June 17, 1958 W. E. HASKIN 2,839,064

BINDER

Filed Nov. 19, 1954 2 Sheets-Sheet 1

FIG. 1

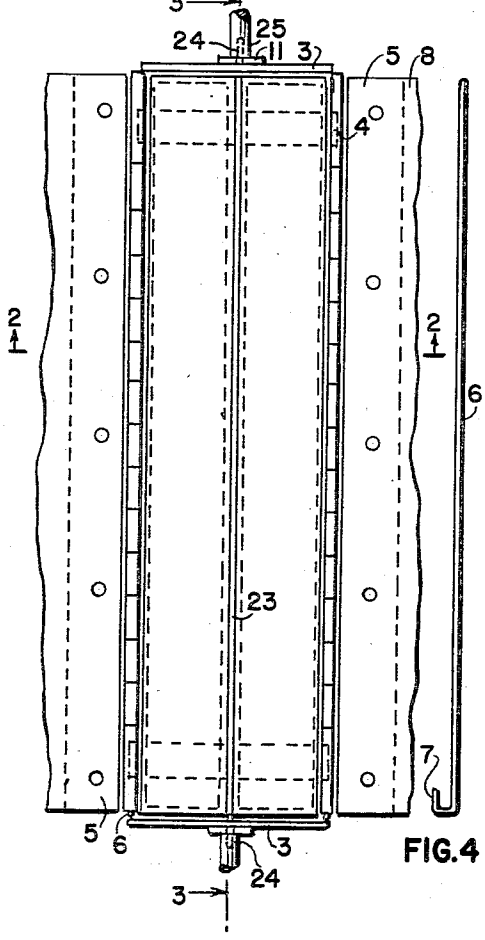
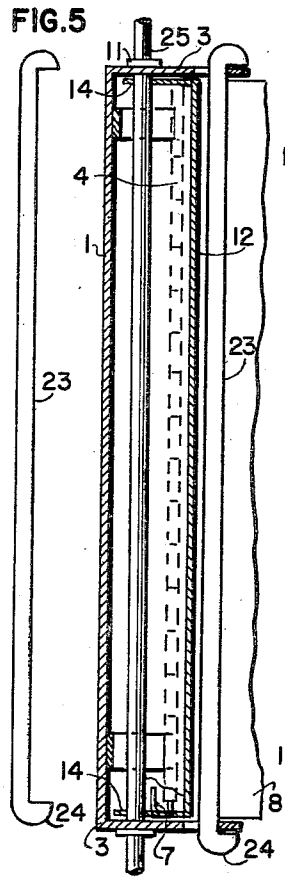


FIG. 4

FIG. 3

FIG. 5



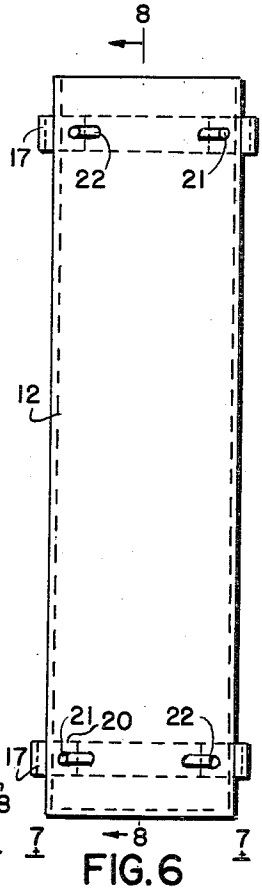


FIG. 6

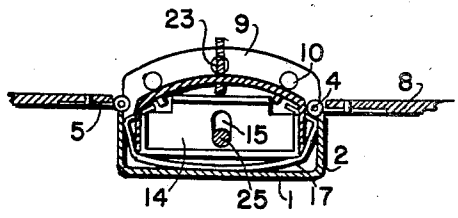


FIG. 2

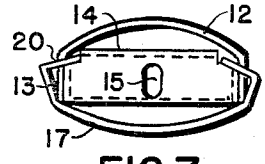


FIG. 7

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BINDER

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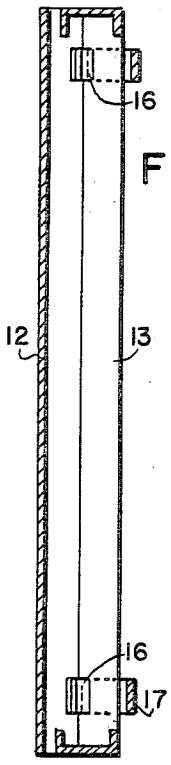


FIG.8

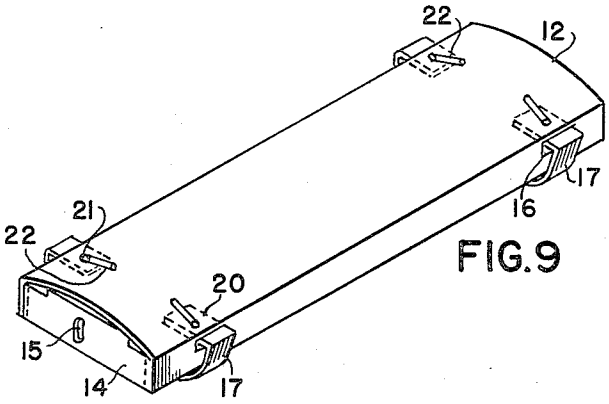
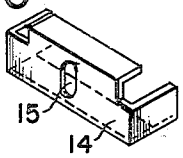


FIG.9

FIG.10



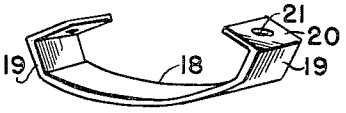


FIG.11

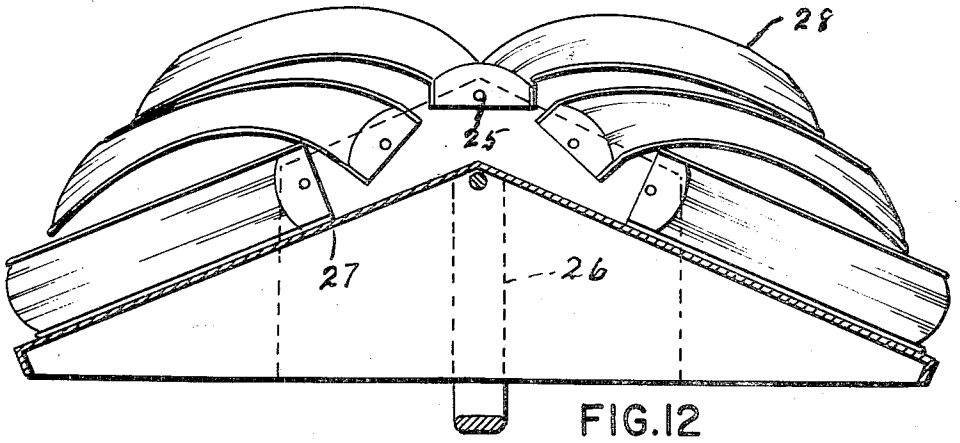


FIG.12

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BINDER

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Application November 19, 1954, Serial No. 470,081

6 Claims. (Cl. 129—1)

This invention relates to binders and more particularly to binders for books and the like, such as telephone directories, which may be frequently referred to.

An object of the invention is to provide a binder of durable and sightly construction for the purpose of publicly displaying telephone directories and the like and primarily adapted to withstand rough usage and malicious tampering at the hands of the public and also, in the field, to provide means for ready replacement of parts damaged by use.

A further object of this invention is to provide a binder adapted to hold a book or other object for pivotal movement on a longitudinal axis. This invention relates to my co-pending application, Serial No. 470,082, filed November 19, 1954, for a patent on a book rack filed herewith, which is designed for use in combination with this improved binder.

With these and other objects in view the invention consists of certain novel features of construction and combination and arrangement of parts which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Fig. 1 is a plan view of the binder in an open position showing rigid side covers having a metallic hinge.

Fig. 2 is a view in transverse section on the line 2—2 of Fig. 1.

Fig. 3 is a view in longitdinal section on the line 3—3 of Fig. 1.

Fig. 4 is a side view of the loose hinge pin.

Fig. 5 is a side view of the book coupling tongue.

Fig. 6 is a plan view of the depressible platform plate mounted on flat compression springs.

Fig. 7 is an end view on the line 7—7 of Fig. 6.

Fig. 8 is a view in longitudinal section on the line 8—8 of Fig. 6.

Fig. 9 is a perspective view of the platform plate with springs and end brackets assembled.

Fig. 10 is a perspective view of the end bracket.

Fig. 11 is a perspective view of a compression spring.

Fig. 12 is a schematic transverse sectional view of five binders having flexible side covers mounted in my improved book rack.

The binder combines four elements comprising a back plate and side cover assembly, a depressible arched inner platform plate, a book-coupling tongue and a longitudinal pivot and supporting rod.

Referring to the accompanying drawings by numerals, as shown in Figs. 1, 2 and 3, the back plate and side cover element includes a metal back plate **1** having perpendicular side walls **2** and end walls **3** forming a rigid box-like structure, the side walls terminating in hinge knuckle **4** at their free edges and having complementary hinge leaves **5** attached thereto by loose hinge pins **6** formed at one end with an angular extension **7**, as shown in Fig. 4, the said complementary hinge leaves **5** having attached thereto side covers **8** which may be of rigid material such as "Masonite" or "Bakelite" or they may be of flexible material such as leather, paper or plastic. The said end walls **3** extend beyond the side walls and terminate in a curved

edge **9**, each end wall being provided with a plurality of key-hole shaped apertures **10** spaced apart and positioned on an arc concentric with the projecting curved edge **9** as shown in Fig. 2 and also having aligned round apertures **11** positioned therein. The said apertures **11** may be positioned on the longitudinal center line of the binder or laterally to the right or left thereof as desired.

As shown in Figs. 6, 7, 8 and 9 the depressible inner platform element includes an arched plate **12** having downwardly projecting parallel side flanges **13** and perpendicular end brackets **14** as shown in Fig. 10 in which are positioned elongated slots **15**. Located in the side flanges **13** near each end are rectangular apertures **16** through which are inserted the free ends **20** of the compression springs **17** preferably made of flat spring wire and formed as shown in Fig. 11 into a bow-shaped base **18** with upwardly projecting side flanges **19** and inwardly projecting end extensions **20** having a round aperture **21** therein. Positioned in the arched surface of the platform plate and aligned with the apertures **21** in the end extensions of the springs are elongated slots **22**.

As shown in Figs. 1, 3 and 5 the book coupling tongue consists of a narrow strip of metal **23** formed symmetrically at each end with a rounded perpendicular extension **24** adapted to be inserted through the key-hole shaped apertures **10** in the end walls **3** of the back plate and being of sufficient length so that the end extensions **24** will project beyond the said end walls.

As shown in Figs. 1, 2 and 3 the longitudinal pivot and supporting rod consists of a round metal rod **25** adapted to be passed through the extruded apertures **11** of the end walls **3** of the back plate and also through the elongated slots **15** of the platform plate and being of sufficient length to project at each end beyond the said end walls **3**.

On assembly of the elements in operative engagement the side covers **8** are first attached to the complementary hinge leaves **5** and coupled to the back plate hinge knuckles **4** by inserting the loose hinge pins **6** which when fully projected into the respective hinge knuckles are rotated inwardly so that the hinge pin extensions **7** lie flat against the inner surface of the side walls **2**. The flat compression springs **17** are assembled to the depressible platform plate **12** by inserting into the rectangular apertures **16** the free end extensions **20** of the springs as shown in Fig. 11. When mounted in this manner as illustrated in Fig. 9, the laterally projecting shoulders of the springs will normally extend outwardly from the sdie walls of the platform plate which is then nested inside the back plate by exerting external pressure to force the said shoulders downward and below the inwardly projecting hinge knuckles **4** of the back plate in which position the shoulders will spring outwardly and lock the platform plate securely in operative engagement as illustrated in Fig. 2. The bow-shaped base **18** will bear upon the inner surface of the back plate and exert an upward pressure to hold the platform plate in its normal operative position with the said shoulders locked under the hinge knuckles. The rod **25** is then passed through the respective end apertures **11** of the back plate assembly and the elongated slots **15** of the platform plate so that the two plates are locked by the rod to prevent their accidental separation.

It is to be noted that the arched surface **12** of the platform plate, the centers of the key-hole shaped apertures **10** and the curved edge **9** of the end walls **3** are concentric and in register and that the arched surface of the platform is normally positioned at the juncture of the round section and the stem of the key-hole shaped apertures as illustrated in Fig. 2. By reason of the resiliency of its supporting springs, the platform plate is adapted to be temporarily depressed by manually exerted external pressure sufficiently to entirely expose the key-hole shaped apertures.

A tongue 23 is then assembled to the binder by depressing the platform plate at one end in the manner described so that the key-hole aperture 10 is fully uncovered and the end extension 24 of the tongue may then be passed therethrough. Upon repeating this operation at the opposite end and shifting the tongue longitudinally both end extensions 24 are positioned outside of the end walls 3. Thereupon the external pressure is released and by reason of the upward thrust of the compression springs under the platform plate the tongue is locked at both ends against accidental longitudinal movement. It is also to be noted that the diameter of the circular section of the key-hole aperture in which the tongue is confined is equal to the width of the tongue so that when the tongue is thus locked in operative engagement it is still free to rotate from side to side in the said aperture.

The binder is primarily designed for the display of telephone directories or the like for use by the public. It is designed for durability and cleanliness and stainless steel is preferably employed for the construction of such metal parts as are touched by human hands. It is also designed with a view to minimizing malicious tampering at the hands of the public and at the same time to afford means for the repair or replacement by a service man of parts damaged by use or other cause in the field.

Fig. 12 illustrates a diagrammatic transverse sectional view of five binders installed in my improved book rack for public use. They are spaced apart and mounted on supporting rods 25 which are attached at each end to uprights 26 integral with the shelf 27 of the rack. Coupled to the binders are a series of telephone directories 28.

To couple a telephone directory 28 or the like to a binder the book is first laid open at the center and a tongue 23 is laid between the parted pages at the spine with one end protruding from the book. The book is thereupon positioned with its spine resting on the platform plate which is then depressed at one end to enable the protruding tongue to enter the key-hole aperture. Thereafter the opposite end of the tongue is secured in the manner above described and the directory is securely coupled to the binder for movement in any direction. One or more directories may be coupled to the same binder to the limit of its capacity.

It is to be noted that when a paper bound book such as a telephone directory is laid open for reading, the spine of the book normally assumes an incurved or concave contour and the reading of the inner margins of the pages is thereby greatly facilitated. The arched surfaces of the platform plate 12 is designed to preserve the concavity of the spine of the book when coupled to the binder so that the reading of the inner margins of the page is thereby greatly facilitated. It is further to be pointed out that as the pages are turned to the right or left of center the coupling tongue is enabled to rotate from side to side and following the contour of the pages and to lay flat between them and at the same time the binder is enabled to rotate from side to side on its longitudinal supporting and pivoting rod which features further promote the legibility of the inner margins of the pages.

For the purpose of guarding against malicious tampering and yet providing means for servicing in the field the major elements are locked together by the supporting and pivoting rod and this rod must first be removed to disassemble the parts for repair.

To disengage the platform plate assembly from the back plate the elongated slots 22 in the platform plate give access to the round apertures 21 positioned in the end extensions 20 of the springs 17. By engaging the apertures 21 by a special tool in the possession of a service man the respective apertures may be drawn toward each other thereby retracting the shoulders so that they will be freed from the hinge knuckles and the platform plate thereby disengaged and removed from the back plate.

The loose hinge pin extensions 7 which have been held captive by the side walls 13 of the platform may now be rotated and withdrawn from the hinge knuckles and the side covers damaged by use may be readily replaced. At the same time the platform plate assembly may be likewise repaired by a service man in the field.

While I have illustrated and described what I believe to be the preferred embodiment of my invention, it is obvious that changes may be made in the general form and arrangement of the parts without departing from the spirit of the invention; hence, I consider myself at liberty to make such changes and alterations as fairly fall within the scope of the claims.

I claim:

1. A binder designed for public use in the display of a paper bound telephone directory or the like, comprising a flat metal back plate formed with perpendicular side and end walls, said side walls having side covers hingedly attached thereto and said end walls having aligned apertures therein, the said end walls also being provided with aligned key-hole shaped apertures, a depressible platform plate formed with an arched surface and perpendicular end walls with aligned elongated apertures nested inside the back plate, resilient springs engageing said back plate and said platform plate to impart an outward thrust to said platform plate, a rod disposed longitudinally of the binder and mounted at each end in a support and extending through all of said aligned apertures in said backplate and platform plate to lock the platform plate in position in the backplate; a flat metal tongue adapted to be inserted between the leaves of a book and having a narrow body portion projecting through the said key-hole apertures in the end walls of the back plates and having widened end portions extending beyond said end walls, said keyhole apertures having a length at least equal to the width of said widened portions and said platform plate being normally supported by said springs in a position partially to cover said keyhole apertures except for a portion thereof of a length equal to the width of said body portion, whereby when not in use a book mounted in the binder is enabled to lie flat on one side in a closed position and when opened for reading and the leaves are turned from side to side the binder is enabled to rotate on said rod to automatically level the leaves in a horizontal plane to greatly facilitate reading.

2. A binder in accordance with claim 1 in which the back plate and side cover assembly comprises a flat metal back plate having perpendicular end and side walls forming a rigid box-like structure, said side walls terminating in inwardly projecting hinge knuckles, a complementary hinge leaf having side covers attached thereto and being joined to the said hinge knuckles by loose hinge pins each having an angular extension at one end which extension upon assembly is rotated inwardly of the back plate to lie flat against the inner surface of the side walls and is prevented by the said end walls from accidental longitudinal movement, upon assembly of the said resilient platform plate nested inside the back plate the said angular end extension of the loose hinge pins are engaged thereby and prevented from rotation whereby the hinge pins are locked in operative engagement and can only be removed from the binder for the repair or replacement of parts damaged by use by first removing the platform plate.

3. A binder in accordance with claim 1 in which the depressible inner platform plate comprises an arched or curved plate having parallel flat side walls and perpendicular end walls, the said side walls having rectangular apertures near each end and below the arched surface, bow-shaped flat wire compression springs depending from the side walls and having inwardly projecting end extensions projected into the said rectangular apertures

so as to form external lateral shoulders outside the said apertures, the platform plate being assembled to the back plate by nesting it inside thereof by exerting external pressure to compress and force the said shoulders to a position inside and beyond the inwardly projecting hinge knuckles of the side walls of the back plate so that the said shoulders upon release and expansion will be locked in operative engagement under the said hinge knuckles and bearing against the said side walls of the back plate with the said bow of the spring being compressed and bearing upon the flat inner surfaces of the back plate so that the platform plate while thus locked in operative engagement by the outward thrust of the bow spring against the shoulder locks and rendered depressible against the back plate and thereupon the opposite end of the platform is depressed to allow the tongue to be entered in the key-hole slot and the directory is securely coupled to the binder in operative engagement.

4. A binder in accordance with claim 3 in which the book coupling means comprise a depressible inner arched platform plate, a book coupling tongue formed of narrow metal strip having a self formed perpendicular extension at each end, adapted to be entered into key-hole shaped apertures radially disposed in the end walls of the back plate and in which the radius of curvature of the said arched surface of the platform plate and the center line of the key-hole shaped apertures are concentric, the latter apertures consisting of the conventional circular bulbous outer portion merging into a straight stem-like inner section, the said arched surface of the platform plate being normally positioned at the point of juncture of the said bulb and stem sections of the key-hole apertures, so that when the platform plate is sufficiently depressed at one end to entirely expose a key-hole aperture, then one end of a coupling tongue is inserted and moved longitudinally therein whereupon the opposite end of the platform is depressed to fully expose a second key-hole aperture and the opposite end of the coupling tongue is then entered therein and shifted longitudinally so that both end extensions protrude equally beyond the said end walls so that the tongue is prevented from further longitudinal movement but is enabled to rotate in the key-hole aperture as the pages are turned from side to side whereby when external pressure on the platform plate is released further accidental longitudinal movement of the tongue is prevented by the end extensions and when a paper bound telephone directory is mounted on the platform plate and a tongue passed between the pages thereof, the directory is securely coupled to the

binder and the normal concavity of the spine is maintained so that the reading of the inner margins of the pages is greatly facilitated.

5. A binder in accordance with claim 4 in which a paper bound telephone directory is positioned on an arched platform so that the normal concavity of its spine is thereby permanently maintained and securely coupled to the binder by a tongue inserted between the leaves at the center of the book and engaged at both ends in the circular bulb of the key-hole shaped aperture in which the flat metal tongue is designed to rotate and follow the contour of the pages accordingly and lay flat between them whereby when the book is opened for reference and the leaves are turned from side to side the inner margins are more clearly exposed to view and the reading thereof is greatly facilitated.

6. In accordance with claim 1, a telephone directory binder adapted for frequent and prolonged use by the public and designed to minimize malicious tampering comprising two major interdependent co-operating elements consisting of a platform plate formation nested inside a back plate structure, both of said plates being formed with perpendicular side and end walls, the said respective end walls of the back plate having aligned round apertures therein intermediate the sides, the said respective end walls of the platform plate having elongated slots therein aligned with said round apertures of the back plate, the said side walls of the platform plate having compression spring means to enable the platform plate to be depressed in cooperation with book coupling means of the back plate for coupling a directory to the binder, the said side walls of the back plate terminating in inwardly projecting hinge knuckles, side covers attached to the said knuckles by a loose hinge pin having an angular extension at one end which upon assembly is rotated inwardly to lie flat against the side walls and prevented by the side walls of the platform plate against counter rotation and removal, a supporting and pivot rod passing through the aligned apertures in the respective end walls of the two plates whereby the two major elements are locked in operative engagement and the malicious removal of the said hinge pins or tampering with the compression spring mechanism of the platform plate at the hands of the public is prevented.

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