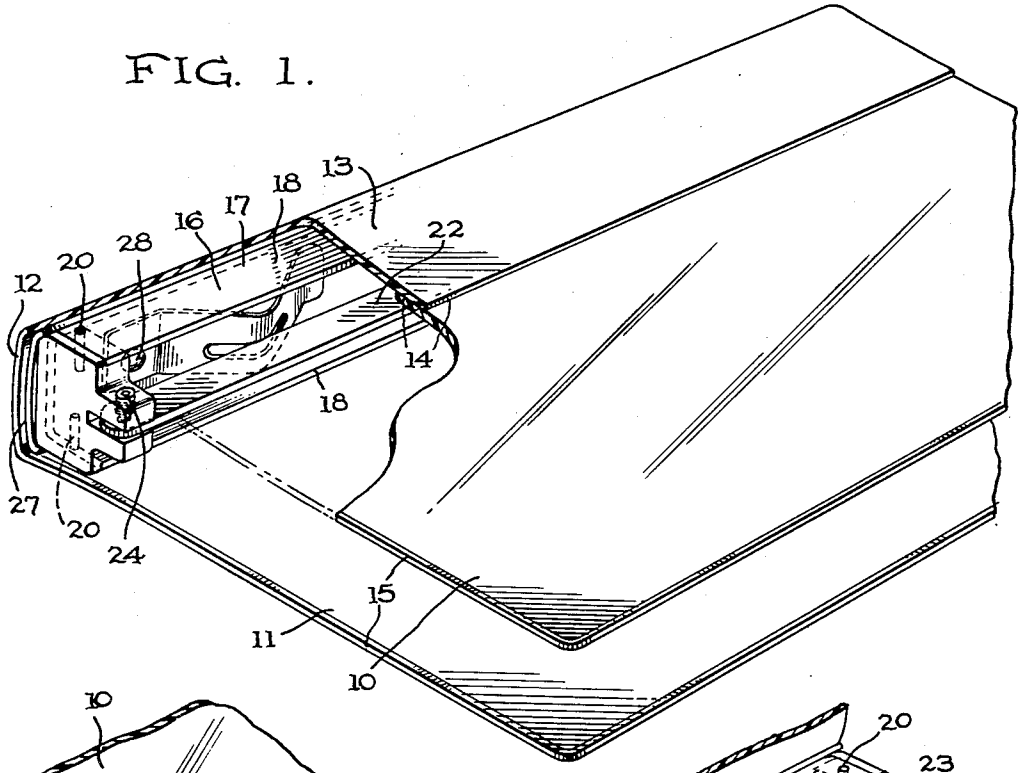
Oct. 6, 1964 C. A. GRANT ETAL 3,151,886

BINDER

Filed May 24, 1961 2 Sheets-Sheet 1

FIG. 1.



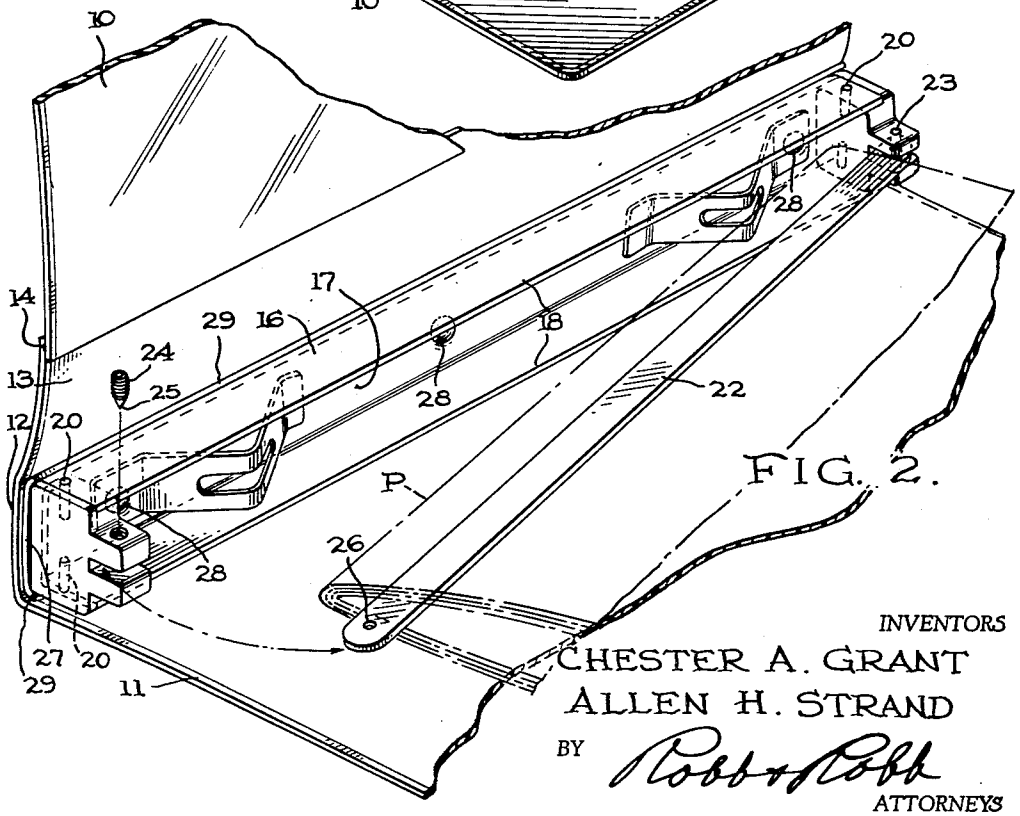


FIG. 2.

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BINDER

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FIG. 3.

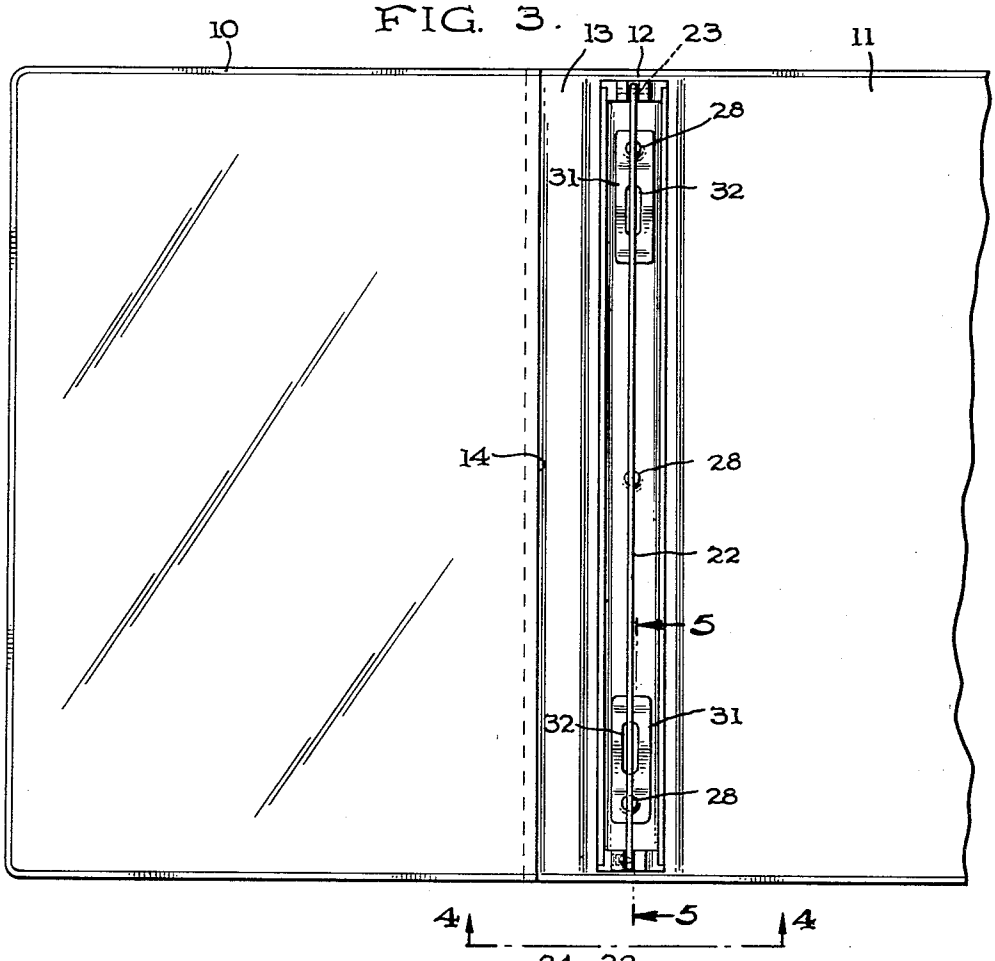
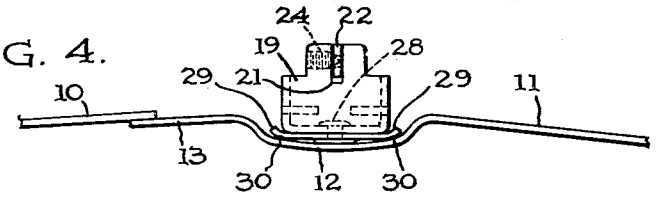


FIG. 4.



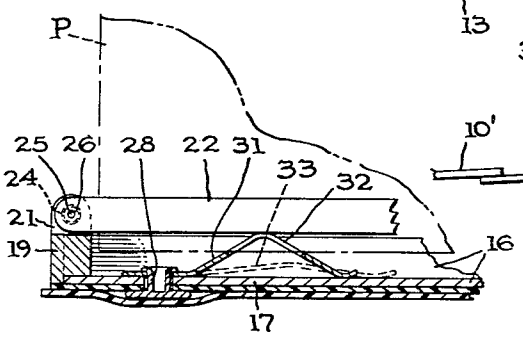


FIG. 5.

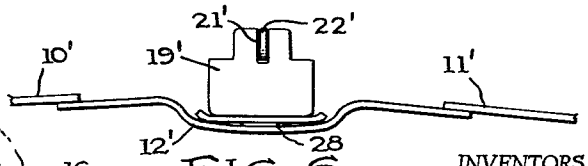


FIG. 6.

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3,151,886

BINDER

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Filed May 24, 1961, Ser. No. 112,404
1 Claim. (Cl. 281—19)

The present invention relates generally to binders, and more particularly, to an improved binder of the clamping-bar type, which may be used to bind for the purpose of temporarily or permanently protecting various catalogs, periodicals, magazines, bulletins, directories, and the like, from undue wear, soil and abuse attributable to frequent and/or rough or careless handling and use by the public in such places as libraries, reading rooms, reception rooms, offices and the like.

One of the primary objects of the invention is to provide a simple and reliable binder of this general type which has structural features which lend themselves to relatively simple and inexpensive manufacturing procedures, as well as to ready assemblage and usage.

More specifically, it is an object of the invention to provide a binder which utilizes a pivotal clamping bar to engage and retain a folded or other bound publication by insertion of the clamping bar between the folds thereof, said bar cooperating with a relatively rigid channel of lightweight construction within which the folded or bound margin of the publiction is cradled and retained during use.

A still further object of the invention is to provide an improved mounting for the clamping bar aforementioned, which is characterized by appropriate simple hardware by which the bar is pivotally attached to the binder at one end of the bar, and having releasable locking means for mechanically interlocking the opposite end of the bar in its normal clamping position.

It is also an object of the invention to provide an improved binder of the aforementioned type, wherein means are provided to urge the folded or bound edge of the publication into effective cooperation with the clamping bar when the publication is mounted in the binder, said means being especially advantageous in cases where the publication is relatively thin and consists of comparatively few pages.

Still another object is to provide a binder as characterized in the preceding paragraph, wherein provision is made for insuring and maintaining centralizaton of the publication within the binder during mounting of the publication therein, as well as subsequently to clamping thereof by the clamping bar.

Other and further objectives and advantages of the invention will be obvious to those skilled in the art, and will become more fully apparent from the following detailed description, together with the accompanying drawings, and the novel features thereof will be defined in the appended claim.

In the drawings:

FIG. 1 is a perspective view illustrating one embodiment of our improved binder, with a portion of the front cover broken away to better disclose the details of the clamping bar and other associated parts of the hardware;

FIG. 2 is a fragmentary perspective view generally similar to FIG. 1, with one cover flap of the binder shown in a raised or partially opened position so as to more completely disclose the clamping bar and related hardware details, with the clamping bar being shown in a partially released position;

FIG. 3 is a fragmentary top plan view of the binder of FIGS. 1 and 2, as viewed in a fully open and relatively flat condition;

FIG. 4 is a fragmentary end view on a slightly enlarged scale, showing the binder hardware and portions of the cover, as viewed on the line 4—4 of FIG. 3;

FIG. 5 is a cross-sectional fragmentary detailed view on substantially the same scale as FIG. 4, taken approximately on the line 5—5 of FIG. 3; and

FIG. 6 is a fragmentary end view, generally similar to FIG. 4, showing a slightly modified cover structure of the binder.

Referring first to FIGS. 1 to 5, inclusive, of the drawings, in which like reference characters designate corresponding parts in the different figures, the binder comprises a front cover or panel **10** of suitable wear-resisting material such as plastic. The front cover may be rigid, semi-rigid, or relatively flexible, as desired or determined according to the particular usage to which the binder is to be subjected. Where it is desired to readily expose the title, design, or other identifying material on the face of the publication to be mounted in the binder, the front cover **10** may be transparent or semi-transparent, and may be integrally formed with back cover **11**, or separate therefrom and suitably joined thereto. The back cover **11** may also be rigid, semi-rigid, or flexible, as desired, and may be either opaque or transparent, according to the preference of the user.

In the construction depicted in FIGS. 1 to 5 of the drawings, the back cover **11** is represented as being opaque and composed of a relatively flexible plastic material, and is considerably wider than the front cover **10** which is illustrated as being relatively transparent and flexible. By making the back cover **11** wider than the front cover **10**, the back cover serves to provide a spine portion **12** at the folded edge of the binder, with the free edge **13** of the spine **12** being suitably secured to the front cover **10**, as by bonding the same together. Such bonding operations are well known in the field of plastics and one of the common methods applicable hereto is that generally designated as dielectric bonding as indicated at **14** in the drawings. If desired, the extreme edges **15** of the front and back covers which constitute the margins of the binder may be embossed or otherwise finished off to have a more decorative or attractive appearance.

The back or spine portion **12** of the binder is suitably attached to a relatively rigid but lightweight channel member **16** formed of aluminum or other durable material. This channel member **16** reinforces or stiffens the spine **12** when attached thereto, said channel member including a flat base designated **17** from which opposed flanges **18**, **18** are integrally extended substantially the full length of the channel. A pair of spaced end posts **19**, **19** are rigidly fixed at the respective ends of the channel member **16**, said posts being preferably of a form as to completely extend across each end of the channel to conceal the extreme end edges thereof, and thus present a more finished appearance. The end posts have a form which can be readily die cast, and when anchored to the ends of the channel **16**, serve to maintain stability therewith by lying largely within the channel between the opposed flanges thereof, while extending completely across the open end of the channel. The end posts can be attached to the channel in any suitable manner, as by the use of press-fit pins **20**.

Each of the end posts **19** is provided with a central slot **21** in the outer end thereof and lying largely outwardly of the channel **16**, with the slots **21**, **21** in the opposed end posts disposed in general alignment with each other to receive a generally flat elongated clamping bar **22**. One end of the bar **22** is inserted in the slot in one of the end posts **19** and is pivotally fixed thereto in any suitable manner as by means of a pivot pin **23** extending through the clamping bar and the portions of the end post lying on opposite sides of the slot. The

other end of the bar **22** is releasably interclockable within the slot **21** of the opposite end post, as by means of a set screw designated **24**. As best seen in FIGS. 2 and 5, the set screw **24** is preferably provided with a socket in one end for the reception of a driving tool such as an "Allen" wrench, while the opposite end of the set screw has the form of a conical point, as indicated at **25**. The point **25** of the set screw is adapted to interengage with a small aperture **26** provided in clamping bar **22**, said aperature **26** preferably being of smaller diameter than the set screw **24** so as to limit the tightening movement of the set screw when screwed home, while at the same time serving to automatically centralize the clamping bar in its locked or closed position relative to the channel **16**.

The channel **16** is suitably attached to the cover components **10** and **11** of the binder, and for this purpose, a narrow backing strip **27** formed of thin plastic material is secured to the base **17** of the channel as by means of a plurality of rivets or eyelets **28**. The strip **27** extends somewhat beyond the lateral marginal edges of the channel **16** to provide spaced longitudinal margins **29, 29** which may be bonded at **30, 30** to the adjacent surfaces of the spine portion **12** of the binder, as by means of dielectric bonding.

The hollow rivets or eyelets **28** may be additionally employed to anchor a pair of leaf springs **31, 31** within the channel **16**, but if preferred, a single centrally disposed spring **31** may be utilized. The springs **31** are relatively thin and flexible, with each spring being arched outwardly of the channel in a generally longitudinal direction, with the inclined arms of each spring forming an obtuse angle when the springs are relaxed, while one end of each spring is anchored to the bottom of the channel, with its opposite end disposed in proximity to the base of the channel and free to slide along the base when inward pressure is imposed on the arched portion of the spring.

In the apex area of each spring, there is provided a central longitudinally extended slot **32**, with the slots being generally aligned with the clamping bar **22**. Thus, the slots serve to help center a publication, as generally designated **P**, when it is being inserted in the binder preliminary to closing of the clamping bar **22**. More particularly, in the case of relatively thin publications, the slots **32** assure effective clamping engagement by urging the publication into firm contact with the clamping bar and maintaining the clamping action after the set screw **24** has been tightened to lock the clamping bar closed, regardless of the thickness of the publication. With thicker publications, the springs **31** will freely flatten out in the bottom of the channel **16**, as indicated at **33**, to automatically compensate for the thickness of the publication when the clamping bar is closed and locked after insertion of the publication in the binder. If the binders are to be used only with relatively thick publications, the springs **32** may be omitted or removed if desired.

Referring to FIG. 6 of the drawings, there is shown therein a modified cover structure wherein the components generally correspond to those previously described, but are designated by primed reference numerals. In the case of this modified embodiment, illustrated in FIG. 6, the front and back covers, designated **10'** and **11'**, respectively, are both substantially the same size, and are interconnected by a separate combined hinge and spine member **12'** to which the covers may be dielectrically bonded. If the spine member **12'** is made of opaque plastic material, it will serve to conceal the hardware from view when the binder is closed, thereby improving the appearance thereof. However, either or both of the covers **10'** and **11'**

may be transparent, semi-transparent or opaque, and either or both may be relatively stiff, semi-rigid, or flexible.

While the specific details have been herein shown and described, our invention is not confined thereto, as changes and alterations may be made without departing from the spirit thereof as defined by the appended claim.

We claim:

A binder of the class described, comprising cover means foldable generally centrally to form front and back cover members, with a transversely extended spine portion therebetween defining the back of the binder, a channel member secured within the cover members and anchored to the spine portion with the open side of the channel member facing outwardly toward the free edges of the cover members, a clamping bar pivotally connected at one end to the channel member and swingable about the axis of said pivotal connection toward and away from a closed position at the open side of said channel member, and means including a member shiftable laterally toward and away from one lateral face of the clamping bar for releasably interlocking the free end of said clamping bar with the channel member when the clamping bar is swung to its closed position, said means for interlocking the clamping bar with the channel member also including a slotted end post rigidly attached to the channel member and extended outwardly therefrom and beyond the open side of said channel member to receive the free end of the clamping bar in the slot thereof, the slot of said end post extending to the extreme outer end of the post to freely admit the free end of the clamping bar into the slot and permit retraction of the clamping bar therefrom responsive to pivotal movements of the clamping bar toward and away from the latter end post respectively, and the laterally shiftable member comprising a set screw carried by said end post and operatively engageable with the clamping bar when in its closed position to releasably secure the clamping bar in such closed position, said set screw having a conical point, and said clamping bar being provided at its free end with an aperture having a smaller diameter than the body of the set screw, said aperture being cooperatively interengageable with the conical point aforesaid to automatically center the free end of the clamping bar in the end post slot and to limit rotational movement of the set screw when locking the clamping bar in closed position, and said channel member being provided with yieldable means disposed within the same for urging publications of various thicknesses into firm engagement with the clamping bar when bound in the binder, said yieldable means comprising a leaf spring anchored to the bottom of the channel member and having a free arched portion engageable against publications of various thicknesses to urge the publication into firm engagement with the clamping bar when bound in the binder, and said free arched portion of said leaf spring having an elongated slot therein extending in a direction generally lengthwise of the channel member and lying substantially in the plane of the clamping bar.

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