf holding strips and means whereby the leaves in the binder are pressed more tightly together when the covers are open than when the covers are closed.

2. In a loose leaf binder, the combination of the covers, leaf holding members having their ends attached to swing with said covers and flex the intermediate portion of said members lying between the covers, and the rigid binding edges of the covers extended to press against the leaves at a point back of the leaf holding members when the covers are opened and be disengaged from said leaves when the covers are closed.

3. In a loose leaf binder, a cover, a resilient leaf holding band secured to said cover, eyes formed on said cover some distance from the binding edge thereof, a rod inserted in said eyes and said band extending under said rod whereby said band is held close to the surface of said cover.

4. In a loose leaf binder, a cover, a plurality of leaf holding members extending from the binding edge of said cover, means on the cover for holding said members close to the surface of said cover near its binding edge, a U shaped bail having its ends pivotally secured to said cover to swing its middle portion toward and away from the binding edge, one end of each of said bands attached to the middle portion of said bail and means for holding the middle portion of said bail close to said cover.

5. In a loose leaf binder, a pair of covers, leaf holding members bridging the space between the covers having their ends adjustably secured to the covers, means on one of the covers comprising a pivoted member arranged to swing toward and away from the binding edge of the cover, for releasing the tension on said leaf holding members.

6. In a loose leaf binder, covers, leaf holding members bridging the space between the covers having their ends secured to the covers some distance from the binding edge of the covers in such manner that the distance from the binding edge of one cover to the binding edge of the other cover will be ma-

terially less when the covers are open than when the covers are closed.

7. In a loose leaf binder, the combination of the covers and resilient leaf holding bands having their ends attached to the covers a material distance from the binding edge thereof, the attached ends of the leaf holding bands arranged to swing with the covers and flex the intermediate portion of said bands lying between the secured points when the covers are swung.

8. In a loose leaf binder, a cover, a non-straight rod pivotally connected to said cover, a leaf holding strip connected to a part of said rod not in line with the pivotal connection of the rod to the cover, the said strip being movably connected to said cover at or near the binding edge thereof.

9. In a loose leaf binder, covers, a member pivotally connected to one of said covers to swing toward and away from the binding edge thereof, a leaf holding member having one end connected to said first named member and the other end connected to the other cover.

10. In a loose leaf binder, covers, a member pivotally connected to one of said covers to swing toward and away from the binding edge thereof, a leaf holding member having one end connected to said first named member and the other end adjustably connected to the other cover.

11. In a loose leaf binder, covers, a member pivotally connected to one of said covers to swing toward and away from the binding edge thereof, a leaf holding member passing loosely through a slot at or near the binding edge of said cover, having one end attached to said first named member and the other end attached to the other cover.

12. In a loose leaf binder, covers, a member pivotally connected to one of said covers to swing toward and away from the binding edge thereof, a leaf holding member passing loosely through a slot at or near the binding edge of said cover having one end attached to said first named member and the other end attached to the other cover, and means for holding said first named member in a position farthest away from the binding edge of said cover.

13. In a loose leaf binder, covers, a rod pivotally connected to one of said covers to swing toward and away from the binding edge thereof, and a leaf holding strip having one end connected to said rod and the other end connected to the other cover with an intermediate portion of said strip lying between said covers, means for retaining that portion of said strip adjacent to said covers in line therewith so that the ends of said leaf holding strip will swing with the covers, and flex the intermediate portion of the strip toward the back of the binder as the covers are

closed and in an opposite direction as the covers are opened.

14. In a loose leaf binder, a cover, a leaf holding strip provided with a plurality of
5 perforations adjustably secured to said cover, a plurality of laterally extending lugs on said cover one of which is arranged to extend through a perforation in the leaf holding strip, and a rod extending over said leaf
10 holding strip and alternately on opposite sides of said laterally extending lugs whereby one of said lugs is prevented from leaving the perforation in said leaf holding band.

15. In a loose leaf binder, a swinging cover and a flexible leaf holding member connected to said cover a material distance from the binding edge thereof so arranged that the leaf holding member will be deflected from the cover at its connected point when the
20 cover is closed and will run along said cover and over the binding edge thereof when the cover is open.

16. In a loose leaf binder, a swinging cover having an extension on its binding edge approximately in line with said cover, and a flexible leaf holding member connected to said cover a distance back of said extension and so arranged that the leaf holding member will be deflected from the cover at its
25 connected point when the cover is closed and will run along said extension and over the edge thereof when the cover is opened.

17. In a loose leaf binder, a pair of swinging covers and a flexible leaf holding member
35 having its ends attached to said covers a distance back from their binding edges and an intermediate portion lying between said covers, the said parts being so arranged that the attached ends of said leaf holding members will swing with the covers and the intermediate portion of said leaf holding members will be flexed away from the binding edges of said covers when they are in a closed position and will relatively approach
40 the binding edge of said covers as they are swung to an open position.

18. In a loose leaf binder, a pair of swinging covers, a flexible leaf holding member having its ends attached to said covers a
50 distance back from their binding edges and an intermediate portion lying between the points where it is attached to said covers, leaves disposed on said leaf holding member and so arranged that the binding edge of said covers will exert pressure against said leaves when said covers are in an open position and said pressure on said leaves will be decreased as the covers are closed.

19. In a loose leaf binder, a pair of swinging covers, a flexible member having its ends attached to said covers a distance back from their binding edges and an intermediate leaf holding section of said flexible member lying between the binding edges of said
65 covers when they are in an open position and

a longer intermediate leaf holding section of said flexible member lying between the points where said flexible member is attached to said covers when said covers are in a closed position.

20. In a loose leaf binder, a pair of swinging covers, a resilient leaf holding member having its ends attached to said covers a distance back from their binding edges with an intermediate portion of said resilient
70 member lying between the attached ends thereof and arranged to be flexed away from said covers at the points where it is attached thereto when said covers are closed and to run along said covers and over the binding
75 edges thereof when said covers are open.

21. In a loose leaf binder, covers, a flexible leaf holding member having one end attached to one cover and the other end passed loosely through an aperture at or near the
80 binding edge of the other cover and a member which has pivotal connection with said last named cover permitting it to swing toward and away from the binding edge of said cover to which pivoted member said
85 leaf holding member is connected.

22. In a loose leaf binder, a pair of covers, a member pivotally attached to one of said covers to permit a portion of said member to swing toward and away from the binding
90 edge of said cover, a flexible leaf holding strip pivotally connected with the swinging portion of said member and passing therefrom loosely through an aperture at or near the binding edge of said cover to
95 the other of said covers to which it is attached.

23. In a loose leaf binder, covers, a flexible leaf holding member, means for connecting said leaf holding member to said covers
105 comprising eyes formed on said covers a distance back from their binding edges and rods inserted in said eyes in such a manner as to leave apertures between said rods and the covers to which they are attached and
110 said leaf holding member passing through said apertures.

24. In a loose leaf binder, covers, a flexible leaf holding member, means for adjustably attaching said leaf holding member to
115 said covers comprising a plurality of apertures in said member, a plurality of laterally extending lugs on the covers, one of which is arranged to extend through a perforation in said member and a rod or wire
120 held in position by said lugs over said member.

25. In a loose leaf binder, a cover, a leaf holding strip passing through an aperture near the binding edge of the cover, an extension on the binding edge of the cover terminating a material distance beyond the
125 aperture for said leaf holding member so that leaves in the binder will be more tightly bound when the cover is open than when
130

the cover is closed, an adjusting member pivoted to the cover to swing toward and away from the binding edge of the cover and one end of said leaf holding strip pivotally secured to said adjusting member.

5 26. In a loose leaf binder, a cover, a leaf holding strip provided with a plurality of perforations, and means for adjustably securing said strip to said cover comprising
10 a plate rigidly secured to the cover provided with three lugs, the middle one arranged to enter a perforation in said strip and a rod pivotally connected to one of the remaining lugs and adapted to be secured to the third
15 lug.

27. In a loose leaf binder, a leaf holding strip, a cover, means on the cover to exert a pull on said strip comprising a rod and a catch on said cover pivoted to swing about

an axis parallel to the binding edge of the cover to securely hold said rod in its normal position. 20

28. In a loose leaf binder, a cover, a leaf holding strip and means for securing one end of said strip to the cover comprising a catch provided with a hook so pivoted to the cover that when the pull on said strip is exerted on said hook the catch after being swung over its dead center will be held against the cover. 25 30

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses this 24th day of July, 1907 at Chicago, Illinois.

WILLIAM S. PROUDFIT, JR.

Witnesses:

R. J. JACKER,
MILTON LENOIR.