June 20, 1933. R. M. WATSON 1,915,140

LOOSE LEAF BINDER

Filed April 23, 1930 2 Sheets-Sheet 1

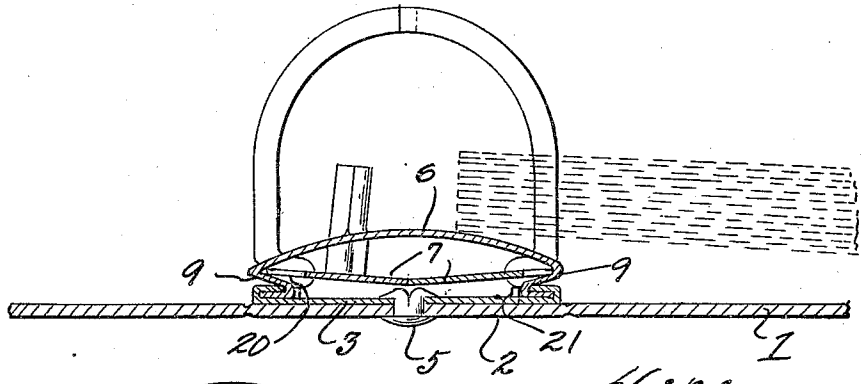


Fig. 1

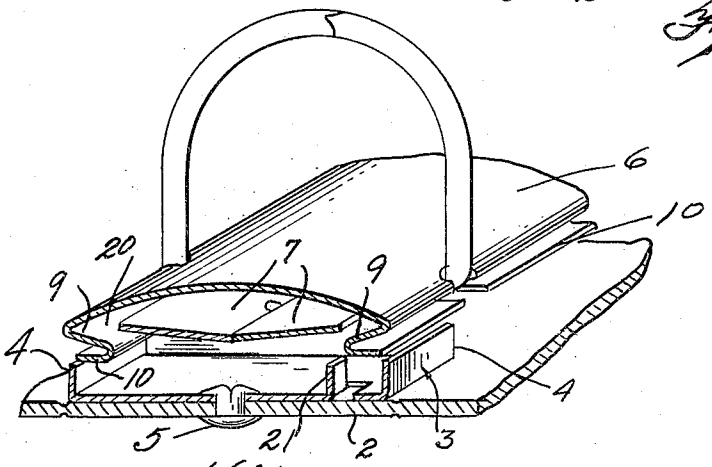


Fig. 2

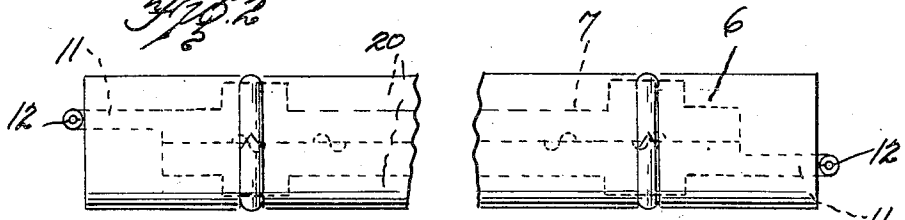


Fig. 3

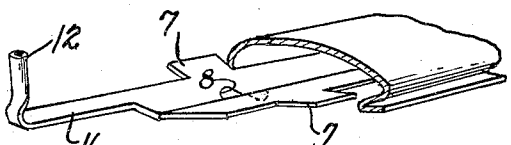


Fig. 4

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LOOSE LEAF BINDER

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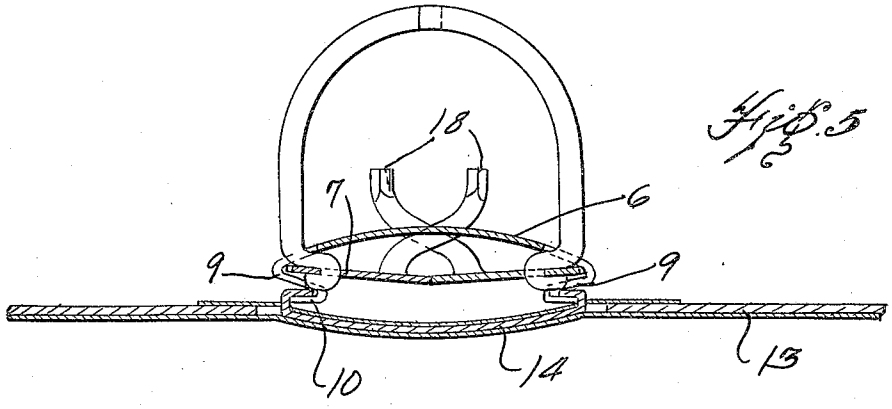


Fig. 5

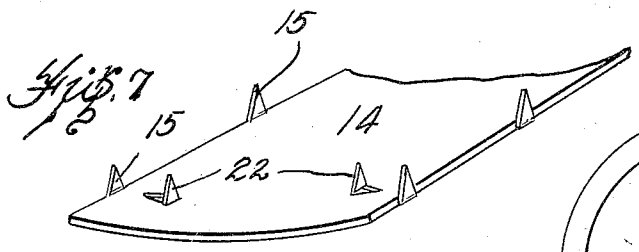


Fig. 7

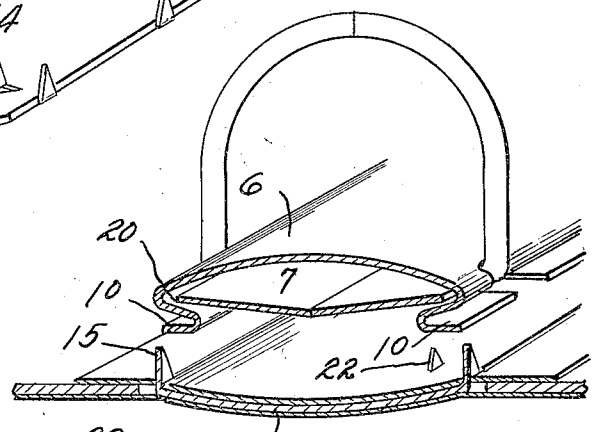


Fig. 6

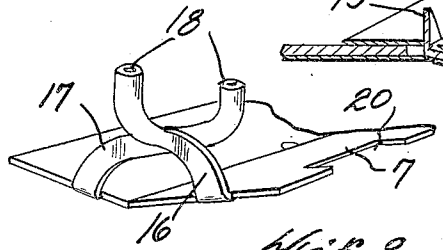


Fig. 8

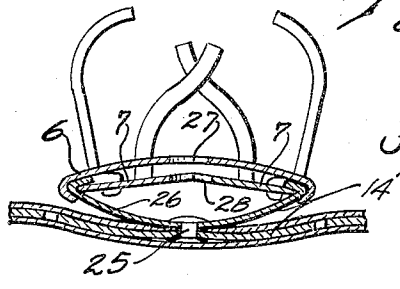


Fig. 9

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UNITED STATES PATENT OFFICE

RICHARD M. WATSON, OF DETROIT, MICHIGAN

LOOSE LEAF BINDER

Application filed April 23, 1930. Serial No. 446,710.

This invention relates to loose leaf binders and has to do particularly with a novel base member and securing means therefor together with a method of assembling the same.

The present invention is adapted to be preferably embodied in binder structure of the type having a shell or base member formed of a single piece which extends substantially the length of the binder. More particularly, the present invention, contemplates certain improvements over the base structure and securing means disclosed in my Patents No. 1,827,411, dated October 13, 1931 and No. 1,771,104, dated July 22, 1930.

It is the particular object of the present invention to provide a shell member, preferably formed of one piece and covering all of the securing and actuating means for the base member, said shell member being fabricated to provide novel inturned edges of such form that said shell member may be used either as a base member for a binder of the type wherein the metal shell forms the only metal part of the back or in a binder of the "smooth back" type wherein a metal reinforcing means is used such as shown in my above mentioned Patent No. 1,771,104. Another feature of the invention resides in the use of novel attaching means and the method of securing the shell of the base member in position by distorting the attaching means. A still further feature contemplates the provision of novel means formed as a part of the plates for carrying the paper retaining rings whereby the rings may be easily opened or closed.

Other novel features reside in the details of construction and assembly as will be more clearly brought out in the specification and claims.

In the drawings:

Fig. 1 is a sectional elevation illustrating the completely assembled base member with the ring members in closed position.

Fig. 2 illustrates the step of positioning the assembled base member into complemental relation with the attaching means secured to the back of the binder.

Fig. 3 is a plan view of the assembled unit illustrating the manner of covering up the securing means by the width of the upper shell.

Fig. 4 is a perspective view, partly cut away illustrating the manner of holding the plate members in assembled relation.

Fig. 5 is a view similar to Fig. 1, but illustrating the shell member as applied to a loose leaf binder of the more expensive cloth back type.

Fig. 6 is a view similar to Fig. 2 but illustrating the step of assembling the type of binder illustrated in Fig. 5.

Fig. 7 is a fragmentary perspective view of the attaching member used in the type of binder illustrated in Fig. 5.

Fig. 8 is a perspective end view of the connecting plates for the ring members and illustrating a modified form.

Fig. 9 illustrates a modified manner of securing the base member to the back of a binder.

One of the features of the present invention resides in the provision of a universally applicable shell or base member. For this reason, two forms of structure have been shown to illustrate this peculiar adaptability of the novel shell member.

The type of binder and base structure illustrated in Figs. 1 to 4 is that type wherein the base structure is secured to the back of the binder by means of rivets. In Fig. 1 a standard binder structure is shown as at 1 with the back portion as at 2. To this back portion 2 may be secured a plurality of attaching members 3.

A feature of the present invention is the forming of the shell members and the attaching members, in combination with the ring connecting members whereby considerable variation or leeway may be allowed in assembly. In other words, the person assembling the binder need not be exact as to the points where the members 3 are riveted to the back portion 2. Each attaching member of the type shown in Fig. 2 is preferably formed with turned up flanges 4 so as to give the same a substantially U-shape, each member 3 being perforated to receive a suitable rivet 5. The base member of the binder is

formed by a one-piece shell 6 which extends substantially the length of the binder and the longitudinal edges of which are fabricated in a novel manner whereby to receive and position the plates 7 and to also receive the flanges 4 of the attaching means 3.

This novel combined structure may best be explained by reference to Fig. 1. Here it will be seen that the plates 7 provided with the struck up lugs 8 have been complementally positioned within the shell member 6 and the edges 9 of the shell member turned over to secure the plate members in operating position.

In addition to the inturned edges 9, the shell member is also provided with the relatively short outturned flanges or edges 10. It will be obvious that the flanges 4 may be turned inwardly as best shown in Fig. 1, whereby to securely grip the edges of the shell structure from the outside so as to secure the same in place. The outturned flange 10 being shorter than the inwardly turned flange 9, it will be obvious that the upper shell member 6 will completely cover the other parts of the base structure so as to present a very neat appearance.

As best shown in Figs. 3 and 4, the plate members 7 are provided with suitable extensions 11 and these extensions are in turn provided with suitable handle members 12 whereby the plate members may be moved relative to each other to open and close the ring members.

In Figs. 5 to 8 I have illustrated the shell member 6 as being utilized as a base member in connection with a binder of the type having a smooth back member or, in other words, one without rivets. In this case, the binder, which may be designated 13, is provided with a suitable attaching member 14 which may be in the form of an arcuate shaped back plate initially provided with upstanding lugs 15.

This back plate 14 may be secured to the back of the binder as by gluing or otherwise, and then the base member, completely assembled as illustrated in Figs. 2 and 6, may be lowered into position and the lug members 15 turned inwardly to engage the outwardly turned flanges 10 and thus positively secure the base member into position and at the same time cover up from view said securing means.

In Figs. 5 and 8 I have illustrated a modified manner of forming the end extensions of the plate 7, wherein such extensions 16 and 17 are crossed over so that it is merely necessary to move the end portions 18 of the extensions toward each other to open up the ring members.

An important detail of the present invention resides in the peculiar fabrication of the plates 7 and the attaching members 3 or 14 as the case may be. I am referring here particularly to the cut-away portions 20 in the plates 7, as best shown in Figs. 1, 3, and 8, and positioning lugs 21 and 22, as best shown in Figs. 2, 6, and 7.

In the preferred method of assembly of the type of back member shown in Figs. 1 to 4, I prefer to cut away the edges of the plate 7 at such points as it is desirable to locate the attaching members 3. If desired, the edges of the plates 7 may be cut away substantially their entire length, as shown in Fig. 3 or such edges may be cut away only at the particular point where the attaching members 3 are located. The purpose of this is to positively eliminate any chance of binding when the flanges 4 are turned over into position, as shown in Fig. 1. The same situation would be true in assembling the type of binders shown in Figs. 5 to 8 but here, inasmuch as the lug members 15 are stamped out so as to be located at particular points, it will be obvious that the plates 7 may be likewise cut away along the edges corresponding to the location of the members 15. This structure is not shown as being necessary but is shown in Figs. 2, 3, 6, and 8 as being the preferred form.

The purpose of the lug members 21 and 22 is to position the flanges 10 so as to reinforce these flanges or what might be said the edges of the shell members while the flanges 4 or the lugs 15 are turned inwardly to secure the back member into position.

In the type of structure shown in Figs. 1 to 4, each attaching member 3 is preferably provided with upturned lugs 21 (as best shown in Fig. 1) so that when the assembled back member is lowered into position, as shown in Fig. 2, the flanges 9 will be positioned between the lugs 21 and the upturned flanges 4. Now, if the flanges 4 are turned inwardly, as best shown in Fig. 1, it will be obvious that the lug members 21 will prevent the longitudinal edges of the shell from being moved inwardly to far. In other words, these lug members 21 will insure a quick and positive locking between the flanges of the attaching members and the inturned flanges of the shell. It will be understood that the fit between the lugs 21 and the inturned edges of the shell member may be somewhat loose so as to permit the free turning in of the flanges 4.

In the structure shown in Figs. 6 and 7 it will be obvious that the lug members 22 may be positioned at substantially any desired points so long as they reinforce the inner edges of the flanges 10 when the outer lugs 15 are turned inwardly to clamp the shell member into position.

Fig. 9 illustrates a modified manner of securing the base member to the back member in that suitable countersunk apertures are formed in the member 14 for receiving rivets 25, the heads of which are covered up by the cloth back of the binder. In this case the plates 17 are preferably held in position by the inturned longitudinal edges of a member 26 and the tops of the rivets 25 upset by means

of a suitable tool which may be inserted through apertures 27 and 28 formed in the top shell 6 and the plates 7 respectively.

It will thus be seen I have provided an extremely simple and compact base member which is adapted for universal use with substantially any type of binder. It will also be seen that by reason of my novel attaching means which permits clamping to the turned over edge of the shell member from the outside instead of from the inside, I have made it possible to secure the base member to the back member at any point or points along the longitudinal edges thereof. Thus if the binder calls for an unusually long shell member I have made it possible to secure the same to the back member at any number of points desired so as to securely and rigidly reinforce the same.

The shell member and ring structure is substantially the same as that disclosed in my above mentioned applications, and the attaching means in either form of binder is extremely simple, easy to manufacture, and easy to assemble.

What I claim is:

1. The method of assembling a base member and securing the same to the cover of a loose leaf binder, which comprises enclosing paper-retaining means within a one-piece shell member, fixedly securing attaching means to the back of the cover at any desired point or points, placing the shell above the attaching means and then turning over a portion of said attaching means to contact with a portion of the shell but concealed by the upper surfaces thereof whereby to fixedly secure the shell to the back of the binder.

2. The method of assembling a base member and securing the same to the cover of a loose leaf binder, which comprises enclosing paper retaining means within a one-piece shell member by folding over the edges of the shell member, fixedly securing attaching means to the back of the cover at any desired point or points, placing the shell above the attaching means and then turning over a portion of said attaching means to contact with a portion of the shell but concealed by the upper surfaces thereof whereby to fixedly secure the shell to the back of the binder.

3. The method of securing a base member to the cover of a loose leaf binder, which comprises fixedly securing one or more attaching members to the back of the binder, providing a single-piece shell for receiving and supporting paper retaining means having an imperforate top surface wider than said attaching means and concealed flanges, and turning over portions of said attaching means to engage said flanges and fixedly secure the shell to the back.

4. The method of securing a base member to the cover of a loose leaf binder, which comprises fixedly securing one or more attaching members to the back of the binder, providing a single-piece shell for receiving and supporting paper retaining means having an imperforate top surface wider than said attaching means and concealed flanges, and turning over portions of said attaching means to engage said flanges and fixedly secure the shell to the back, the turning over of said portions serving to move said shell toward the back of the binder and also concealing the attaching means.

5. A loose leaf binder, comprising in combination a back, an attaching member secured to the binder adjacent the back, a base member comprising a shell extending substantially the length of the binder and having both inturned portions and outturned portions, said inturned portions serving to complementary position the connecting means of paper retaining members, said attaching member having means adapted to receive said outturned portions when the base member is placed over the attaching member, said means on the attaching member being turned over for fixedly engaging the outturned portions of the shell, said attaching member and turned over means being concealed beneath the shell.

6. A loose leaf binder comprising in combination a back portion, a shell extending substantially the length of the binder and having inturned portions and substantially horizontal outturned portions, and a metallic member secured to the back of the binder and fixedly clamped to said shell by a portion thereof overlapping said outturned portions, said metallic member and outturned portions being substantially concealed by the shell.

7. A loose leaf binder comprising in combination a base member comprising a one-piece shell extending substantially the length of the binder, complementally positioned plates for supporting paper retaining means held in operating position and concealed by said one-piece shell, means concealed by the shell and secured to the back of the binder for fixedly clamping longitudinal edges of the shell to the binder, and means connected to one of said plates and extending past the end of the shell to serve as a handle member for actuating said plate.

8. A loose leaf binder comprising in combination a back member, attaching means permanently secured to said back member, a one-piece shell member extending substantially the length of the binder and concealing said attaching means and being fixedly clamped into position by said attaching means, plates concealed by said shell and connecting paper retaining rings having their outer edges pivoted along the longitudinal edges of the shell, and means integrally connected to each end of said plates and extending upwardly at substantially right angles

thereto for causing actuation of the ring members.

9. The method of assembling a base member and securing the same to the cover of a loose leaf binder, which comprises enclosing paper retaining means within a one piece shell member, fixedly securing attaching means to the back of the cover, placing the shell above the attaching means and then turning over a portion of said attaching means to contact with a portion of the shell but concealed by the upper surfaces thereof whereby to fixedly secure the shell to the back of the binder.

10. A loose leaf binder, comprising in combination a binder having a portion thereof forming a back, a base member comprising a single shell extending substantially the length of the back of the binder and having inturned portions extending underneath to complementally position connecting plates and paper retaining means, said inturned portions terminating in outwardly extending flanges, and an attaching member secured to the back of the binder and completely covered by the shell and having portions turned over for cooperating with said flanges for fixedly securing the base member as a part of the binder, said turned over portions and flanges being concealed beneath the shell.

11. A loose leaf binder, comprising in combination a back, an attaching member secured to the binder adjacent the back, a base member comprising a shell covering said attaching member and extending substantially the length of the binder and having longitudinal edges inturned and terminating in outturned portions located beneath the top surface of the shell, said inturned portions serving to complementally position the connecting means of paper retaining members, said attaching member having means adapted to receive said outturned portions when the base member is placed over the attaching member, said means on the attaching member being turned over for fixedly engaging the outturned portions of the shell.

In testimony whereof I affix my signature.

RICHARD M. WATSON.