Dec. 5, 1950 H. A. CHERRY 2,532,695

LOOSE-LEAF BINDER

Filed July 11, 1944 3 Sheets-Sheet 1

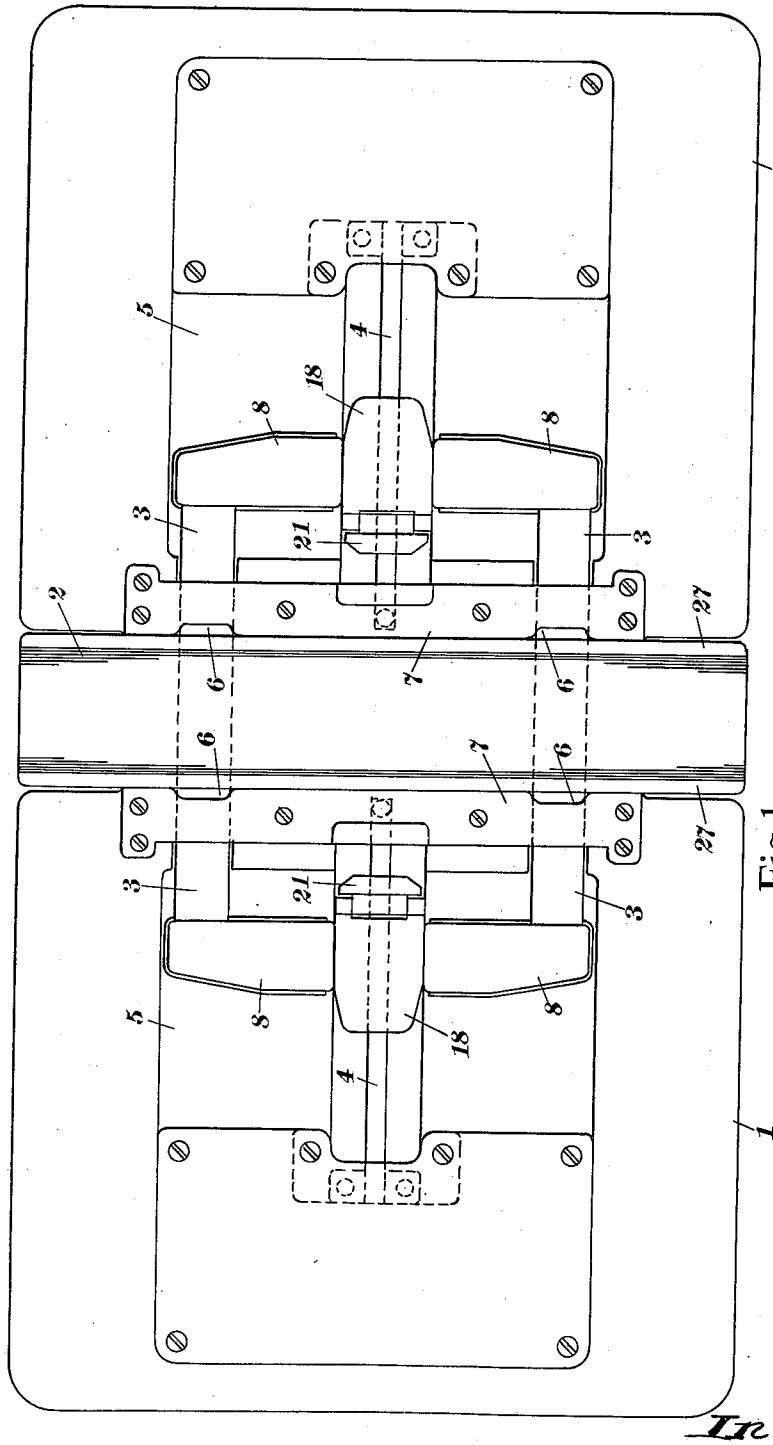


Fig.1

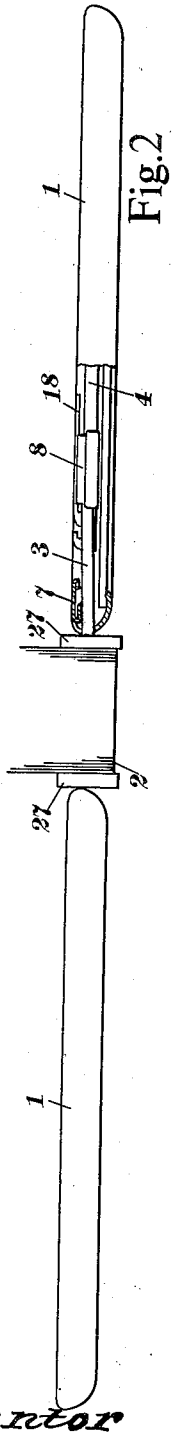


Fig.2

Inventor
H. A. Cherry
By Glascock Downing & Seibold Attys.

Dec. 5, 1950 H. A. CHERRY 2,532,695

LOOSE-LEAF BINDER

Filed July 11, 1944 3 Sheets-Sheet 2

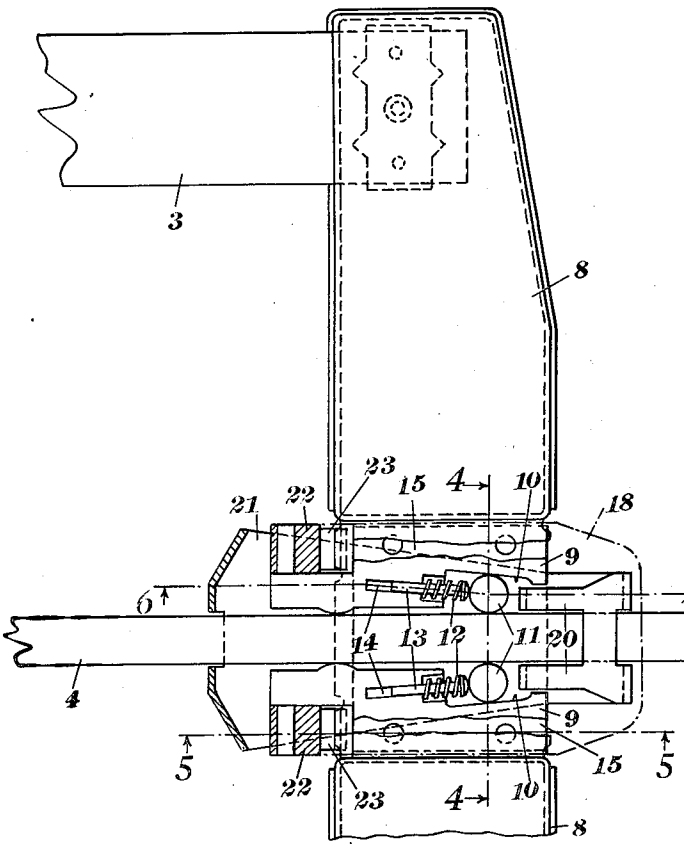


Fig.3

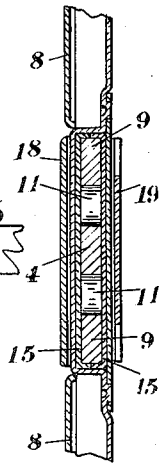


Fig.4

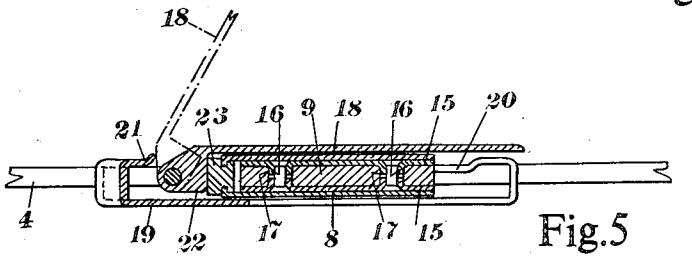


Fig.5

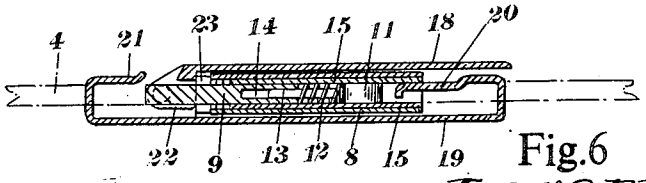


Fig.6

Inventor
H. A. Cherry
By Glascock Downing & Seebold
Attys.

Dec. 5, 1950 H. A. CHERRY 2,532,695

LOOSE-LEAF BINDER

Filed July 11, 1944 3 Sheets-Sheet 3

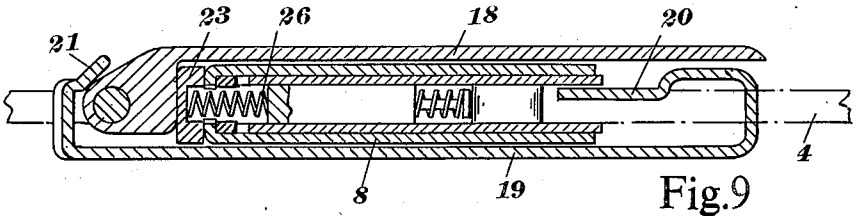


Fig.9

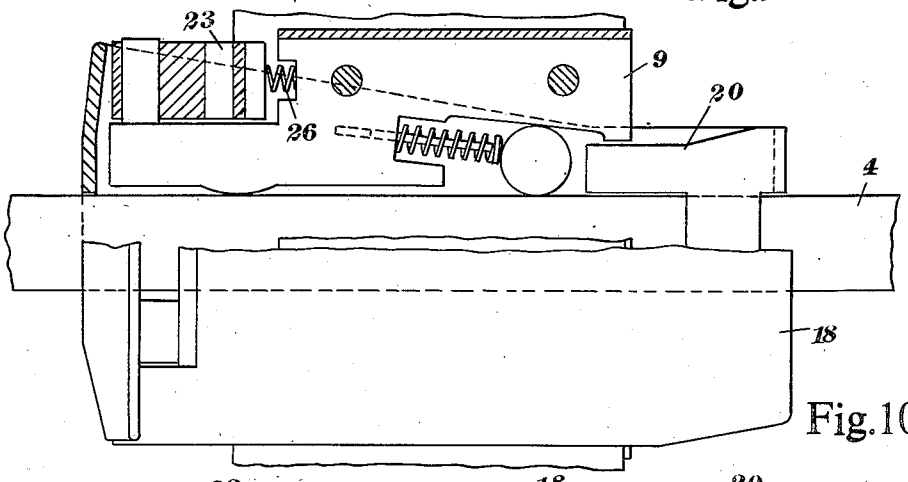


Fig.10

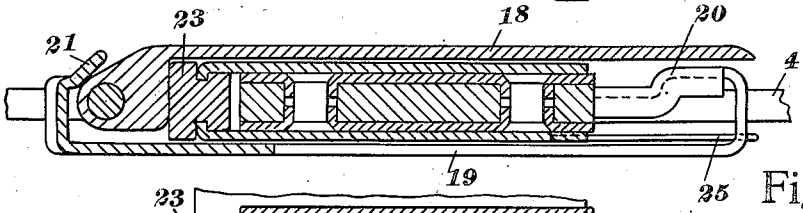


Fig.7

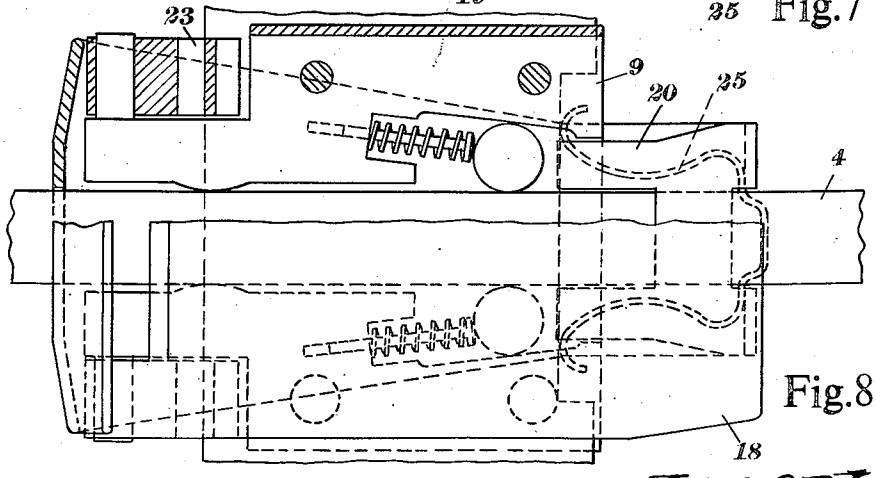


Fig.8

Inventor
H. A. Cherry
By Glascock Downing & Sebald Attys.

Patented Dec. 5, 1950 2,532,695

UNITED STATES PATENT OFFICE

2,532,695

LOOSE-LEAF BINDER

Harold Arthur Cherry, Northfield, Birmingham, England, assignor to Kalamazoo Limited, Birmingham, England

Application July 11, 1944, Serial No. 544,357
In Great Britain August 5, 1943

2 Claims. (Cl. 129—41)

1

This invention relates to loose leaf binders of the kind in which a pair of covers are interconnected by tongs and in which one or each of the covers is movable relatively to the thongs for releasing or securing the interposed leaves. The object of the invention is to provide improved means for securing the covers.

In the accompanying sheets of explanatory drawings:

Figure 1 is a front end view (with the covers spread apart), and Figure 2 is a corresponding part sectional lower end view, of a loose leaf binder embodying the invention.

Figure 3 is a fragmentary front view illustrating to a larger scale than Figures 1 and 2 the securing means combined with one of the covers of the binder.

Figures 4, 5 and 6 are sections taken respectively on the lines 4—4, 5—5 and 6—6 of Figure 3.

Figures 7 and 8 are respectively a sectional side view and a part sectional plan illustrating to a larger scale than Figures 3 to 6 a modified detail associated with the securing means.

Figures 9 and 10 are respectively similar views to Figures 7 and 8 illustrating another modified detail associated with the securing means.

In Figures 1 and 2, 1 indicates the covers, and 2 the loose leaves, of the binder, the rear edges of the leaves being provided in the usual manner with slots or holes through which pass a pair of thongs 3 whereby the covers are interconnected.

In applying the invention to each cover 1, I employ a longitudinal metal bar 4 adapted to be secured at its ends in a recess 5 in the inner side of the cover, the bar being adapted to lie between and parallel with the thongs 3 which extend into the said recess through holes 6 in a metal reinforcing strip 7 secured to the rear edge of the cover. For interconnecting the ends of the thongs 3 within the recess 5, I employ a metal cross bar 8 arranged at right angles and adapted to slide relatively to the longitudinal bar 4. Preferably and as shown the cross bar 8 is constructed from sheet or strip metal pieces arranged to form between them (at least at the center of the cross bar) a space for accommodating gripping means whereby the cross bar can be secured to the longitudinal bar 4. In constructing such gripping means I mount in the said space and alongside each of the upper and lower edges of the longitudinal bar 4 a member 9 having a portion 10 of its inner edge inclined relatively to the adjacent edge of the

2

longitudinal bar. In each of the spaces bounded by the inclined edge portions 10 of the members 9 and the adjacent edges of the longitudinal bar 4 is inserted a roller 11, and this is urged in one direction by a spring 12 which acts on the roller through the medium of a headed pin 13, the latter serving to carry the spring, and being slidably mounted in a bore 14 in the corresponding member 9. The members 9 are secured together and provided with a limited freedom of sliding movement relatively to the cross bar and parallel with the longitudinal bar 4 for the purpose to be hereinafter described. As shown the members 9 are secured together by sheet metal pieces 15 which flank opposite sides of the longitudinal bar 4, and which are formed at their inner sides with projections as 16 adapted to engage the adjacent ends of holes as 17 in the said members. On the outer ends of the members 9 is pivoted a finger lever 18, this being in the form of a flap which can be closed down compactly on the outer surface of the central portion of the cross bar 8. Moreover, I mount on the longitudinal bar 4 a sheet metal slide 19 which passes beneath the central portion of the cross bar 8. One end of the slide 19 is turned upwards and inwards and is shaped to form tongues 20 adapted to press the rollers 11 against the action of their loading springs 12 out of their normal positions in which they exert a wedging action on and interlock the members 9 and the longitudinal bar 4. The other end of the slide 19 is also turned upwards and inwards and is shaped to form a lip 21 adapted to be engaged by the finger lever 18. Further, the pivoted end of the finger lever 18 is shaped to form a cam or cams 22 which by interaction with an abutment or abutments 23 on the cross bar 8 can move the cross bar relatively to the members 9.

Although it is preferred to combine a mechanism as above described with each of the two covers of the binder, such a mechanism may be combined with one cover only if desired.

Assuming the binder above described is in the condition in which the levers 2 are secured between the covers 1, and it is required to release the leaves, the finger lever 18 of the mechanism (or of either of the mechanisms when two are used) is raised. This causes the slide 19 to be moved in the direction for releasing the rollers 11. The cover 1 carrying the mechanism can now be moved outwardly relatively to the thongs 3 for releasing the leaves 2. To re-secure the leaves 2, the cover 1 is returned to its initial po-

sition and the finger lever 18 is then folded down on to the cross bar 8, thereby enabling the rollers 11 to interlock the cross bar and the longitudinal bar 4. In the final stage of this movement of the lever 18 its cam or cams 22 interacts or interact with the abutment or abutments 23 on the cross bar 8 and, by causing the cross bar to slide relatively to the members 9, imposes an extra tension on the thongs 3, thereby setting up a supplementary pinching action on the leaves 2, and enabling the latter to be more tightly secured than would otherwise be possible.

To hold the finger lever 18 against accidental movement out of its folded position, the lip 21 on the adjacent end of the slide 19 is adapted to bear on the inner end of the finger lever when the members 9 and the slide occupy appropriate relative positions. Also any convenient spring means may be employed for urging the members 9 and the slide 19 into such positions. Thus, a spring 25 in the form of a bent wire may be arranged between the slide 19 and one pair of adjacent ends of the members 9 at a position beneath the tongues 20, as shown in Figures 7 and 8. Alternatively, or in addition, the abutment or each abutment 23 on the cross bar 8 may be loaded by a spring 26, as shown in Figures 9 and 10.

Preferably I interpose between the inner edge of each cover 1 and the leaves 2 a separate clamping bar 27 (Figures 1 and 2) such as is ordinarily used in binders of the type to which the invention relates, the securing action being then exerted by the covers on the leaves through the medium of the clamping bars.

The invention is not limited to the example above described as subordinate details may be varied. Thus, whilst I prefer to provide a gripping roller at each edge of the longitudinal bar, only one such roller may be used if desired. Also instead of a roller at one or each edge of the said bar I may provide a ball or a slidable wedge piece, or a rockable cam piece or any equivalent device which can set up a frictional grip between the cross bar and the longitudinal bar.

By this invention, I am able to provide a cover-securing mechanism for the covers of binders of the type specified in a very simple and convenient form.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. Means for securing the covers of a loose leaf binder of the kind specified, comprising the combination with at least one of the covers, of a longitudinal bar secured to the cover, cover-

tightening thongs arranged parallel with said longitudinal bar, a cross bar attached to said thongs and slidable relatively to said longitudinal bar, at least one member carried by and capable of a limited amount of transverse sliding movement relatively to said cross bar, said member being formed with an inclined edge at a position alongside said longitudinal bar, spring-loaded frictional gripping means situated between and co-operating with said inclined edge and the adjacent edge of said bar, a slide mounted on said longitudinal bar and provided at one end with an inwardly directed projection for acting on and releasing said gripping means when said slide is moved in one direction, an abutment on the other end of said slide, a second abutment on said cross bar, and a finger lever pivoted to said member and movable about its pivot axis into and out of a normal position in which it is folded over said cross bar, said lever being shaped and arranged so that when moved out of its normal position it serves by acting on the first mentioned abutment to actuate said slide for releasing said gripping means, and when returned to its normal position it serves to move said cross bar relatively to said member for the purpose of exerting a supplementary pinching action on the leaves of the binder.

2. Means as claimed in claim 1, in which the abutment on said slide has the form of a lip arranged to bear on said finger lever and thereby prevent accidental movement of said finger lever out of its normal position, and in which spring means are provided for opposing movement of said finger lever with the member to which it is pivoted in the direction for disengaging said finger lever from said lip.

HAROLD ARTHUR CHERRY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
979,673	Impey	Dec. 27, 1910
1,247,047	Wigginton	Nov. 20, 1917
1,258,383	Wigginton	Mar. 5, 1918
1,530,155	Cooper	Mar. 17, 1925
2,165,060	Krug	July 4, 1939
2,167,685	Scherzinger	Aug. 1, 1939

FOREIGN PATENTS

Number	Country	Date
285,997	Great Britain	1928