A. B. PLUSHKELL.

FLAT OPENING BINDER.

APPLICATION FILED MAR. 9, 1914.

1,130,333. Patented Mar. 2, 1915.

Fig. 1

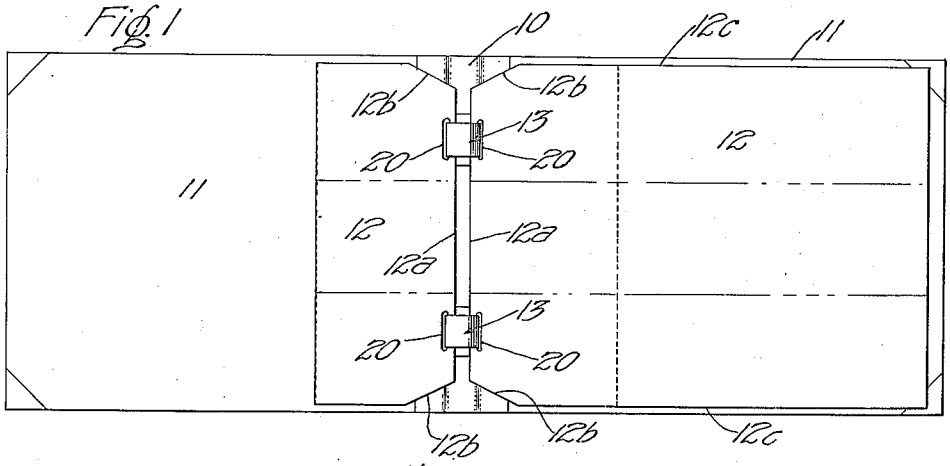


Fig. 3

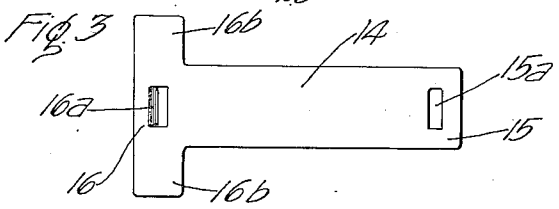


Fig. 4

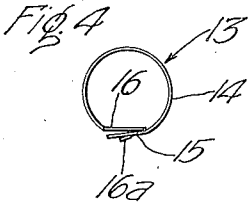


Fig. 5

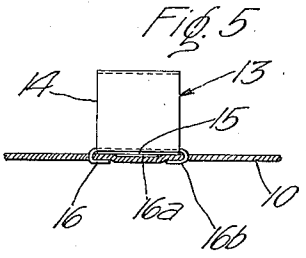
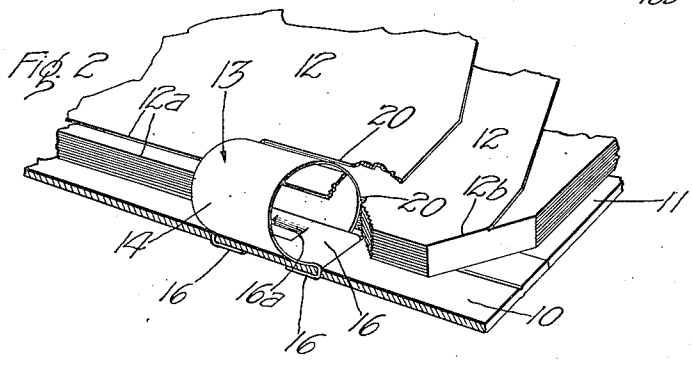


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

AUGUST B. PLUSHKELL, OF ALHAMBRA, CALIFORNIA.

FLAT-OPENING BINDER.

1,130,333. Specification of Letters Patent. Patented Mar. 2, 1915.

Application filed March 9, 1914. Serial No. 823,562.

To all whom it may concern:

Be it known that I, AUGUST B. PLUSHKELL, a citizen of the United States, residing at Alhambra, in the county of Los Angeles, State of California, have invented new and useful Improvements in Flat-Opening Binders, of which the following is a specification.

This invention relates to a binder and binding ring and to a system of binding sheets therewith; and the prime object of this invention is the provision of a simple and inexpensive means for securely binding sheets so that they may be opened flat.

This invention has particular reference to the binding of sheets which are not removed from or inserted in the binder, once being bound remaining in the binder.

It is one of the objects of this invention to provide an inexpensive binder of this character.

I have developed my invention with especial reference to the binding of check books, record books, and other books of like character; although I do not limit my invention to such uses. For the purposes of pointing out the utility of my invention, I herein describe it as a binder for a check book or the like; other uses of my invention may be inferred from this typical embodiment herein described.

One of the primary features of my invention is the formation and construction of the binder ring, itself. This binder ring is formed of a flat metallic strip bent into the shape of a ring with overlapping ends. An aperture in one of the ends and a hook in the other provide means for connecting the two ends. The resiliency of the metal tends to expand the ring and tends to throw the hook and aperture into tight engagement and to prevent the ends being disconnected; and the ring is fastened to the binder back in such a manner as to make it impossible to disconnect the ring without removing it entirely from the back. This construction makes it impossible to remove a sheet from the binder ring without either mutilating the sheet or the binder.

Other features of my invention are more fully explained in the following specification and are illustrated in the accompanying drawings, in which,

Figure 1 is a plan of a book equipped with my binder, Fig. 2 is a fragmentary perspective showing my binder ring and its attachment to the binder back, Fig. 3 shows the strip of which the binder is formed, Fig. 4 is an end view of the binder ring, Fig. 5 is a side view of the binder ring showing its attachment to the binder back.

In the drawings I have shown a book with back 10 and covers 11. I have shown a book such as is ordinarily used for checks; and I have shown sheets 12 of checks therein; but it will be understood, as hereinbefore stated, that my invention may be applied to other uses.

My binder rings 13 may be used in any number; for the ordinary check book, two rings will suffice. For smaller books, one ring may suffice, while for larger books it may require three or more. Each of these binder rings is formed of a flat strip of metal 14 bent into ring shape with its ends 15 and 16 overlapping, the end 15 being outside the end 16. The outside end 15 has an aperture 15^a; and the inside end 16 has a hook 16^a adapted to engage the aperture in the manner shown in Fig. 4. The resiliency of the metal strip 14 tends to expand the ring, so that the hook 16^a is pulled tightly against the edge of the aperture 15^a, and so that there is no tendency for the hook to disengage from the aperture. The end 16 has two laterally projecting tabs 16^b which form means of connection of the binder ring with the back 10. Simple and strong connection is formed by bending the tabs 16^b as shown in Figs. 2 and 5 into clenchers which pass through the binder back 10. The tabs 16^b, being on the inner end 16, the outer end 15 is tightly held between the inner end and the binder back 10. When once the binder ring is fastened to the back, it is impossible to disconnect the two ends of the binder ring without removing it from the back or without mutilating either the ring or the back, or both.

Each of the sheets 12 is provided with slots 20 for engagement with the binder rings 13. As hereinbefore stated, there may be any desired number of these binder rings 13. The sheets 12 as they are originally put upon the rings are not entirely loose and disconnected from each other; I prefer to slightly fasten them together so as to form them into a block through which the rings 13 may be easily and quickly passed. I do this so that it is not necessary to place the sheets one by one on the binder rings.

It will be seen that the sheets 12 throw over from one position in the book to the opposite position; and that the back edges 12^a of the sheets cannot be secured together for the reason that flat opening would thus be hindered or made impossible. I prefer to cut the corners of each sheet diagonally as shown at 12^b and to glue the edges of the sheets along these diagonal cuts; so that the sheets are secured together in a block easy to put upon the ring binders. The sheets are also held from movement in the book by being slightly glued together. If they were unglued each sheet could move loosely on the ring binders, with a tendency to wear or tear out the ring slots in the sheets. This method makes them the same as a bound back. At the same time, they may be easily separated from each other without any tendency to tear. Each sheet, as it is transferred from one side to the other side, is merely lifted and the glued portions separate as is illustrated in Fig. 2. A diagonal pull is exerted along the edges 12^b, so that there is no tendency whatever to split or tear the sheets. As is well known, when sheets are glued together along their longitudinal edges, such as the edges 12^c, they are very apt to tear when the uppermost sheet is lifted; particularly due to the fact that the grain of the paper may not be longitudinal of the sheet but may run diagonally into the sheet from one of its longitudinal edges.

The advantages and utilities of my binder are readily apparent. As applied to check books and the like, (record and all other books in which the used sheets are turned from one position to the other) my invention provides a simple, efficient and inexpensive means of allowing the pages or sheets to be opened flatly so that they may be used easily and efficiently. It is well known how difficult it is to use the ordinary side stitched check book. The stubs being short are very difficult to bend back toward the left to expose the fresh stubs and checks for use. In my form of binder, the used stubs are thrown over to the left without any difficulty whatever and the fresh checks are exposed flat. My device has this advantage without sacrificing any of the advantages of the ordinary book. The stubs, or other used sheets, cannot be removed from the book without mutilation. They cannot be extracted from their place, neither can they be changed in relative position. The sheets are held in a solid block, as a bound book, until they are severed from each other. And, with all these advantages, my binder is of relatively small cost.

Although, as hereinbefore stated, I explain my invention with especial reference to check books and the like, it will be understood that my invention is not limited to such a use. My binder ring is adapted for use in any situation where an inexpensive flat opening binder is required for sheets which are to be permanently bound and not removed from the binder.

I claim—

1. In combination with a back, a binder ring formed of a flat strip of metal with ends overlapping, hook and aperture means formed in the overlapping ends for holding the ends together, and laterally projecting tabs on one of the ends forming clenchers for engagement with the back.

2. In combination with a back, a binder ring formed of a flat strip of metal with ends overlapping, the end which is outside having an aperture therein, a hook on the other end adapted to enter said aperture, and laterally projecting tabs on the inner end to form clenchers to engage the back, so that the outer apertured end is held tightly between the inner end and the back.

3. In combination with a back, a binder ring formed of a flat strip of metal with ends overlapping, the end which is outside having an aperture therein, a hook on the other end adapted to enter said aperture, and laterally projecting tabs on the inner end to form clenchers to engage the back, so that the outer apertured end is held tightly between the inner end and the back, and sheets with slots near and parallel to one edge for reception of the binder ring, said sheets being cut diagonally on their corners adjacent said edge and the diagonal edges thus formed being glued together, the sheets being otherwise disconnected from each other.

4. A binder ring, comprising a body formed of a flat metal strip with overlapping ends, one of said ends having an aperture, a hook on the other of said ends, and laterally projecting tabs on one of said ends to form a means for fastening the binder ring.

5. A binder ring, comprising a body formed of a flat metal strip with overlapping ends, the outside end having an aperture, a hook on the inner end adapted to enter the aperture, the resiliency of the metal strip tending to expand the ring and pull the hook tightly in the aperture, and fastening tabs projecting laterally from the inside hooked end of the strip.

6. A ring binder, comprising a flat strip of metal bent to form a ring with overlapping ends, one of said ends having an aperture therein, a hook on the other end adapted to enter the aperture, the resiliency of the metal ring tending to expand the ring and pull the hook tightly into the aperture.

7. In combination with a back, a binder ring formed of a flat strip of metal with ends overlapping, coöperative means on said ends for securing the ends together so that the ends must be moved relatively to each other

in a direction radial of the ring to be released from each other, and means for securing the radially innermost end of the ring to the back securing the outermost end between the back and the innermost end.

8. In combination with a back, a binder ring formed of a flat strip of metal with ends overlapping, coöperative means on said ends for securing the ends together so that the ends must be moved relatively to each other in a direction radial of the ring to be released from each other, and laterally projecting tabs on the radially innermost end of the ring forming clenchers for engaging the back to secure the innermost end thereto and to secure the outermost end between the innermost end and the back.

In witness that I claim the foregoing I have hereunto subscribed my name this 26th day of February 1914.

AUGUST B. PLUSHKELL.

Witnesses:

JAS. H. BALLAGH,

JAMES T. BARKELEW.