Nov. 22, 1955 J. MacLEAN 2,724,387

MOVABLE RING FILES AND BINDERS

Filed Aug. 19, 1952 3 Sheets-Sheet 1

Fig. 1.

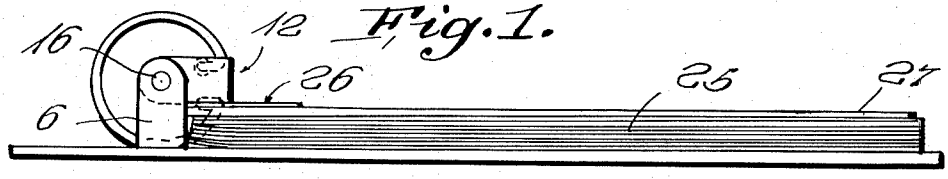



Fig. 2.

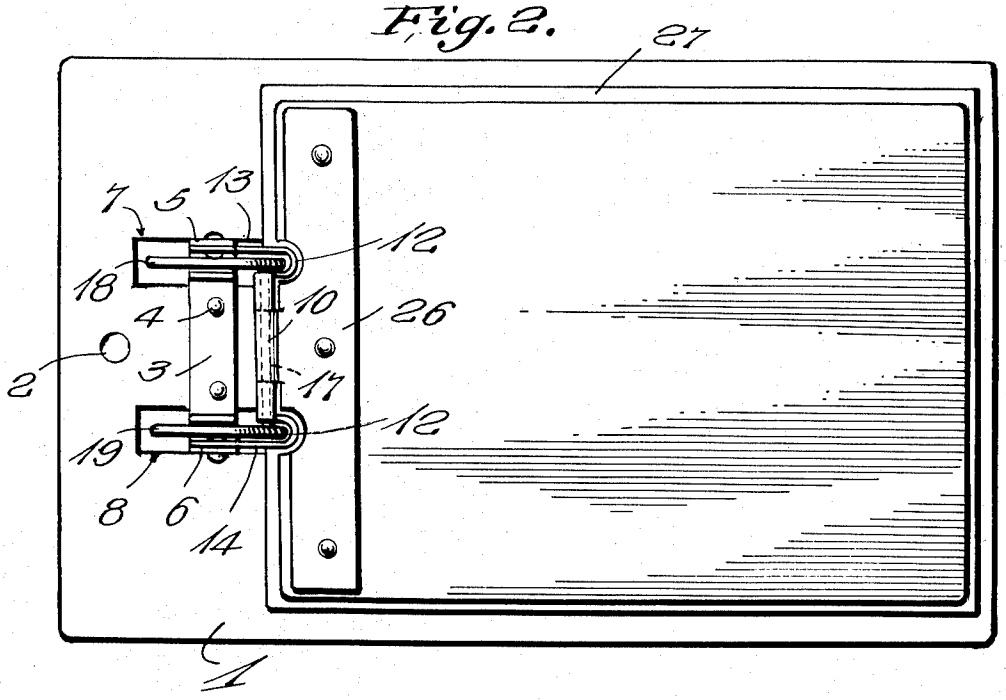
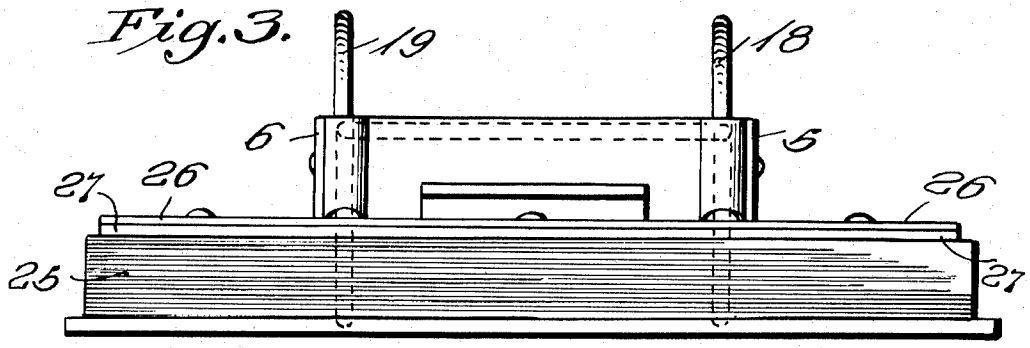



Fig. 3.

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MOVABLE RING FILES AND BINDERS

Filed Aug. 19, 1952 3 Sheets-Sheet 2

Fig. 4.

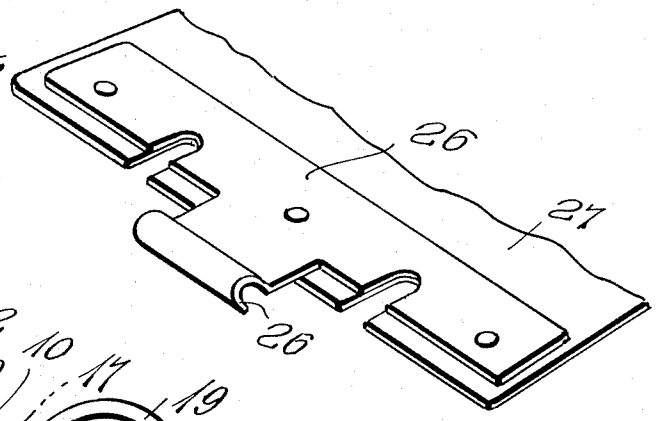



Fig. 5.

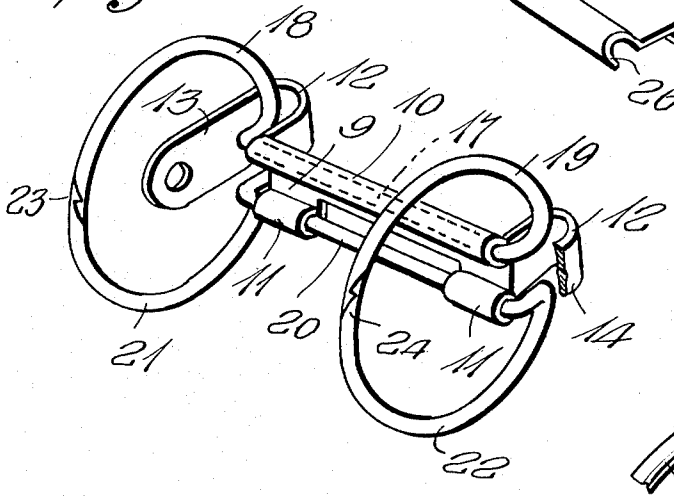



Fig. 11.

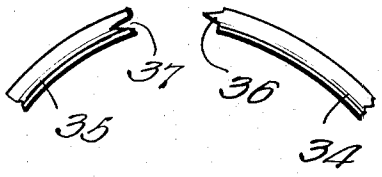
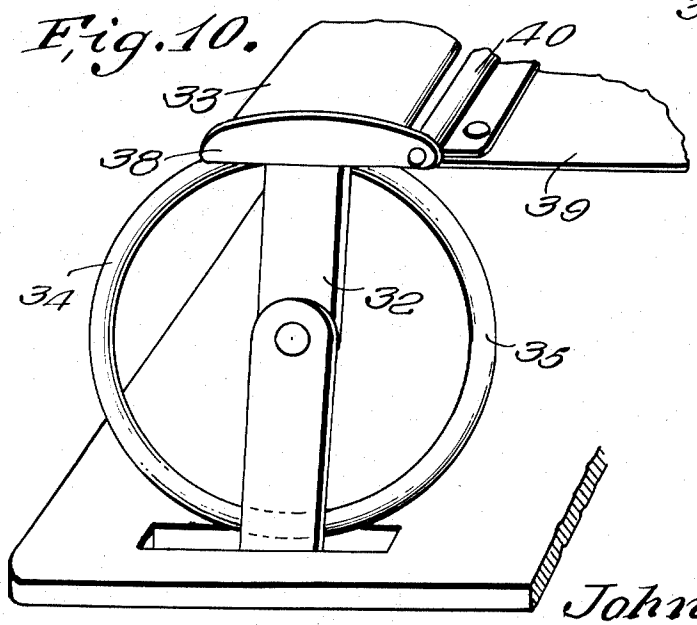



Fig. 10.

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MOVABLE RING FILES AND BINDERS

Filed Aug. 19, 1952 3 Sheets-Sheet 3

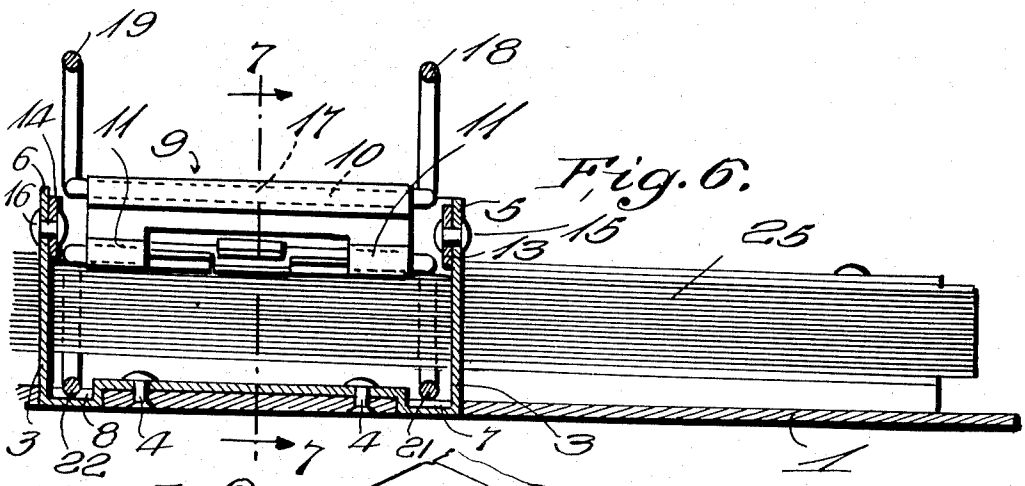


Fig. 6.

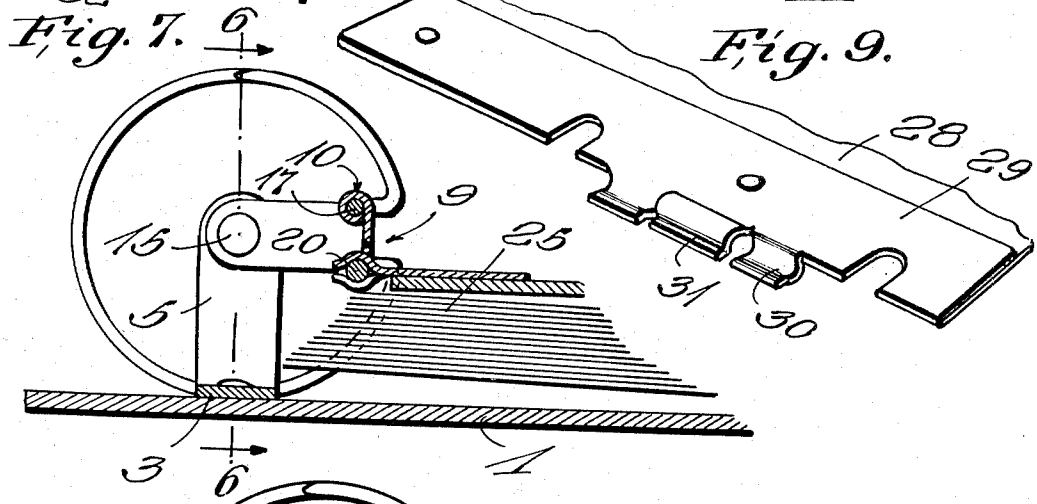


Fig. 7.




Fig. 9.

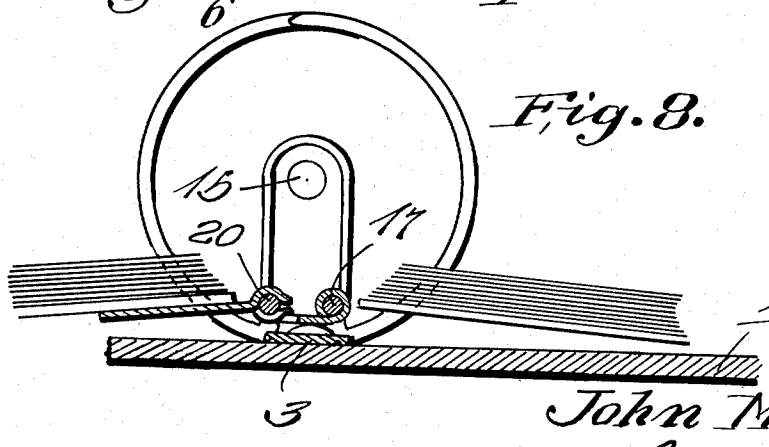


Fig. 8.

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2,724,387

# MOVABLE RING FILES AND BINDERS

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Application August 19, 1952, Serial No. 305,194

2 Claims. (Cl. 129—24)

My invention relates to movable ring files and binders, and particularly to a file or binder of this character intended and adapted to be mounted upon a base board or upon a cover structure, and which will receive and accommodate a plurality of sheets and will hold these in the relation to be readily accessible and will retain the individual sheets and the entire quantity against accidental or casual displacement.

An object of this invention is to provide a movable ring file and binder which can be used by construction men, engineers, factory messengers, truckers, railroaders, bankers, students, garage men, Army, Navy, Air Force and Marine personnel, housewives and people in many other occupations and pursuits, to receive and hold sheets or envelopes or the like in position to be retained against displacement and to be yet readily available for reference, and with which one or several sheets can be added or taken out of the file at any desired place, by opening the rings.

Another purpose is to provide a flat opening ring file and binder structure in which the rings move with the paper and thus avoid possibility of tearing the sheets.

Still another object of my invention is to provide a semi-automatic throw-board structure which adjusts itself to the amount of paper carried in the file or binder when closed, and which swings or carries over with the sheets as opened.

A further purpose is to provide a structure of this character in which the rings can be readily closed and opened by the operator without employment of special tools or appliances.

With the above and other objects in view, some of which will be apparent to those skilled in the art and others of which are inherent in the construction and use and operation, my invention includes certain novel features of construction and combination and arrangements of parts which will hereinafter be set forth in connection with the drawings.

In the drawings:

Figure 1 is a view in edge elevation showing one embodiment of my invention in a ring file or binder.

Fig. 2 is a top plan view of the structure shown in Figure 1.

Fig. 3 is an enlarged view in end elevation.

Fig. 4 is a fragmentary perspective view to better show the construction of the throw-board.

Fig. 5 is a fragmentary perspective view to better show the structure of the rings.

Fig. 6 is a fragmentary enlarged sectional view substantially on line 6—6 of Fig. 7, showing a modified embodiment of the invention.

Fig. 7 is a fragmentary sectional view substantially on line 7—7 of Fig. 6.

Fig. 8 is a view similar to Fig. 7 showing the ring structure in the position in which the sheets carried thereby are accessible for viewing.

Fig. 9 is a fragmentary perspective view to better show



the detachable throw-board mounting as illustrated in Figs. 6 through 8.

Fig. 10 is a fragmentary perspective view showing another modified embodiment.

Fig. 11 is a fragmentary view of the parts shown in Fig. 10 with the rings open for reception or removal of sheets.

In the present instance, I have shown my improved movable ring file and binder structure embodied with a base or supporting member 1 which can be of wood or pressed fiber board or other suitable material, and this base or supporting member 1 has one end extending somewhat after the manner of a clip board, an opening being provided at 2 to receive a nail or hook or like fastening by which the base or supporting member is hung up, or to receive a cord or chain or other flexible portion by which the base or support is suspended.

A supporting bracket 3 is mounted on the base or supporting member 1 by use of rivets or other fastenings 4, and this supporting bracket has its ends bent upwardly to provide bearing stanchions 5 and 6 having bearing openings adjacent to their upper ends. Since it is desirable that the rings, to be later described, be mounted to give a minimum height above the surface of the base or supporting member 1, I have found that the bearing openings in the bearing stanchions 5 and 6 can be lowered by cutting out slot-like openings 7 and 8 in the base or supporting member 1, and then offsetting the supporting bracket 3 adjacent to the extremities of the cross bar portion thereof somewhat after the manner shown in Fig. 6.

A ring supporting bearing structure 9 has a cross bar structure provided with bearing portions 10 and 11 at opposite edges, and the ring supporting bearing structure is then offset as at 12 and the ends are turned in to provide bearing arms 13 and 14 provided with bearing openings. The bearing arms 13 and 14 are adapted to fit between the bearing stanchions 5 and 6 with their bearing openings registered therewith, and these parts are swingably or pivotally connected together by rivets or other suitable bearing fastenings 15 and 16.

The ring portions are each made up of two parts hingedly held so that they may be closed together to annular form for retaining sheets in place, and can be opened up to permit placement and removal of sheets. The ring member 17 has a middle portion rotatably received through the bearing portion 10, and the ends are then bent substantially laterally and are curved around to provide the half-ring portions 18 and 19 which are substantially centered around the bearing openings of the bearing arms 13 and 14. A second ring member 20 is mounted for swinging movement in the bearing 11, and is provided with half-ring portions 21 and 22. The half-ring portions 18 and 21 are formed at their ends with interlocking or interengaging catch portions 23 and the half-ring portions 19 and 22 have similar catch portions 24 at their ends so that the ring members can be moved to the position shown in Fig. 5 and these catch portions 23 and 24 will retain the half-ring formations in substantially continuous annular form.

With this construction and arrangement of parts, the catch portions 23 and 24 can be disengaged and the rings can then be opened to permit placement and removal of sheets of paper or other desired material as indicated at 25, these sheets of course being punched or perforated to spacing receiving the ring portions.

The bearing portion 11 is cut out in its middle area, to leave the corresponding area of the second ring portion 20 exposed, and this cylindrical exposed portion serves admirably to receive and mount a bearing 26 by which a throw-board 27 is carried. As illustrated, such throw-board and bearing structure is perhaps more fully shown

in Fig. 4. With this arrangement, the throw-board **27** has its bearing portion **26** on the ring member **20**, so that the throw-board can be readily swung to raised and to lowered positions. As perhaps best shown in Figures 1 and 3, the ring supporting bearing structure **9** and the parts carried thereby, can be rolled over forwardly so that the throw-board **27** will rest and lie substantially flat upon the top of the sheets at **25**, when the file or binder is closed. When it is desired to have access to the sheets, the throw-board **27** can be raised and can be swung over and moved outwardly and upwardly and the face of the sheets will then be fully exposed, it being possible to open any desired number of sheets with the throw-board. This swinging back of the throw-board will cause the sheets carried therewith to move with the rings, and there will not be any wear upon the sheets around the openings receiving the ring portions.

It may be found desirable to provide a throw-board which is detachable, so that if the throw-board or cover board **27** wears out customers can secure another board and apply this to the ring parts.

With this in mind, I have illustrated a modified embodiment of my invention in Figures 6 through 8 of the drawings, and as here disclosed the main parts of the sheet supporting structure are substantially as described above. In this embodiment, the modified throw-board **28** is substantially a duplicate of the throw-board **27**, but the mounting bracket **29** is somewhat different. As stated, the second ring portion **20** has a length exposed in its middle, and the modified mounting bracket **29** has half bearing portions **30** to fit on one side of the exposed portion of the member **20** and a half bearing portion **31** cooperating therewith to fit on the opposite side. These bearing portions **30** and **31** are sufficiently resilient that they can be sprung over the exposed middle portion of the part **20**, and these parts fit substantially after the manner of a spring clip, so that the throw-board can be readily and expeditiously clipped in place and removed, as may be desired.

With the disclosure in Figures 10 and 11, I have illustrated a slightly different construction in which the bearing arms **32** carry a casing **33** from which the half-rings **34** and **35** project at each end. Any suitable spring means or other mechanism can be provided in the casing **33** to normally urge the half-ring portions **34** and **35** to a closed position, and as many such structures are well known in the art no attempt is here made to illustrate particular embodiments. With this arrangement, the half-ring portions **34** and **35** can be provided with a tongue **36** on one end and a registering groove **37** on the other, and when the half-ring portions are brought together this will cause registry and a substantially completely and continuous annular ring form. As disclosed, brackets **38** are provided at the ends of the casing **33**, and the throw-board **39** is hinged at its inner ends between these brackets as indicated at **40**. With this modified construction, the use and operation will be substantially the same as set forth above, and the rings can be readily opened for placement and withdrawal of sheets and will serve to retain the sheets against accidental or casual displacement.

In each of the embodiments as set forth, I have disclosed my improved movable ring file and binder structure applied to a supporting or base member somewhat after the manner of the usual clip board, but it will be understood that the base or supporting member **1** might be one cover of a check book or other binder, and that complete cover structure can be embodied with my invention. In fact, this invention is capable of employment in a number of different uses as for handling ledgers, receipt books, calendars, prescriptions, and the like in orderly and compact arrangement with all sheets retained against accidental or casual displacement.



While I have herein shown and described only certain specific embodiments of my invention and have set forth only certain possible modifications and varied embodiments, it will be appreciated that many changes can be made in the form and construction and arrangement and assembly of the parts, and in the manner of use, without departing from the spirit and scope of my invention.

I claim:

1. A ring binder comprising a supporting board, a pair of stanchions upstanding from said board, a cross piece having a pair of offset arms pivotally connected to said stanchions for rotation about a first axis, a pair of complementary half-ring members adapted to carry apertured sheets and pivotally mounted on said cross piece and together forming at least one complete ring when closed, and a throwboard pivotally mounted on one said half-ring member for pivotal movement about a second axis spaced from said first axis, whereby when said throwboard and apertured sheets are turned, said throwboard will carry said ring members about said axis upon movement of said throwboard about said axis, and said throwboard, sheets and ring members will turn together as a unit about said axis and said throwboard will lie flat against said sheets in all positions of said sheets.

2. A ring binder comprising a supporting board, a pair of stanchions upstanding from said supporting board, a cross piece having a pair of offset arms pivotally connected to said stanchions for rotation about a first axis, a pair of complementary half-ring members adapted to carry apertured sheets and having a straight middle portion pivotally mounted on and parallel to said cross piece and a plurality of half-ring portions disposed in planes perpendicular to said middle portions, and a throwboard pivotally mounted on one said middle portion for pivotal movement about a second axis spaced from said first axis, whereby when said throwboard and apertured sheets are turned, said throwboard will carry said ring members about said axis upon movement of said throwboard about said axis, and said throwboard, sheets and ring members will turn together as a unit about said axis and said throwboard will lie flat against said sheets in all positions of said sheets.


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