Sept. 19, 1950 G. C. BRUEN 2,522,986

CARD-FILING TRAY

Original Filed Nov. 8, 1943 3 Sheets-Sheet 1

Fig. 1

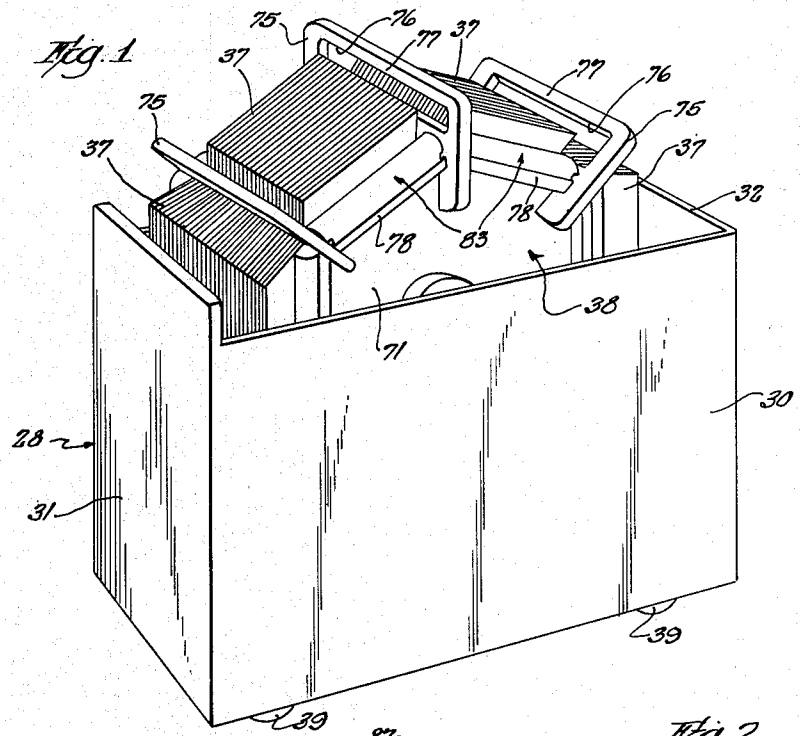


Fig. 2

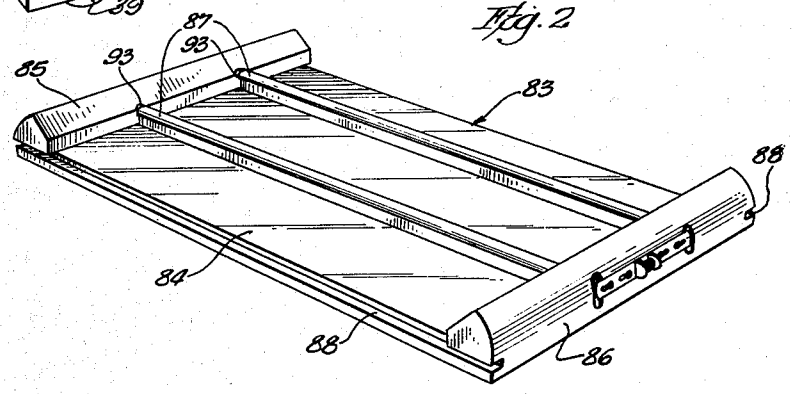
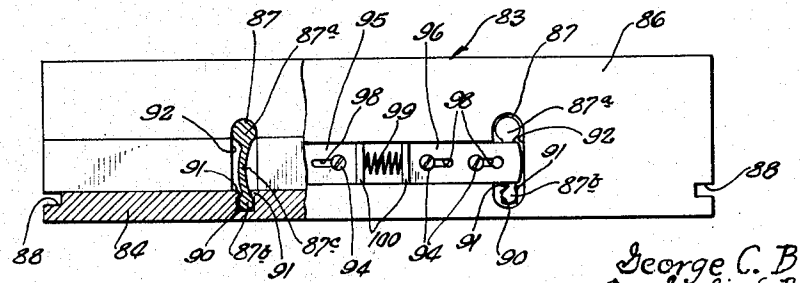


Fig. 3



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CARD-FILING TRAY

Original Filed Nov. 8, 1943 3 Sheets-Sheet 2

Fig. 4

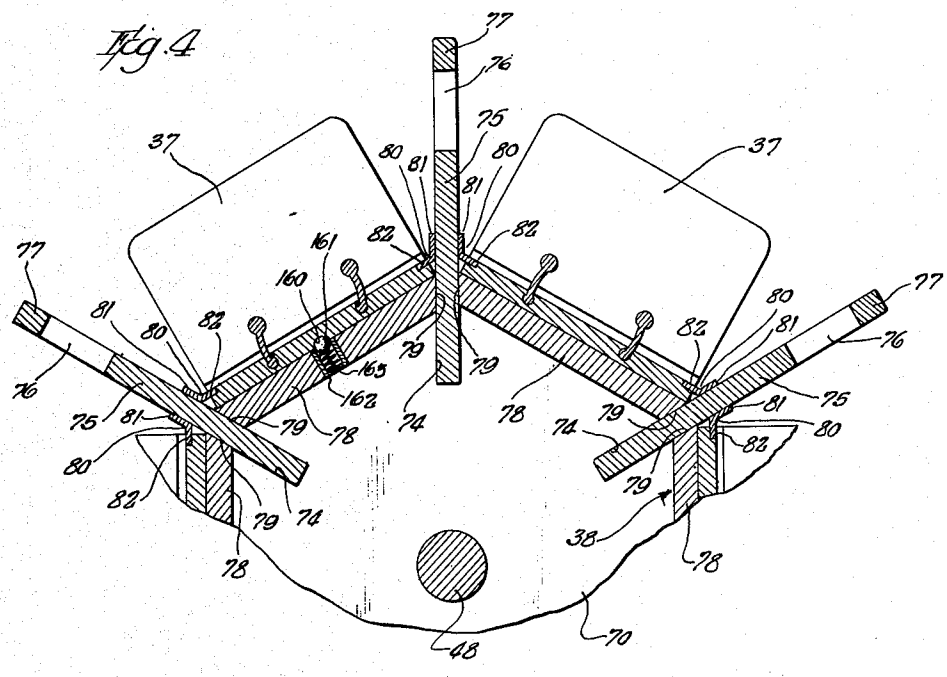
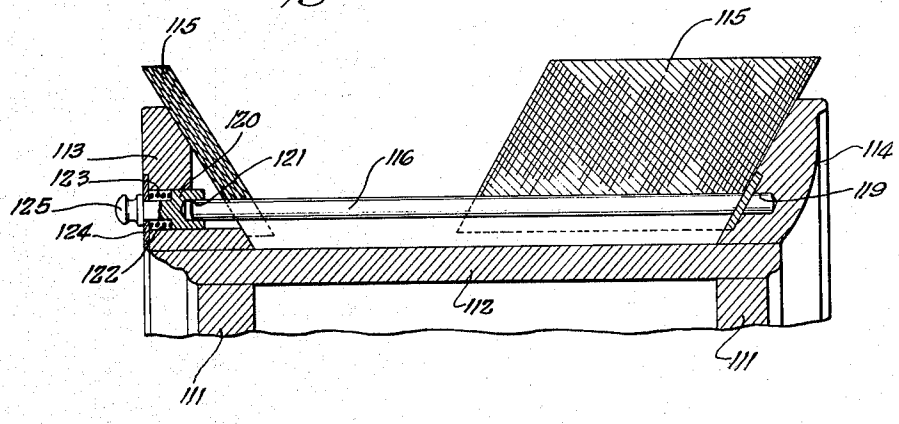


Fig. 5



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CARD-FILING TRAY

Original Filed Nov. 8, 1943 3 Sheets-Sheet 3

Fig. 6

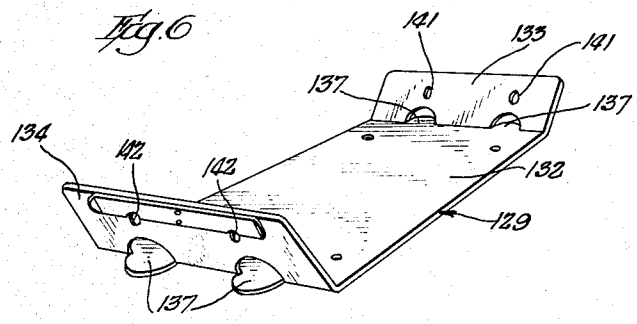
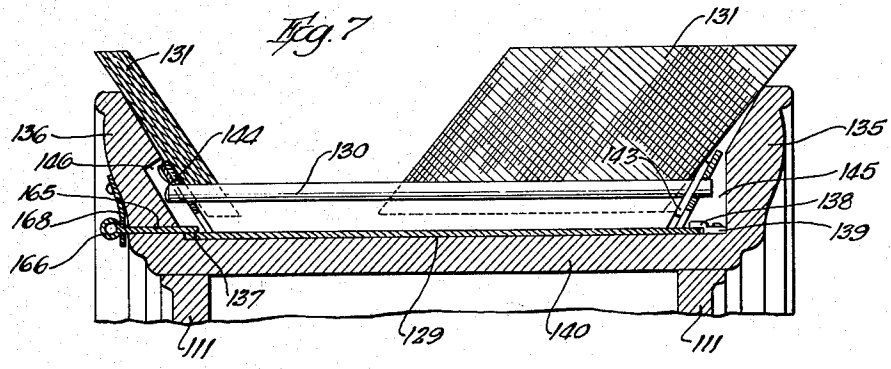


Fig. 7



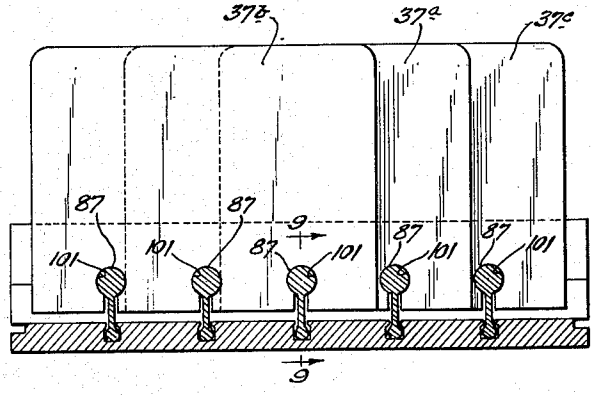
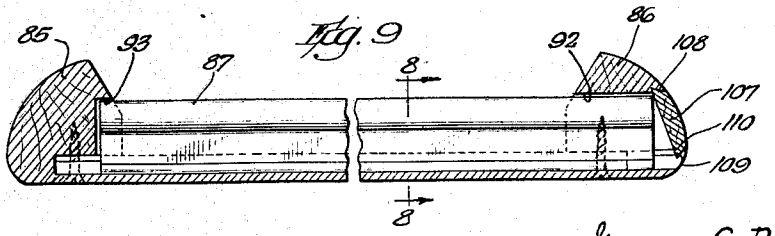


Fig. 8

Fig. 9



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Patented Sept. 19, 1950 2,522,986

UNITED STATES PATENT OFFICE

2,522,986

CARD FILING TRAY

George C. Bruen, deceased, late of Chicago, Ill., by Sophie E. Bruen, executrix, Chicago, Ill., assignor, by mesne assignments, of seventy and five-tenths per cent to said Sophie E. Bruen, five per cent to Edna V. Dickinson, Highland Park, Ill., nine per cent to Sarah M. Bullock, Wilmette, Ill., ten and five-tenths per cent to G. A. Stuart, Denver, Colo., two per cent to Jay Fisher, Chicago, Ill., one per cent to Marie Thoenen, Elmwood Park, Ill., one per cent to George H. Fredericksen, Chicago, Ill., and one per cent to E. M. Thorsen, St. Joseph, Mo.

Original application November 8, 1943, Serial No. 509,389. Divided and this application April 25, 1946, Serial No. 664,940

5 Claims. (Cl. 129—16)

1

The present invention relates to card filing equipment, and particularly to the trays which carry reference or posting cards or the like for inspection and/or storage.

This application is a division of the copending application of George C. Bruen, Serial No. 509,389 for Card Filing Equipment, filed November 8, 1943, which, on July 15, 1947, issued as Letters Patent No. 2,424,144.

It is an object of this invention to provide card trays adapted to the use of cards having a plurality of keyhole type slots in one edge and adapted to hold said cards in separable and linearly movable relationship, as well as securely, so that the trays may be tipped through various positions without loss or loosening of the cards.

Another object of the invention is to provide card supporting trays including removable card carrying bars and wherein the parts are constructed and arranged to give substantial support to the bars throughout their length and in a multiplicity of positions of the tray.

The invention has for a further object the provision of card trays adapted to support and ease of removal relative to card filing equipment, so that entire trays may be either used as a part of said filing equipment or separated therefrom.

As another object, the invention comprehends the provision of improved forms of removable trays for card filing equipment which utilize a minimum amount of metal.

Another object of the invention is the provision of improved card filing trays such that both the trays and the cards carried thereby may be conveniently and easily placed in position for reading and handling of the cards.

For a further object, the invention includes the provision of card filing trays having a combination of card supporting and carrying bars such that the cards may be filed therein in staggered relationship when desired for variations of reference and the like.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views.

In the drawings:

Fig. 1 is a view in perspective of card filing equipment embodying the invention, illustrating its appearance when supported in a drawer adapted to movable mounting in a suitable enclosure;

2

Fig. 2 is a perspective view of one form of card tray embodying my invention;

Fig. 3 is an end elevational view in partial section which shows details of construction of the tray depicted in Fig. 2;

Fig. 4 is a fragmentary vertical sectional view which illustrates certain details of the structure shown in Fig. 1;

Fig. 5 is a side sectional view of another form of card carrying tray adapted to use on a modified type of support;

Fig. 6 is a perspective view of a removable card carrying tray which is found illustrated in Fig. 7;

Fig. 7 is a view similar to Fig. 5 of the modified form of card carrying tray depicted in Fig. 6;

Fig. 8 is a sectional view taken substantially on a line 8—8 of Fig. 9 and illustrating the details of construction of a special tray particularly adapted to the support of cards in aligned or offset relationship one to the other; and

Fig. 9 is a side sectional view taken substantially on a line 9—9 of Fig. 8.

For exemplary purposes, the illustrative trays which are depicted in the drawings are shown in an adaptation to rotary filing equipment although various types of carriers or enclosures might well be used therewith.

Figs. 1 and 4, for example, are views which illustrate a preferred type of filing equipment in which my card trays are embodied.

Referring generally to the structure therein illustrated, a support and partial closure is provided by a drawer 28 having side walls 30 and end walls 31 and 32. File cards 37 are carried for ready access by a rotatable member 38 disposed within the drawer and desirably extending upwardly above the top of the drawer. Projecting below the bottom surface of the drawer and near the corners thereof are rollers 39 upon which the drawer is supported for movement into and out of a suitable housing or closure.

As depicted in Fig. 4, the rotatable member 38 is supported for rotation upon a cylindrical shaft 48, which shaft is carried by the side walls 30 of the drawer. In order to provide a light and inexpensive structure, the rotatable member 38 may be constructed almost entirely from wood utilizing polygonal end walls, such as 70 and 71, provided with central bores for receiving the shaft 48.

In the particular rotatable member disclosed in Figs. 1 and 4, the end walls 70 and 71 are hexagonal. In any instance, the number of sides

utilized on a rotatable member of the type disclosed is determined by the size of the cards which are to be carried thereby and also by the limits of the space within which the rotatable member is to be confined.

The end walls 70 and 71 are slotted at their corners, the rectangular slots 74 serving to receive partition frame members 75 of wood which project radially outwardly and are provided with elongated rectangular apertures 76 so as to form elongated pull bars 77 which serve as handles for the movement of the rotatable member by the operator.

In order to provide a plurality of bases for supporting trays which carry the cards 37, the end walls 70 and 71 of the rotatable member have side walls 78 secured to their outer surfaces. The side walls 78 are rectangular in plan and have their edges 79 beveled, as shown in Fig. 4, and spaced sufficiently to receive therebetween the partition members 75.

On each side and near the side walls 78, each partition member 75 carries a sheet metal guide 80 which preferably consists of a strip of sheet metal having an attaching flange 81 and a guiding flange 82. The flanges 81 and 82 are disposed at an obtuse angle relative to one another so that each guiding flange is substantially parallel to and spaced from a card-supporting base provided by one of the side walls 78 of the rotatable member. Each side wall 78 of the rotatable member and the guides 80 on the opposite sides thereof serve as supports for carrying card carrying trays 83 of the type shown in Figs. 2 and 3.

Referring to the preferred form of my card carrying tray illustrated in Figs. 2 and 3, it has a substantially plain or flat base 84 which may be made of wood, plywood or the like. At opposite ends of the base 84 and secured thereto are end wall members 85 and 86 which, together with the base 84, are adapted to carry card-supporting bars 87, which bars extend longitudinally between the end wall members and are laterally spaced in substantially parallel relationship.

On opposite sides and opening outwardly, the base 84 is provided with longitudinally extending slots or channels 88 which also extend through the end wall members 85 and 86 to receive the guide flanges 82 of the guide members 80 on the rotatable support 38. The illustrated card carrying tray 83, having a base 84 suited in size to the side walls 78 of the rotatable member and having the longitudinally extending channels 88 which engage the guide flanges 82, is placed in position upon the rotatable member by sliding the tray endwise between the partition members 75. By this structure and arrangement of parts, a card carrying tray may be slid endwise to a projecting position on the rotatable member 38 for convenience in use or may be easily removed from the rotatable member for use at a different or more convenient place.

Referring to Fig. 3, the preferred form of card carrying bar 87 has a sectional shape such that it comprises a substantially cylindrical and longitudinally extending upper bead 87*a*, a substantially cylindrical and longitudinally extending lower bead 87*b* which is preferably smaller than the upper bead, and an integrally formed and relatively thin intervening web 87*c* connecting the beads.

The base 84 is provided with parallel and longitudinally extending channels 90 which open upwardly of the base and are adapted slidably

to receive the beads 87*b* of the card carrying bars.

Desirably, and to provide support for the bars 87 throughout their lengths when turned to various positions with cards mounted thereon, the upper edge portions of the channels 90 are restricted by flanges 91 to an extent such that the open edges of the channels slidably confine the web portions 87*c* of the bars and are narrower than the beads 87*b* thereof. The web portions 87*c* of the bars 87 extend upwardly from the base to an extent such that the beads 87*a* are in spaced and parallel relationship to the surface of the base and desirably support cards such as 37 in spaced relationship to the base.

The end wall member 86 has apertures 92 which are aligned longitudinally with the channels 90 in the base and are of a size such that the bars 87 may be slid endwise into the channels through those apertures. At the other end of the tray, the end wall member 85 has recesses 93 therein which are aligned with the channels 90 to receive and provide stops for the endwise movement of the bars 87 toward that end wall member.

When the bars 87 are fully inserted into the channels and their ends extend into the recesses or sockets 93 in the end wall member 85, their length is such that their opposite ends extend into the apertures 92 of the end wall member 86. In the form disclosed in Figs. 2 and 3, the card carrying bars 87 are releasably held in place by a pair of apertured metal plates 95 and 96 mounted on suitable holding means such as wood screws 94. The end wall serves as a base for slidably supporting the plates 95 and 96, and the screws 94 extend through suitable slots 98 which extend longitudinally of the plates and transversely relative to the apertures 92 in the end wall. A compression spring 99 is disposed between outwardly turned flanges 100 on the adjacent ends of the plates 95 and 96 to bias the plates to a latching position, such as that shown in Fig. 3, in which ends of the plates extend across the apertures 92 and the ends of the bars 87. The adjacent flanges 100 on the plates 95 and 96 serve as grips which may be manually pressed together against the biasing force of the spring 99 to retract the plates from their latching positions across the ends of the bars 87. When thus retracted, the card carrying bars may be slid endwise from the trays.

The card carrying trays disclosed herein are adapted to carry cards of the type shown in Fig. 8, which cards have substantially keyhole shaped slots 101 along one edge thereof. The slots 101 fit over the beads 87*a* of card carrying bars, such as 87 in Figs. 2 and 3, and grip the bars so as to stay in position even when the trays are moved to various positions, including the completely inverted position, as when a tray is at the bottom of the rotatable member 38. In the card carrying tray disclosed in Figs. 2 and 3, two card carrying bars 87 are used so that uniformly punched cards 37 are carried thereby in aligned positions.

In the modification of the invention which is disclosed in Fig. 8, the structure of the tray is generally similar to that disclosed in Figs. 2 and 3, except that five of the bars 87 are employed and are supported in substantially parallel relationship and are uniformly spaced laterally. With this arrangement of the bars and with properly slotted cards, the cards may be supported in a normal position equidistantly be-

tween the sides of the base or they may be offset to one side or the other of that normal position. The card 37*a* in Fig. 8 is mounted in the normal position and centrally of the base while the cards 37*b* and 37*c* are offset laterally to one side of that normal position.

Each card has three substantially keyhole shaped slots 101 which are laterally spaced along one edge of the card in an amount corresponding to the spacing between the bars 87. When in the normal position, as indicated by the card 37*a*, the three intermediate bars 87 support the card, while the staggered relationship of cards is accomplished by their being supported on the three bars at one side or the other of the tray. Thus, cards, such as 37*b* and 37*c*, are offset from those normally aligned along the mid-portion of the tray for some special purpose or to indicate that those offest cards require some special attention, such as making entries thereon or copying records therefrom.

Fig. 9 shows a slightly varied form of tray in which the general construction is the same as that of either of the previously described modifications but the bars 87 are held in place by a wooden strip 107. This wooden strip has beveled edges 108 and 109 which provide its body section with a dovetailed form for fitting a complementary dovetailed slot 110 in the end wall member 86. In the assembly of the bars 87 with the tray, the bars are confined between the sockets 93 in the end wall member 85 and the strip 101 which closes the outer end of the apertures 92 in the end wall member 86.

To effect removal of the bars 87, the dovetailed strip 107 is slid endwise out of the slot 110. The bars 87 may then be removed from the tray through the apertures 92.

Although the bars of the type shown in Figs. 2, 3, 8 and 9 may be made of metal, they are preferably made of plastic material which may be extruded to the desired sectional shape in strips, and then cut to the necessary length. Plastic material has been found to be particularly satisfactory for the tray construction shown, not only because it is light and relatively inexpensive, but also because the slot structure of the tray base provides effective reinforcement throughout the length of each bar.

In order to hold trays of the type shown in Figs. 2, 3, 8 and 9 in a centrally disposed position relative to the rotatable member 38, each such tray is provided with a partially spherical socket 160 in its lower surface, as shown in Fig. 4. Each of the side walls 78 is provided with a spring urged detent including a ball 161 slidable and partially confined in a metal tube 162 and pressed outwardly to a projecting position by a compression spring 163. The edges of the tube 162 at its open end are curved inwardly to limit the outward movement of the ball.

When a tray is slid into position relative to a side wall 78 of the rotatable member and between the guides 80, the ball 161 snaps into the socket 160 when the central position is reached and thereby holds the tray in that position until sufficient force is applied to one end to force the ball into the tube against the biasing force of the spring 163.

In the modified form of card carrying tray shown in Fig. 5, a base 112 is mounted directly upon end walls 111 of the rotatable member and carried thereby. The base 112 of the tray has secured to its ends adjacent the end walls of the rotatable member outwardly projecting ends 113 and 114 which may be made of wood; and desirably presents outwardly diverging and opposed card-supporting surfaces facing toward one another. In addition to serving as end supports for cards, such as 115, the tray ends 113 and 114 also support the ends of card carrying rods 116. The outward divergence of the inner surfaces of the ends 113 and 114 supports the cards 115 which are carried by the rods 116 in a slanting position for ease of inspection.

Each of the rods 116 has an end supported in a socket 119 extending into the end wall 114 in a direction substantially parallel to the base 112. The other end wall 113 slidably carries a plunger 120 having sockets 121 in the end thereof for receiving the other ends of the rods 116. The plunger 120 is slidable in a bore 122 and is biased toward the rod engaging position by a compression spring 123, which compression spring is interposed between a surface of the plunger and a plate 124 secured to the outer surface of the end wall 113. The plunger 120 carries on its outer end a knob 125 which may be gripped by the user to move the plunger and effect release of the ends of the rods 116.

In the particular form of card tray disclosed, the end walls 113 and 114 are wedge shape so that when they are asembled upon the rotatable member, their edges adjoin to form a complete rim on the periphery of each end surface of the rotatable member.

In the modified form of card tray disclosed in Figs. 6 and 7, the rotary member is similar in construction to that shown in Fig. 5. However, this tray utilizes a separate card carrying element or tray 129 which may be made of metal, fabric or plastic. This separate or inner tray 129 supports card carrying rods 130 which in turn carry cards such as 131.

The card carrying tray 129 has a flat base portion 132 at the opposite ends of which are integrally formed and upwardly diverging flanges 133 and 134. The upward divergence or slope of the flanges 133 and 134 corresponds to the slope of the inner surfaces of the end walls 135 and 136 of the tray carrying portion of the rotatable member. At each end ears 137 are punched out of the flanges 133 and 134 and lie in the plane of the base 132. These ears 137 project endwise from the tray and at one end are adapted to fit beneath a flanged edge 138 of a metal holding strip 139 secured to a wall 140 of the rotatable member.

At the opposite end of the tray 129, the ears 137 are engaged and held in place by a spring pressed sheet metal bar 165. On its outer end the bar 165 has a handle 166 which may be gripped to withdraw the bar from its position of engagement with the ears 137 on the tray. Also, near its outer end, the bar 165 has an aperture therein through which a thin leaf spring 168 extends. The end of the spring is secured to the outer surface of the end wall 136 and it urges the bar 165 into the latching position shown in Fig. 7.

At opposed and laterally spaced positions, the flanges 133 and 134 have apertures 141 and 142 therein for receiving the ends of the card carrying bars 130. At each end the bars are gripped and held in position by resilient strips of sheet metal 143 and 144 secured to the flanges 133 and 134 adjacent the apertures. Also, the end surfaces of the end walls 135 and 136 are recessed at 145 and 146 to receive the projecting ends of card carrying rods 130. The shape of the recesses 145 and 146 is such that when the bar 165 is with-

drawn from its latching position, the tray 129 and the cards carried thereby may be removed together from the rotatable member.

While a preferred embodiment of this invention has been illustrated, many modifications may be made without departing from the spirit of the invention, and it is not intended that the invention is to be limited to the precise details of the construction set forth, but shall include all of the changes within the scope of the appended claims.

Having thus described the present invention, what is claimed as new and desired to be secured by Letters Patent of the United States, is:

1. In a card filing equipment adapted to permit the location of predetermined cards in offset relation, a tray comprising a plane body portion carrying a pair of end walls, said body portion having longitudinally extending slots, and said end walls having recesses for receiving a plurality of card-supporting bars, the recesses in one end wall being sockets open at the inner end, and the recesses in the other wall being through bores, said latter wall having a longitudinally extending slot traversing its recesses, and said slot being under-cut at its side walls, and a closure member of complementary shape adapted to be slid into said latter slot for retaining said bars in said tray.

2. In a card filing equipment adapted to permit the location of predetermined cards in offset relation, a tray comprising a plane body portion carrying a pair of end walls, said body portion having longitudinally extending slots, and said end walls having recesses for receiving a plurality of card-supporting bars, the recesses in one end wall being sockets open at the inner end, and the recesses in the other wall being through bores, said latter wall having a longitudinally extending slot traversing its recesses, and said slot being under-cut at its side walls, and a closure member of complementary shape adapted to be slid into said latter slot for retaining said bars in said tray, said tray being provided with a plurality of bars comprising two additional bars, one on each side of the bars required to hold the cards in a stack, whereby a plurality of specially selected cards may be located in offset relation, the cards having regularly spaced bar apertures, and the bars being regularly spaced.

3. In a card tray for card filing equipment the combination comprising a base member having substantially parallel and longitudinally extending channels therein opening upwardly of the base member, the open edges of said channels being restricted to narrower sections than the inner portions thereof, said base having end wall portions at opposite ends thereof, one of said end wall portions having through openings aligned with said channels and the other having sockets aligned with the other ends of the channels, card supporting bars each having relatively thin longitudinally extending mid-sectional portions adapted slidably to fit between said edges of the channels, said card supporting bars also having beads of wider section than the mid-sectional portion extending longitudinally along opposite edges thereof, one of said beads being of greater width than the space between said edges of the channels and adapted slidably to fit into one of said channels with the mid-sectional portion projecting outwardly between said edges, whereby said base engages said one of the beads along the length of the bar in various positions of the tray adequately to support the bar, each of said bars

normally extending into one of said sockets and one of said through openings in the end wall portions, and releasable means for holding the bars in place relative to the base.

4. In a card tray for card filing equipment adapted to the use of cards having substantially keyhole shaped slots in one edge, the combination comprising a base member having a longitudinally extending channel therein opening upwardly of the base member, the open edges of said channel being restricted to narrower sections than the inner portion thereof, said base having end wall portions at opposite ends thereof, one of said end wall portions having a through opening and the other having a socket aligned with the ends of the channel, a card-supporting bar having a relatively thin longitudinally extending mid-sectional portion adapted slidably to fit between said edges of the channel, said card-supporting bar also having beads of wider section than the mid-sectional portion extending longitudinally along opposite edges thereof, one of said beads being of greater width than the space between said edges of the channel and slidably fitting into said channel to support the bar with the other bead and a part of the mid-sectional portion extending outwardly from the base to fit into the keyhole shaped slots of said cards, said bar being slidable into said channel endwise through said through opening in one of the end wall portions to a position such that one end extends into said socket in the other end wall, and releasable means for retaining the bar in place relative to the base.

5. In a card tray for card filing equipment adapted to the use of cards which have a predetermined number of slots in spaced relationship along one edge thereof, the combination comprising a base member having a plurality of substantially parallel and longitudinally extending channels therein opening upwardly of the base, the open edges of said channels being restricted to narrower sections than the inner portions thereof, the number and spacing of said channels being related to the number and spacing of the slots in said cards, card supporting bars slidable endwise into said channels, the lateral sections of said bars including intermediate webs slidable in the narrower open edges of the slots and longitudinally extending beads, one of each of which is slidable in the inner portion of one of the slots and the other of which is in spaced relationship to the base, and means secured to the base for retaining the bars at one end, and releasable means at the other end of the base for normally retaining the other ends of the bars.

SOPHIE E. BRUEN,
Executrix of the Last Will and Testament of George C. Bruen, Deceased.

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