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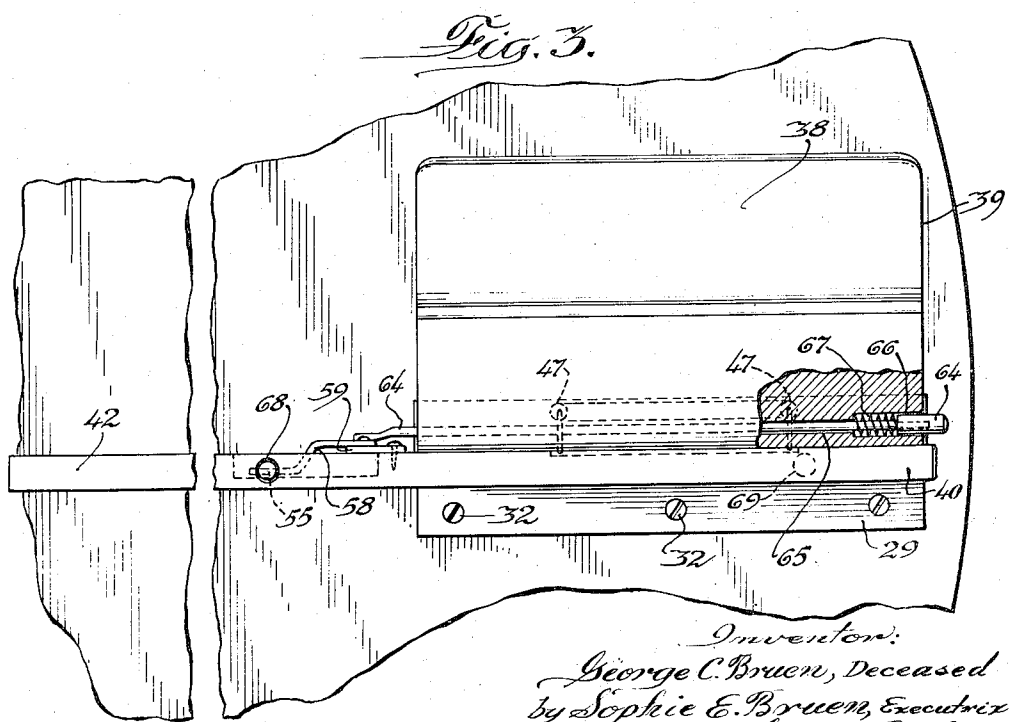
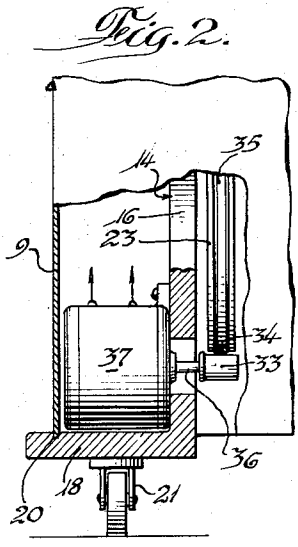
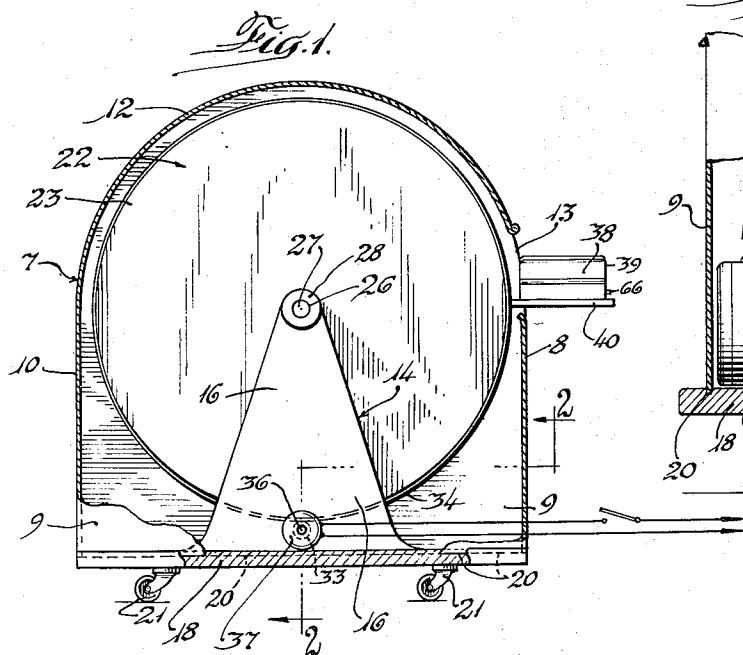
G. C. BRUEN

2,480,445

CARD FILING EQUIPMENT

Filed May 3, 1946

3 Sheets-Sheet 1



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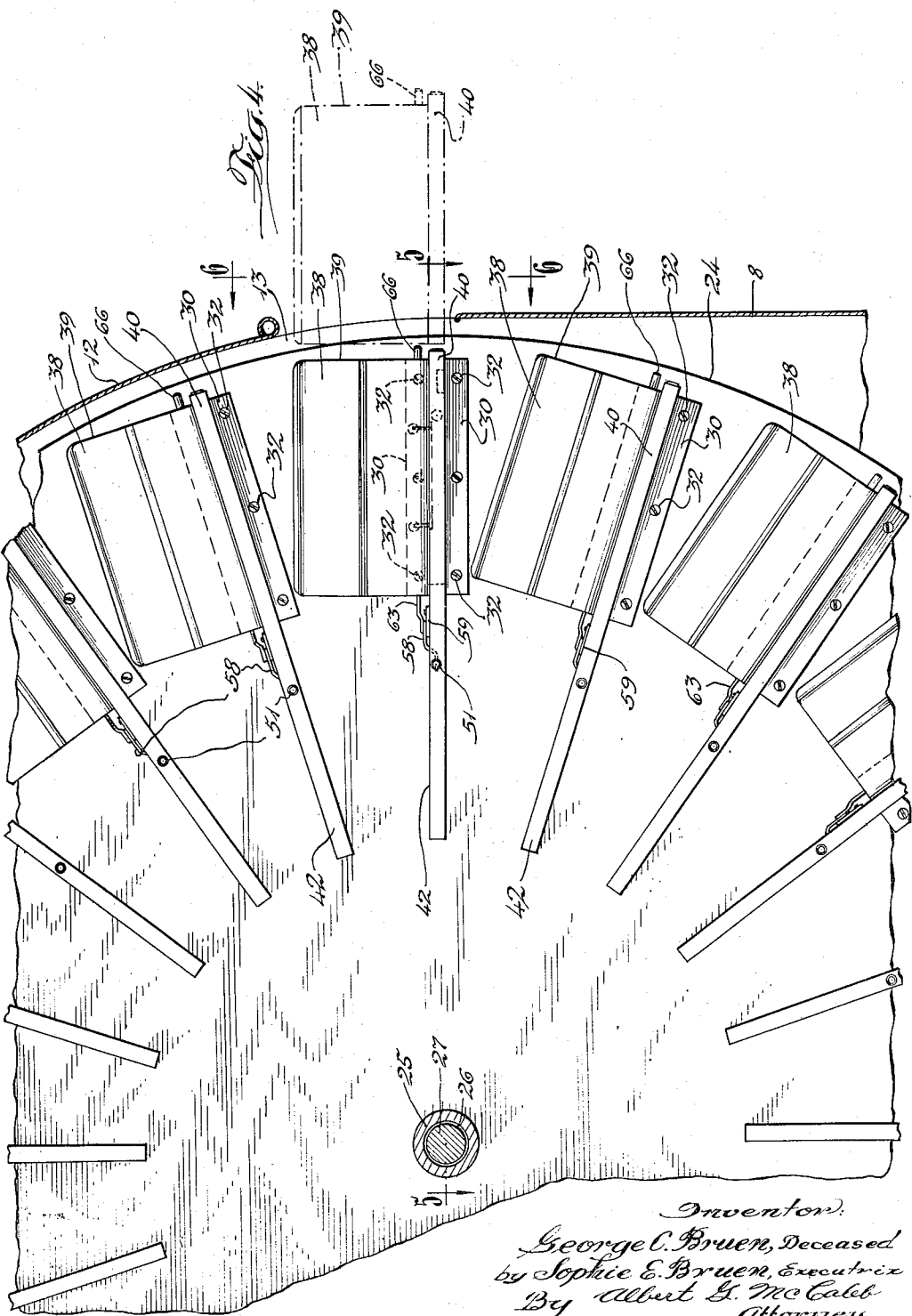
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CARD FILING EQUIPMENT

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3 Sheets-Sheet 2



2,480,445

3 Sheets-Sheet 3

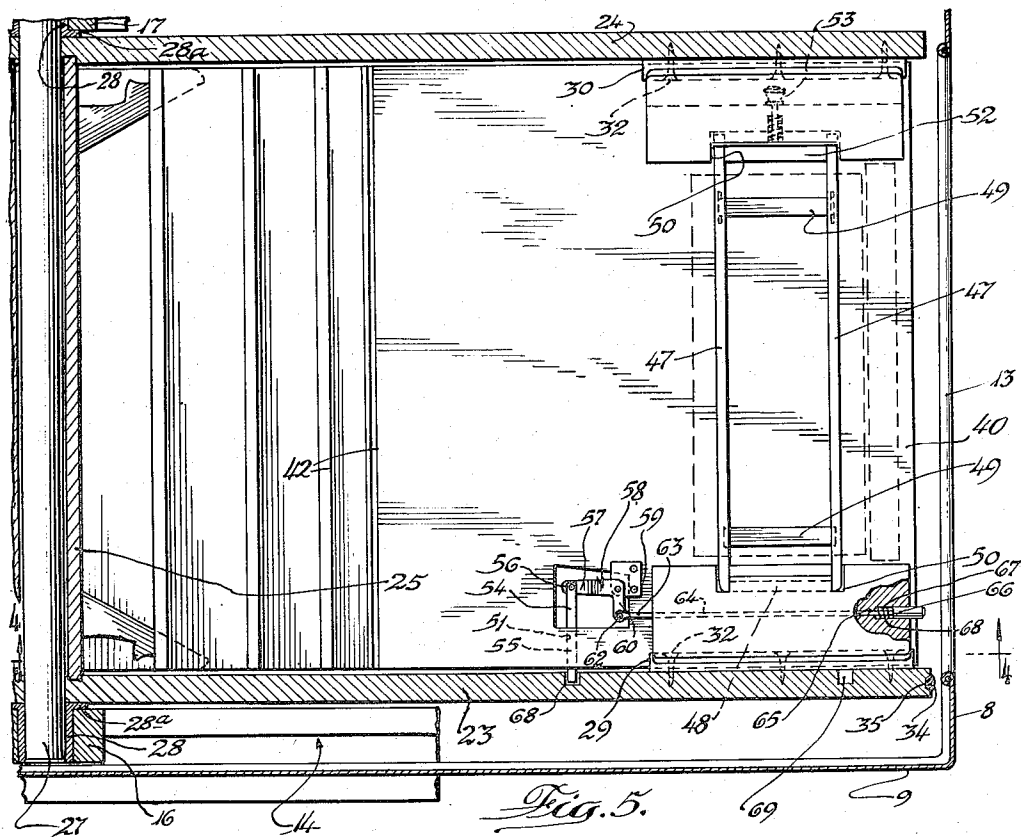
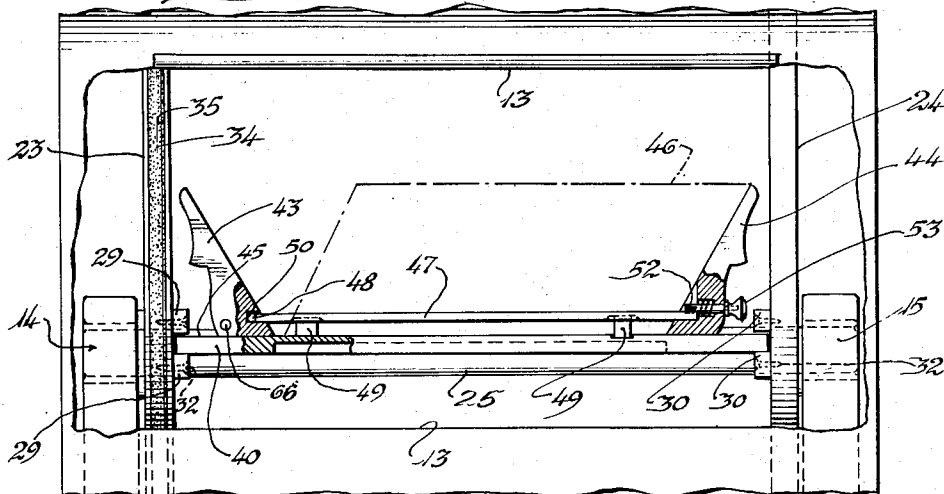


Fig. 6.



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UNITED STATES PATENT OFFICE

2,480,445

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 May 3, 1946, Serial No. 667,192

4 Claims. (Cl. 45-3)

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This invention relates to card filing equipment, and particularly to such equipment wherein a large number of cards may be housed in a relatively small space and readily made available for convenient access.

One of the objects of the present invention is to provide card filing equipment wherein a rotary tray-carrying element is adapted normally to carry a plurality of card-carrying trays in closely spaced and compact relationship with the trays movably supported relative to the rotary element so that they may be selectively and conveniently brought to an exposed position for reference.

As another object the invention contemplates the provision of card filing equipment of the rotary type in which a series of card-carrying trays is supported for radial movement relative to a rotary support and parallel to the axis of the support so that normally the trays are stored in closely spaced relationship near the axis of the support for compact storage and may be selectively moved outwardly of the support at a convenient horizontal position for use.

This invention has for another object the provision of a sliding support for card-carrying trays upon which said trays are movable to storage and extended positions relative to a tray-carrying element, and which support includes means for releasably locking the trays in either of said positions or permitting their complete withdrawal.

A further object of the invention is to provide a rotary file having its rotational axis disposed at a convenient level for use of card-carrying trays by an operator, and wherein said trays have their bases disposed in radial planes relative to the rotational axis, so that the trays are brought to an upright position with their bases substantially horizontal at said convenient level for use.

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 three sheets of drawings:

Fig. 1 is a vertical side sectional view of card filing equipment embodying a preferred form of this invention;

Fig. 2 is a fragmentary sectional view showing a portion of the structure of the card filing equip-

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ment depicted in Fig. 1 and wherein the section is taken substantially as indicated by lines 2-2 in Fig. 1;

Fig. 3 is a fragmentary side sectional view drawn to an enlarged scale and illustrating a part of the internal structure of the card filing equipment shown in Fig. 1;

Fig. 4 is a fragmentary side sectional view similar to Fig. 3, but drawn to a smaller scale so as to indicate more clearly the assembled relationships of the internal parts than does Fig. 3; the sections for both Figs. 3 and 4 being taken substantially on a line 4-4 of Fig. 5;

Fig. 5 is a fragmentary plan sectional view taken substantially on a line 5-5 of Fig. 4; and

Fig. 6 is a fragmentary front view of a portion of the card filing equipment viewed as indicated by a line 6-6 of Fig. 4 and the accompanying arrows, and wherein parts are broken away to show certain details of structure.

Referring to the drawings, wherein one form of card filing equipment embodying the invention is shown for illustrative purposes, a housing 7 has a front wall 8, side walls 9, and a back wall 10. The back wall 10 has an upper arcuate top portion 12 which extends around towards the front wall 8, but is spaced therefrom. This separation of the front wall and top portion provides a rectangular opening 13 between the side walls.

Within the housing are two L-shaped standards 14 and 15 situated in opposed relation with vertical sides 16 and 17 parallel to the side walls 9. The standards 14 and 15 include horizontal bases 18 and 19 which project outwardly from the side walls and serve as supports for the housing. Longitudinal grooves 20 at the outer edges of the bases 18 and 19 receive the lower edges of the housing side walls, wherein the side walls are secured to the standards. Attached to the bottom side of the bases 18 and 19 are casters 21 upon which the file may be readily moved to an appropriate location.

A shaft 27 is rotatably supported at each end by bearing collars 28, which bearing collars are carried by the standards 14 and 15. Supported by the shaft 27 is a rotary card file which includes a drum 22 having two circular side walls 23 and 24 parallel to the side walls of the housing; said drum also having a cylindrical hub 25 to which

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the side walls 23 and 24 are secured and which extends axially and concentrically therebetween. Centrally located through the drum 22 is an axial bore 26 adapted to receive the above mentioned shaft 27. The sides of the drum are prevented from rubbing against the sides of the standards by bearing collar flanges 28a at one end of each of the bearing collars. The outer periphery of the drum is adjacent the opening 13.

Although the drum may be rotated by any appropriate means, an electrically operated motor drive is preferred in the present instance. As shown in Fig. 2, a tire 34 is mounted in a circumferential groove 35 in the edge of the drum side wall 23. A pulley 33 attached to a shaft 36 of a motor 37 frictionally engages the tire to rotate the drum. In the present instance the motor is attached to one of the standards and is supported by the base 18 of the standard 16.

Attached to the inner surfaces of each of the side walls 23 and 24 of the drum in opposed and parallel relationship by fastening means, such as screws 32, are pairs of guide strips 29 and 30 which define substantially radial guide channels; the guide channels on one side wall being opposed to and axially aligned with the guide channels on the other side wall.

As shown in Fig. 4, a plurality of card-carrying trays 38 are normally disposed between the side walls of the file in equally and closely spaced relationship to one another so that as many trays as possible may be carried by the file. One side 39 of each tray is adjacent the periphery of the file. Each tray has a flat base 40 disposed between the side walls 23 and 24 of the drum 22 and slidably supported on the drum by the guide strips 29 and 30. Being carried by the guide strips 29 and 30, the bases of the trays are substantially radial to the side walls and radial to the axis of the drum. Projecting inwardly of the file from the inner side of each of the trays is a substantially coplanar extension 42 of the base 40. The extension is of a width approximately equal to the width of the tray. Each tray includes opposing end walls 43 and 44 secured to the base adjacent the side walls of the file. The end walls 43 and 44 define the length of the tray so that the longitudinal axis of each tray is parallel to the axis of the shaft. Each base 40 has exposed end marginal portions 45 outside of said end walls 43 and 44.

The tray end walls have opposed inner surfaces so disposed with respect to the base that they form therewith obtuse angles at the bottom of the tray. Thus there are provided opposed and upwardly diverging card-supporting surfaces which permit the tops of cards 46, indicated generally by dot and dash lines in Fig. 6, to be readily separated for reference even though the cards practically fill the base portion of the tray between the end walls 43 and 44.

Card-retaining bars 47 extend from one end wall of the tray to the other and are desirably straight side portions of a substantially U-shaped rod. The side portions are connected at one end by an integral intervening portion 48. The bars are also connected near their opposite ends by substantially U-shaped straps 49. The straps brace the bars relative to one another and also act as base supports therefor. The bottoms of the straps rest against the upper surface of the base 40. To facilitate removal of all of the cards from a tray, the bars are releasably held in place relative to the tray in recesses 50 in the end walls of the tray.

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In each of the tray end walls 44 is a movable latch element 52 which is actuated for release of the bars by force manually applied to a knob 53 projecting from the outer surface of the end wall 44.

In a file having the construction disclosed, the height of the shaft 27 determines the height at which the trays reach an upright position with their bases level. Such a position is desirably at a level convenient to an operator. With the construction shown in Fig. 1, the level position of the tray is such that it is convenient for use by an operator who is seated in front of the file. Since the trays have their braces disposed in radial planes relative to the rotational axis, the trays are brought into an upright position with their braces substantially horizontal at said convenient level for use. The lower edge of the opening 13 in the housing is substantially on a common level with and parallel to the rotational axis so that the trays are accessible at the desired level and in an upright position.

The trays slide between the guide strips 29 and 30 in a direction radial to the rotational axis of the drum from their storage positions within the periphery of the file, through the opening 13 in the housing to an extended position outside the housing. The extended position of a tray is shown in Fig. 1, and illustrated by dot and dash lines in Fig. 4.

In order to secure the trays in either their storage or extended positions, a manually operable stop 54 is provided on each tray, as shown in Fig. 5. Each stop comprises a tongue 55 mounted for linear sliding movement in a bore 51 at one side of each base 40. A bell crank lever 58 is mounted on a plate 59 for lateral swinging movement relative to the base 40 and has angularly disposed arms 57 and 60. The extending end of the bell crank arm 57 is rotatably connected to one end of the tongue 55 by means, such as a rivet 56. The other arm 60 of the bell crank lever is rotatably connected by means, such as a rivet 62, to one end of a push rod 64, which push rod extends through and is slidable in a bore 65 in the end wall 43 of the tray. An actuating knob 66 on the outer end of the push rod provides an end surface, against which a compression spring 67 located in the bore 65 of the end wall 43 exerts a force in a direction outwardly of the tray. Acting through the push rod and bell crank, the spring biases the tongue 55 outwardly of the tray toward the drum side wall 23. Recesses 68 and 69 in the drum side wall 23 are aligned with the direction of movement of the tray and are so disposed that they receive the end of the tongue 55 in the storage and extended positions of the tray, respectively. The trays may be completely withdrawn from the drum when desired by releasing the tongue from the recess 69 and sliding them outwardly.

The drum is rotated by the motor and friction pulley until the tray wanted by the operator is level with the opening. The drum is then stopped. Since the tray is in storage position, the push rod 64 is pressed inwardly toward the shaft. The rod moves the bell crank lever clockwise, as viewed in Fig. 5, so as to withdraw the tongue from the recess 68. The tray may then be slid toward and through the opening in the housing. When the tongue reaches the recess 69 and pressure has been released from the knob 53, the tongue will fall into the recess, and the tray will then be locked in extended position. The force of the spring 67 keeps the tongue in

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locked position. The tray is now in position for use by the operator. If the push button is not released when it reaches the recess 69, the operator may withdraw the tray completely from the file. To re-insert the tray, or to remove the tray from extended to storage position, the operations are reversed. After the tray has been returned to storage position or withdrawn entirely, the drum may again be rotated by the operator.

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 providing an enclosure having opposed and substantially parallel side walls and a front opening between the side walls, a shaft, means for supporting the shaft so that it extends laterally of the housing between the mid-portions of the side walls, a rotary card file carried by said shaft with its periphery adjacent said front opening in the housing, said card file having side walls and including a plurality of elongated card-carrying trays normally disposed between the side walls of the file in equally and closely spaced relationship to one another with their elongated dimensions axially of the file and one side of each tray adjacent the periphery of the file, said trays including substantially flat bases disposed between the end walls of the file in planes substantially radial to the shaft and having substantially coplanar side extensions on one side thereof projecting inwardly of the file from the inner sides of the trays a distance approximately equal to the width of each tray, said trays also including end walls secured to their respective bases adjacent the side walls of the file and card-retaining means extending longitudinally of the trays between their end walls, means for slidably supporting the bases of said trays for radial movement relative to said side walls of the file to carry said trays between storage and extended positions, said opening in the housing being of a size that said trays will pass therethrough in moving to and from said extended position, and means for releasably retaining each of said trays in each of said positions relative to the side walls of the rotary file.

2. Card filing equipment comprising, in combination, a housing having opposed and substantially parallel side walls and a front opening between the side walls, a shaft, L-shaped standards for supporting the shaft so that it extends laterally of the housing between the mid-portions of the side walls, said front opening being rectangular in shape with its lower side substantially parallel to the axis of said shaft, a drum carried by said shaft and having two circular side walls connected by a central hub portion, a plurality of card-carrying trays normally disposed between the circular side walls in equally and closely spaced relationship to one another with one side of each tray adjacent the periphery of the wheel, said trays including substantially flat bases disposed between the two circular side walls substantially in planes radial to the shaft, said bases having substantially coplanar side extensions on one side of the trays

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and projecting inwardly of the wheel from the inner sides of the trays a distance approximately equal to the width of each tray, said trays also including end walls secured to their respective bases adjacent the side walls of the drum, said bases also having exposed end marginal portions outside of said end walls, card-retaining means extending longitudinally of the trays between their end walls, radially disposed guide strips in opposed relationship on the circular side walls of the drum for slidably supporting the bases of said trays for radial movement relative to said side walls of the drum to carry said trays between storage and extended positions, said opening in the housing being of a size that said trays will pass therethrough in moving to and from said extended position, and a stop movably mounted on each of said bases and having a manually operable actuating shaft pivotally connected thereto through a bell crank for releasably retaining each of said trays in each of said positions relative to the circular side walls of the drum.

3. Card filing equipment comprising in combination, a housing having a front opening, a card file having circular side walls, means for rotatably supporting said card file within said housing with the outer periphery of the file adjacent the opening in said housing, means for rotating the file relative to the housing, a plurality of card-carrying trays normally disposed between the side walls of the file in equally or closely spaced relationship to one another with their longitudinal axes parallel to the axis of rotary movement of the file and with one side of each tray adjacent the periphery of the file, said trays including flat bases disposed in planes substantially radial to the side walls and having coplanar extensions on one side thereof projecting inwardly of the file from the inner sides of the trays, said trays also including end walls secured to their respective bases and card-retaining means extending longitudinally of the trays between their end walls, said bases also having exposed end portions outside of said end walls, means on said circular side walls and engaging said exposed end portions of the bases and slidably supporting said trays for radial movement relative to said axis of rotary movement of the file to carry said trays between storage and extended positions, said trays being outside said housing in said extended positions, and said front opening having its lower edge substantially parallel to the axis of rotary movement of the file and disposed in a horizontal plane relative thereto, said opening also being of a size that said trays will pass therethrough when aligned therewith and in moving to and from their extended positions.

4. Card filing equipment comprising in combination, a card file having circular side walls, means for rotatably supporting said card file, a plurality of card-carrying trays normally disposed between the side walls of the file in closely spaced relationship to one another with their longitudinal axes parallel to the axis of rotary movement of the file and with one side of each tray adjacent the periphery of the file, said trays including flat bases disposed in planes substantially radial to the side walls and having extensions on one side thereof projecting inwardly of the file from the inner sides of the trays, said trays also including end walls secured to their respective bases adjacent the side walls of the file and card-retaining means extending longi-

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tudinally of the trays between their end walls, said bases also having exposed end portions outside of said end walls, means on said circular side walls for slidably engaging and supporting said exposed end portions of the bases of said trays for radial movement relative to the axis of rotary movement of the file to carry said trays between storage and extended positions, the axis of rotary movement of the file being supported at a level such that said trays are at a convenient level for use when their respective bases are disposed in a substantially horizontal plane, and manually operable means for releasably retaining each of said trays in each of said positions relative to the axis of rotary movement of the rotary file.

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*Executrix of the Last Will and Testament of
George C. Bruen, Deceased.*

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