April 25, 1967 D. H. BACHMAN 3,315,682

LOOSE LEAF NOTEBOOK BINDER

Filed Feb. 3, 1965 2 Sheets-Sheet 1

Fig. 1

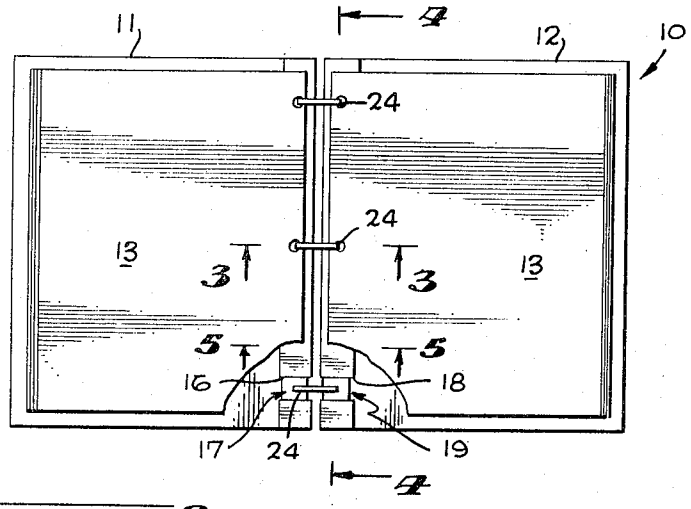


Fig. 3

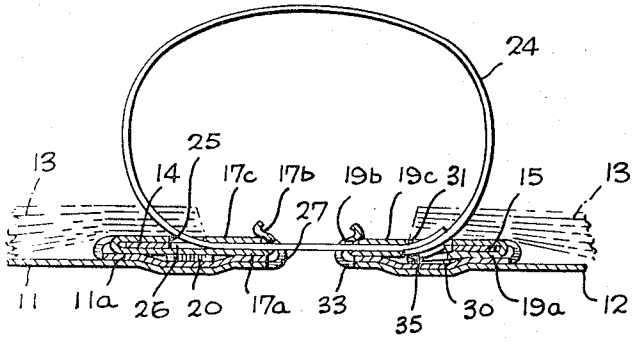


Fig. 2

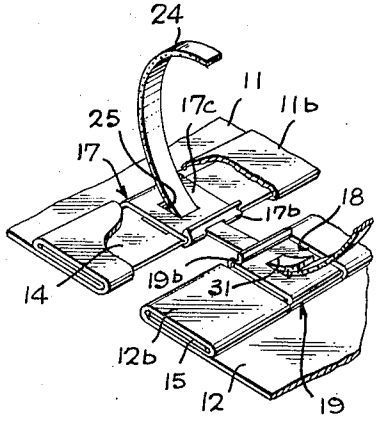
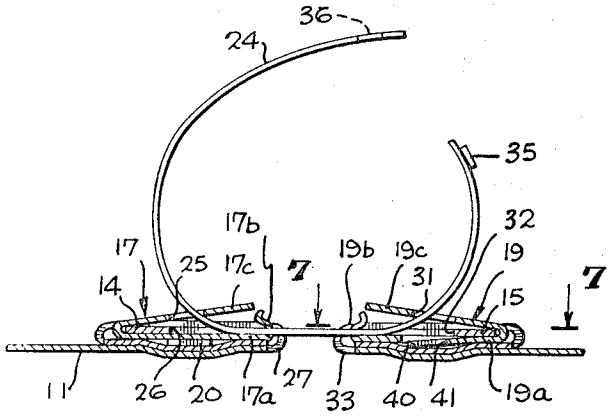


Fig. 3a



DAVID H. BACHMAN
INVENTOR.

BY R. E. Beaugue

ATTORNEY

April 25, 1967 D. H. BACHMAN 3,315,682

LOOSE LEAF NOTEBOOK BINDER

Filed Feb. 3, 1965 2 Sheets-Sheet 2

Fig. 4

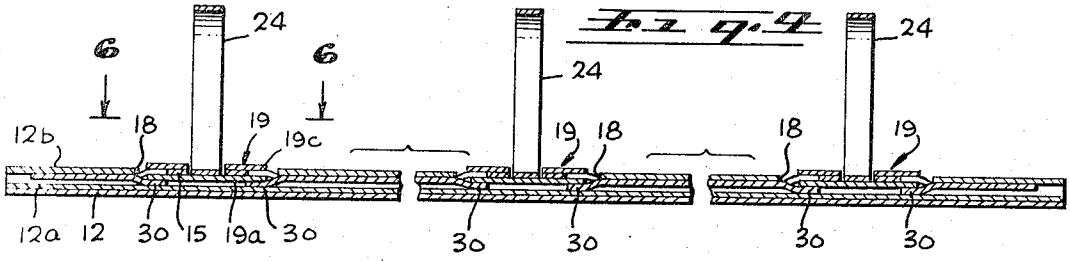


Fig. 5

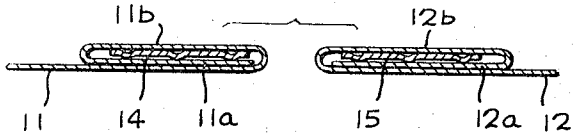


Fig. 6

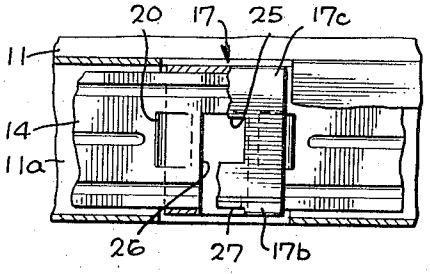


Fig. 7

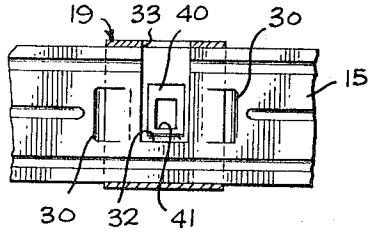


Fig. 10

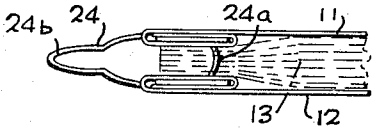


Fig. 11

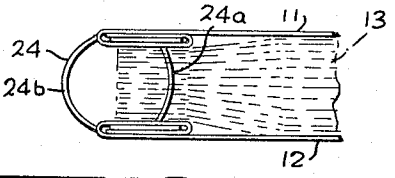


Fig. 8

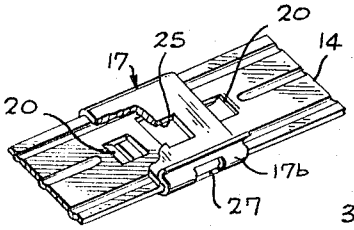


Fig. 13

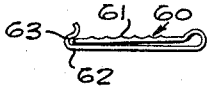


Fig. 12

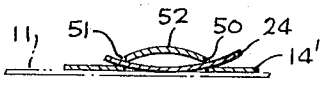
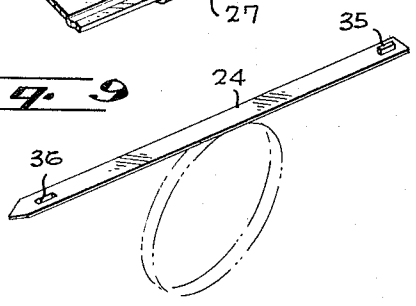


Fig. 9



DAVID H. BACHMAN
INVENTOR.

BY R. E. Beaugue

ATTORNEY

United States Patent Office

3,315,682

Patented Apr. 25, 1967

3,315,682

LOOSE LEAF NOTEBOOK BINDER

David H. Bachman, Chatsworth, Calif.
(5344 W. Freemont Place, Littleton, Colo. 80120)

Filed Feb. 3, 1965, Ser. No. 430,013
4 Claims. (Cl. 129—1)

This invention relates to a loose leaf notebook binder and more particularly to a binder for loose leaf papers in which the cover of the binder can be placed against both sides of the paper to take up minimum space.

Present types of hard cover binders utilize three rigid metal rings mounted on a rigid metal back strip and the back strip requires a fixed storage space regardless of the number of pages in the binder. Also, some present types of file folders utilize metal straps which are pressed down against the paper so that the file thickness is only slightly greater than the thickness of the papers. However, it is difficult to view the full area of papers in these file folders when the inner pages are exposed. Also, since the clips present a knife edge to the openings in the papers, the papers tear out easily.

The present invention utilizes flexible rings which replace the rigid metal rings of prior notebook binders and the length of the rings passing through the paper between the cover members is made adjustable by use of clamps attached to the cover members. Therefore, file space can be saved since the cover members can be held tight against the outside papers and the binder takes up only the space consumed by the papers and cover members. Also, the flexible rings can be rotated and opened at any point in order to remove or add papers at any location between the covers. The flexible rings present a large area to the holes in the paper so that the paper will not easily pull out as happens with the metal straps of present file folders. Since the covers open as a book, the papers at any selected location can be fully observed.

It is therefore an object of the present invention to provide a notebook binder which opens as a book and which consumes only the space taken up by the thickness of the loose leaf papers and cover members.

Another object of the invention is to provide a notebook binder which utilizes flexible rings to hold the papers, the ring length between the clamps being adjustable to place the cover members adjacent the loose leaf papers in the binder.

Another object of the invention is to provide a notebook binder from which loose leaf papers can be removed or to which loose leaf papers can be added without disturbing other papers and the thickness of the binder is proportional only to the number of pages in the binder.

These and other objects of the invention not specifically set forth above will become readily apparent from the accompanying description and drawings in which:

FIGURE 1 is a top plan view of the open notebook binder containing loose leaf papers which are cut away at the bottom inside covers to show a flexible ring and clips therefor;

FIGURE 2 is a perspective view of the bottom ring and clips shown in FIGURE 1;

FIGURE 3 is a vertical section along line 3—3 of FIGURE 1 illustrating a pair of clips in closed position for securing a flexible ring;

FIGURE 3*a* is a sectional view similar to FIGURE 3 with the clips in open position to permit movement of the ring;

FIGURE 4 is a vertical section along line 4—4 of FIGURE 1 showing the clip construction and three of the flexible rings;

FIGURE 5 is a vertical section along line 5—5 of FIGURE 1 showing the mounting bars covered by the cover members;

FIGURE 6 is a top plan view partly in section along line 6—6 of FIGURE 4;

FIGURE 7 is a sectional view along line 7—7 of FIGURE 3*a*;

FIGURE 8 is a perspective view partly in section of the upper mounting bar and clip in FIGURE 2 with the flexible ring removed;

FIGURE 9 is a perspective view of a flexible ring in fully open position and showing the attachment means;

FIGURE 10 is an end elevational view of a closed notebook binder containing relatively few loose leaf papers;

FIGURE 11 is an end elevational view similar to FIGURE 10 showing a closed notebook binder containing a relatively large number of loose leaf papers;

FIGURE 12 is a sectional view of a modified mounting bar attached to one cover which permits movement of the ring and has no ring securing means;

FIGURE 13 is a sectional view of a modified clip which is normally sprung into the closed position.

Referring to the embodiment of the invention chosen for purposes of illustration, the notebook binder **10** consists of front and back cover members **11** and **12** between which are contained a plurality of loose leaf papers **13**. The inside edge of cover member **11** is folded around a mounting bar **14** and folded edge **11***a* is glued to member **11** in order to secure the mounting bar along the inside edge (see FIGURE 5). In a similar manner, the inside edge of cover member **12** is folded around a mounting bar **15**. The top folded edge portion **11***b* of cover member **11** is cut away at three spaced locations **16** at which ring clips **17** are located and top folded edge portion **12***b* of cover member **12** is cut away at three spaced locations **18** at which ring clips **19** are located.

Each clip **17** comprises a metal plate folded around bar **14** with lower side **17***a* secured to bar **14** by means of spaced lugs **20** which are punched out of bar **14**. In attaching each clip, the lugs are bent outwardly so that side **17***a* can be placed flat against bar **14** between the lugs and the lugs are then bent over on the clip to hold side **17***a*. The end of side **17***a* is bent around the edge of bar **14** to form a hook **17***b* and the end of the upper side **17***c* can be snapped underneath the hook to hold the upper side **17***c* in ring locking position. A ring **24** passes through an opening **25** in upper side **17***c* and along a slot **26** in bar **14** and then through opening **27** in the hook end **17***b*. When the clip **17** is in closed position, as illustrated in FIGURE 3, a portion of the ring is clamped between the upper and lower sides **17***a*, **17***c* of the clip. As illustrated in FIGURE 3*a*, clip **17** is opened by pushing back on hook end **17***b* in order to release the upper side **17***c* which is sprung upward from the lower side **17***a* so that it moves to release the ring **24** for movement through the clip.

Similarly, each clip **19** comprises a metal plate folded around bar **15** with lower side **19***a* secured to the bar by means of spaced lugs **30** which are punched out of bar **15**. In order to attach each clip, the lugs **30** are bent outwardly so that side **19***a* can be placed flat against bar **15** between the lugs and the lugs are then bent over the clip. The end of side **19***a* is bent around the edge of bar **15** to form a hook **19***b* and the end of upper side **19***c* can be snapped underneath the hook to hold the upper side **19***c* in ring locking position. The ring **24** passes through an opening **31** in upper side **19***c* and along a slit **32** in bar **15** and then through opening **33** in the hook end **19***c*. When the clip **19** is in closed position as illustrated in FIGURE 3, a portion of ring **24** is clamped between the

upper and lower sides **19***a*, **19***c* of the clip. As illustrated in FIGURE 3*a*, clip **19** is opened by pushing back on hook end **19***b* in order to release the upper side **19***c* which is sprung upwardly from the lower side **19***a* so that it moves to release ring **24** for movement through the clip.

While the clips **17** and **19** are similar in construction, the clip **19** can be provided with additional means for positioning the ring **24**. As illustrated in FIGURE 9, each ring **24** comprises a thin strap of flexible material, such as plastic or leather, which has a raised knob **35** at one end and a slit **36** in the other end to snugly receive the knob and retain the ring in closed position. In order to locate the knobs **35** always in the same reference position when the rings are closed, a tab **40** is punched slightly downward out of the lower side **19***a* and contains a recess **41**. After a ring has been closed and while the clamps **17** and **19** are in the open position (see FIGURE 3*a*), the ring can be rotated until the knob **35** abuts the edge of recess **41** in tab **40** and thereafter the upper sides **17***a* and **19***a* can be snapped closed to hold the ring **24** (see FIGURE 3). The tab **40** and recess **41** provide sufficient space in clips **19** for each knob **35** so that the location of the knob is always known when the notebook binder is closed.

When it is desired to remove or add loose leaf pages **13** to the binder, the first step is to unsnap clips **17** and **19** on both sides by pushing down and outwardly on hook ends **17***b* and **19***b*, respectively while the notebook is closed. This permits sides **17***c* and **19***c* to spring upwardly and release the flexible rings **24**. The upper cover is then rotated to the position shown in FIGURE 3*a*. The binder and loose leaf papers are then opened to the place where the paper is to be removed or inserted and the rings can then be rotated until the knob **35** is located at this place. The rings are then separated to permit removal or addition of papers and thereafter the rings are again fastened together and rotated until the knobs **35** assume their stored position in recesses **41**. The right hand pile is then pressed downwardly at the location of clips **19** in order to close the clips **19** and lock the rings in this position. The upper cover is rotated back to original position and secured by pressing down on the book in the vicinity of each upper clip **17**. Before closing clips **17**, tension is applied outwardly on the rings to have minimum ring length between the clips. By placing the knobs **35** back in original position, they do not interfere with the paper and permit minimum separation of the cover members.

As illustrated in FIGURES 10 and 11, the length of portions **24***a* of rings **24** between the clips **17** and **19** is adjusted before the clips are closed by pulling on the portions **24***b* extending beyond the end of the binder. In FIGURE 10, a relatively few loose leaf papers **13** are between the covers and the length of portions **24***b* considerably exceeds that of the portion **24***a*. The length of portions **24***a* is selected to be about equal to the thickness of the loose leaf papers so that the binder takes up minimum file space. In FIGURE 11, a relatively large number of loose leaf papers are located between the cover members and the portions **24***a* and **24***b* of rings **24** are about the same length. Since the portions **24***b* project rings beyond the end of the binder, they provide pull strings for removing the binders when stored on edge in a file. It is understood that the rings in FIGURES 2, 3 and 3*a* will be pulled through clips **17** to provide the proper ring length between the cover members before the binder is closed.

In FIGURE 12, there is shown a modified mounting bar **14'** which is attachable to the cover **11** and contains slits **50** and **51** which are wide enough to receive the ring **24**. The slits are enlarged by pressing out portion **52** between two slits. The mounting bar **14'** can replace the bar **14** and clips **17** on cover **11** while the mounting bar **15** and the clips **19** are used on the opposite cover **12**. The slits **50** and **51** permit ready movement of the ring **24** therethrough to adjust the length of the ring between the covers, but the slits do not provide for clamping of the ring.

In FIGURE 13, a modified clip **60** is illustrated which is similar to the clips **17** and **19** except that the upper side **61** is sprung downwardly toward the side **62** and the bent end **63** is moved outwardly so that the upper side **61** can be lifted up. The end **63** is then released to hold the upper side **61** away from the side **62** so that the ring can move through suitable openings, such as shown in the clips **17** and **19**. Thus, the clip **60** normally assumes the closed position and is held in the open position, which is the reverse of clips **17** and **19**.

By the present invention there is provided a notebook binder which opens as a book to any selected location and the material is fully visible. Since the length of the rings between the cover members can be varied, the binder will be only about as thick as the contents plus the cover members. The cover members can be either rigid or flexible and can be secured to the clip mounting bars in any suitable fashion or made integral with the bars. Further, various types of clips can be attached in various ways to the mounting bars or suitable clips can be attached directly to the cover members rather than to mounting bars. Different size rings can be used if external portion is too long or too short. Also, various types of connections for securing the rings could be utilized in place of the illustrated clip connections. Various other modifications are contemplated by those skilled in the art without departing from the spirit and scope of the invention as hereinafter defined by the appended claims.

What is claimed is:

1. A loose leaf notebook binder comprising:
cover means;
clip means attached to said cover means;
a binder ring passing through and adjustable in its circumferential direction relative to said clip means;
said ring having ends which are separable to condition said ring for receiving and discharging perforated loose leaf pages;
coupling means releasably joining said ring ends;
said clip means including clamping means for releasably clamping said ring against circumferential movement through said clip means in a fixed position wherein said pages may be moved about said ring without encountering said ring ends, said ring being circumferentially adjustable through said clip means when said ring clamping means are released, thereby to permit removal and insertion of any page without removal of the remaining pages; and
said clip means having a recess to receive said ring coupling means when said ring occupies said fixed position.

2. A loose leaf notebook binder comprising:
a pair of separate cover members having adjacent edges;
mounting bars attached to said cover members along said adjacent edges, respectively;
a plurality of clips arranged in pairs along said adjacent edges of said cover members, each clip pair including aligned clips on said cover members, respectively;
binder rings passing through and adjustable in their circumferential direction relative to said pairs of clips respectively;
said rings having ends which are separable to condition said rings for addition and removal of perforated loose leaf pages;
said clips including holding means for releasably holding said rings against circumferential movement through their respective clips in positions wherein said pages maye be moved about said rings without encountering said ring ends, said rings being circumferentially adjustable through their respective clips

when said holding means are released, thereby to permit removal and insertion of any page without removal of the remaining pages when said cover members are open and adjustment of the length of the ring portions passing through said loose leaf pages to provide for minimum thickness of the binder when said cover members are closed; and

each of the said clips comprising a spring metal strip folded around the adjacent mounting bar and having a hook end for engaging and holding the other end of said strip when the respective clip is closed, said hook end being movable to disengage said other strip end upon application of a clip opening force, said hook end and said other end of each clip constituting said ring holding means of the respective clip and having openings receiving the corresponding binder ring in such a way that each ring is released for circumferential movement through its clip when the clip ends are disengaged and each ring is held against circumferential movement through its clip when the clip ends are engaged.

3. A notebook binder as defined in claim 2 wherein each of said clips has an upper side above and a lower side below its respective mounting bar, said hook end of each clip being integral with the respective lower clip side and located at one edge of the corresponding mounting bar, and said upper side of each clip extending across

the upper side of the corresponding mounting bar and comprising said other clip end.

4. A notebook binder as defined in claim 3 wherein each mounting bar has a transverse slot opposite each clip, said openings in each clip being located at opposite ends of the adjacent bar slot, each ring passing through its respective clip openings and bar slot and being clamped between said upper and lower sides of its respective clip when the latter is closed.

References Cited by the Examiner

UNITED STATES PATENTS

826,460	7/1906	Wirt	129—41
836,956	12/1906	Ziegler	129—41 X
930,783	8/1909	McMillan.	
1,163,766	12/1915	Morden	129—1
1,574,774	3/1926	Wigginton	129—41
3,073,315	1/1963	Schade	129—41

FOREIGN PATENTS

682,620	3/1964	Canada.
1,242,106	8/1960	France.
101,005	8/1916	Great Britain.

JEROME SCHNALL, *Primary Examiner.*