May 1, 1956 J. STINGL 2,743,983

ROTARY CARD FILING CABINET

Filed Dec. 15, 1952 2 Sheets-Sheet 1

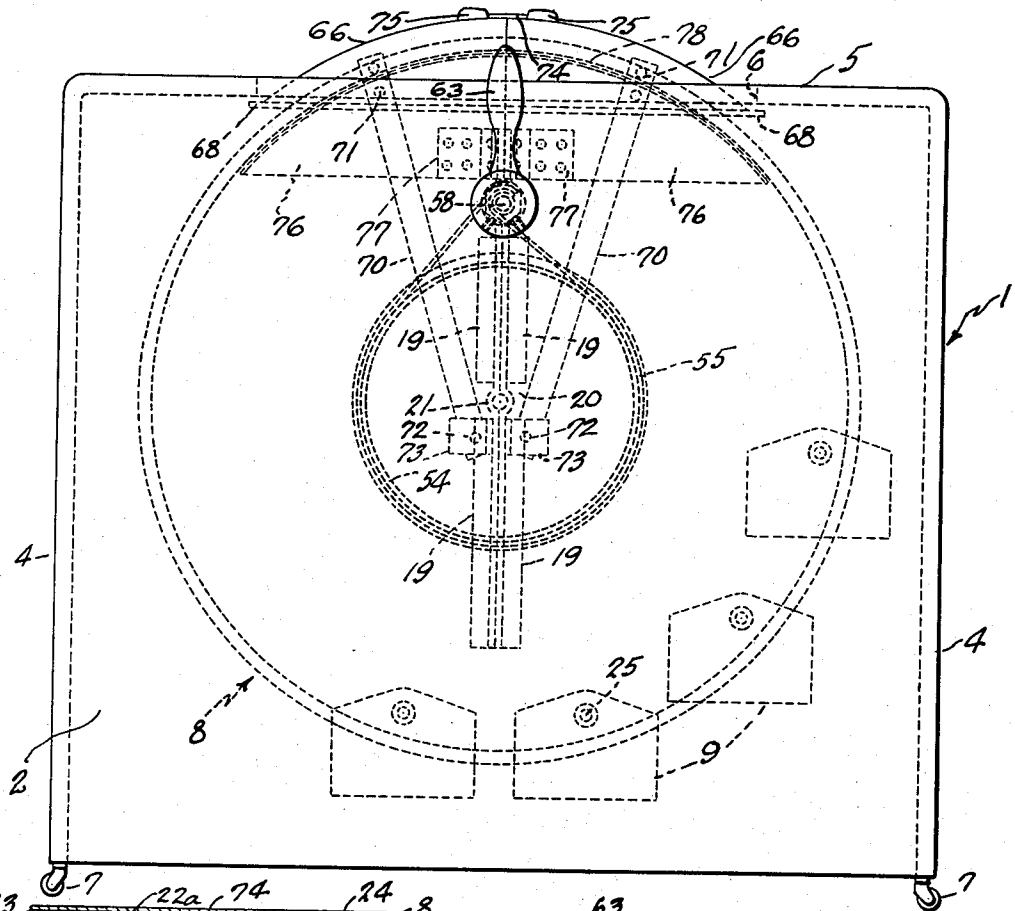


Fig. 1.

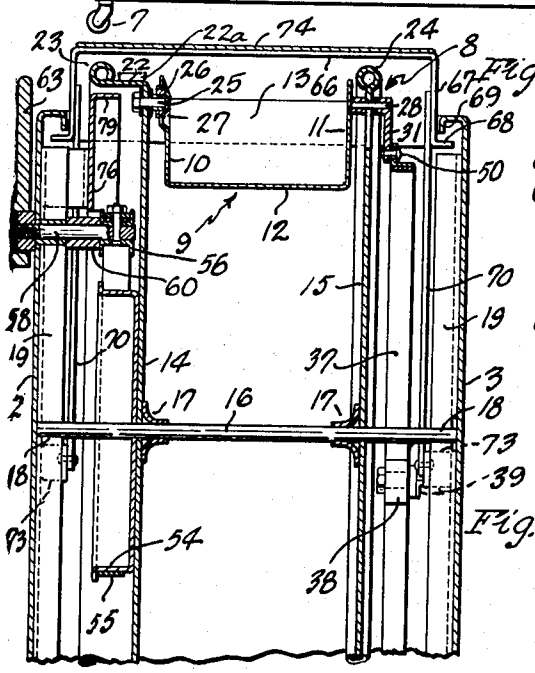


Fig. 2.

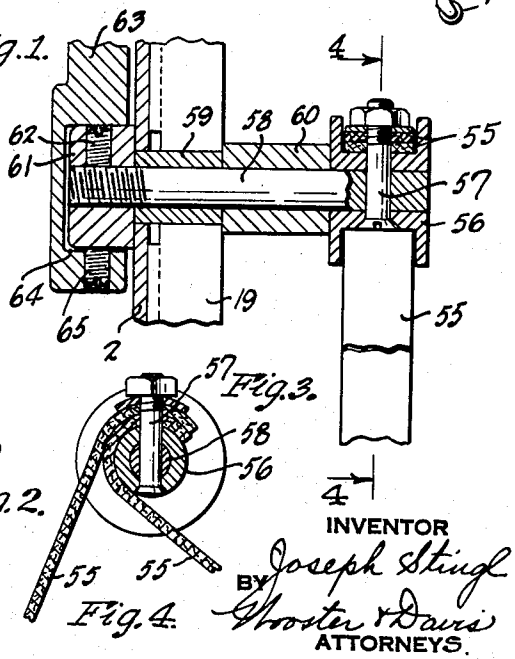


Fig. 3.

Fig. 4.

INVENTOR
Joseph Stingl
BY
Wooster & Davis
ATTORNEYS.

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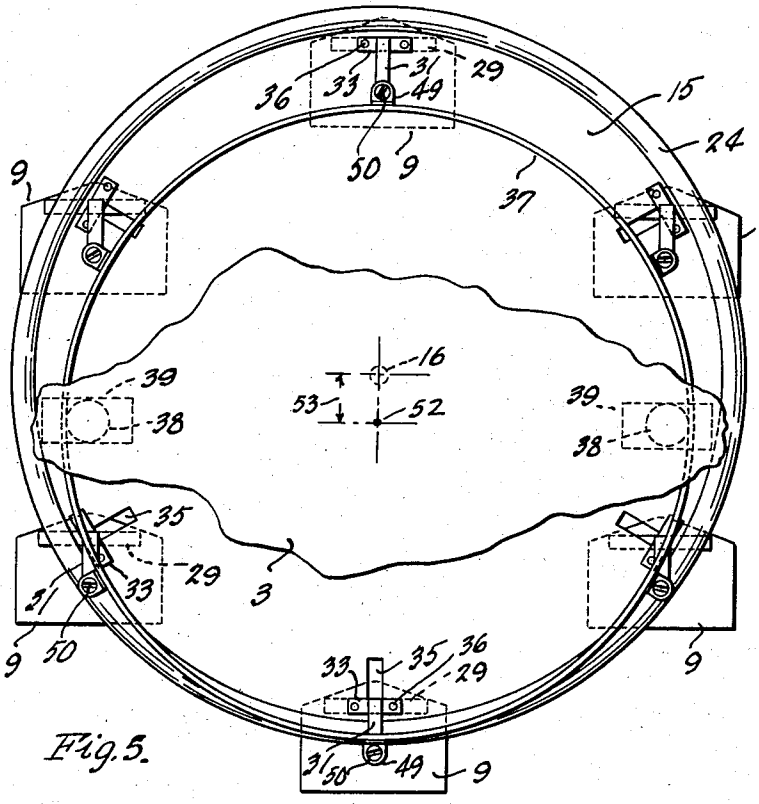


Fig. 5.

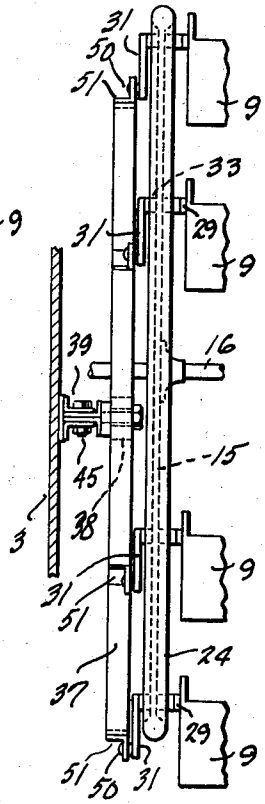


Fig. 6.

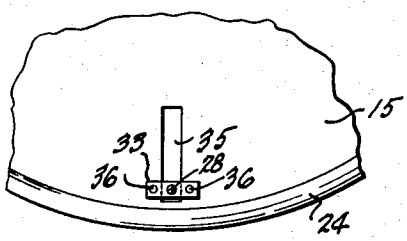


Fig. 7.

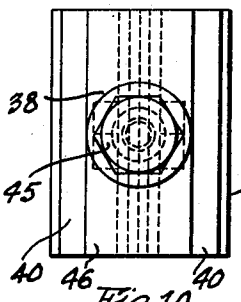


Fig. 10.

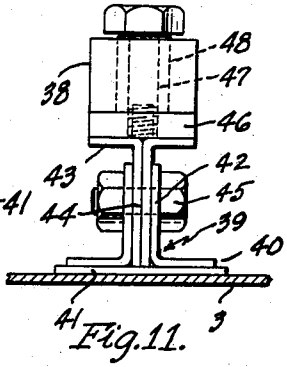


Fig. 11.

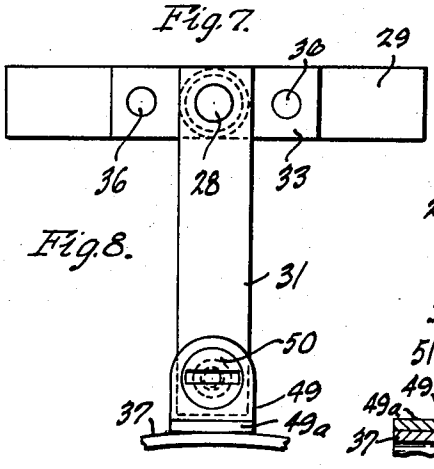


Fig. 8.

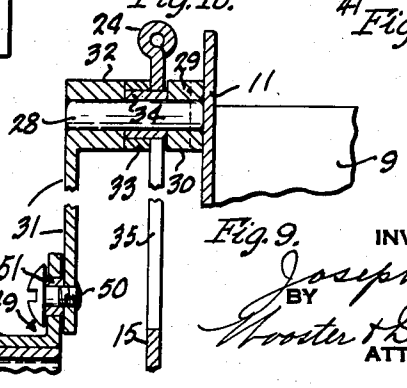


Fig. 9.

INVENTOR
Joseph Stingl
BY
Wooster & Davis
ATTORNEYS.

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2,743,983

ROTARY CARD FILING CABINET

Joseph Stingl, Stratford, Conn., assignor to The Ferris Manufacturing Company, Stratford, Conn., a corporation of Connecticut

Application December 15, 1952, Serial No. 326,078

5 Claims. (Cl. 312—267)

This invention relates to filing cabinets, particularly to one for filing record cards, and has for an object to provide such a cabinet which has an improved arrangement of a rotary support for card holders so they may be easily and quickly brought to a position where any card is easily accessible for examination, and the holder may be held in the most advantageous position for easy access to the desired cards.

It is also an object to provide such a cabinet in which the cards are held in open trays provided with means for always automatically holding the trays in the upright position for any position in its travel, so that it is not necessary to punch the cards or provide rods for holding them in the containers, nor is it necessary to provide belts or similar retaining means for keeping the cards in the holders.

Another object is to provide an improved means for mounting the card holders or retainers in the rotary support for these containers.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawings forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In these drawings:

Fig. 1 is a side view of the cabinet showing it closed and indicating part of the enclosed elements in dotted lines;

Fig. 2 is a transverse vertical section on substantially the center of the upper part of the cabinet;

Fig. 3 is a detail section of a portion of the control mechanism for the rotary support;

Fig. 4 is a detail section thereof substantially on line 4—4 of Fig. 3;

Fig. 5 is a side view of the rotary support for the card holders showing a part of one side wall of the cabinet broken away;

Fig. 6 is a partial side view and partial section looking from the right of Fig. 5;

Fig. 7 is a side view of a portion of one element of the rotary support showing the mounting for one end of the card-supporting trays or containers mounted thereon;

Fig. 8 is a detail view looking toward the supporting means at one end of a card container;

Fig. 9 is a vertical section thereof including a section of the rotatable support in which it is mounted;

Fig. 10 is an end view of one of the supporting rollers and the bracket for mounting it for a rotatable ring; and

Fig. 11 is a plan view thereof, showing it mounted in the side of one of the side walls of the cabinet.

This improved cabinet comprises an enclosed casing or housing 1 including sheet metal side walls 2 and 3 and end walls 4 connected at the top by a top wall 5 provided with an opening 6, and the cabinet is mounted on the usual supporting rollers or casters 7. Mounted within and enclosed by this casing or housing is an upright rotary

support 8 carrying a series of containers or trays 9 for record cards (not shown), the trays being intended to hold the cards in an upright position extending transversely of the trays. With this arrangement each tray or container will hold a maximum number of cards any one of which may be easily examined from the front of the cabinet when brought to the top so that it is accessible through and located in the opening in the top wall of the cabinet and projects above this top wall. These trays or containers may be of any suitable consstruction but are preferably of sheet metal formed to provide end walls 10 and 11, a connecting bottom wall 12, with side walls 13 connecting the end walls, and they are open at the top to give easy access to the cards carried thereby.

The trays or containers are mounted in the upright rotary support mounted in the casing or housing to rotate about a substantially horizontal axis, and the support is located so that its upper edge portion projects above the top wall of the casing through the opening 6 in this wall to permit each individual container to be brought to a position at the top of the casing where any card in this container is easily accessible for examination or removal. The rotary support comprises a pair of upright laterally spaced rotary members 14 and 15. These may be of different constructions, but they are preferably sheet metal discs mounted to rotate in a vertical plane about a substantially horizontal axis, the supporting means comprising a horizontal shaft 16 on which these discs are mounted, and secured by any suitable means such, for example, as a collar 17 welded to the disc and the shaft, and the shafts are mounted at their ends in suitable bearings 18 mounted on the inner sides of the side walls 2 and 3 of the casing. Different forms of bearings may be used, but a simple and effective one comprises a pair of angle bars 19 placed side by side and secured by one flange on the inner side of the side walls of the casing by any suitable means, such, for example, as welding, the mounting flanges being cut away, as indicated at 20, and the abutting flanges then bent laterally at 21 to form a bearing for the end of the shaft 16. The peripheral edge portion of one supporting disc 14 located at the front side of the cabinet is extended laterally as indicated at 22 to provide a horizontal flange between the body of the disc and the rolled-over stiffening edge 23. This edge also provides a hand grip for rotating the support, bringing individual card containers to the upper position at the top of the cabinet, and it also provides an enclosing means for brake control mechanism later to be described. Other hand grips 22*a* may be mounted on the flange. The other rotary disc 15 is also provided with a rolled-over strengthening rib 24. These rolled-over edges obviate any sharp edge on the peripheries of the disc and also greatly stiffen and strengthen the discs, as well as giving an attractive finished appearance.

These discs comprise the rotary support for the series of card holders or containers 9, and each container is pivotally mounted at its opposite ends in the two discs and extends between and is supported by these discs. The pivots are preferably located above the center of gravity of the containers so that they tend to retain an upright position. At one end, preferably the end mounted in the disc 14, the tray is pivotally supported by a bolt 25 extending through and secured to the disc 14, and on this bolt is a bearing bushing 26 mounted in a suitable supporting ring or bushing 27 mounted in the end wall 10 of the container. This forms a pivotal mounting for the end of the container, permitting it to turn and maintain an upright position as the rotary support 8 for the containers is rotated.

At the opposite end the container is mounted by somewhat different supporting means, as shown more clearly in Figs. 8 and 9, which comprises a short shaft 28 secured

at one end to the end wall 11 of the container by any suitable means, such, for example, as welding, and stiffened by a cross bar 29 also welded to the end wall and provided with a thickening boss 30 in which the end of the shaft is mounted. At the other or outer end of the shaft is fastened a depending crank arm 31 which may also have a boss 32 secured to the shaft by any suitable means, such, for example, as welding, and between the bosses 30 and 32 is a mounting cross bar 33 provided with an opening in which is located a bearing sleeve 34. The trays with these mounting supports are assembled and then are mounted in the supporting discs 14 and 15. The pivot in the end 10 is mounted by merely passing a bolt through the two mounting means in the disc 14 and the end wall 10 and applying the nut to the end of the bolt. For mounting the support at the other end of the container the disc 15 is provided with an elongated slot 35 for each location of a container. This slot is preferably a substantially radial slot, although not necessarily so. This slot is of sufficient width for passage of the crank arm 31, and also the mounting bar 33 through it from the inner side of the disc 15 when this bar is turned so that it lies longitudinally of the slot, and then after passing through the slot the bar is turned to lie across the slot and secured to the disc 15 by any suitable means, such, for example, as rivets or welding 36. Thus the shaft 28 extends through the disc 15, as does also the bearing bushing 34 for this shaft, which is thus located in the slot 35 and provides a bearing of suitable length for the shaft.

Means is provided for automatically maintaining the trays or card containers 9 always in their upright position as their rotary support 8 is rotated, to thus prevent tipping of these containers, and eliminating any danger of the cards dropping or being discharged from the containers. For this purpose a rotary ring 37 is mounted between the outer side of the disc 15 and the adjacent side wall 3 of the housing, and this ring is mounted to rotate with the upright rotary support 8 for the card containers. For this purpose there are mounted on the inner side of the side wall 3 and at substantially diametrically opposite sides of the ring 37 a pair of rollers 38 on the inner side of the ring. These are preferably of rubber, although they could be of other material, and they are mounted on the side wall 3 by any suitable means, that shown in detail in Figs. 10 and 11 being very satisfactory and preferred. This mounting comprises a pair of metal angle members 39 having one flange 40 welded to the wall 3 either with or without an intervening plate 41, and between the upright flanges 42 is mounted a bracket comprising the angle members 43 placed side by side with these side by side flanges 44 located between the flanges 42 and secured by a bolt 45. A thickening block 46 may be welded to the angle members 43 and a stud 47 is threaded into this block and forms a bearing for a bearing bushing 48 in the roller 38. The ring 37 preferably comprises a substantially flat strip arranged horizontally, and the supporting rollers 38 are on the inner side of this ring, which is clear and free of obstructions so the ring is free to rotate on these rollers and is held to rotate about a center 52. Mounted on the outer side of the ring and suitably spaced throughout its periphery are a series of pivot lugs 49, and these may be angle members with one flange 49*a* secured to the ring by any suitable means, such, for example, as welding. The lower end of the depending crank arm 31 connected to each tray or container 9 is pivoted to one of these pivot lugs 49 as indicated at 50 by any suitable means, that shown comprising a screw threaded into the arm and welded or riveted over at its inner end and carrying a bearing sleeve 51 in the pivot lug. The rollers 38 are so located that the center about which the ring 37 rotates, indicated at 52, Fig. 5, is spaced below the axis of the supporting shaft 16, about which the discs 14 and 15 rotate, a distance 53 equal to the distance the pivotal connection 50 on each depending arm 31 is located below the axis of the pivot shaft 28 for the associated container. Therefore as the rotary support 8 and supporting container discs 14 and 15 rotate, the ring 37 rotates with them, but as it is held offset from the axis of the discs the crank arms 31 are always held in upright vertical position and the trays or containers 9 are therefore also always held in the upright position in any location they may be during rotation of the discs 14 and 15, and there is no danger of these containers being tipped out of position either by the operator or by cards located on either side of the supporting pivots, and there is therefore no danger of the cards being dumped out of the containers.

There is a distinct advantage in this arrangement of having the crank arms 31 and the rotatable ring 37 located at the outer side of the disc 15 and between this disc and the side wall 3 of the housing. By this arrangement the pivotal bearing support 34 for the shaft 28 and the container is mounted in and extends through the disc bringing the bearing close to the end of the container for a more rigid support and also reducing to a minimum the space between the end 11 of the container and the disc 15 to reduce liability of cards being inserted in this space and dropping to the bottom of the cabinet. Also there is more space for the ring 37 between the disc 15 and the side wall 3 of the housing, and further, this arrangement permits mounting the supporting rollers 38 for the ring 37 directly on the inner side of the wall 3.

Means is also provided for holding the rotatable support 8 in any given position to which it may have been turned, and also to prevent its being turned by overweight of cards on one side or the other of its axis, as certain trays may or may not be filled with cards. For this purpose there is mounted on the outer side of the disc 14 a flanged brake drum 54 embraced by a flexible fibrous brake band 55, the free ends of this band being wrapped around a flanged spool 56 and secured thereto by a bolt 57 extending transversely through the spool. The spool is mounted on a shaft 58, the bolt 57 also serving as the means for securing this spool on the shaft. This shaft is mounted in a suitable bearing 59 in the angle members 19 carrying the shaft 16, and there is a suitable bushing 60 between this bearing and the spool 56. The shaft and bearing 59 are carried through the side wall 2 and on the outer end of the shaft is threaded a nut 61, such, for example, as a hex nut, bearing against the end of bearing 59. This nut may be tightened up on the bolt to provide proper friction between the nut 61 and the outer end of the bearing 59 and between the sleeve 60 and the inner end of the bearing 59, or between the ends of sleeve 60 and the bearing 59 and spool 56, and then secured in this position by one or more set screws 62. This will provide proper friction between the nut and the sleeve 60 with the opposite ends of the stationary bearing 59, or between the sleeve and the bearing and spool, so that as the shaft is turned to any given position it will be frictionally held in this position. Means is provided on the outer side of the cabinet for turning the shaft to apply or loosen the brake 55. This may be a hand or foot operated lever, that shown comprising a hand lever 63, provided with a hexagonal socket 64 to receive the nut 61, and held on this nut by one or setscrews 65. Thus as the ends of the brake band 55 are wrapped around the body of the spool 56, swinging the lever 63 to the right, as shown in Fig. 1, will wind the ends of the band on the spool and tighten this band around the drum 54 to hold the rotatable support 8 in any given position. The brake may be loosened and the support released by swinging the handle in the opposite direction. In a narrower space the sleeve 60 may be omitted and the spool 56 bear directly against the end of bearing 59 for the frictional holding effect for the spool.

The opening 6 in the top wall of the housing or casing is closed by a pair of arc-shaped closures 66, also preferably made of sheet metal, and each including radially extending flanged sectors 67 at their opposite ends

projecting into the opening 6 and having at their lower edges outwardly extending flanges 68 projecting inwardly and downwardly extending flanged portions 69 about the opening. Each closure is mounted on a pair of supporting arms 70 one at each end of the closure, the upper end of each arm being secured on one of the end flanges 67 by any suitable means, such, for example, as welding 71, and swinging at its lower end about a pivot 72 in a suitable block 73 mounted on the side walls 2 and 3 of the housing. With this arrangement the two closures are swingable laterally to and from the closed position shown in Fig. 1 with their inner ends abutting and closing the opening 6, and overlying the upper edges of the discs 14 and 15 and also over any card support 9 that may be in the upper position. A metal strip 74 may be welded to the edge of one closure and overlap the edge of the other closure when in closed position, and each closure may be provided with a suitable hand grip 75.

It is also preferred to provide at the front of the casing a curved guard 76 mounted by suitable brackets 77 on the inner side of the front wall 2 and projecting above the top wall 5 as indicated at 78, so that when the closures 66 are in the open position the opening between the flange 22 and the top wall 5 will be closed. This curved top edge is also provided with an inwardly extending flange 79 to strengthen the guard and also lie under the flange 22 as shown in Fig. 2.

It will be clear this construction and arrangement provides a simple and effective filing cabinet for record cards, and that for a given size of cabinet a large number of cards may be filed in it. The cards are always held in an upright position where they are easily accessible and may be readily examined from the front of the cabinet. The card containers are all automatically and positively held in the upright position so that there is no danger of their tipping to discharge the cards, and the upright rotary support for the containers may be easily and quickly turned to bring any desired container to the top of the cabinet for examination of the cards in this container. Also, when the rotary support has been turned to any desired position it is effectively held in this position by the brake means controlled by the hand lever 63, which brake means also prevents the rotary support from turning by overbalancing by some of the trays on one side carrying more cards than those on the opposite side.

Having thus set forth the nature of my invention, I claim:

1. A filing device for cards comprising a cabinet including upright side and end walls and a top wall provided with an opening, a pair of laterally spaced upright rotary supports mounted in the cabinet between the side walls with their upper edges projecting through said opening, a series of trays adapted for carrying a plurality of record cards in an upright position, means pivotally mounting the trays on and extending transversely between the supports arranged about the peripheries of these supports, said mounting means comprising pivots located above the centers of gravity of the trays, the pivot at one end of each tray comprising a short shaft passing through the adjacent support, a bearing for said shaft carried by said support, a cross bar secured to the inner end of the shaft and to the end of the tray, a depending crank arm secured on the shaft on the opposite outer side of the support from the tray, an upright ring located between said support and the adjacent side wall of the cabinet, means mounting said ring to rotate about an axis spaced below the rotary axis of said supports, and means pivotally connecting each crank arm to the ring at a point spaced below the axis of the connected shaft a distance equal to the distance the center of the ring is spaced below the axis of the supports.

2. A filing device for cards comprising a pair of laterally spaced upright rotary supports, a series of trays adapted to carry a plurality of record cards in an upright position, means pivotally mounting the trays on and extending transversely between the supports arranged about the peripheries of these supports, said mounting means comprising a pivotal support at each end of a tray, the pivotal support at one end of each tray comprising a shaft, a transverse bar secured to one end of the shaft and to one end of the tray, a bar carrying a bearing for the shaft, the adjacent upright support being provided with an elongated slot through which the bar may pass when located longitudinally of the slot and then be turned to lie across the slot, means securing the bar to a side of the support in a position extending transversely of the slot, a laterally extending arm secured to the shaft on the opposite side of the support from the tray, an upright ring, means mounting the ring to rotate about an axis spaced laterally of that of the supports, and means pivotally connecting the free end of each arm to the ring.

3. A filing device for cards comprising a cabinet including upright side and end walls and a top wall provided with an opening, a pair of laterally spaced upright rotary supports mounted in the cabinet between the side walls with their upper edges projecting through said opening, a series of trays adapted for carrying a plurality of record cards in an upright position, means pivotally mounting the trays on and extending transversely between the supports arranged about the peripheries of these supports, said mounting means comprising pivots located above the centers of gravity of the trays, the pivot at one end of each tray comprising a short shaft passing through the adjacent support, a bearing for the shaft carried by said support, a transverse bar secured to the inner end of the shaft and to the tray, a laterally extending crank arm secured on the shaft on the opposite side of the support from the tray, an upright ring located between said support and the adjacent side wall of the cabinet and comprising a substantially flat horizontal strip, means mounting said ring to rotate about an axis offset laterally from the axis of rotation of said supports and comprising a pair of rollers at the inner flat side of and diametrically opposite sides of the ring, and means pivotally connecting the free ends of the arms to the ring at spaced points throughout its periphery.

4. A filing device for cards comprising a cabinet including a housing having upright side and end walls, an upright rotary support comprising a pair of laterally spaced upright rotary discs mounted in the housing between the side walls, a series of containers for carrying a plurality of record cards in an upright position, means mounting the containers on and extending between the discs arranged about the peripheries of the discs comprising pivotal supports at the opposite ends of the containers, the support at one end comprising a shaft, a transverse bar secured to the inner end of the shaft and to the end of the container, the adjacent disc support being provided with an elongated slot, a bar on the shaft extending transversely across the slot and secured to the disc, a bearing for the shaft in said bar, a laterally extending crank arm secured to the outer end of the shaft and adapted to pass through the slot so as to be located on the opposite side of the disc from the container, an upright rotary ring located on the opposite side of the disc from the container and between the disc and the adjacent side wall of the cabinet, means comprising spaced rollers located on the inner side of the ring mounting the ring to rotate about an axis spaced laterally from the axis of the supporting discs, and means pivotally connecting the free ends of the crank arms to the ring at spaced points about the ring.

5. A filing device for cards comprising a casing including upright side and end walls, a series of open topped containers for carrying a plurality of cards in an upright position, a pair of laterally spaced upright rotary supports for said containers mounted between the side walls, means mounting the containers on and extending between the supports comprising pivotal mounting means secured to the opposite ends of the containers and mounted on the

supports, the pivotal means at one end of the container comprising a shaft, a transverse bar secured to one end of the shaft and secured to the container, and said shaft mounted in a bearing on the adjacent support, said shaft extending from the container through the support, a laterally extending crank arm secured to the shaft on the opposite side of the support from the container, an upright ring comprising a substantially flat horizontal band located between the support and the adjacent side wall of the cabinet, a pair of supporting rollers for the ring located at the inner flat side of the ring at diametrically opposite sides thereof and positioned for the ring to rotate about an axis spaced laterally from the axis of the rotary

supports, and means pivotally connecting the free ends of the crank arms to the ring at spaced points throughout its periphery.

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