Dec. 3, 1946. E. N. YZETTA 2,411,950

ROTARY TRAY FILE

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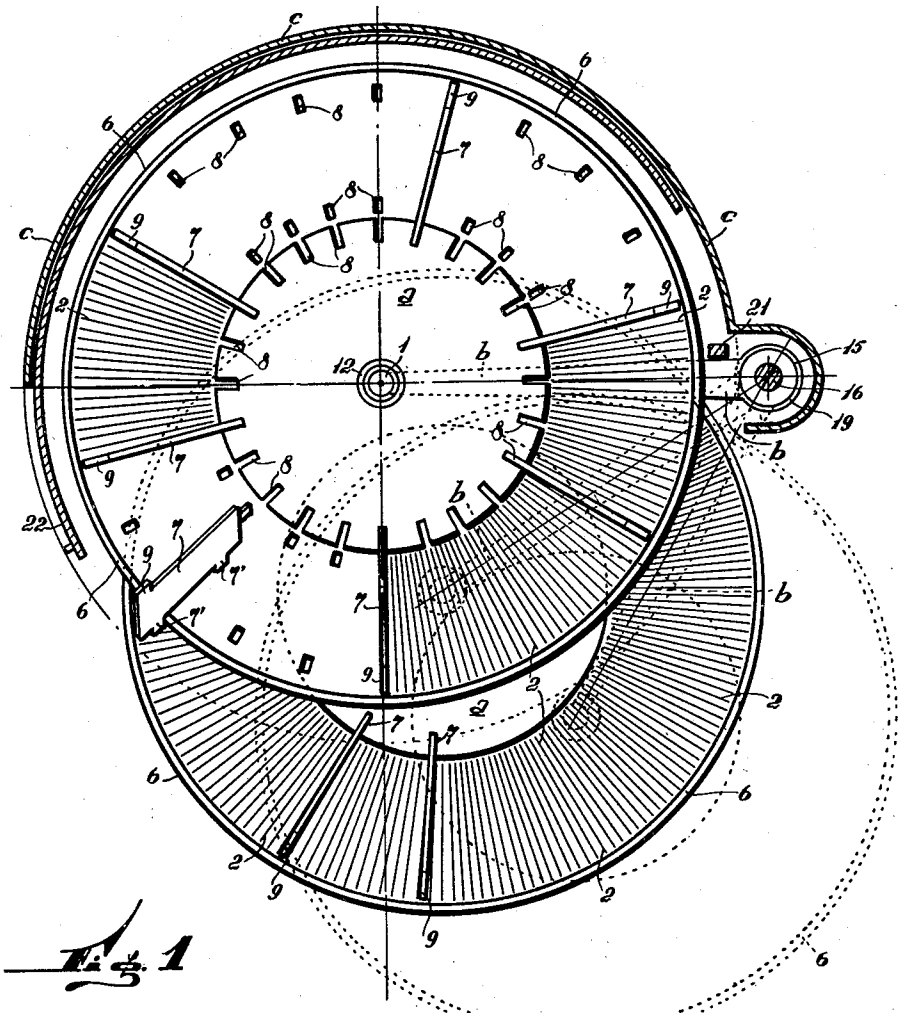


Fig. 1

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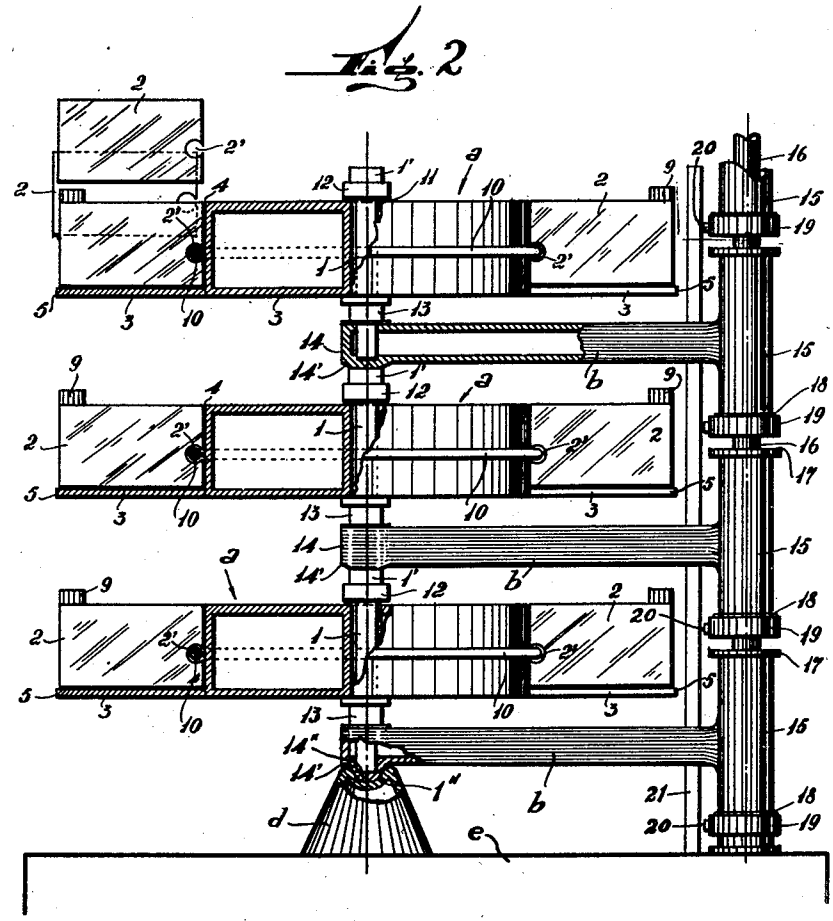
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Fig. 2



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ROTARY TRAY FILE

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2 Claims. (Cl. 45—3)

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This invention relates to rotary tray files and substantially has for object to provide a combination base for forming file sets each constituted by a plurality of rotary file card trays, without the operation of one of said trays interfering with that of another.

In connection with tray files, it is a well known fact that the file cards therein, placed in position by simple support, must be free from obstruction at their top edges, as well as along their sides, in order to facilitate the handling of the same for inspection.

On account of these requirements, in the assemblage of rotary multiple file trays, considerable difficulties are encountered, owing to the impossibility of superposing the rotatable elements without interference between the same, unless the spacing between every two of the rotary trays be such that access may be had thereto by their top, but such arrangement has heretofore proved unsatisfactory, owing to the large space occupied by the whole of file trays. It is an object of the present invention to obviate these difficulties.

An ideal arrangement would consist in a strict and direct superposition of a plurality of coaxial file trays, so as to form a single set or body, with the whole of the trays so combined as to allow of independently displacing any one of the trays with regard to the remainder of the set, for ready use by the operator; and this is provided by the construction in accordance with this invention, which according to the particular features and convenient results obtained in the experiments carried out, will assure a general adoption of the improved system in connection with different types of files, and in particular, with those of large capacity.

With these objects in view, the invention deals with an assembly of rotary file trays of annular shape and radial arrangement of the file cards, but with a particular system of mounting the trays on bracket arms, coaxially and rotatably arranged on a lateral spindle or supporting column, adapted for carrying a plurality of said bracket arms, one above another and each supporting a file tray, so that the assembly of trays will normally form a column, but, as the bracket arms are adapted for independent oscillation, any one of the file trays may be turned so as partially to separate from the column and uncover a suitable part thereof for allowing the inspection of its contents, whereupon, by means of adequate guiding and detention means, the tray may be pushed back to occupy its normal position in the column.

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Another particular object of the invention consists in so combining the supporting arms or brackets that the weight of the trays will be balanced, by causing the axles of the same to bear one upon the other and thus form a compound column. Notwithstanding such arrangement, any of the axles may abandon its coaxial position when its respective tray is shifted outwards by the angular displacement of its bracket.

A further object of the invention consists in providing a maximum of capacity within a most restricted volume of rotary file material.

The invention also has for its object to provide an abundant service of file cards in condition for ready handling and inspection by the operator who, from a convenient position and comfortably seated, may operate, at the same time, several sets of files.

A further object of the invention is to allow of independently controlling at will the position of the several file trays, for consulting the file cards from the top as well as from the sides of the tray on which they are resting.

Another object still is to form conjoints or sets of files which owing to their particular configuration are adapted to form cabinets or cylindrical bodies of furniture, of reduced volume.

Other objects of the invention will appear when considering the following description of a preferred embodiment of the novel rotary file, illustrated by way of example and to facilitate the understanding of the invention, in the accompanying drawings, wherein:

Figure 1 is an upper plan view of a tray assembly according to the invention, showing how the horizontal displacement of a tray with regard to the assembly of trays, placed within a cabinet or similar piece of furniture, exposes a considerable area of the tray for inspection, the cabinet being shown in section.

Figure 2 is an elevation of a modified embodiment of a rotary file which allows of so arranging the centre of the several trays, one with regard to the other, that they will be supported, in their inoperative condition, in the shape of a column or pile.

The same letters and numbers of reference have been used to indicate like or corresponding parts in all the several views.

Referring now to the drawings, *a* indicates the file trays, mounted for free rotation on an axle 1, each tray being provided with at least one annular platform 3 for supporting the file cards

2. The platform 3 of each tray *a* extends between an annular inner wall 4 and the peripheral edge 5, the width of the platform 3 being determined for radial arrangement of the file cards 2, as may be seen in the several figures. For securing the file cards in position on the platform 3, the trays *a* are provided with suitable retention means.

In the embodiment of Figure 1, the retention means for the file cards consists of an annular vertical flange 6, provided along the outer periphery of the platform 3, which will thus be bounded by said flange 6 and the inner wall 4, respectively. The file cards are thus supported edgewise or in upright position on the platform 3 without necessity of further auxiliary means.

The platform 3 of each tray *a* is divided by partitions 7, held in position by suitable lugs 7' inserted into slots 8, formed in the platform 3 and inner wall 4. The partitions 7 are removable and their position may be varied so as to form file sectors of different size, for holding a greater or smaller number of file cards 2. The partitions 7 are further provided adjacent to their upper outer corner with a lug 9, adapted to project beyond the top edge of the file cards and to carry a tag or label for indexing purposes.

In the embodiment of Figure 1, the retention means for the file cards consists of a cord 10 or the like, horizontally applied at a suitable height against the inner wall 4, and of a convenient diameter and condition to serve as a sort of rail. The file cards, in turn, are formed with a notch 2', corresponding in shape with the cross section of the cord 10, so that when inserted on the same, the cards will be held in a vertical position, as clearly shown in said figure. In this form of construction, the flange 6 on the outer periphery of the platform or tray 3 may be dispensed with.

For loose engagement with the axle 1, each tray *a* is provided with a sleeve-shaped hub 11, mounted by means of a bearing 12 and a supporting washer 13 on axle 1 carried by the free end 14 of an arm *b*, which constitutes the oscillatory support of said axle 1 and hence of the tray *a*.

The arm *b* for each tray *a* is somewhat longer than the radius of the tray and is conveniently secured to or formed integrally with a sleeve 15, slidably mounted on the supporting spindle or column 16. The sleeve 15 is provided at each end with an annular cap 17 and 18, in rotatable adjustment with the spindle 16, for allowing of the angular motion of the arm or bracket *b*, as may be seen by referring to the drawings.

Each sleeve 15 rests with its annular cap 18 on a washer 19, affixed to the spindle 16 by means of a set screw 20, so that the level of adjustment of said washer 19 will determine the plane of motion of the bracket *b* with its tray *a*, and the distance separating the several trays *a* from each other may likewise be varied in order to suit file cards of different heights.

With reference to the embodiment of Figure 2, the axles 1 and related members for rotatably mounting the trays *a* on the brackets *b* are so adjusted that when desired, the same may be caused to rest one upon the other and the assembly of trays may be supported by a pedestal *d* or the like.

For that purpose, by adjusting the washer 19 by means of the set screw 20, the arms *b* with their sleeves 15 may be so arranged that a convex spherical boss 14', provided on the lower

part of the end 14 of each of said arms *b* except the lowermost one, will engage with the concave spherical top 1' of the next lower axle 1 when the axles of the several trays *a* are in alignment, i. e., in their inoperative position, while the convex spherical boss 14'' on the lower part of the end 14'' of the lowermost arm *b* will then rest on the concave spherical top 1'' of the pedestal *d*, as shown in Fig. 2.

This position is determined by a stop 21, shown in Figure 2, which consists of a vertical bar mounted on the same base and extending parallel to the spindle 16 at a distance from the latter less than that between the spindle and the peripheries of the file trays, said bar 21 projecting past all the arms or brackets *b*, so that when the same are in their normal position against said stop 21, all the trays *a* will be coaxial, and in the arrangement according to Figure 3, they will all bear one on the other and form a column; in such inoperative position, the brackets *b* of the trays *a* will be relieved of the weight of these latter. It is understood that the brackets *b* must be of sufficient strength for assuring the proper support of the tray when in its operative position and allow of its convenient handling as if it were a rotary file tray independent of the general assembly.

From the foregoing description it will be seen, therefore, that a plurality of file trays *a*, provided with an annular platform or bottom 3, a back wall 4 and a retention means formed either by a vertical flange 6 or a rear cord 10, according to the particular design, are adapted to be freely revolved by means of a hub on a vertical axle 1, mounted on the free end of a bracket or arm *b* which by means of a sleeve 15 is rotatably mounted on a spindle 16 which serves to support the file tray supporting arms, said file trays *a* with their arms or brackets being mounted in alignment, so that all their axles are situated on the same vertical line when said trays are in their inoperative position, determined by the stop 21, but will be free to oscillate in a direction opposite to said stop, in order that, by means of an angular displacement of the respective arm, one or more of the file trays may depart from said column of file trays and allow, as shown in Figure 1, of conveniently inspecting the file cards contained therein.

The spindle or column 16 and stop bar 21 will be suitably supported by a base *e* or the like, and as it will be necessary to provide means for protecting the file cards placed on the trays, the assembly formed by the several file trays *a* with their oscillatory arms *b* and supporting spindle 16, will conveniently be housed in a cabinet or similar piece of furniture *c*, as shown in Figure 1, the front of which may be closed by a slide door 22 of semi-cylindrical configuration.

As has been stated, in order to operate the rotary file, the operator grips the file tray to be inspected and causes the same to turn around towards the front, out of its alignment with the column of file trays, as the tray, by turning on its axle 1, will cause all the file cards 2 on the same to be exposed, in suitable position for inspecting and handling.

In the case of file cards 2 of a larger size than that allowed by the clearance between the bottom of the tray and the bracket *b*, said trays *a* may be spaced at a greater distance one from another by simply changing the position of the washer 19 on which is supported each bracket *b*. How-

ever, it is preferable to place the file trays *a* closer to each other, in axial engagement, so that the convex spherical boss 14' of the free end 14 of each bracket *b* except the lowermost one will bear on the concave spherical upper end 1' of the axle 1 of the next lower tray and the boss 14'' of the lowermost bracket *b* will be supported on the concave spherical top 1'' of the pedestal *d*. In this way, all the axles 1 of the several trays will support each other in column shape, normally resting on the pedestal *d*. This arrangement of providing a support for the trays does not interfere with the movements of any of the trays *a*, as the adjustment and exact adaption of the brackets *b* will allow of the free angular motion of the same towards the front, as well as of their return to the inoperative or coaxial position.

It will be evident that when carrying the invention into practice, several modifications of construction and arrangement of the file trays may be introduced without departing from the basic principles of the invention, as clearly determined in the following claims.

I claim:

1. A filing device comprising a single vertical spindle, a plurality of similar bracket arms mounted with their inner ends rotatable on said spindle to project radially therefrom in spaced apart horizontal planes, vertical axles projecting upwardly from the free outer ends of said bracket arms, respectively, a plurality of rotary file trays the radius of which is less than the length of said bracket arms, said rotary file trays being mounted on said axles, respectively, stop means to arrest all said bracket arms against movement in one direction in a predetermined position in which all said vertical axes are in alignment, the free end of each of said bracket arms except the lowest

one being adapted to rest, in said predetermined position, on the top of the axle of the tray disposed directly below such bracket arm, and a pedestal to support the outer end of the lowermost bracket in said predetermined position, so that, when all said bracket arms are in said predetermined position, the axles of all the trays and the free ends of all the bracket arms form with said pedestal a solid column.

2. A filing device comprising a single vertical spindle, a plurality of similar bracket arms mounted with their inner ends rotatable on said spindle to project radially therefrom in spaced apart horizontal planes, vertical axles projecting upwardly from the free outer ends of said bracket arms, respectively, a plurality of rotary file trays the radius of which is less than the length of said bracket arms, said rotary file trays being mounted on said axles, respectively, stop means to arrest all said bracket arms against movement in one direction in a predetermined position in which all said vertical axes are in alignment, each bracket arm carrying on the underside of its free outer end a convex spherical boss, the boss of each bracket arm except the lowest one being adapted to rest, in said predetermined position, on the concave spherical top of the axle of the tray disposed immediately below such bracket, and a pedestal having a concave spherical top surface adapted to receive and to support the spherical boss at the outer end of the lowermost bracket arm, so that, when all said bracket arms are in said predetermined position, the axles of all the trays and the bosses at the free ends of all the bracket arms form with said pedestal a solid column.

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