

R. KRUMMING.
 TEMPORARY BINDER OR LOOSE SHEET HOLDER.
 APPLICATION FILED SEPT. 5, 1911.

1,020,561.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 1.

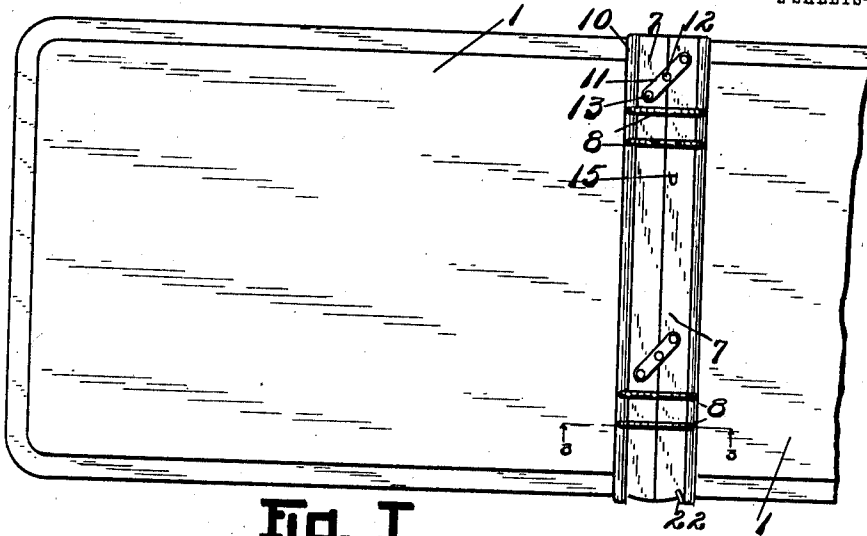


Fig. I.

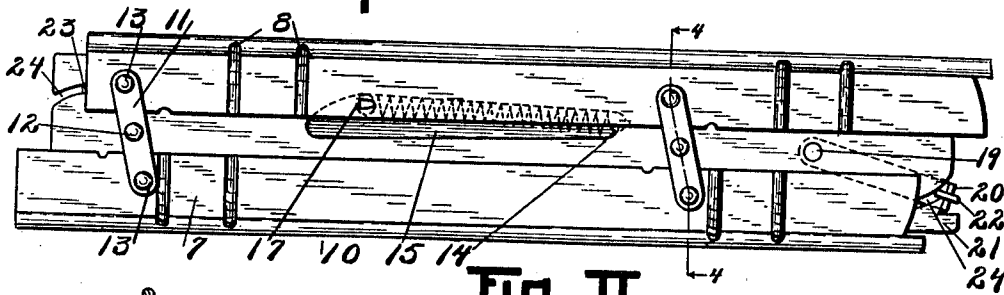


Fig. II.

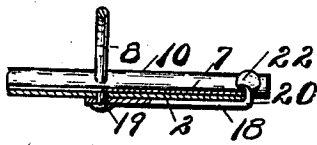


Fig. V.

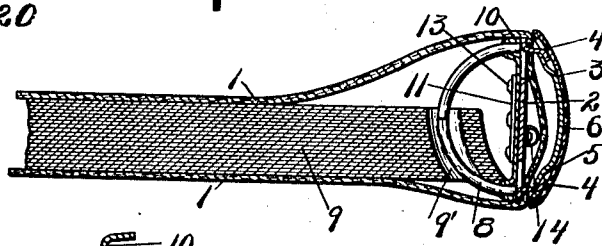
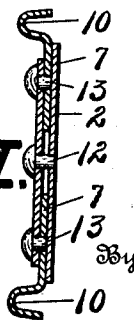


Fig. III.

Fig. IV.



Witnesses

Lulla Greenfield
 Margaret Glasgow

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2 SHEETS—SHEET 2.

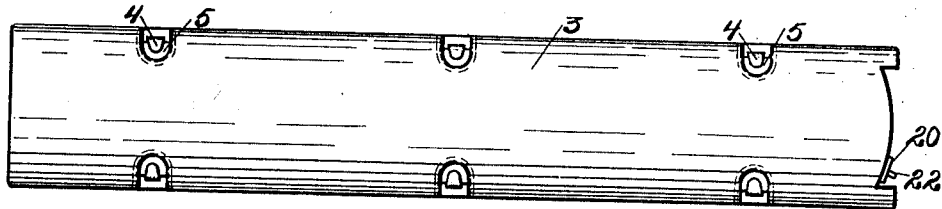


Fig. VI.

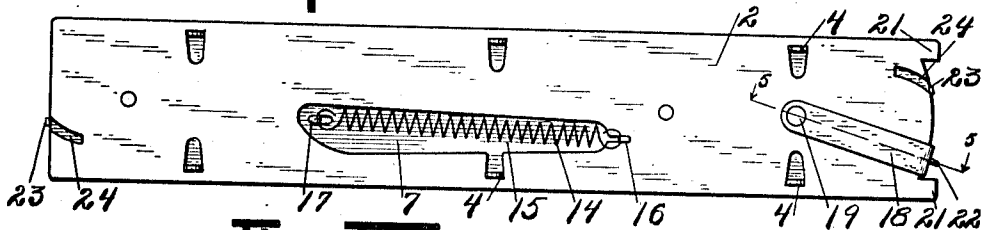


Fig. VII.

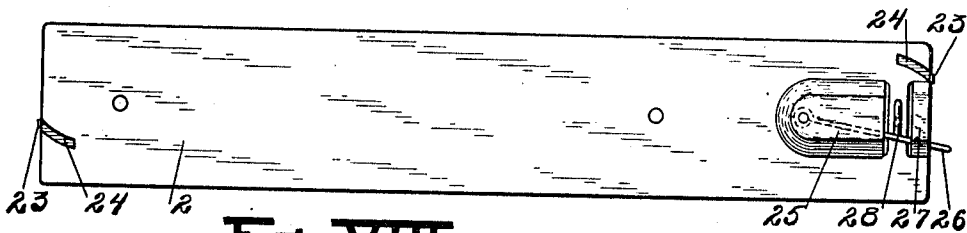


Fig. VIII.

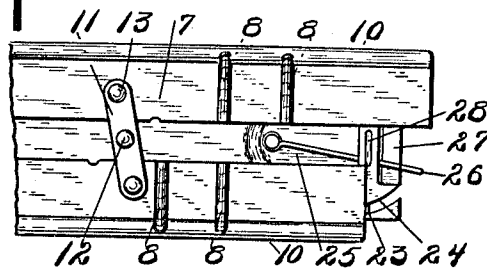


Fig. IX.

Witnesses

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UNITED STATES PATENT OFFICE.

REINHOLD KRUMMING, OF MILWAUKEE, WISCONSIN.

TEMPORARY BINDER OR LOOSE-SHEET HOLDER.

1,020,561.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed September 5, 1911. Serial No. 647,745.

To all whom it may concern:

Be it known that I, REINHOLD KRUMMING, a citizen of the United States, residing at the city of Milwaukee, county of Milwaukee, State of Wisconsin, have invented certain new and useful Improvements in Temporary Binders or Loose-Sheet Holders, of which the following is a specification.

This invention relates to improvements in temporary binders or loose sheet holders.

The main objects of this invention are: First, to provide an improved temporary binder or loose sheet holder of the "ring" binder type. Second, to provide an improved temporary binder or loose sheet holder of this type which is automatically opened upon the disengaging of the retaining catch. Third, to provide an improved temporary binder or loose sheet holder which is very easily manipulated for the insertion or removal of sheets or leaves. Fourth, to provide in a temporary binder or loose sheet holder of the class described, an improved back structure.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is an inside plan view of a structure embodying the features of my invention, one of the covers being partially broken away. Fig. II is an inside view of the binding mechanism of the structure shown in Fig. I, the mechanism being shown open. Fig. III is a detail longitudinal section of the structure shown in Fig. I, the binder being closed and sheets or leaves being shown therein. Fig. IV is a transverse section through the binding mechanism taken on a line corresponding to the broken line 4-4 of Fig. II. Fig. V is a detail section taken on a line corresponding to line 5-5 of Fig. VII showing details of the catch. Fig. VI is a rear view of the binding mechanism with the back member 3 in place, the cover 1 and the finishing or facing 6 for the back member 3 being omitted.

Fig. VII is a rear view of the binding mechanism with the back member 3 omitted. Fig. VIII is a view corresponding to that of Fig. VII of a modified structure in which the spring for automatically opening the binding members is omitted and a modified form of catch is provided. Fig. IX is a detail front view of the structure shown in Fig. VIII.

In the drawing, similar reference characters refer to similar parts throughout the several views and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the covers 1 of the structure illustrated are flexible. The back of the binder illustrated as the preferred construction comprises a back plate 2 and a transversely curved back member 3. The covers 1 are arranged over the back plate and clamped thereon by means of the back member 3. The back member 3 is secured by lugs 4 at the edges of the back plate which are folded into seats 5 provided therefor in the back member. (See Figs. 3, 6, and 7). The back member 3 clamps the covers to the back plate and forms a curved back for the book. It also forms a housing for certain parts as will appear as the description proceeds. The back member 3 is provided with a finishing strip or facing 6 which covers the lugs 4 and provides a suitable finish for the back of the binder.

A pair of supporting bars 7 are provided for the binding members 8. These binding members are arranged in coacting pairs and form the retaining means for the sheets or leaves 9, which are perforated at 9' to receive the binding members. The bars 7 in the structure illustrated, have bead-like flanges 10 at their edges. The binding members 8 are arranged through these flanges and secured in the channels thereof by solder. This provides an effective means for securing the binding members to the thin sheet metal bars, and further, the bars are made rigid and reinforced by these flanges. The supporting links 11 for the bars are mounted on pivots 12 on the back plate 2. The bars are mounted on the links by means of the pivots 13. Thus supported, the bars, when moved longitudinally, swing away from each other, separating the leaf engaging or binding members 8.

I preferably provide means for automati-

cally opening the binding members consisting of a coiled spring 14, which is arranged in an opening 15 in the back plate 2. One end of the spring 14 is secured to the back plate 2 by means of the integral lug 16 at one end of the slot or opening 15, and the other end to a lug 17 on one of the bars 7. (See Fig. VII). The bars are swung to their closed position against the tension of spring 14 so that when the bars are released, the spring swings them to the position shown in Fig. II. The bars are retained in their closed position by means of the catch 18 which is pivoted at 19 on the rear side of the plate 2. The catch is provided with an upturned engaging portion 20 adapted to swing over the end of one of the bars, as shown in Fig. I. The back plate 2 is notched to provide stops 21 for the catch. This catch is formed from a thin strip of metal having its outer end turned up to form the engaging member 20 and extended into a finger piece 22.

To limit the opening movement of the bars, I provide each bar with a lug-like stop 23 at one end and the back plate 2 with slots 24, the inner ends of the slots forming stops. These slots are curved and the lugs engaging therein assist in retaining the parts in their proper relation.

In the modification shown in Figs. VIII and IX, the spring or automatic opening feature is omitted. The catch in the structure shown in these figures is slightly modified, the back plate being provided with the housing 25 for the catch 26, the housing being formed integrally with the back plate. The supporting loop 27 is provided for the outer end of the housing, the loop being struck up from the back plate. The catch is, in this structure, formed of wire and is retained in its adjusted position by means of the keeper 28 formed integrally with the back plate. In this modified structure, the back member 3 is also omitted.

I have illustrated and described my improvements in a simple and effective embodiment thereof. While various modifications in structural details other than those illustrated, are possible, I have not attempted to describe or illustrate the same herein as I believe that the structure shown and described illustrates my invention so that those skilled in the art to which it relates will readily apply the same as may be required. I desire, however, to be understood as claiming the same specifically in the form illustrated as well as broadly within the scope of the appended claims.

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

1. In a temporary binder, the combination of a back plate having a longitudinal opening therein and rearwardly projecting

lugs at its edges, a flexible cover arranged over said back plate, a transversely curved back member arranged upon and secured to said back plate by said lugs to clamp said cover thereon, said back member being provided with seats for said lugs, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, stop lugs at opposite ends of said binding member bars, said back plate being provided with curved slots in its ends adapted to receive said stop lugs, a coiled spring arranged in said longitudinal opening in said back plate, with one end connected to said back plate and the other to one of said binding member bars, and a catch pivoted on the rear side of said back plate and projecting forwardly at the end thereof to be engaged with one of said binding member bars, the end of said back plate being notched to receive said catch, said back member constituting a housing for said spring and catch.

2. In a temporary binder, the combination of a back plate having an opening therein and rearwardly projecting lugs at its edges, a flexible cover arranged over said back plate, a back member arranged upon and secured to said back plate by said lugs to clamp said cover thereon, a pair of facing binding member bars having binding members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, stops for said binding member bars, a coiled spring arranged in said opening in said back plate, with one end connected to said back plate and the other to one of said binding member bars, and a catch pivoted on said back plate for one of said binding member bars.

3. In a temporary binder, the combination of a back plate having rearwardly projecting lugs at its edges, a flexible cover arranged over said back plate, a back member arranged upon and secured to said back plate by said lugs to clamp said cover thereon, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, a spring connected to said back plate and to one of said binding member bars, and a catch mounted on said back plate to be engaged with one of said binding member bars, said back member constituting a housing for said spring and catch.

4. In a temporary binder, the combination of a back plate having rearwardly projecting lugs at its edges arranged in opposed pairs, a flexible cover member arranged over said back plate, a back member arranged

upon and secured to said back plate by said lugs to clamp said cover thereon, said back member being provided with seats in its edges for said lugs, said seats being depressed so that the lugs are below the surface of the back member, and binding members mounted on said back plate.

5. In a temporary binder, the combination of a back plate having rearwardly projecting lugs at its edges, a flexible cover member arranged over said back plate, a back member arranged upon and secured to said back plate by said lugs to clamp said cover thereon, the edges of said back member being notched to receive said lugs and provided with depressed seats therefor, and binding members mounted on said back plate.

6. In a temporary binder, the combination of a back plate having an opening therein, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, stop lugs at opposite ends of said binding member bars, said back plate being provided with curved slots in its ends adapted to receive said stop lugs, a coiled spring arranged in said opening in said back plate with one end connected to said back plate and the other to one of said binding member bars, and a catch pivoted on the rear side of said back plate and projecting forwardly at the end thereof to be engaged with one of said binding member bars, the end of said back plate being notched to receive said catch.

7. In a temporary binder, the combination of a back plate having an opening therein, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, a coiled spring arranged in said opening in said back plate with one end connected to said back plate and the other to one of said binding member bars, and a catch pivoted on the rear side of said back plate and projecting forwardly at the end thereof to be engaged with one of said binding member bars, the end of said back plate being notched to receive said catch.

8. In a temporary binder, the combination of a back plate having an opening therein, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, stop lugs at opposite ends of said binding member bars, said back plate being provided with curved slots in its ends adapted to receive said stop lugs, and a coiled

spring arranged in said opening in said back plate with one end connected to said back plate and the other to one of said binding member bars.

9. In a temporary binder, the combination of a back plate having an opening therein, a pair of facing binding member bars having binding members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, and a coiled spring arranged in said opening in said back plate with one end connected to said back plate and the other to one of said binding member bars.

10. In a temporary binder, the combination of a back plate, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, and a catch pivoted on the rear side of said back plate and projecting forwardly at the end thereof to be engaged with one of said binding member bars, the end of said back plate being notched to receive said catch.

11. In a temporary binder, the combination of a back plate, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, and a catch pivoted on the rear side of said back plate and projecting forwardly at the end thereof to be engaged with one of said binding member bars, the end of said back plate being notched to receive said catch.

12. In a temporary binder, the combination of a back plate, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back plate, said bars being pivotally mounted on said links, and stop lugs at opposite ends of said binding member bars, said back plate being provided with curved slots in its ends adapted to receive said stop lugs.

13. In a temporary binder, the combination of a back, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links, a stop for said binding member bars, a spring connected to said back and to one of said binding member bars, and a catch for said bars.

14. In a temporary binder, the combination of a back, a pair of facing binding member bars having binder members disposed thereon in coacting pairs, supporting

links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links, a spring connected to said back and to one of said binding member bars, and a catch for said bars.

15 15. In a temporary binder, the combination of the back, a pair of binding member bars, binding members disposed on said bars in coacting pairs, supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links, one at each side of the supporting pivots for said links, and a stop on one of the bars adapted to engage the back to limit the opening movement of the bars.

16. In a temporary binder, the combination of the back, a pair of binding member bars, binding members disposed on said bars in coacting pairs, supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links, and a catch on said back adapted to be engaged with one of said bars when the bars are in their closed position.

17. In a temporary binder, the combination of the back, a pair of binding member bars, binding members disposed on said bars in coacting pairs, supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links, one at each side of the supporting pivots for said links, and a catch for retaining said bars in their closed position.

18. In a temporary binder, the combination of a back, a pair of binding member bars having bead-like flanges at their rear edges, binding members disposed on said bars in coacting pairs arranged through said flanges and secured within the channels thereof; and supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said links.

19. In a temporary binder, the combination of the back, a pair of binding member bars, binding members disposed on said bars in coacting pairs, and supporting links for said bars pivotally mounted on said back, said bars being pivotally mounted on said

links one at each side of the supporting pivots for said links.

20. In a temporary binder, the combination of a back plate; a binding member bar mounted to swing thereon, said binding member bar being provided with a raised bead-like flange at its rear edge; and a binding member prong arranged through said flange and rigidly secured within the channel thereof, said flange and the parts secured therein being above the plane of the lower face of the bar.

21. In a temporary binder, the combination of a back plate having an opening therein; a pair of facing binder member bars having binder members disposed thereon in coacting pairs; supporting links for at least one of said bars; a coiled spring arranged in said opening in said back plate with one end connected to said back plate and the other to the binding member bar, carried by said links; and a catch pivoted on said back plate and projecting at the end thereof to be engaged with said bar.

22. In a temporary binder, the combination of a back plate; a pair of facing binder member bars having binder members disposed thereon in coacting pairs; supporting links for at least one of said bars; and a catch pivoted on said back plate and projecting at the end thereof to be engaged with said bar, the end of said back plate being notched for limiting the swing of said catch.

23. In a temporary binder, the combination of a back plate; a pair of facing binding member bars having binding members disposed thereon in coacting pairs, one at least of said binding member bars being pivotally mounted; a spring acting to open the said binding member bars; and a catch for retaining the same in their closed position.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

REINHOLD KRUMMING. [L. S.]

Witnesses:

ADA BESWARRICK,
A. USCHISON.