Aug. 16, 1932. G. H. DAWSON 1,871,668

TRANSFER BINDER

Filed Jan. 30, 1929

Fig. 1

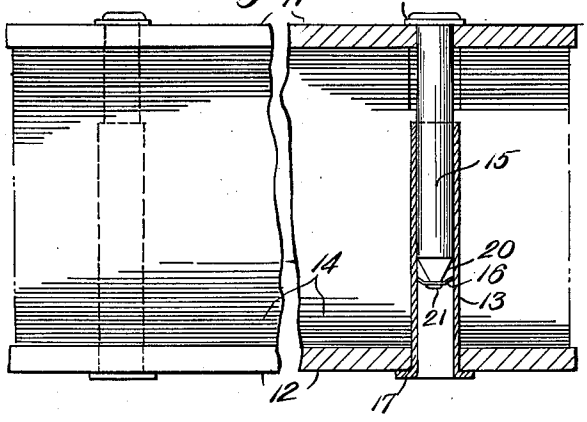



Fig. 2

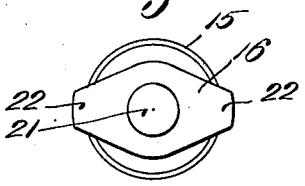



Fig. 3

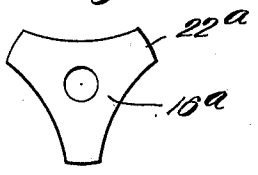



Fig. 4

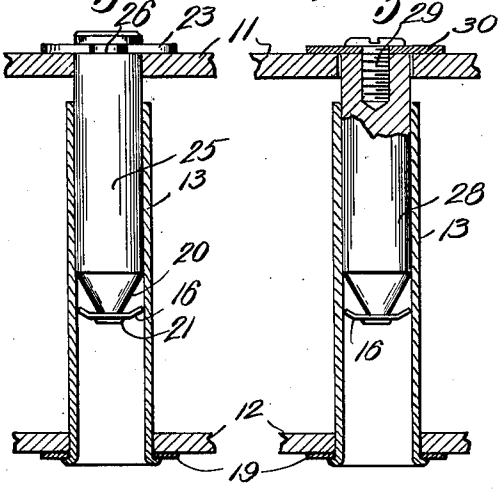



Fig. 5




Fig. 6

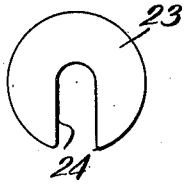
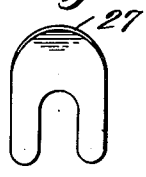



Fig. 7




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# UNITED STATES PATENT OFFICE

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## TRANSFER BINDER

Application filed January 30, 1929. Serial No. 336,178.

This invention relates to sheet binders and pertains more particularly to transfer binders adapted to serve as permanent binding means for loose-leaf record sheets and the like. The principal objects of the invention are to provide simple and inexpensive devices for readily and securely binding together a plurality of separate sheets in a compact and permanent volume for reference purposes; to provide telescoping tube and post members and a locking element associated therewith and adapted effectively to prevent relative movement of said members away from each other; and to furnish detachable cover-securing members adapted to cooperate with the posts of the binding means, whereby one of the cover elements of the binder may be removed to permit separation of the bound sheets and disengagement of the interlocked binding elements. Other objects reside in the novel features of construction of the devices hereinafter described, as pointed out in the appended claims.

A recommended embodiment of the invention is shown for the purpose of illustration in the accompanying drawing in which:

Fig. 1 is a composite end elevation and vertical section of a two-post binder equipped with the improved binding means;

Fig. 2 is an enlarged bottom view of the upper post member shown in Fig. 1;

Fig. 3 is a plan view of a modified form of post-locking member;

Fig. 4 is a sectional view of the assembled binding elements equipped with a detachable cover-securing member;

Fig. 5 is a view similar to Fig. 4 illustrating a modification in the detachable member; and

Figs. 6 and 7 are plan views of optional forms of detachable washers forming part of Fig. 4.

As this invention has to do with the interlocking binding elements of the completed binder, the precise construction and external appearance of the article is not essential to the improved structure. The binder preferably has top and bottom covers 11 and 12 of suitably stiff sheet or other appropriate material, fabric-covered or otherwise constructed according to desired usage.

The binding means comprises essentially one or more tubular posts 13, adapted to pass through aligned openings in the individual sheets 14; cooperating coupling posts or dowels 15 adapted to pass through the openings of other sheets of the collection and to telescope within the respective tubes 13; and anchors or locking members 16 carried at the inner ends of the respective dowels 15 and so constructed and arranged that the dowels 15 may readily be inserted and telescoped within the tube 13, yet adapted to prevent relative movement between said elements in the opposite direction.

When covers or backers are used, the tubular posts 13 may be affixed in any desired manner in the back 12 so that the posts assume an upstanding relation to the back at predetermined intervals to register with the apertures in the sheets; and the dowels 15 may be similarly secured to the top cover 11. For example, each tube 13 may have an annular flange 17 at its outer end bearing against the outer surface of the cover 12; and the outer end of each dowel 15 may be headed over, to bear upon a washer 18 interposed between said head and the surface of the cover 11. If desired, washers 19 may be employed beneath the flanged ends of the tubes 13 as shown in Figs. 4 and 5.

The locking member or anchor 16 preferably consists of a relatively thin and substantially flat piece of resilient metal having a central aperture fitting over the tapered inner end 20 of the dowel 15 and secured thereon by heading over the tip of said point as at 21. The plate 16 preferably has two or more laterally extending wings shown as a pair of wings 22 (Fig. 2) or as three wings $22^a$ in the optional form of plate $16^a$ (Fig. 5), the radii of said wings being appreciably greater than the interior radius of the tubular post 15. Consequently, when the dowel 15 with its plate 16 is forced downwardly into the tube 13, the wings 22 or $22^a$ are flexed rearwardly of the direction of movement and the outer edges of the wings have sliding frictional engagement with the interior wall of the tube.

Owing to the rearward bend of the wings, the parts may be telescoped together without the application of excessive force, but when it is attempted to withdraw the dowel 15 the flexed wings of the plate bind against the wall of the tube 13 and effectively prevent relative outward movement between the parts.

Thus, after assembling the desired number of perforated sheets over the tubular posts 13, the coupling posts 15 may be passed through the perforations in the upper layer of sheets and pushed into the respective tubes 13 until the sheets are compressed to the desired extent and the posts assume a position of rest. The posts then become automatically interlocked and the sheets are permanently bound together. The locking engagement between the plates 16 and the tubes 13 will be found to be so secure that it is practically impossible to pull them apart by hand or by any ordinary implement. Furthermore, the bound edges of the sheets are so tightly compressed that none of the sheets may accidentally be separated from the remainder of the volume.

The interlocked binding posts above described may be utilized in a non-permanent installation, if desired, by providing detachable securing members at the post ends to permit removal of one of the covers. Alternative constructions of such removable means are illustrated in Figs. 4 and 5. In Fig. 4 the permanently affixed washer 18 of Fig. 1 is replaced by a detachable slotted washer 23 having a radial slot 24 (Fig. 6) whereby the washer may be slid transversely from beneath the head of the dowel 25. Said dowel preferably has an annular groove 26 adapted to receive the washer 23 in frictional engagement. The detachable washer may be formed as in Fig. 7 and may be provided with an edge tip or flange 27 to be grasped by the fingers in withdrawing the washer. In the modified structure of Fig. 5, the dowel 28 has an axial screw threaded recess receiving a screw 29 which removably secures an ordinary washer 30 against the end of the dowel and upon the cover 11.

In either of said structures detachment of the cover securing means allows the cover to be lifted from the dowels and permits the removal of the bound sheets. The dowel and tube may then be separated by forcing the dowel and its anchor through the tubular post in a downward direction (Figs. 4 and 5), so that the cooperating coupling members may be used in another installation.

The binder above described has especial utility when used as a transfer binder to collect in a permanent assemblage for reference perforated record sheets which have previously formed part of one or more loose-leaf binders and upon which entries have been made at periodic intervals. When the entries have been completed and it is desired to collect and file away a plurality of similar sheets, such separate sheets must be removed from the temporary, loose-leaf binder or binders and assembled in the permanent volume.

The devices above described provide a transfer binder which is economical to manufacture, easy to assemble and durable in use. It will be understood, however, that details of construction may be varied to suit particular purposes without departing from the essence of this invention as defined in the following claims.

I claim:

1. A transfer binder for perforated sheets comprising a pair of covers, a tube fixed transversely of one of the covers, a complemental dowel detachably connected to the other cover and having one end received within the tube, a locking plate fixed to said end of the dowel and extending transversely thereof, the ends of the locking plate having constant engagement with the interior wall of the tube and being flexed toward the mouth of the tube by reason of said engagement so that the dowel and its locking element can be moved through the tube in one direction only and are locked against movement in the other direction at any position of rest, the detachable connection between the dowel and its cover being accessible when the binder is assembled, whereby the dowel may be disconnected from said cover and may be separated from the tube by forcing it and its locking element forwardly through the tube.

2. A transfer binder for perforated sheets comprising a pair of covers, a tube attached to one of the covers, a complemental dowel detachably connected to the other cover and having one end telescoped within the tube, a locking plate fixed transversely to said telescoped dowel end, the ends of the locking plate having sliding engagement with the bore of the tube and being flexed toward the mouth of the tube as a consequence of said engagement so that the dowel and its locking plate can be moved through the tube in one direction only and are locked against movement in the other direction in any position of rest, the dowel being removable from the tube by forcing it therethrough after detaching it from its cover.

3. A transfer binder for perforated sheets comprising a pair of covers, a tube attached to one of the covers, a complemental dowel detachably connected to the other cover and having one end telescoped within the tube, a locking plate fixed transversely to said telescoped dowel end, the ends of the locking plate having sliding engagement with the bore of the tube and being flexed toward the mouth of the tube as a consequence of said engagement so that the dowel and its locking plate can be moved through the tube in one direction only and are locked against movement

in the other direction in any position of rest, the outer end of the dowel extending through its cover and having a head and a recess beneath the head, and a removable washer engaging said recess and bearing against the outer face of the cover, so that the dowel may be forced through the tube and separated therefrom after removing said washer.

4. A permanent binder for perforated sheets, comprising a pair of cover members, an open-ended tube attached to one of said members, a solid dowel connected to the other member and having a tapered end telescoped within the tube, the telescoped tube and dowel extending through the apertured sheets bound between the cover members, and a locking plate permanently fixed to the tip of the tapered dowel end, the locking plate having a plurality of spaced, radial wings constantly engaging the interior surface of the tube as the dowel is forced into the tube, and said wings being flexed toward the mouth of the tube by reason of said engagement so that the dowel can be moved through the tube in one direction only and is locked against movement in the other direction at any position of rest, thereby to clamp the cover members upon the intermediate sheets and prevent relative outward movement of said members.

Signed by me at Boston, Massachusetts, this 28th day of January, 1929.

GEORGE H. DAWSON.