July 28, 1953 F. A. RATCLIFFE ET AL 2,646,800

EXPANSIBLE POST BINDER

Filed June 9, 1950

FIG. 1.

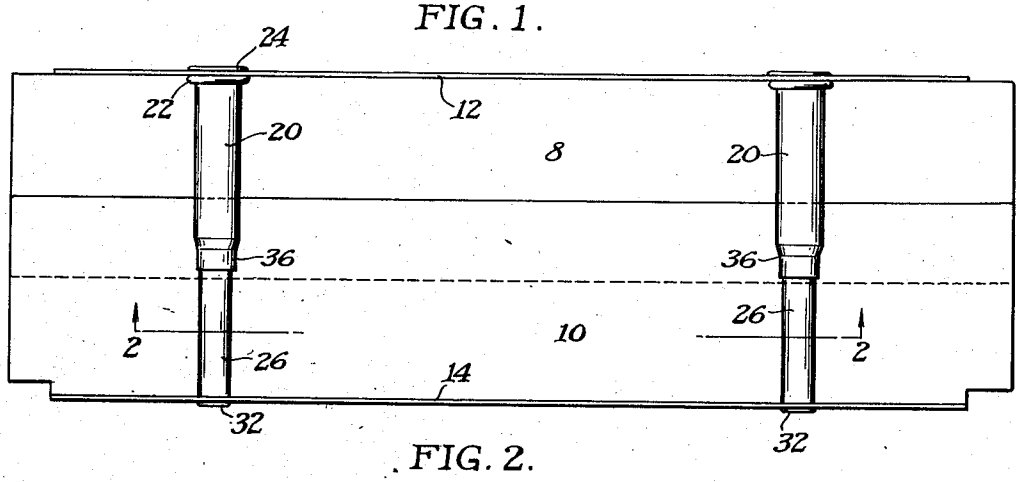


FIG. 2.

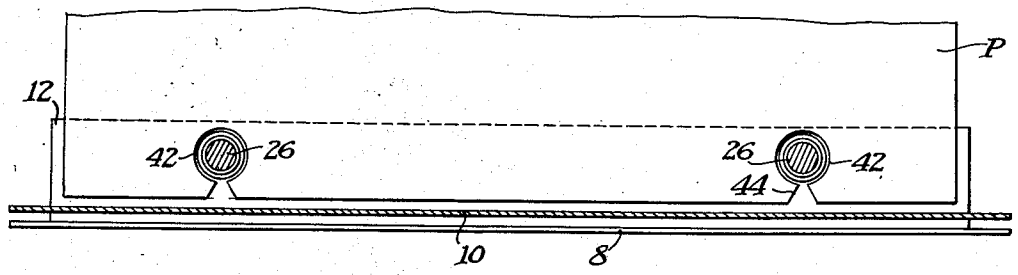


FIG. 3.

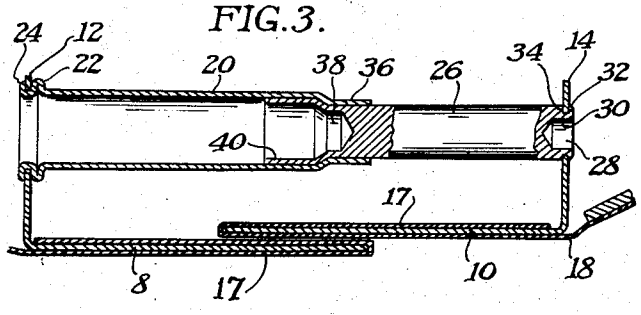


FIG. 4.

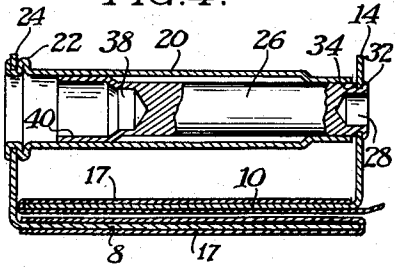


FIG. 6.

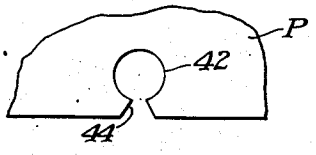
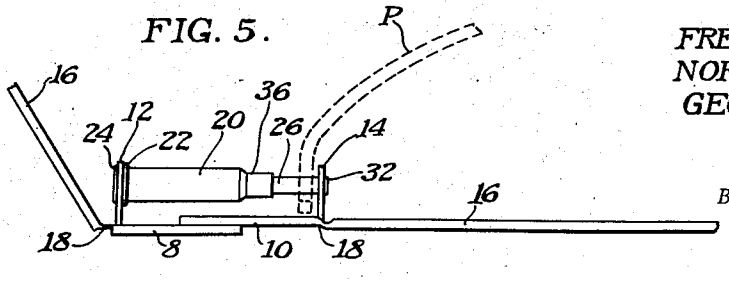


FIG. 5.



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EXPANSIBLE POST BINDER

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1 Claim. (Cl. 129—13)

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The present invention relates to binders and it has for its object to provide a simple, light, durable and convenient binder of the loose leaf type, particularly useful in accumulating together and maintaining compactly a series of suitably perforated pamphlets of the same or different thicknesses which, within the capacity of the binder, may be easily and quickly inserted, removed or replaced.

A further object of the invention is to provide such a binder of a construction such that it may be produced by machine processes and a method of assembly that greatly reduces the cost of manufacture.

These and other desirable objects are accomplished by the construction disclosed as an illustrative embodiment of the invention in the following description and in the accompanying drawings forming a part hereof, in which:

Fig. 1 is a view of the impaling spindles and back plate assembly of a binder constructed in accordance with and illustrating one embodiment of the invention, the same being viewed from the interior thereof, the covers being omitted and the impaling spindles and back plates being in open or extended positions;

Fig. 2 is a section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a central section taken longitudinally through one of the spindles and hence transversely of the back plates upon extensions of which latter the spindles are carried, these parts being in extended positions as in Fig. 1;

Fig. 4 is a similar view with the parts collapsed to the minimum length of the spindles;

Fig. 5 is an end view of the complete binder on a much reduced scale, the same being on its back with the covers extended as in inserting or removing a unit of the contents shown in dotted lines; and

Fig. 6 is a fragmentary detail of a pamphlet or other contained unit in the region of one of the perforations by which it is engaged and held in place.

The same reference numerals throughout the several views indicate the same parts.

Referring more particularly to the drawings and first to Fig. 5 thereof, 8 and 10 indicate two superposed, stiff preferably sheet metal plates slidable transversely upon each other and together constituting the main body of the back of the binder, although the metal plates are preferably covered or faced with binder's cloth or other suitable book binding sheet material. Inwardly projecting flanges 12 and 14 on the

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opposite outer edges of the plates 8 and 10 lie in parallel planes and impart a general L-shape to each of these plates.

The binder covers 16 are of the usual stiff boards covered or faced, like the back plates 8 and 10, with suitable book binding sheet material, which sheet material, extending continuously from the back plate to the cover, forms at 18 a hinge connecting the parts to each other. This sheet material is also lapped over both the side and end edges of the elements 8, 10, and 16 and extends a short distance over the inner faces thereof, for which reason the flanges 12 and 14 terminate short of the edges of the plates 8 and 10, as appears in Figs. 1 and 2.

The two or more (two are herein shown) impaling spindles extending between the flanges 12 and 14 are identical and hence a description of one will suffice for all. Each spindle comprises a two part telescopic construction. An outer tubular post 20 has its base end upset to produce a shoulder in the form of an exterior peripheral fold 22 a short distance from its extremity. The latter is then inserted in a circular aperture of the same diameter in the flange 12 and headed over and clinched at 24 so that the flange is seized between it and the folded shoulder 22 and the post is firmly anchored in the flange. The base and body portions of the post 20 remain of uniform internal diameter for reasons that will later appear.

The companion cooperating element of the two part impaling spindle is composed of a rod or intermediately solid cylindrical post 26, the base end of which is axially bored to form a shallow cavity 28 and exteriorly turned down or reduced in diameter to produce a brief tubular tip 30 and an adjacent shoulder 34. The tip occupies a circular opening in the back plate flange 14. It protrudes beyond the latter which protrusion is clinched or riveted down at 32 to seize the flange between itself and the shoulder 34 and thus anchor the post firmly in the flange.

The two posts 20 and 26 are of course in exact axial alinement and the latter is adapted to slide telescopically within the former. Its intermediate solid portion takes such sliding bearing in a reduced tubular outer end portion 36 of post 20 the inside diameter of which affords a working fit therewith. But the two posts are locked against disengagement when extended to an extreme degree by provisions through which they are also furnished with additional and more extensive bearing area. To these ends the outer tip of post 26 is also bored to form an end cavity

38 and the walls thereof are expanded into a tubular enlargement 40 having a sliding fit in the body of post 20.

In manufacture two posts are obviously so assembled as a first step by dropping the smaller post 26 into post 20 from the base end of the latter and thereafter permanent attachment made to the respective back plate flanges 12 and 14 as previously described. The continuously and completely uniform internal diameter (except at the reduced neck 36) of post 20 provided by the method of forming shoulder 22 on the exterior thereof aids this procedure, and enables the insertion of the post 26, if desired, even after the post 20 has been riveted in its flange 12, but before the post 26 has been riveted in its flange 14, of course.

To load the binder with its intended contents, it may conveniently be expanded to the position of Figs. 1, 3, and 5 with the greater portion of the smaller post 26 exposed. The binding rear edge of the pamphlet P shown in dotted lines in Fig. 5 is prepared with a key hole perforation embodying a round aperture 42 of a size slidably fitting the larger post 20, and a narrow connecting slot 44 running to the margin as in Fig. 6, which at 44 may have parallel sides but more conveniently is formed of somewhat V-shape, as seen in the drawings. By distorting the wall portions of the latter, the pamphlet elements P, one by one, may be engaged on the larger or the smaller diameter portions of the posts until the spindle is full, or they may be removed in a reverse manner. It is somewhat easier, of course, to engage or disengage the pamphlet from the smaller diameter post portion 26 of the retaining spindle. But when the binder is relatively full and the pamphlet to be inserted or removed cannot be brought to the smaller diameter part of the spindle, it can be forced onto or off of the larger diameter part 20, by applying a little more force.

When standing on the bookshelf, the pressure of the adjacent books keeps the binder collapsed as much as possible dependent upon the thickness of the contents of the binder, so that excess use of shelf space is avoided. Yet the expansibility of the posts or spindles enables (within reasonable limits) the insertion of an additional pamphlet in the binder, or the replacement of one pamphlet by a somewhat thicker revised edition of the same pamphlet, at no cost of additional shelf space until the time when thickening contents actually requires it. And when the binder is taken from the shelf and laid on a desk for reading, the binder may conveniently be pulled apart to its position of maximum expansion, thus allowing more slack for the various pamphlets in the binder and enabling the pages to open up better and lie flatter. But when the binder

is picked up from the desk for replacement on the bookshelf, the mere manual grasping of the binder tends to collapse it or telescope it to the minimum thickness allowed by the construction of the binder and the thickness of its contents, thus making it ready for insertion in the alloted space on the bookshelf.

It is seen from the foregoing disclosure that the above mentioned objects of the invention are admirably fulfilled. It is to be understood that the foregoing disclosure is given by way of illustrative example only, rather than by way of limitation, and that without departing from the invention, the details may be varied within the scope of the appended claim.

What is claimed is:

In a loose leaf binder, the combination with a pair of overlapping, rigid, flanged back plates having alined openings in the flanges, of an impaling spindle embodying a tubular post secured in the opening in one flange, the base end of such post being of uniform internal diameter through to the outer side of its supporting flange and being provided with an outwardly folded bead abuting the flange on the inner side thereof and a tip riveted against the flange on the outer side thereof, which free end of the post is reduced to a lesser cylindrical diameter furnishing a sliding bearing of substantial extent, and a second cooperating post slidable telescopically in the first and having its base reduced in diameter and secured in the opening of the other flange with its tip riveted against the outer side of the latter, the body portion of said second post consisting of an integral, solid rod having an axial bore in its free end forming a cavity for the reception of a riveting anvil the cylindrical walls of which bore are expanded to provide an additional sliding bearing of substantial extent within the larger diameter of the first mentioned post.

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