R. KRUMMING.

TEMPORARY BINDER OR LOOSE SHEET HOLDER.

APPLICATION FILED OCT. 18, 1915.

1,183,083.

Patented May 16, 1916.

2 SHEETS—SHEET 1.

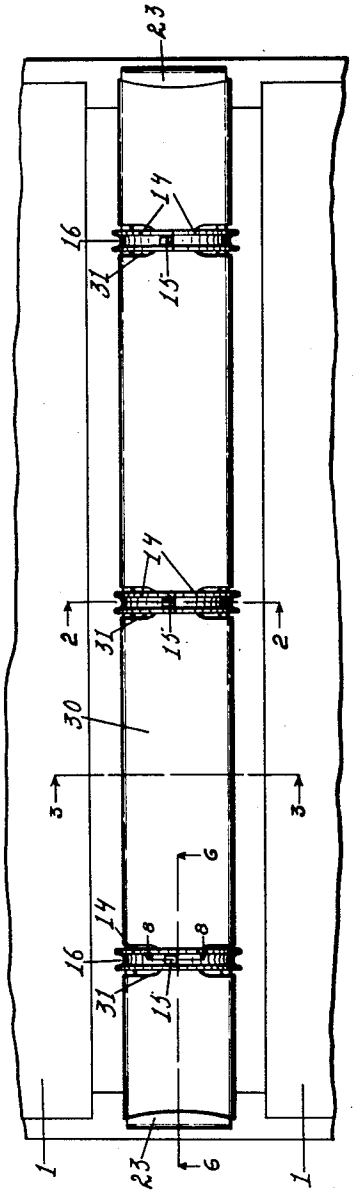


Fig. I.

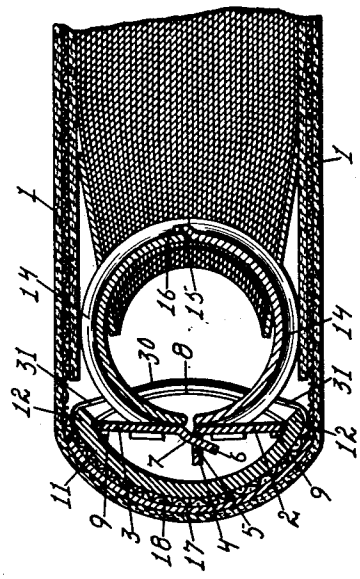


Fig. II.

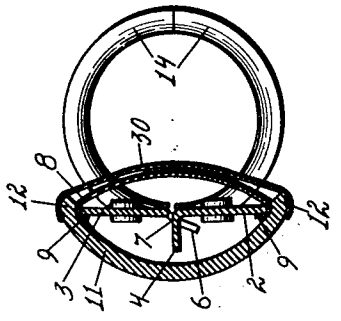


Fig. III.

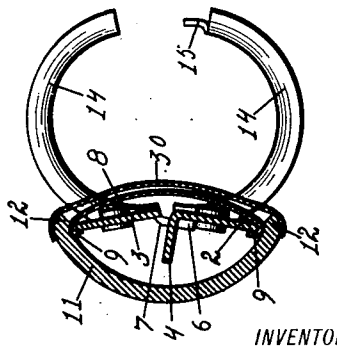


Fig. IV.

WITNESSES:

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2 SHEETS—SHEET 2.

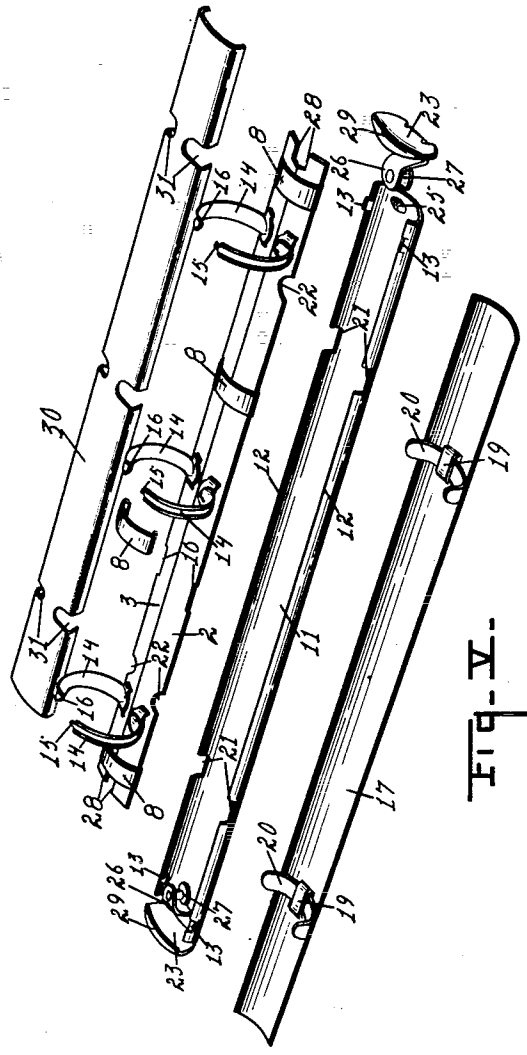


Fig. V.

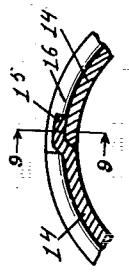


Fig. VIII.



Fig. IX.

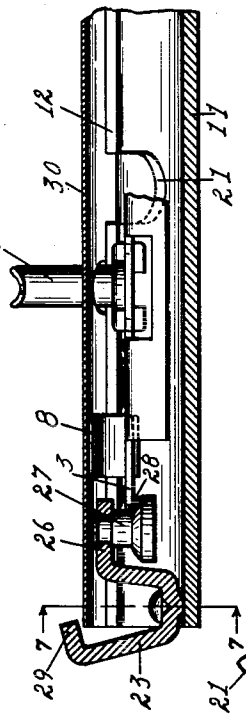


Fig. VI.

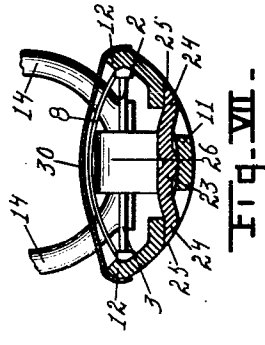


Fig. VII.

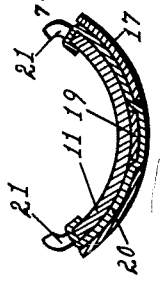


Fig. X.

WITNESSES:

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UNITED STATES PATENT OFFICE.

REINHOLD KRUMMING, OF MILWAUKEE, WISCONSIN.

TEMPORARY BINDER OR LOOSE-SHEET HOLDER.

1,183,083. Specification of Letters Patent. Patented May 16, 1916.

Application filed October 18, 1915. Serial No. 56,555.

To all whom it may concern:

Be it known that I, REINHOLD KRUMMING, a citizen of the United States, residing at 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 in a temporary binder or loose sheet holder of the ring type an improved rocking hook supporting plate structure. Second, to provide in a temporary binder of the class described, an improved hook structure in which the ends of the hooks are effectively interlocked when closed. Third, to provide in a temporary binder of the class described, an improved actuating means. Fourth, to provide in an improved temporary binder of the class described an improved cover attaching means. Fifth, to provide a temporary binder of the class described which is very convenient to use and one in which the parts are simple and economical to use and one in which the parts are simple and economical to produce and easily assembled.

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 a detail inside view of the structure embodying the features of my invention with the covers extended. Fig. II is an enlarged detail longitudinal section on a line corresponding to line 2—2 of Fig. I. Fig. III is an enlarged detail section on a line corresponding to line 3—3 of Fig. I, with the hooks closed, the covers and cover attaching plate being omitted. Fig. IV is a corresponding detail section with the hooks open. Fig. V is a perspective view of the hook carrying plates, back member, cover plate, and facing plate disassembled. Fig. VI is an enlarged detail section on a line corresponding to line 6—6 of Fig. I. Fig. VII is an enlarged detail section on a line corresponding to line 7—7 of Fig. VI, showing details of the actuating lever. Fig. VIII is an enlarged detail section through a pair of hooks on a line corresponding to line 8—8 of Fig. I. Fig. IX is an enlarged detail section through a pair of hooks on a line corresponding to line 9—9 of Fig. VIII. Fig. X is an enlarged detail section through the back plate and cover plate, showing the means for attaching the cover plates.

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 structure illustrated is provided with flexible covers 1. The hook carrying members or plates 2 and 3 are disposed edge to edge for rocking movement.

I preferably provide the hook carrying plates with connections, illustrated in Letters Patent, No. 1,126,490, issued to me January 26, 1915, consisting of the rearwardly projecting flange 4 on the plate having slots 5 adjacent the body of the plate. The plate 3 is provided with tongues 6 disposed in these slots. These tongues 6 of the plate 3 are offset inwardly at 7 and rearwardly inclined to permit the plates to lie edge to edge. This provides a rocking connection for the plates which prevents their becoming displaced and, further, the tongues 6 engaging the under side of the plate 2 constitute stop members limiting the upward rocking movement of the plates. A plurality of bowed or C-shaped springs 8 having inturned portions 9 at their ends engaging over the outer edges of the plates, shown in Figs. II–V, are provided. These springs are arranged above the plates and urge their inner edges toward each other supporting them in their adjusted positions, as shown in Figs. III and IV, the springs being engaged under stress and the stress increasing as the plates are rocked past their centers, so that as the plates are moved past their centers the springs act to swing them to and retain them in their open or closed positions.

The plates have notches 10 on their outer edges to receive the springs, the notches supporting the springs against longitudinal movement on the plates and so that their outer sides are within or flush with the edges of the plates permitting the plates to be slid

longitudinally of the back member 11. The back member 11 is channel-shaped in cross section and has forwardly projecting flanges 12 at its edges. The back member is non-yielding or rigid and the plates are a comparatively loose fit in its flanges so that they may be easily slipped into place and are supported for rocking movement, as explained, by means of the springs 8.

The plates are held against longitudinal movement in the back member by means of the lugs 13 struck in from the edges of the back member, the lugs being turned down at the ends of the plates after they are slid into position in the back member. These lugs are positioned so that the ends of the plates are spaced from the ends of the back member. This arrangement permits the plates and springs being assembled and placed in the back members in their assembled relation.

The hooks 14 are mounted on the plates in coacting pairs, the hooks being preferably mounted as described in my said patent. These hooks are curved in cross section and also longitudinally, being stampings, and are mounted so that their ends abut when the hooks are closed. One hook of each pair is provided with an integral forwardly projecting tongue 15 offset and adapted to fit into the channel 16 of the coacting hook, see Figs. VIII and IX. This supports the hooks so that they cannot be moved laterally relative to each other when closed, greatly relieving their connections to the plates from strain. The covers are also adapted to be mounted on the back member after the hook carrying plates are assembled therein. This I accomplish by providing a channel-shaped cover member 17 to which the covers 1 are secured by the facing fabric 18 arranged on the inside of the cover member and secured to the covers. The cover member has loops 19 struck up therein adapted to receive the bendable clips 20, see Fig. V. The ends of these clips are folded through notches 21 in the edges of the back member, see Fig. X.

The hook carrying plates have notches 22 in their edges which register with the notches 21 of the plates allowing the clips to be secured after the hook carrying plates are assembled in the back members. This permits the hook carrying members being assembled in the back members and the cover members attached as desired, which is of convenience, as any desired cover may be furnished.

To facilitate the opening and closing of the hooks I provide U-shaped actuating levers 23 having pintles 24 at their bight ends engaging in pintle openings 25 formed in the back members. The inner arms 26 of these actuating levers overhang the ends of the hook carrying plates and are provided with headed studs 27 engaging registering notches 28 in the ends of the plates. The outer arms of these levers are preferably flanged at 29 and constitute finger pieces for the levers. They are also preferably shaped to constitute end closures or members for the back member, see Figs. I and V, providing a neat finish. By this arrangement of actuating levers the parts are conveniently assembled and the hook carrying plates are very effectively operated. Downward and outward pressure on the finger pieces of the levers opens the hooks and inward pressure closes them. The levers are positioned for very convenient manipulation.

I preferably provide a front or finishing plate 30 having notches 31 to accommodate the hook members, the front plate being flanged to engage over the edges of the back member as shown. This facing plate is preferably of light metal suitably finished to provide an attractive finish for the binder.

My improved binder is comparatively simple and economical in its parts and the parts are quickly and conveniently assembled. The structure is very strong and durable and convenient to use.

I have not, in the accompanying drawing, attempted to maintain the relative proportion of the parts in the matter of thickness of material, as such details will be readily understood by those skilled in the art to which my invention relates.

I have illustrated and described my improvements in detail in an embodiment which I find very satisfactory. I have not attempted to illustrate or describe certain modifications which I contemplate as I believe the disclosure made will enable those skilled in the art to which this invention relates to embody or adapt the same as conditions may require.

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 pair of hook carrying plates disposed edge to edge for rocking movement, one of said plates having a rearwardly projecting flange at its inner edge with slots therein close to the body of the plate, the other having rearwardly inclined tongues at its inner edge disposed through said slots, the tongues engaging the under side of the opposite plate to limit the upward throw of the plates, bowed springs engaging the outer edges of said plates and urging them toward each other, the edges of said plates being notched to receive the springs, said plates having opposed notches at their ends, hooks mounted on said plates in coacting pairs, the downward throw of said plates being limited by the engagement of said hooks, a channel-shaped non-yielding back member

having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto, said back member having lugs struck in from its edges at the ends of said plates supporting them against longitudinal movement in said back member, the ends of the said plates being spaced from the ends of said back member, and U-shaped actuating levers pivoted at their bight ends within said back member at the ends of said hook carrying plates with their inner arms overhanging the ends thereof and provided with depending headed studs engaging said end notches of said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks.

2. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, one of said plates having a rearwardly projecting flange at its inner edge with slots therein close to the body of the plate, the other having rearwardly inclined tongues at its inner edge disposed through said slots, the tongues engaging the under side of the opposite plate to limit the upward throw of the plates, bowed springs engaging the outer edges of said plates and urging them toward each other, the edges of said plates being notched to receive the springs, hooks mounted on said plates in coacting pairs, the downward throw of said plates being limited by the engagement of said hooks, a channel-shaped non-yielding back member having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto, said back member having lugs struck in from its edges at the ends of said plates supporting them against longitudinal movement in said back member.

3. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, the edges of said plates being notched to receive the springs, said plates having opposed notches at their ends, a channel-shaped non-yielding back member having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto, said back member having lugs struck in from its edges at the ends of said plates supporting them against longitudinal movement in said back member, the ends of said plates being spaced from the ends of said back member, and U-shaped actuating levers pivoted at their bight ends within said back member at the ends of said hook carrying plates with their inner arms overhanging the ends thereof and provided with depending headed studs engaging said end notches of said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks.

4. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, said plates having opposed notches at their ends, means for limiting the throw of said plates, a channel-shaped non-yielding back member having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto, said back member having lugs struck in from its edges supporting said plates against longitudinal movement in said back member with the ends of said plates spaced from the ends of said back member, and U-shaped actuating levers pivoted at their bight ends within said back member at the ends of said hook carrying plates with their inner arms overhanging the ends thereof and provided with headed studs engaging said end notches of said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks carried thereby.

5. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, means for limiting the throw of said plates, a channel-shaped non-yielding back member having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto, said back member having lugs struck in from its edges supporting said plates against longitudinal movement in said back member with the ends of said plates spaced from the ends of said back member.

6. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, said plates having opposed notches in their ends, bowed springs engaging the outer edges of said plates and urging them toward each other, means for limiting the throw of said plates, a channel-shaped back member in which said plates are mounted, the ends of said plates being spaced from the ends of said back member, and U-shaped actuating levers pivoted at their bight ends within said back member at the ends of said hook carrying plates with their inner arms overhanging the ends thereof and provided with depending headed studs engaging said end notches of said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks.

7. In a temporary binder, the combination of a pair of hook carrying plates disposed

edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, means for limiting the throw of said plates, a channel-shaped back member in which said plates are mounted, and a U-shaped actuating lever pivoted at its bight end within said back member at one end of said hook carrying plates with its inner arm overhanging the ends thereof and provided with a depending stud engaging said plates whereby when said lever is oscillated said plates are rocked to open and close the hooks carried thereby.

8. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, a non-yielding back member in which said hook carrying plates are mounted, the ends of said plates being spaced from the ends of said back member, and actuating levers pivoted within said back member at the ends of said hook carrying plates to overhang the ends thereof and provided with depending headed studs engaging said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks carried by the plates.

9. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, said plates having opposed notches in their ends, means for yieldingly holding said plates in their open and closed positions, a channel-shaped back member in which said plates are mounted, the ends of said plates being spaced from the ends of said back member, and U-shaped actuating levers pivoted at their bight ends within said back member at the ends of said hook carrying plates with their inner arms overhanging the ends thereof and provided with depending headed studs engaging said end notches of said plates whereby when said levers are oscillated said plates are rocked to open and close the hooks carried thereby, the outer arms of said levers constituting finger pieces and end members for said back member.

10. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, a spring acting on said plates to yieldingly hold them in their open and closed positions, a channel-shaped back member in which said plates are mounted, and a U-shaped actuating lever pivoted at its bight end on said back member at one end of said hook carrying plates with its inner arm overhanging the ends thereof and provided with a depending stud engaging said plates whereby when said lever is oscillated said plates are rocked to open and close the hooks carried thereby, the outer arm of said lever constituting a finger piece and an end member for said back member.

11. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, a channel-shaped back member in which said plates are mounted, a channel-shaped cover plate embracing said back member, said cover plate having loops struck upwardly therefrom, and bendable cover plate attaching clips disposed through said loops with their ends folded over the edges of said back member, the edges of said back member being notched to receive said clips, said hook carrying plates having notches in their outer edges registering with said back member to permit the securing of said clips after the hook carrying plates are disposed in said back member.

12. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, a channel-shaped back member in which said plates are mounted, a channel-shaped cover plate embracing said back member, said cover plate having loops struck upwardly therefrom, and bendable cover-plate attaching clips disposed through said loops with their ends folded over the edges of said back member, the edges of said back member being notched to receive said clips.

13. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, a channel-shaped back member in which said hook carrying plates are mounted, a channel-shaped cover plate embracing said back member, said cover plate having loops struck upwardly therefrom, and bendable cover plate attaching clips disposed through said loops, their ends being folded over the edges of said back member, the edges of said back member being notched to receive said clips, said hook carrying plates having notches in their outer edges registering with said back member to permit the securing of said clips after the hook carrying plates are disposed in said back member.

14. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, a channel-shaped back member in which said hook carrying plates are mounted, a channel-shaped cover plate embracing said back member, said cover plate having loops struck upwardly therefrom, and bendable cover plate attaching clips disposed through said loops, their ends being folded over the edges of said back member.

15. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, and a channel-shaped back member having forwardly projecting flanges at its edges adapted to receive said hook carrying plates when they are presented longitudinally thereto.

16. In a temporary binder, the combination of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, means for limiting the throw of said plates carried thereby, and a back member in which said hook carrying plates are mounted.

17. In a temporary binder, the combination of a pair of hook carrying plates disposed edge to edge for rocking movement, bowed springs engaging the outer edges of said plates and urging them toward each other, and a back member in which said hook carrying plates are mounted.

18. In a temporary binder, the combination of a pair of hook carrying plates supported for rocking movement, and hooks mounted on said plates in coacting pairs so that their ends abut when closed, said hooks being longitudinally curved and curved in cross section, one hook of each pair being provided with an integral projecting tongue at its outer end outwardly offset and conformed to fit into the channel of the coacting hook when the hooks are closed.

19. In a temporary binder, the combination of a pair of hook carrying plates supported for rocking movement, and hooks mounted on said plates in coacting pairs, said hooks being channeled in cross section, one hook of each pair being provided with a tongue projecting into the channel of the coacting hook when the hooks are closed.

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

REINHOLD KRUMMING. [L. S.]

Witnesses:

ARNOLD WANGERIN,

EUGENE WENGERT.