Aug. 2, 1949. G. C. BRUEN 2,477,786

CARD FILING EQUIPMENT

Filed April 25, 1946 3 Sheets-Sheet 1

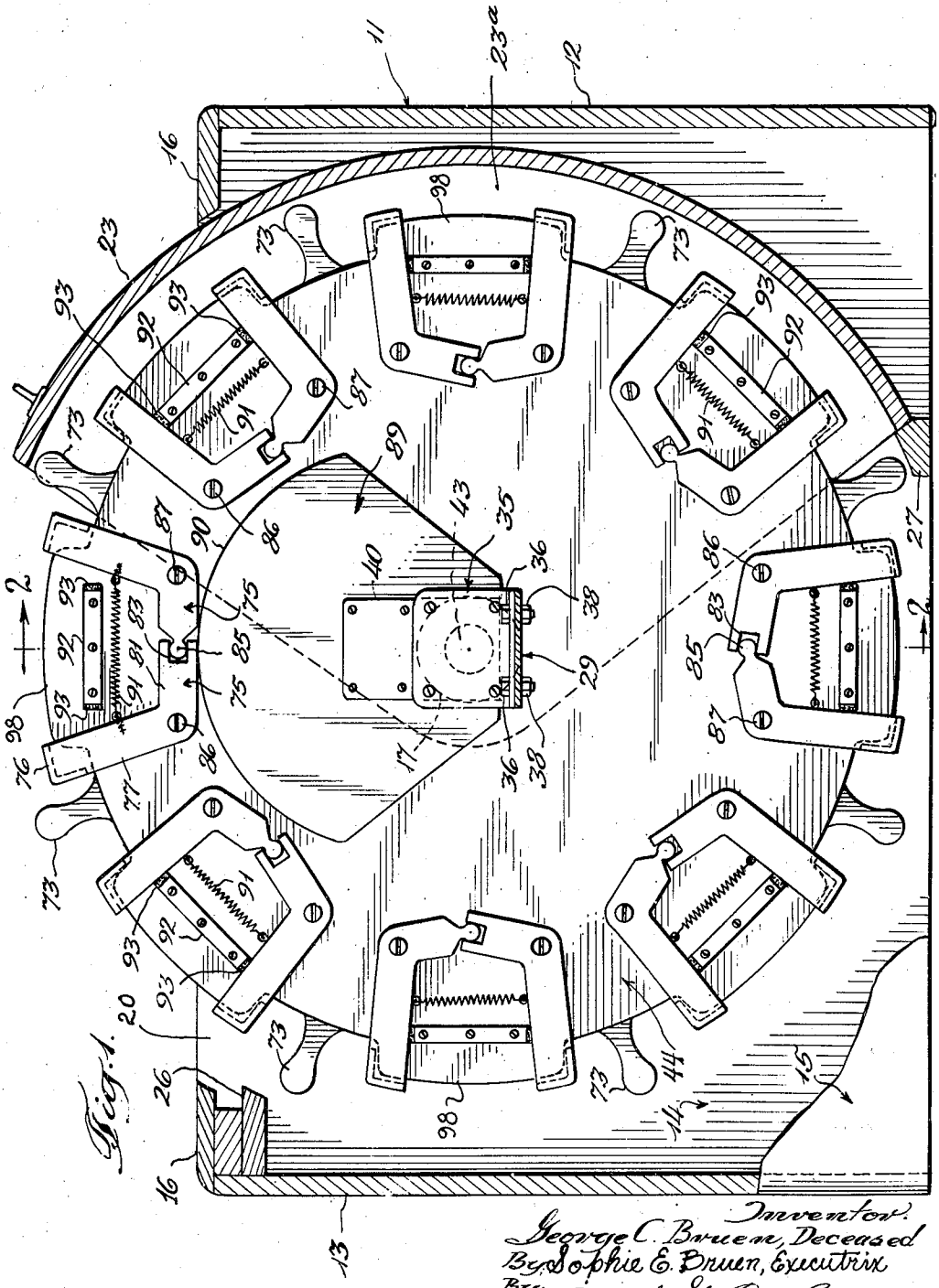


Fig. 1.

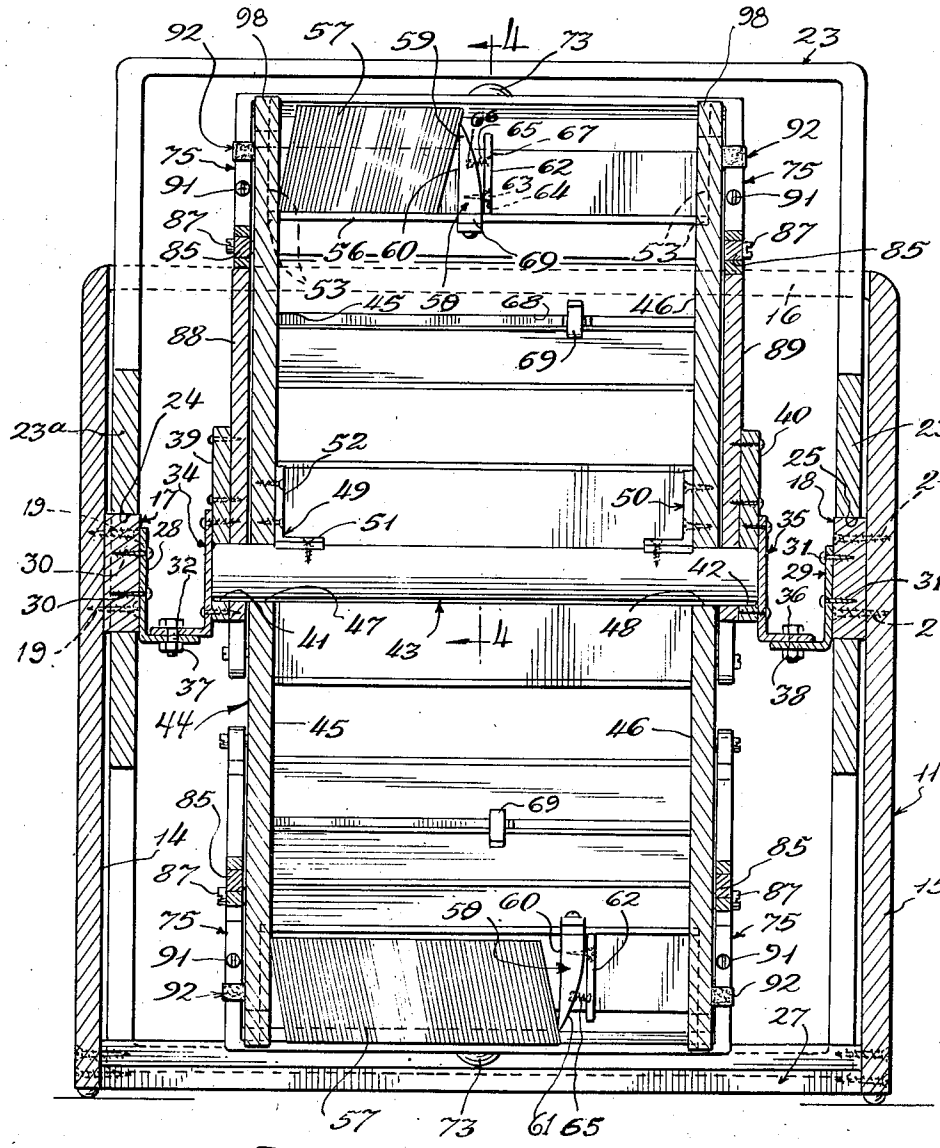
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Fig. 2.



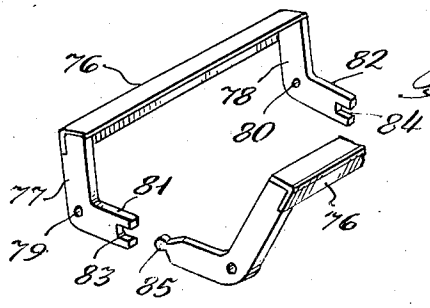


Fig. 3.

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Filed April 25, 1946 3 Sheets-Sheet 3

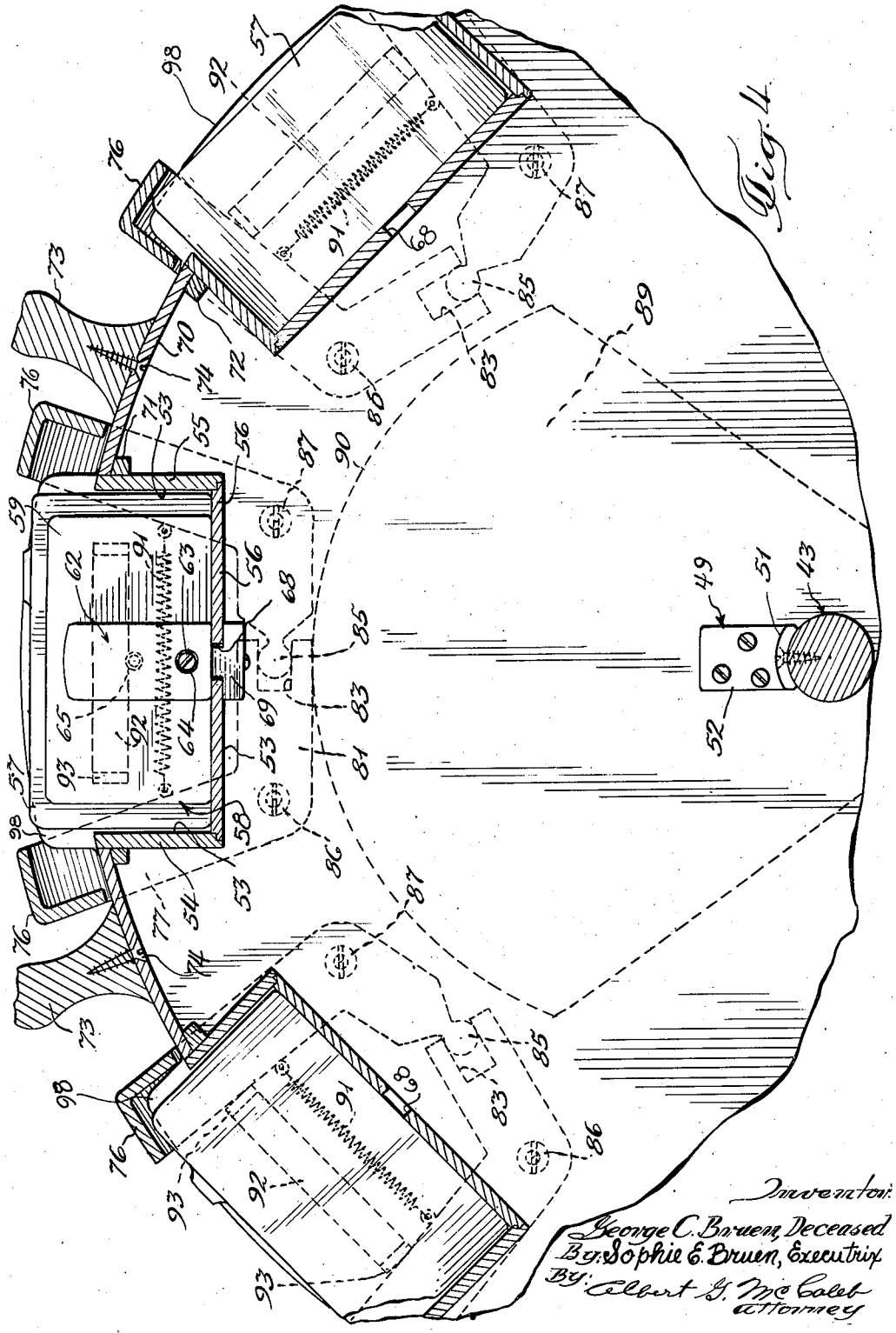


Fig. 4.

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Patented Aug. 2, 1949 2,477,786

UNITED STATES PATENT OFFICE

2,477,786

CARD FILING EQUIPMENT

George C. Bruen, deceased, late of Chicago, Ill., by Sophie E. Bruen, executrix, Chicago, Ill., assignor 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.

Application April 25, 1946, Serial No. 664,942

5 Claims. (Cl. 45—3)

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The present invention relates to card filing equipment, and particularly to the provision of such equipment wherein the cards are made easily accessible and more readily available for use in the normal course of its operation.

As one of its more general objects, this invention contemplates the provision of filing equipment in which a plurality of card-carrying trays are stored in a relatively small space and movable to a position for ready access, in which position the cards are made available in a handy position and freed for removal during reference.

A more specific object of the invention is to provide card filing equipment of the rotary type wherein a plurality of card-carrying trays are carried for movement about an axis, and in which the cards are effectively held in position in the trays for storage purposes but are automatically released at a handy position for use.

The invention has for a further object the provision in card filing equipment of effective automatic means for holding the cards in place and releasing them for ready reference at a convenient position.

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

In the three sheets of drawings:

Fig. 1 is a side elevational view of the card filing equipment embodying the invention and wherein parts are shown in section to improve the disclosure of essential portions;

Fig. 2 is a front sectional view of the card filing equipment depicted in Fig. 1 wherein the section is taken substantially on a line 2—2 of Fig. 1;

Fig. 3 is a fragmentary perspective view of certain parts of the structure illustrated in Figs. 1 and 2; and

Fig. 4 is a fragmentary sectional view drawn to a larger scale of a portion of the card filing equipment and wherein the section is taken on a line 4—4 of Fig. 2.

In the presently disclosed embodiment of the invention, the various objects are accomplished for illustrative purposes in a rotary card file having a housing and a removable cover. While rotary files and their enclosures may not be broadly novel, the further aspects of the invention adapt

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it to the use of file cards which may be unprepared except for their selection within reasonable size limits. Furthermore, free access is provided to those cards at a convenient position and the cards are positively retained in their storage positions.

Referring to the exemplary form of the present card filing equipment shown in Figs. 1 and 2, a housing 11 comprises end walls 12 and 13, side walls 14 and 15, and a top 16, which top is provided with an opening 20. Circular wood blocks 17 and 18 are secured in opposed positions to the mid-portions of the side walls 14 and 15, respectively, by fastening means such as wood screws 19 and 21, to provide bearings upon which an arcuate cover 23 is supported for circular movement to open and closed positions relative to the opening 20. The arcuate cover 23 has side walls 23a and 23b provided with bearing openings 24 and 25, respectively, which are concentric with the axis of arcuate curvature and fit the peripheral surfaces of the blocks 17 and 18 movably to support the cover. A strip 26 projecting inwardly of the housing adjacent to the top 16 acts as one stop for the cover 23 and restricts its movement at the closed position. Another stop 27, extending transversely between the end walls 14 and 15 at the bottom of the housing 11, restricts the movement of the cover 23 when it is moved to its open position within the container, as shown in Fig. 1.

Metal angle brackets 28 and 29 are secured to the circular blocks 17 and 18, respectively, by wood screws 30 and 31. Substantially similar angle brackets 34 and 35 are secured to the angle brackets 28 and 29, respectively, by removable fastening elements, such as bolts 32 and 36 and their associated nuts 37 and 38 in positions such that the connected pairs form channels, which channels have rectangular wood blocks 39 and 40, respectively, secured to surfaces thereof opposite the circular blocks 17 and 18. Bores 41 and 42 in the blocks 39 and 40 are desirably concentric with the circular blocks and provide bearings for rotatably supporting a horizonally disposed shaft 43. Axial movement of the shaft 43 is restricted by abutment of the ends thereof against a surface of the angle brackets 34 and 35 (Fig. 2).

As illustrated in Figs. 1 and 2, a rotary file 44 is carried by the horizontally disposed shaft 43.

To provide a light and inexpensive structure, the rotary file 44 may be constructed almost entirely of wood, utilizing substantially polygonal end walls 45 and 46 which are provided with central bores 47 and 48, respectively, for receiving the shaft 43.

The rotary file member 44 is fixedly secured to the shaft 43 by fastening elements, such as angle brackets 49 and 50, which, for example, include flanges 51 and 52, one of which is secured to a polygonal end wall and the other of which is secured to the shaft 43 by wood screws.

As depicted in Figs. 2 and 4, end walls 45 and 46 of the rotary file are desirably channeled, as indicated at 53 in Fig. 2, to receive the ends of card tray walls 54 and 55 and bottoms 56. The walls 54 and 55 and the bottoms 56, together with the end walls 45 and 46 of the rotary file, form boxes adapted to serve as card-carrying trays and which are fixedly mounted in circumferentially spaced relationship adjacent the periphery of the rotary file. In the disclosed file, each of the trays is identical in construction. The card trays extend axially across the peripheral surface of the rotary file 44, and are adapted to carry cards 57 in positions displaced axially of the shaft and facing endwise of the file so that data placed thereon is easily readable and the cards are readily accessible. The depth of each box is preferably so related to the size of the cards carried thereby that the cards project outwardly beyond the tray side walls. It is desirable for the retention of the cards, however, that radial extensions 58 are provided on the end walls 45 and 46 at the ends of the boxes.

To hold the cards 57 in upright position in the card trays, especially when the trays are not completely filled, each of the card trays is provided with a movable follow block 58. This follow block may be made of wood with a substantially triangular sectional shape presenting a plane surface 60 to engage the cards 57 and an opposite surface 61 tapered upwardly. A clamping member 62 is movably secured to the block 59 by a screw 63 which extends through a loosely fitting aperture 64 in the clamping member so as to permit the clamping member to be moved toward and from the block. A compression spring 65 having opposite ends disposed in recesses 66 and 67 in the block and clamping member, respectively, biases the clamping member away from the block and to its clamping position. The bottom of each card tray is provided with a longitudinally extending slot 68 which provides a guide for the follow block 58. An inverted T-shaped guide block 69 is secured to the under side of each follow block 58 and includes a stem extending upwardly through, and slidable in, the slot 68 and projecting flange portions of greater width than the slot 68 for movably retaining each block relative to a tray.

When a clamping member 62 is pressed toward a block 59, the under surface of the clamping member is raised from the upper surface of the bottom 56, thereby permitting the follow block 58 to be moved longitudinally in the card trays to a desired position. Each follow block 58 is normally locked in a desired position when its clamping member is released. The spring 65 will cause the clamping member to move away from its follow block to a locking position in engagement with the bottom 56.

The spaces between trays on the peripheral surface of the rotary file 44 are covered by panels 70 as shown in Fig. 4. Strips 71 and 72 extend axially between and are secured to the end walls 45 and 46 of the rotary file and the tray walls 55 to support the panels.

In order to facilitate movement of the card file to various positions and the bringing of various trays to position for use, a radially projecting handle 73 is secured to the mid-portion of each panel 70 by the wood screws 74.

To keep the cards 57 from falling out of the trays when the rotary file 44 is turned, each of the trays is provided with a pair 75 of cooperating movable card-retaining bars which normally overlie opposite side and end portions of the trays and which are shown in Figs. 1, 3 and 4. Each pair of card-retaining bars is substantially identical in construction.

Referring to Fig. 3, one of the card-retaining bars comprises an angle shaped top portion 76 having at its opposite ends downwardly projecting curved legs 77 and 78 which are respectively provided with bores 79 and 80. The legs 77 and 78 have integral angularly disposed arms 81 and 82, respectively, provided with slots 83 and 84 in their ends. The other card-retaining bar of each pair is similar in construction, except that each of the angularly disposed arms has on its end an arcuately shaped projecting portion 85 which is adapted movably to seat in the slot 83 at the end of the arm of an opposed bar, as is depicted in Figs. 1 and 4.

As shown in Fig. 1, the card-retaining bars are mounted on the side walls 45 and 46 of the rotary file for swinging movement about the axes of screws 86 and 87 between open and closed positions. The uppermost of the pairs of card-retaining bars (Fig. 1) is shown in the open position, while the others are in their normally closed position. Being movably connected at the ends of their opposed arms, the bars of each pair move together and swing in opposite directions. When the card-retaining bars are in their open position, the top portions thereof are separated by an amount which is desirably somewhat greater than the width of the trays, so that the cards 57 may be removed from the trays or new cards may be inserted. When in their normally closed position, the top portions of the bars overlie the trays and opposite corners of the cards, whereby the cards are securely retained in the trays.

Since the cards are normally filed in and removed from any one tray while that tray is in the upright position and handy to the operator, it is desirable that the bars be automatically swung apart for access to the cards in that position when the file is turned, and otherwise retained in their closed position for retaining the cards.

To effect automatic movement of the pairs of card-retaining bars to their open position when each of the trays reaches an upright working position during rotation of the file, camming members 88 and 89 are provided on opposite sides of the rotary file which extend outwardly from the shaft 43 in planes parallel to the end walls 45 and 46, which camming members are fixedly secured to the rectangular blocks 39 and 40, respectively. Each of the camming members has a curved camming surface 90, the vertex of which coincides with the working position, and which is adapted to engage each pair of card-retaining bars 75 to effect smooth opening and closing movement of the bars as they pass through the upright position of the trays during the turning of the rotary file. While each tray is disposed in its upright position at the top of the file,

cards are free to be removed from, or new cards may be inserted in, the tray. During further rotation of the file, the card-retaining bars **75** disengage the camming surface **90** and are moved to their normally closed position by tension springs **91**. As shown in Fig. 1, opposite ends of the tension springs **91** are connected to opposed portions of the legs of each pair of card-retaining bars normally to draw them together. Stops **92** comprising metal strips having outturned ends are secured to the end walls of the rotary file between each pair of bars and preferably carry felt pads **93** for engagement with the bars to limit their inward movement.

Engagement of the camming members with the card-retaining bars desirably provides sufficient resistance to movement of the rotary file to hold it in position regardless of an unbalanced condition which may occur if some of the trays contain more cards than others.

From the foregoing description of the disclosed card filing equipment, it may be readily understood that the cards used in the file need not be punched or otherwise specially prepared or selected to fit a particular type or spacing of retaining bars or the like. This feature contributes to economy of use, while other emphasized factors are conducive to ease and efficiency of operation.

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. Card filing equipment comprising, in combination, a housing having opposed side walls and a top opening, a shaft, means secured to the mid-portion of each of said opposed side walls for rotatably supporting the shaft, a rotary card file mounted on said shaft and projecting through said opening in the housing in a direction radial to the shaft, said card file including a plurality of box-like card trays opening outwardly around the periphery of the file, a pair of card-retaining bars having portions normally in card-retaining positions overlying peripherally spaced marginal portions of each of the card trays, said card-retaining bars each having legs at their opposite ends extending inwardly of the file, means for rotatably supporting said legs relative to the file so that said portions of the bars are swingable to open positions on opposite sides of each of the trays, the legs of each of said pairs of card-retaining bars having movably connected and angularly disposed end portions, means for biasing the card-retaining bars of each pair to their normal card-retaining positions, and stationary cams supported from said opposed side walls of the housing on opposite sides of the files and having similarly curved cam surfaces aligned for engagement with said end portions on the legs of said bars during rotation of the file, the positions and curvatures of said cam surfaces being such that they coact with the end portions of the legs of one pair of card-retaining bars at a time to effect movement of the bars of that pair to said open position when that pair of bars and its intervening tray are exposed through said opening in the housing.

2. Card filing equipment comprising, in combination, a housing having a top opening, a shaft, means for rotatably supporting the shaft within said housing, a rotary card file mounted on said shaft and projecting through said opening in the housing, said card file including a plurality of box-like card trays opening outwardly around the periphery of the file and having longitudinal edges disposed axially of the rotary file, a pair of card-retaining bars having portions normally in card-retaining positions overlying said longitudinal edges and peripherally spaced marginal portions of each of the card trays, means for supporting said card-retaining bars for swinging movement relative to the file about axes parallel to the axis of said shaft and between said card-retaining positions and open positions at the sides of the trays, means for biasing the card-retaining bars of each pair to their normal card-retaining positions, and stationary cams supported within the housing on opposite sides of the file and having similarly curved cam surfaces, and means carried by said card-retaining bars in alignment for engagement with said cam surfaces during rotation of the file for effecting movements of the bars to their open positions against the force of said biasing means at a predetermined position of the rotary file.

3. Card filing equipment comprising, in combination, a support, a shaft, means on said support for carrying the shaft, a card file rotatably carried by said shaft, said card file including a plurality of peripherally separated card-supporting trays having edges substantially parallel to the shaft and opening outwardly in a direction substantially radial to the shaft, means comprehending pairs of card-retaining bars each having portions outwardly of and substantially parallel to said edges of one of the trays and mounted for swinging movement about an axis parallel to said shaft in a direction transverse to one of said edges, said card-retaining bars having card-retaining positions overlying said edges and adjacent marginal portions of said trays and open positions in which the bars of each pair are spread apart, tension springs connecting the bars of said pairs for biasing each of the card-retaining bars to its card retaining position, and means for effecting movement of the bars of each pair to the other of said positions against the force of the biasing means.

4. Card filing equipment adapted to be carried within a housing by a horizontally disposed and rotatably supported shaft and comprising, in combination, a rotary card file mounted on said shaft, a plurality of box-like card trays carried in spaced relationship on said rotary card file and opening outwardly adjacent the periphery of the file, a pair of card-retaining bars movably connected together for simultaneous movement and supported for swinging movement about separated axes to and from positions overlying marginal portions on opposite sides of each of said trays, a spring for biasing each pair of card-retaining bars to a card-retaining position in which the bars overlie a tray, and stationary camming members supported in spaced relationship axially of said shaft adjacent opposite sides of said rotary file and each having a vertex coincident with a predetermined position of the file for engaging said card-retaining bars during rotation of the file to move them from the card-retaining position against the force of said biasing spring.

5. In card filing equipment having a movable tray-carrying element, the combination comprising, a series of card-carrying trays mounted on

said tray-carrying element and movable therewith through a predetermined filing position, each of said trays including a box-like body having a bottom, end walls and side walls for carrying cards with their edges exposed, said end walls being comparable in size to the cards which the tray is adapted to carry, a pair of movable card-retaining elements for each of the trays and having a closed position and an open position, the card retaining elements of each pair having rigid extensions thereon and movably connected together so that the movement of one effects movement of the other element of the pair, said retaining elements in their closed positions overlying portions of the tray from end to end and adjacent the exposed edges of cards carried by the tray, the open position of the card-retaining means being out of alignment with the tray and

cards, means for biasing the retaining elements to the closed position, and cam means for effecting movement of the retaining elements to the open position when the tray is moved to said predetermined filing position.

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