Nov. 20, 1956 W. E. HASKIN 2,771,075

BINDER

Filed Nov. 19, 1954 3 Sheets-Sheet 1

Fig. 1.

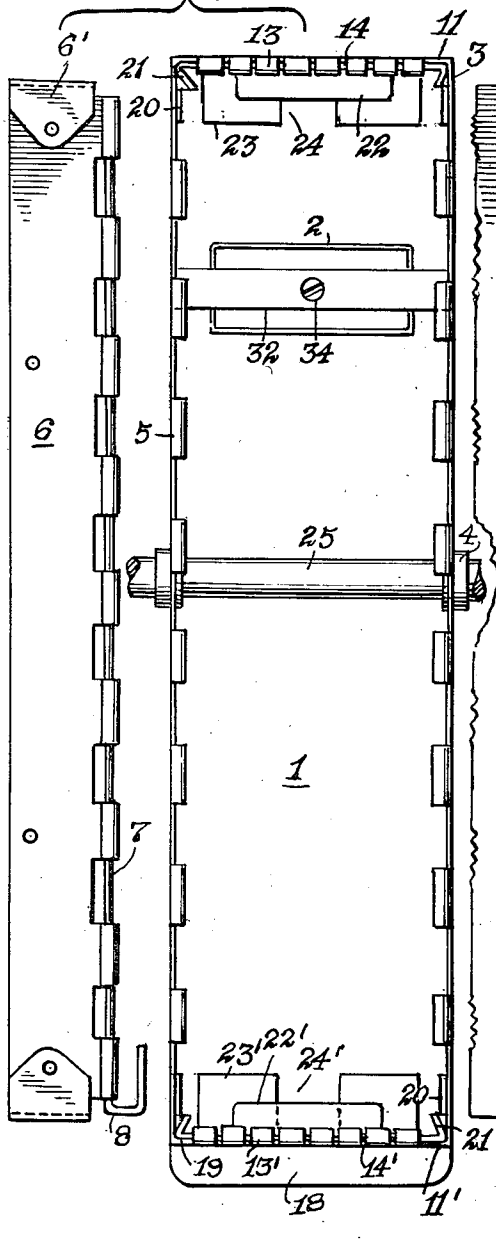
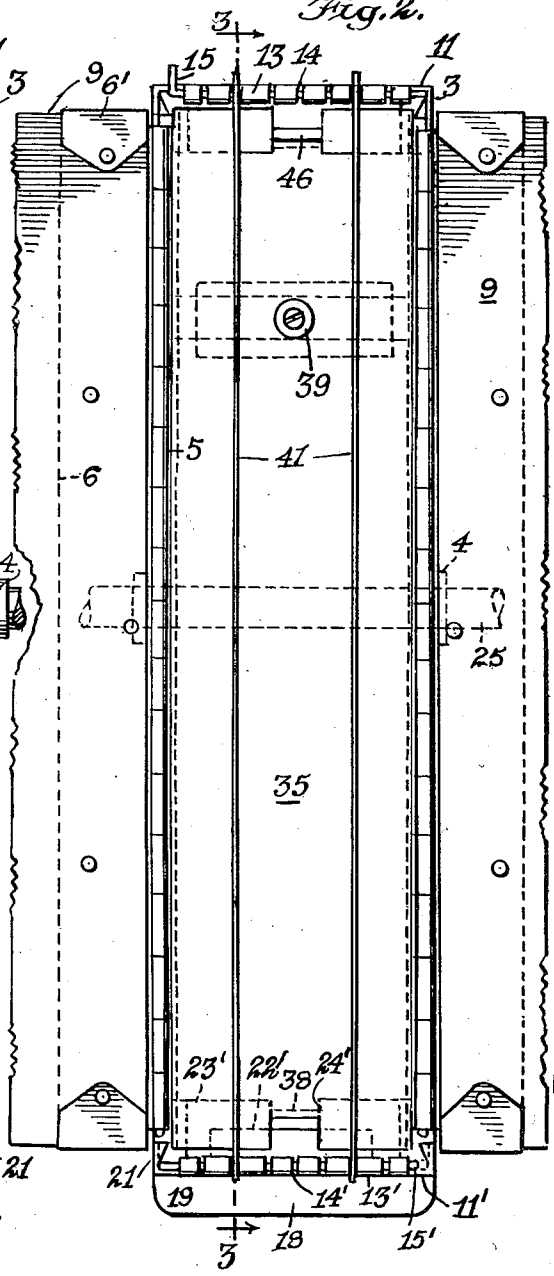


Fig. 2.

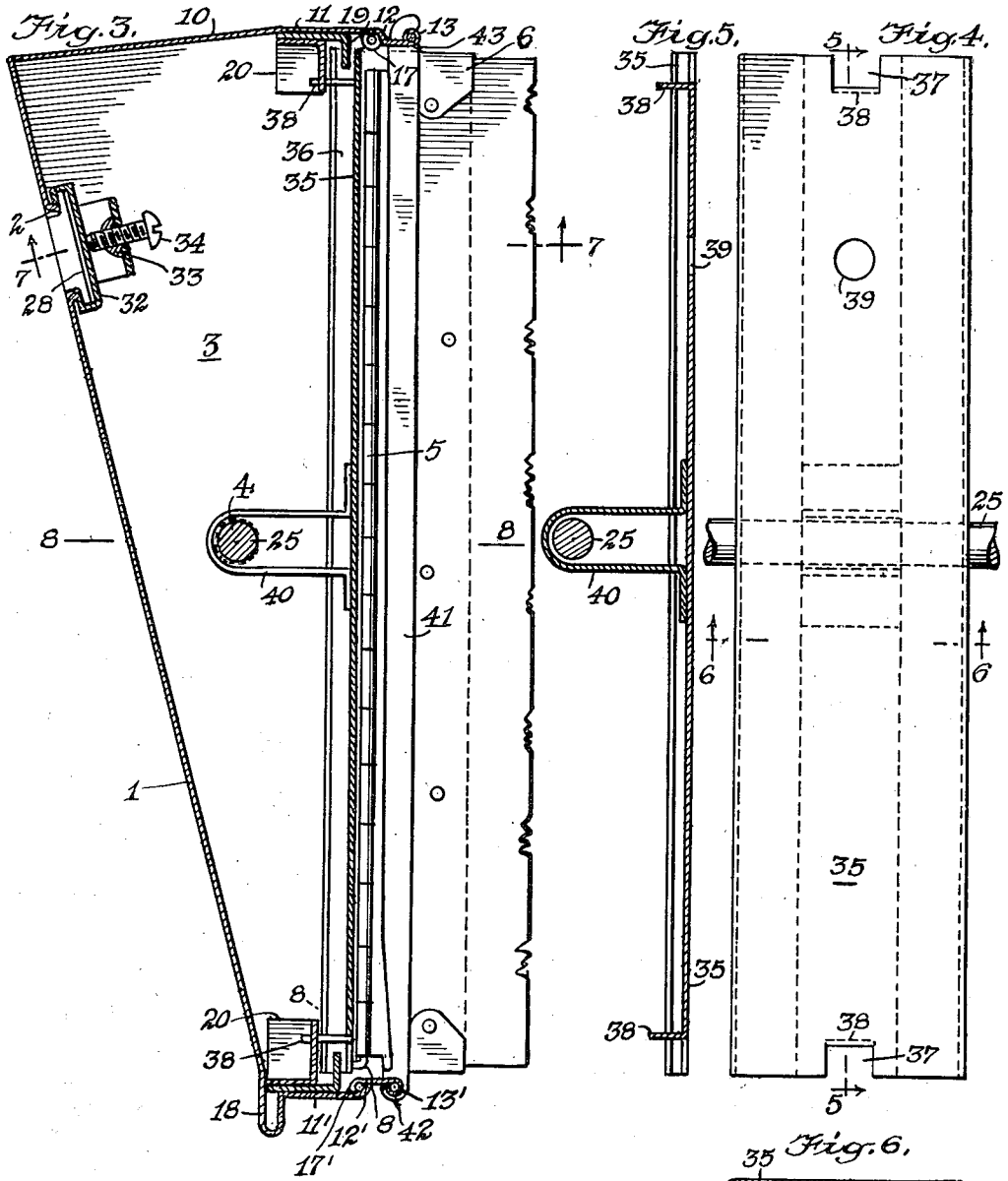


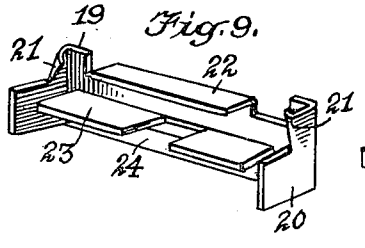
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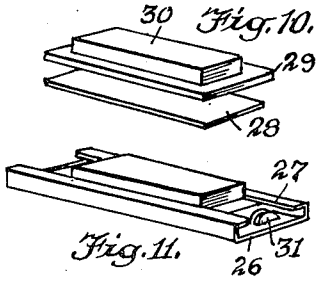
Nov. 20, 1956 W. E. HASKIN 2,771,075

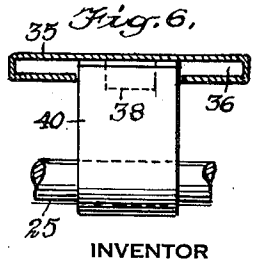
BINDER

Filed Nov. 19, 1954 3 Sheets-Sheet 2









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Nov. 20, 1956 W. E. HASKIN 2,771,075

BINDER

Filed Nov. 19, 1954. 3 Sheets-Sheet 3

Fig. 7.

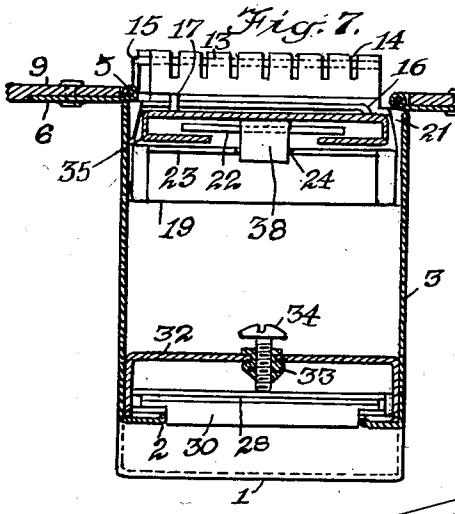
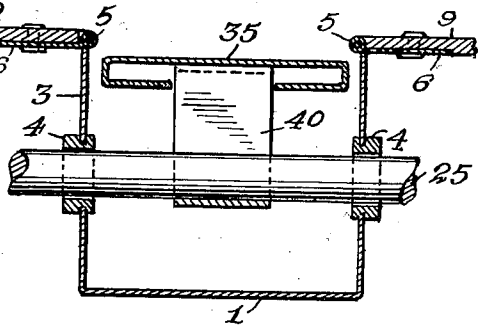


Fig. 8.



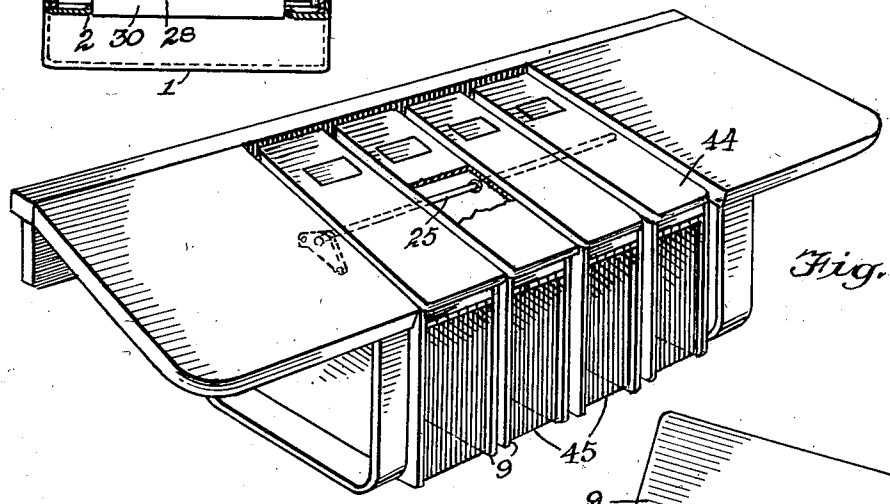


Fig. 12.

Fig. 13.

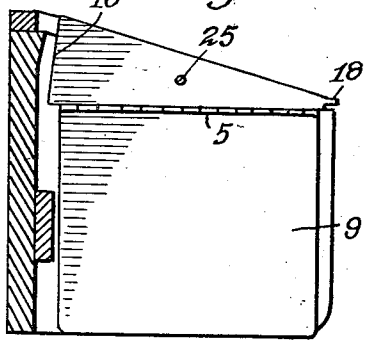
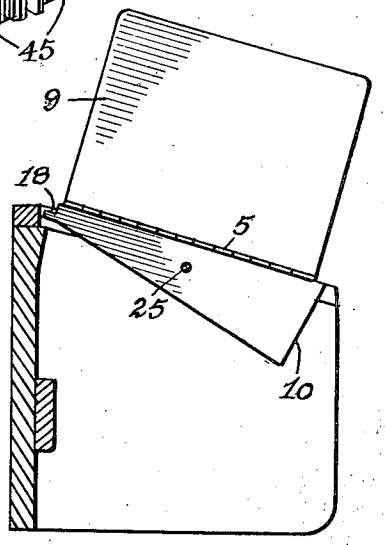


Fig. 14.



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BINDER

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Application November 19, 1954, Serial No. 470,083

5 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 adapted to hold a book or other object for pivotal mounting in connection with my improved book rack, an application for a patent on which was filed July 21, 1926, Serial No. 124,011, which matured into a patent issued October 9, 1928, and numbered 1,687,443. The book rack embodies the following three elements: a casing, a binder partially concealed in the casing, and means pivotally connecting the binder intermediate the ends thereof to said casing for supporting and permitting said binder to swing around said pivot outside of said casing in position for use.

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

The invention relates to my application for a patent on a binder filed April 23, 1929, Serial No. 357,551, which matured into a patent issued June 24, 1940, and numbered 1,767,978 and to my application for a patent on a binder filed November 5, 1948, Serial No. 58,425, which matured into Patent No. 2,617,422, issued November 11, 1952, and includes improved construction.

In particular, a further object of this invention is to provide means whereby when a book is installed in a binder in my improved book rack co-pending application Serial No. 470,082, filed November 19, 1954, in a closed position with its spine in a horizontal plane and is rotated on its pivot to an open position for reading, the book is positioned at an inclined plane to facilitate reference by the reader.

With these and other objects in view the invention consists in 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 backbone member of the binder and complementary hinge leaf.

Fig. 2 is a plan view of the assembly in open position.

Fig. 3 is a view in longitudinal section on the line 3—3 of Fig. 2.

Fig. 4 is a plan view of the inner platform member of the binder.

Fig. 5 is a view in longitudinal section on the line 5—5 of Fig. 4.

Fig. 6 is a view in transverse section on the line 6—6 of Fig. 4.

Fig. 7 is a view in transverse section on the line 7—7 of Fig. 3.

Fig. 8 is a view in transverse section on the line 8—8 of Fig. 3.

Fig. 9 is a perspective view of an end reinforcing and supporting bracket.

Fig. 10 is a perspective view of a transparent label cover and label.

Fig. 11 is a perspective view of the label holder assembly.

Fig. 12 is a perspective view of a book rack with several binders in position, with telephone directories or the like coupled thereto, and showing the rod on which the binders are supported.

Fig. 13 is a view in vertical section of the book rack showing a binder in a normally closed position adapted to hold a book coupled thereto with its spine disposed in a horizontal plane.

Fig. 14 is a view similar to Fig. 13 showing the binder rotated on a pivot to an open position adapted to hold a book coupled thereto with its spine disposed in an inclined plane for reading.

Referring to the drawings by numerals the binder comprises two major elements, a backbone member and a removable inner platform member.

As illustrated in Figs. 1 and 2, the backbone member may be constructed of any suitable material, as for example, a metal channel shaped section, preferably of polished stainless steel, including a flat back plate **1**, having a rectangular window opening **2** positioned intermediate the ends and nearer one end than the other, for the purpose of displaying a label. As shown in Fig. 3, the back plate is formed with perpendicular triangular shaped side walls **3** having therein aligned apertures **4** positioned intermediate the ends and preferably at a point nearer one end than the other. The side walls are provided at their outer free edges with hinge knuckles **5** to which are attached the complementary hinge leaves **6** by means of the loose hinge pins **7** which are formed with a U shaped extension **8** at one end. Attached to the complementary hinge leaves which are formed at each end with a wraparound reinforcement **6'** are the side covers **9** which may be made of any suitable material such as "Bakelite," "Masonite," plastic, fiber or metal.

As illustrated in Fig. 3, the back plate **1** is formed at its rear end with an angular extension or end wall **10** which together with the back plate and side walls constitute a wedge-shaped structure. The end wall **10** of the back plate is formed with an angular extension **11** beyond the side walls and which is provided with an offset **12** and a further extension which is formed at its free edge to provide a cylinder **13**. As shown in Fig. 7, the cylinder is provided with a series of slots **14**. Positioned for reciprocal operation in the cylinder **13** and guided by the offset **12** is a U shaped wire **15** which is formed with an offset extension **16** at the free extremity of one leg and which is prevented from complete removal from the cylinder by contact with the retaining lip or detent **17** formed in the end wall **11**.

The back plate at the opposite or front end is folded back on itself to create a projecting ledge **18** merging into an angular extension **11'** extending beyond the side walls parallel to extensions **11** and which is likewise provided with an offset **12'** and an extension and cylinder **13'**. This cylinder is also provided with a series of slots **14'** exactly corresponding to the opposite cylinder and a U shaped wire **15'** and detent **17'**. The projecting ledge **18** is for the purpose of providing a finger grip for the movement of the binder about a pivot.

Positioned inside the backbone member at each end and abutting the end walls extensions **11** and **11'** and the side walls **3** thereof are identical reinforcing and supporting brackets **19**. As illustrated particularly in Fig. 9 the brackets are formed with end flanges **20** which are provided with inwardly projecting ears **21**. Positioned centrally of the web and formed at the upper edge thereof is an inwardly projecting flange **22**, and a secondary ledge **23** having a notch **24** therein at its center is also

mounted on the web slightly below and parallel to the flange 22. The respective side walls 3 and the end wall extensions 11 and 11' of the backbone member are electrically welded to the brackets at the abutting corners to form a rigid rectangular frame structure. It is to be noted that the bracket end flanges 20 are cut away to permit the U shaped extensions 8 of the loose hinge pins 7 on assembly to the hinge knuckles 5 to be rotated to lie flat against the inner surface of the side walls 3 of the backbone members and when in that position the ears 21 prevent movement of the hinge pins longitudinally of the back.

Figure 1 further illustrates a removable rod 25 inserted through the apertures 4 in the side walls of the backbone which serves as a support on which the binder is adapted to rotate when mounted in a book rack as illustrated in Figs. 12, 13 and 14. For the purpose of this case on complete assemblage of parts of the rod serves to lock the two major elements in operative engagement as in Figs. 2 and 3.

Mounted inside the backbone member in the window opening 2 as shown in Figs. 3 and 7 is a separable label holder consisting of an open end channel shaped base plate 26 provided with retaining flanges 27 as shown in the perspective drawing Fig. 11. Inserted from one open end into the holder is a label 28 printed on stiff paper or other suitable material together with a transparent cover of "Lucite" or other suitable plastic material formed with a raised body projection 30 designed to exactly fit into the window opening and having base flange extensions 29 as shown in Fig. 10, adapted to engage the retaining flanges 27. The length of the label holder is somewhat greater than the length of the window opening as shown in Fig. 7, and the base plate 26 is provided with end lugs 31 which may be extruded to retain the label and cover centered in the holder so that when the said raised body projection 30 of the transparent cover is inserted from the inside of the backbone and secured in the window opening the label holder is prevented from accidental longitudinal or lateral movement. Positioned centrally of the window opening 2 and extending transversely thereof is a brace 32 attached to the side walls 3 of the backbone member as shown in Figs. 1, 3 and 7. Mounted in the brace centrally of the window opening is a lock nut 33 into which is inserted retaining screw 34 adapted to bear upon the under surface of the label holder and lock the label and cover firmly in the window opening against external pressure for dust proofing the label and to protect against malicious tampering.

The second major element of the binder is an inner removable platform member inserted in the backbone member as shown in Figs. 2, 3, 7 and 8, and consisting of a plate 35 formed with the longitudinal or side edges folded back to provide a cavity 36 as illustrated in Figs. 4, 5 and 6. At each end on the longitudinal center line the plate 35 is formed with a notch 37 and an inward angular projection 38, and at a point in alignment with the label retaining screw 34 is positioned an aperture 39. Mounted on the platform plate at a point in alignment with the apertures 4 in the side walls 3 is a loop 40 adapted to receive the rod 25.

As shown in Figs. 2 and 3, disposed longitudinally of the unit and positioned in the slots 14 and 14' of the respective end walls of the backbone member are the book coupling tongues 41. The tongues are formed of thin strip metal having at one end an aperture 42 and at the opposite end a notch 43 being secured at each end by the wires 15 and 15'. Provision is made for the insertion of one or more tongues in the binder, one tongue for each book contained therein.

In the general assemblage of parts of the backbone element in operative arrangement, the U shaped wires 15 and 15' are first mounted with one leg projected into the respective cylinders 13 and 13', and the other leg having the offset extension 16 is disposed inside the end wall offsets 12 and 12'. The respective detents 17 and 17' are then positioned in operative engagement to limit the withdrawal of the wires from the respective cylinders and prevent their entire removal from the binder.

The side covers 9 are then attached to the complementary hinge leaves 6 which in turn are hingedly connected with the hinge knuckles 5 of the backbone member by means of the loose hinge pins 7. When the said pins are fully projected into the respective knuckles they are rotated so that their end extensions 8 are swung through an arc and positioned inside the back as illustrated in Figs. 2 and 3. The end flanges of the reinforcing brackets shown in Fig. 9 are cut away at this point to allow the extensions 8 to lie flat against the inner surface of the side walls 3 and while in this position the ears 21 of the brackets act to prevent accidental movement of the pins longitudinally of the back.

The printed label 28 indicating the contents of the binder together with its transparent plastic cover 29 are then inserted in the label holder 26 and the extruded lugs 31 are positioned to prevent their longitudinal movement in the holder as illustrated in Fig. 11. The label holder assembly is then mounted from the inside into the window opening 2 of the backbone member and the retaining screw 34 in the brace 32 is then actuated to exert pressure against the under surface of the label holder as shown in Fig. 3 and retain it firmly in position against external stress.

The inner platform member 35 which is sufficiently shorter than the backbone member to clear the flange 22 when moved as far as it will go in one direction is then inserted in the following manner. One end of the plate is first laid upon the secondary ledge 23 of the reinforcing bracket with the angular projection 38 entering the notch 24 in the ledge so that lateral movement of the platform plate is prevented thereby. The platform plate is then projected longitudinally of the back towards the end thereof so that the flange 22 enters the cavity 36 and prevents lifting the plate at the end. At the limit of this movement the opposite end of the platform plate will clear the opposite flange 22' so that the plate may be seated on the opposite secondary ledge 23' with the extruded tongue 38 entering the notch 24' therein. Thereupon the platform plate is shifted in the opposite direction so that the flange 22' in turn enters the cavity 36 and longitudinal movement is adjusted to bring the loop 40 in alignment with the apertures 4 of the backbone member.

As shown in Fig. 2, on assembly of the platform plate a gap 46 is provided at each end thereof between the angular projection 38 and the edge of the flange 22 into which a pry is inserted to facilitate shifting the platform plate longitudinally of the binder to insure accurate alignment of the loop 40 with the apertures 4.

A removable rod 25 is then passed through the apertures 4 and the loop 40 thereby securely locking the platform plate against movement in any direction whereby the hinge pins 7 are prevented from counter rotation and removal from the binder and the label holder cannot be removed or tampered with. The aperture 39 in the platform plate is provided for tightening the retaining screw on the label holder while in service.

As illustrated in Figs. 12, 13 and 14, when a plurality of binders 44 and books 45 are installed in my improved book rack in a normally closed position, the spines of the books lie in a horizontal plane whereas the back plates of the binders lie in an inclined plane by reason of their wedge-shaped structure and when a binder is rotated on its support to an open position as shown in Fig. 14, the book will be positioned in an inclined plane to facilitate reading. This improvement over previous practice is accomplished entirely by the formation of the binder and requires no additional floor space.

The binder has been especially designed for public use in the handling of telephone directories. An objective

is to minimize malicious tampering at the hands of the public and also to permit of easy replacement of damaged parts in the field. The two major component parts are locked together in operative arrangement by the removable rod **25**. Upon the removal of this rod in the field the said parts may be disassembled in the reverse of the manner described. Upon the disengagement of the inner platform plate **35** from the back member the hinge pin extensions **8** are released and the hinge pins **7** may be readily withdrawn from their hinge knuckles for the removal and substitution of side covers and the label holder may be removed for alteration or replenishment by backing off the retaining screw **34**. The tongues may be readily removed and altered or rearranged in the manner shown and the U shaped wires **15** may be replenished by the manipulation of the detents **17**. The use of stainless steel is preferably employed in the back and hinge members for durability, pleasing appearance and the elimination of perishable coverings such as paint, plating or other treatment of material.

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. In a book binder the combination of two major elements, the first element comprising a rigid hollow metal backbone formation including a flat back plate formed with perpendicular triangular side walls terminating in hinge knuckles at their free edges, said back plate being formed at one end with an angular end wall extension which together with the said back plate and side walls constitutes a wedge-shaped structure, flanged reinforcing and supporting end brackets positioned inside and attached to the said end and side walls of the back plate, said brackets each having formed on its upper edge a central inwardly projecting primary flange, a secondary flange having a slot therein at the center and positioned below the said primary flange and inwardly projecting ears formed in the upper edges of the flanged ends, side covers mounted on complementary metal hinge leaves attached to the said side wall hinge knuckles by loose hinge pins each having a U shaped extension at one end which when rotated to lie flat against and inside the said side walls is prevented from longitudinal movement by the said ear of an end bracket, and the second major element comprising an inner platform plate positioned inside the backbone member and removably attached thereto, having a notch and a downwardly projecting lip at each end and a folded under flange along each side to form a socket into which the primary flange of the end bracket is projected at each end to secure and prevent accidental removal of the platform plate, the said folded under flanges are seated at each end upon the said secondary slotted flange with the projecting lip entered in the said slot to prevent lateral movement of the platform plate so that when the two major elements are thus assembled in operative engagement the platform plate bears against and prevents further rotation of the said loose hinge pins extensions and whereby when the two major elements are disassembled the hinge pins and side covers may be removed from the binder for repairs.

2. A device in accordance with claim 1 designed for public use in the handling of telephone directories in which the back plate is provided with a rectangular window opening therein, intermediate the ends, a cross-brace having a lock nut and adjusting screw centrally mounted therein positioned transversely of the said window and secured to the side wall of the back plate, a separable open end channel-shaped metal label holder formed with retaining flanges, substantially as long as the width of the back plate having inserted therein from one open end a label printed on stiff paper and a transparent plastic label cover having a raised body projection designed to exactly fit into the window opening and having base flange extensions adapted to engage the retaining flanges and be retained in a central position by extruded lugs at each end in the label holder so that when the said raised projection of the plastic cover is inserted in the window opening the label holder is prevented from longitudinal or lateral movement and whereby when the screw in the said cross-brace is adjusted to bear firmly upon its under surface the label holder assembly is locked firmly in the window opening against external pressure for dustproofing the label and for protection against malicious tampering.

3. In a book binder the combination of two major elements including an outer rigid hollow metal backbone formation and an inner platform member nested therein, the said backbone formation comprising a flat back plate formed with perpendicular side walls terminating in hinge knuckles at their free edges, side covers attached to the said hinge knuckles, aligned apertures positioned in the said side walls intermediate the ends, a rod passing through the said apertures for supporting the binder in a casing, means for coupling a book to the binder, a window opening positioned in the said back plate for displaying a label, a bracket firmly mounted inside and integral with the backbone formation transversing the said window opening and provided with a retaining screw, a separable label holder containing a label which when positioned from the inside into the said window opening is firmly secured therein by the said retaining screw bearing upon the label holder, a book resting upon the said inner platform member and coupled to the binder supported by the said rod in a casing in a closed position whereby the said label designating the contents of the book is firmly held against external pressure and upon removal of the book and platform member the label holder may be removed for alteration or renewal of the label.

4. A device in accordance with claim 1 in which the back plate of the backbone member is provided at one end with a projecting ledge merging into an end wall extension and at the opposite end an angular end wall merging into a similar end wall extension, both the said extension being identical and parallel and having slotted cylinders formed at their free edges extending beyond the side walls, reciprocating captive pins positioned in the cylinders, a tongue securely fastened at each end by the said pins in the cylinder slots, a telephone directory seated on the platform plate and coupled to the binder by the said tongue whereby the book is securely coupled to the binder for movement in any direction and whereby releasing the tongue at one end the directory may be readily removed and replaced.

5. A telephone directory binder adapted for frequent and prolonged use by the public and designed to minimize malicious tampering and facilitate servicing in the field, comprising two major interdependent co-operating elements consisting of a backbone structure having a flat back plate with a window therein and formed with perpendicular triangular side walls with aligned apertures therein intermediate the ends and with hinge knuckles on their free edge, the said back plate also having end walls formed with slotted cylinders on their free edges, and a platform plate securely positioned inside the backbone to form a rigid hollow wedge-shaped assembly, the said platform plate having a loop extension aligned with said apertures of the back, and a separable label holding subassembly carrying a label and transparent cover inserted from the inside in the said window opening with means integral with the backbone structure to secure the label against external pressure for dustproofing and protection against tampering, and side covers removably attached to the said hinge knuckles of the back structure by loose hinge pins having an angular extension at one end, the side and end walls of the back structure cooperating with the side flanges of the platform plate to lock the said hinge

pins against accidental movement and protect against tampering, book coupling means including the said slotted cylinders on the end walls of the back plate cooperating with the platform plate to couple a book to the binder, a directory or the like positioned with its spine supported by the platform plate and securely fixed by the said latter means of the back, and a removable rod passing through the said apertures of the back and the loop of the platform to lock these two major elements in operative engagement, whereby upon removal of the rod for servicing in the field both elements are readily separable for the replacement of parts damaged by use or other cause.

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