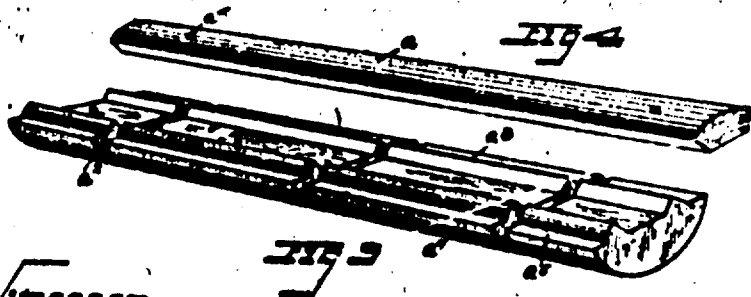
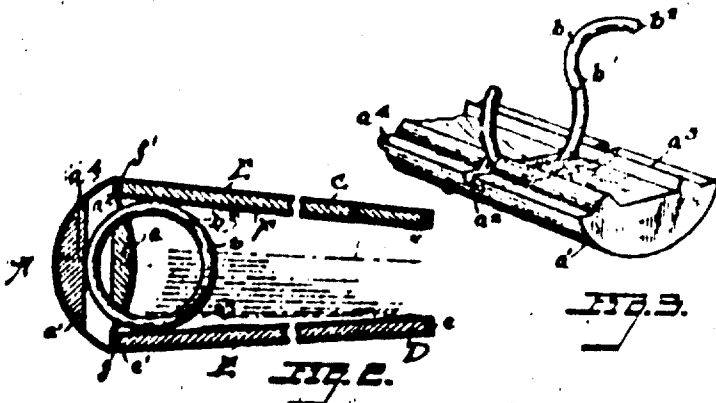
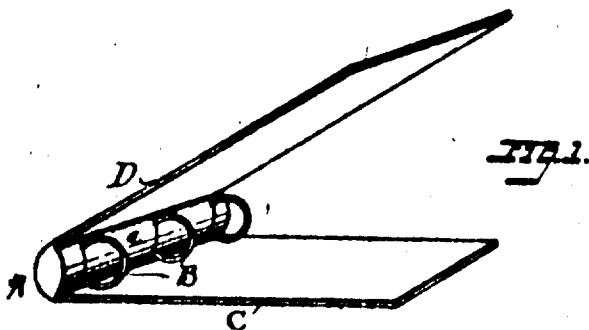


E. G. HUBBY.
LOCKE LEAF BINDER.
APPLICATION FILED JULY 27, 1910.

981,998.

Patented May 9, 1911.



Witnesses:
Oliver H. Kappeler
Hugh C. McMill
NEW YORK
CLIPRARY

Inventor
Rollin S. Hubby
By *J. S. Hall*
Attorney

991,993. LOOSE-LEAF BINDER. ROLLIN G. HUBBY, Cleveland, Ohio. Filed July 27, 1910. Serial No. 574,032.

To all whom it may concern:

Be it known that I, ROLLIN G. HUBBY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Loose-Leaf Binders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to improvements in loose leaf binders, and has for one of its objects the production of such a binder within which sheets of paper can be easily and quickly secured, from which they can be readily removed and from which any one or more of the sheets may be taken without disturbing the arrangement of the remaining sheets. My binder is also applicable to the filing of clippings, catalogues, etc.

Loose leaf binders which present a neat and attractive appearance and which are at present in use contain devices more or less complicated for securing the papers in place, and this necessarily makes them too expensive to be included in the usual office equipment, except to a limited extent. There are many places where their use would be a great convenience, but would involve undue expense.

It is a further object of my invention, therefore, to produce a binder which will be neat in appearance as well as very strong and cheap, and these objects are accomplished in the binder illustrated in the accompanying drawings and set forth in the claims annexed hereto.

Figure 1 is a perspective view of my improved loose leaf binder; Fig. 2 is a transverse sectional view through the back of the binder adjacent one of the rings; Fig. 3 is a detail in perspective, showing the way in which the rings are set into grooves in the outer back member; and Figs. 4 and 5 are perspective views of the inner and outer members, respectively, of the back.

In the drawings in which like reference characters are employed to designate corresponding parts throughout the several views, A represents the back, which is composed generally of the inner member *a* and the outer member *a'*. These parts are preferably made of wood, and it is very essential that the grain of the wood in the member *a'* should run lengthwise of the piece, for a purpose hereinafter explained. At suitable distances throughout its length, the member *a'* is provided with transverse grooves *a²*, which extend from the inner surface thereof to a depth of about one-half its thickness, the bottoms of the grooves being preferably straight, as shown.

Forced to a seat within each groove is a ring B. Each of these rings is made with a swiveled section *b*, which is joined at *b'* to the body portion of the ring. The opposite end of the swiveled section is provided with a projection *b¹*, which engages a notch or recess in the end of the body portion of the ring with which this end of the section is adapted to cooperate. When all of the rings have been forced into their respective

grooves, I glue, tack, or otherwise secure the inner member *a* to the inside surface of the member *a'* between the longitudinal ribs *a³*. The surfaces of these ribs adjacent the side edges of the members *a'* are curved to conform to the contour of the curved exposed surface of the member *a*.

I find it a saving of time in the assembling of the back members to employ both brads *a'* and glue for securing the parts *a* and *a'* together, as the brads hold the parts firmly in place while the glue is drying, and thereby avoid the use of a vise or clamp for that purpose.

It will be seen by reference to Fig. 3 that, at the point where the rings engage the sides of the grooves, the depth of the grooves is considerably increased by the ribs *a³*. This causes each groove to firmly embrace over one-fourth the circumference of each ring and, since the grooves are made slightly narrower than the thickness of the rings and the rings have to be actually forced to a seat within the grooves, the rings will be held positively against movement in any direction and the member *a*, being made of a sufficient width to engage the interior of the rings, prevents the loosening of the rings and the withdrawal of the same from the grooves. It will also be noted that, at the points where the member *a* engages the interior of the rings, the member forms a chord for the inner circumference of the ring, which tends to prevent the creeping of the ring.

It is well known that the shrinkage of wood is in a cross-grain direction and that the shrinkage does not affect the length of the fiber, and it is, therefore, essential, as previously mentioned, that the grain of the wood in the member *a'* should run parallel to the longitudinal axis of the piece, or at substantially right angles to the grooves *a²*, for the purpose of preventing the shrinking of the wood having any effect upon the width of the grooves and causing the rings to become loose.

The binder is provided with two covers C and D. These covers are secured to the back member in a manner that will permit them to swing freely from a closed position, such as shown in Fig. 2, to an extreme open position, or until they are permitted to engage each other at the back. When in closed position, it is desirable to have the

covers converge toward the front and I, therefore, make the back of a width greater than the diameter of the rings plus the thickness of the two covers.

To the outside surface of the covers I secure a covering of flexible material E, such as buckram, which extends from inside the forward edge of one of the covers, back across the outside surface of one cover, about the outside of the outer back member and then forwardly over the outside surface of the other cover and around the forward edge thereof to the inside. This piece of material should be of sufficient width to extend slightly beyond the edges *e* of the covers, where it may be turned about said edges and permit it to overlie a portion of the inside surfaces of the covers. A second piece of similar material F is secured to the inside surfaces of the two covers and extends rearwardly from near the rear of one cover to the rear edge of the cover and is creased at *f* and glued to the rear edge *e'* of the cover. The material is then stretched over the inside surface of the back member *a* to its other extreme edge (slots having been cut for the accommodation of the rings B) where it is bent back upon itself or creased, as shown at *f'*, glued to the rear edge of the cover and passes forwardly to a point corresponding to the front edge on the opposite cover. The material will be pasted or glued to the inner member *a* of the back. The ends of the back may be covered with a piece of the covering material or may be painted to produce a finished effect and keep out moisture. This manner of covering the binder makes it very substantial and durable and, at the same time, neat in appearance.

I find, by making the inside surface of the back member *a* curved, that the rear or inner edges of the leaves act more satisfactorily when the covers are opened and closed. If this surface were straight, it can be readily seen that, with the back down, when the covers are thrown back to a plane parallel to the inside of the back, the leaves will divide and fall flat on both covers. Upon closing the book, the leaves will have a tendency to slide to as near the center of the back member as the rings will permit, and the portions beyond the point where the covers are hinged will bend at an angle with respect to the portions lying upon the inside of the back and will be apt to be clenched on the rings and break or tear in the holes by which they are mounted upon the rings. By curving this surface, as shown, a central ridge is formed throughout the back against which the rear edges of the leaves will abut and which will tend to prevent the inward creeping of the outside leaves, and the holes within the leaves

(through which the rings pass) will be prevented from binding or clenching against the rings.

As will appear by reference to Fig. 2, the outer edge of each cover E projects inwardly and overhangs the back member *a'*, as shown at *e'*. These inwardly projecting portions *e'* are adapted to engage the portions *a'* of the inner face of the member *a'* which are located outside of the ribs *a'*, such portions forming jambs for the inner edges of the covers. This provides a rigid or continuous corner or edge between the cover and the back which is homogeneous with the back.

While I have described the particular form of split ring as being that which I prefer to employ in connection with my loose leaf binders, I wish it understood that I do not claim the ring as any feature of my invention and that I may use any type of split ring which I believe will satisfactorily accomplish the purpose.

Having thus described my invention, what I claim is:

1. In a temporary binder, the combination of an outer back member, said member having transverse grooves extending outwardly from its inner surface and said member having a pair of inwardly projecting spaced ribs intersected by said grooves, rings snugly fitting said grooves and engaged by said ribs, and an inner member secured to the inner face of the outer member between said ribs and engaging the interior of said rings.
2. In a temporary binder, the combination of an outer back member having a pair of longitudinally extending spaced ribs on its inner surface and provided with transverse grooves extending outwardly from the inner face and intersecting said ribs, rings mounted in said grooves and snugly fitting the same, the rings being of such dimensions as to be engaged by said ribs with the inner faces of said ribs corresponding substantially to the interior of the rings, and an inner back member adapted to be applied to the inner face of the outer back member and having side edges adapted to engage the inner faces of the ribs and the inner surfaces of the rings.
3. In a temporary binder, the combination of an outer back member having a pair of longitudinally extending spaced ribs on its inner surface and provided with transverse grooves extending outwardly from the inner face and intersecting said ribs, rings mounted in said grooves, the rings being of such dimensions as to be snugly engaged by said ribs with the inner faces of said ribs corresponding substantially to the interior of the rings, and an inner back member adapted to be applied to the inner face of the outer back member and having side edges adapted to engage the inner faces of the

ribs and to form each chords for the adjacent inner surfaces of the rings.

4. In a temporary binder, the combination of an outer back member, said member having an inner face provided with a pair of longitudinally extending ribs and having transverse grooves extending outwardly from its inner face and intersecting said ribs, rings closely fitting said grooves and of such dimensions as to be engaged by said ribs, and an inner back member adapted to be applied between the ribs of the outer member and in engagement with the inner surfaces of the rings, the outer member being formed of wood with the grain running transversely of the grooves.

5. In a temporary binder, the combination of an outer back member having spaced transverse slots, rings mounted in said slots, and an inner member applied to the other member and securing said rings in place, the inner surface of the inner member being convexly curved.

6. In a temporary binder, the combination of an outer back member, said member being provided with a pair of longitudinally extending spaced ribs each having its outer face convexly curved, rings mounted on said member, and an inner back member adapted to be applied to the outer back member and to fit between the ribs thereof and secure the rings in place, the inner member having a convexly curved surface substantially flush with the curved surfaces of the ribs.

7. In a temporary binder, the combination of an outer back member, said member being provided with a pair of longitudinally extending spaced ribs, each having its outer face convexly curved, the outer member being provided with grooves extending transversely thereof and intersecting said ribs, rings mounted in said grooves and engaged by said ribs, and an inner back member adapted to be applied to the outer back member and to fit between the ribs thereof, the inner member having a convexly curved surface substantially flush with the curved surface of the ribs.

8. In a temporary binder, the combination, with the covers, of an outer back member having on its inner face a pair of longitudinally extending ribs, said ribs having their opposed faces inclined and converging toward the outer surface of said member and said member having transverse grooves extending outwardly from its inner face and intersecting said ribs, rings snugly fitting said grooves and engaged by said ribs, said rings being of such dimensions that their inner surfaces substantially coincide with the inclined faces of said ribs, and an inner back member adapted to be fitted to the outer member between the ribs and having its opposite edges adapted to fit the converging faces of said ribs.

9. In a temporary binder, the combination of an outer back member, having a transverse slot, a ring mounted in said slot, and an inner member applied to the outer member and engaging the interior of said ring at separated points and securing said ring in place.

10. In a temporary binder, the combination of an outer back member having spaced transverse slots, rings mounted in said slots and fitting snugly therein, and an inner member applied to the outer member and extending through said rings and securing them in place.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

ROLLIN G. HUBBY.

Witnesses:

J. B. HULL,
BRENNAN B. WEST.