June 16, 1953 J. H. TALMAGE ET AL 2,642,067

SEPARATOR SHEET FOR FILING APPLIANCES

Original Filed March 2, 1946 2 Sheets-Sheet 1

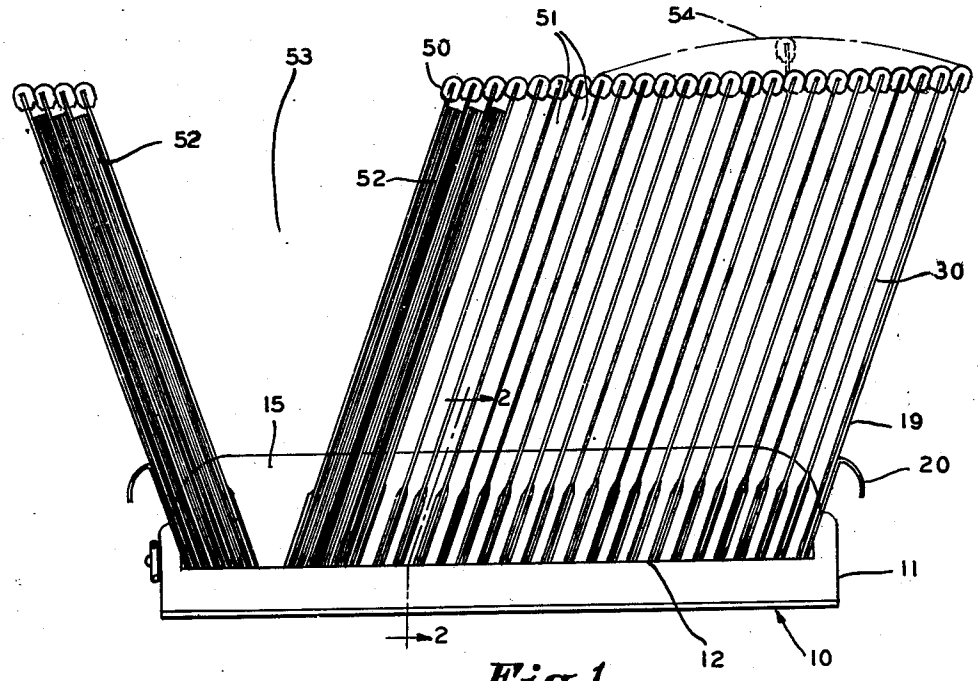


Fig. 1

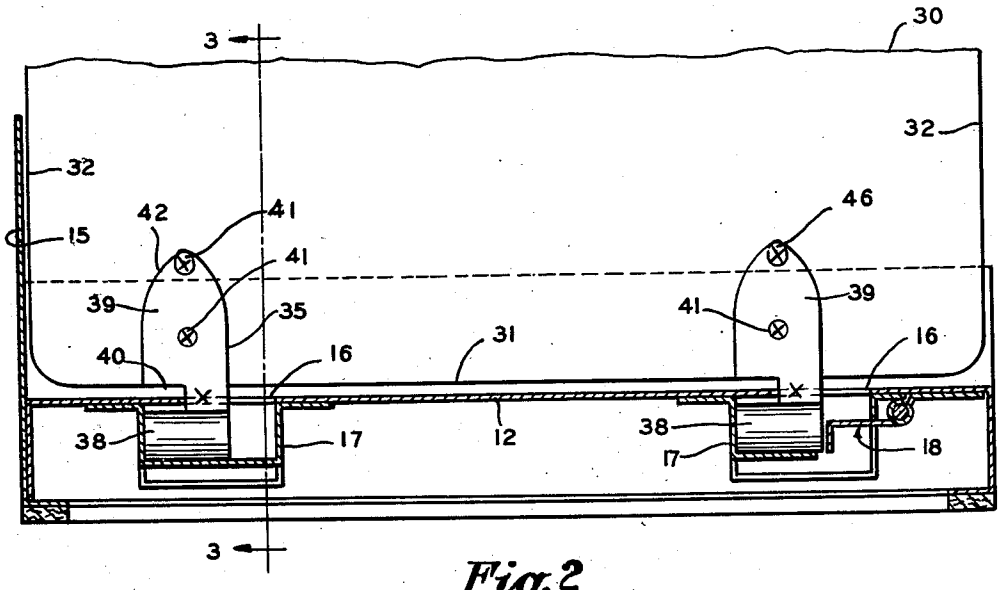


Fig. 2

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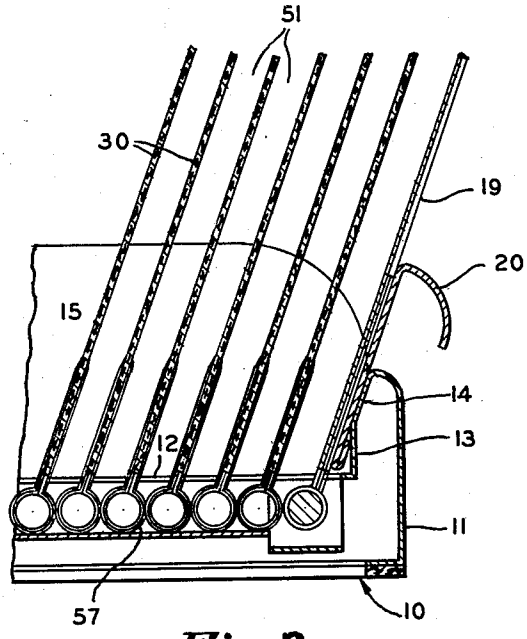


Fig.3

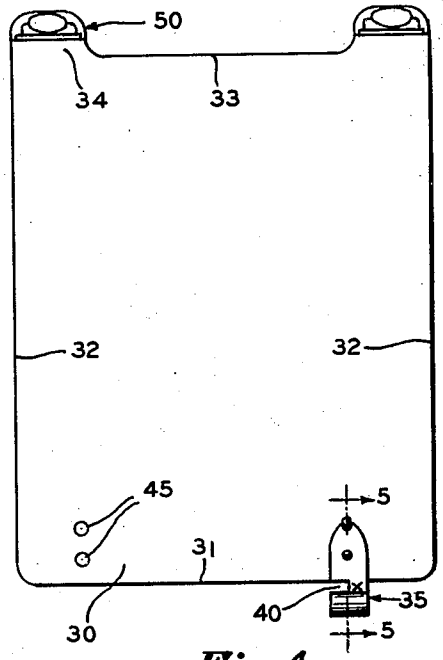


Fig.4

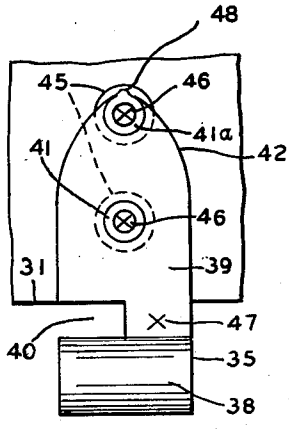


Fig.6

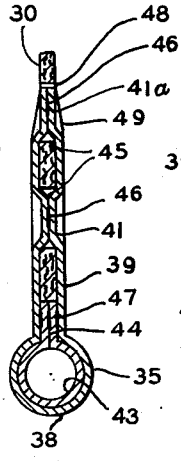


Fig.5

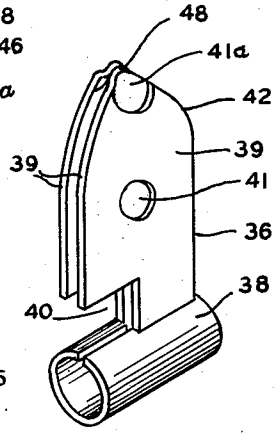


Fig.7

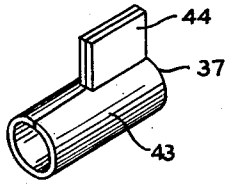


Fig.8

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UNITED STATES PATENT OFFICE

2,642,067

SEPARATOR SHEET FOR FILING APPLIANCES

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Original application March 2, 1946, Serial No. 651,564. Divided and this application October 7, 1947, Serial No. 778,432

5 Claims. (Cl. 129—16.7)

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The invention relates to filing appliances and more particularly to tray or housing equipment for filing records of various sizes and kinds, printed, typed, photographed, recorded, or otherwise entered upon cards, sheets, forms, negatives, prints, records and the like, of almost any thickness from light weight bond or ledger papers to heavy index bristol board and cardboard and including photographic positives and negatives and sound recording records. Such record cards and the like may include tabulating cards, machine posted record sheets, statements, ledger records, stock records, sales records, negative films, photoprints, record recordings, and the like. This application is a division of our application Serial No. 651,564, filed March 2, 1946, now issued as U. S. Letters Patent No. 2,581,730.

The primary object of the present invention resides in the provision of a new and improved construction and arrangement for separating filed materials by an indexed system within a single tray.

Another object of the present invention lies in the provision of separator members for a filing appliance which readily form uniformly spaced individual compartments within a filing appliance of the general type disclosed in U. S. Patent No. 2,581,730 and which will accommodate records for any make or style of posting machine, or records of any size of say 6" to 17" wide and say 3" to 14" high, which do not require the record cards handled or housed to be punched for filing but yet readily handle record cards which previously have been punched, and which accommodate record cards made of any weight of bond or ledger or index bristol paper, cardboard and the like.

Still another object of the present invention is embodied in providing a separator member construction including as an integral structure therewith pivot roller means adapted to be mounted in a card tray to permit the separator members to lie maintained in uniform spaced relationship and which may be selectively, rotatably separated one from another to form a deep, wide, V-opening therebetween providing ample visibility of the entire record face of the card exposed. Such arrangement will support the exposed card in flat upstanding angled position and retain all other cards in a flat protected position preventing them from sagging or curling and preventing wear and damage to their bottom ends.

Likewise, it is an object of the present invention to provide an improved portable record card filing tray with a base and having spaced pivotally

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mounted separators, with improved means for attaching pivot mountings to preferably cardboard separators at their bottom edges so that the pivot mountings will not tear or damage record cards when being removed from or replaced in the tray.

Furthermore, it is an object of the present invention to provide an improved pivot mounting for the separators of a portable record card filing tray in which the pivot mountings may be formed of very light gauge sheet metal and reinforced against distortion from a truly round shape.

Finally, it is an object of the present invention to provide a new portable record card filing appliance which is durable and effective in use, which has an improved and simplified construction and arrangement that may be readily manufactured and assembled by the simplest of operations in an inexpensive manner, which overcomes the foregoing prior art difficulties and solves many problems existing in the art, and which incorporates one or more or all of the foregoing advantages and desiderata.

These and other objects and advantages apparent to those skilled in the art from the following description and claims may be obtained, the stated results achieved, and the described difficulties overcome by the devices, arrangements, elements, parts, constructions, combinations, sub-combinations, filing appliances, and tray structures which comprise the present invention, the nature of which is set forth in the following general statement, a preferred embodiment of which—illustrative of the best mode in which applicants have contemplated applying the principles—is set forth in the following description, and which are particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The nature of the improvements in filing appliances as are disclosed herein may be stated in general terms as including together with a tray member having plural pivot openings in the bottom thereof, file separator members of rigid and sturdy construction and provided on the bottom edges thereof with pivot rollers to be locked in the tray bottom to rockably mount the separators therein so as to form uniform individual compartments in the tray for the reception of record material.

By way of example, a preferred embodiment of the improved filing appliance is illustrated in the accompanying drawings forming part hereof wherein:

Figure 1 is a side elevation of a filing appliance

incorporating the improvements of the present invention;

Fig. 2 is a vertical sectional view taken on line 2—2 of Fig. 1, looking in the direction indicated;

Fig. 3 is a fragmentary sectional view looking in the direction of the arrows 3—3, Fig. 2;

Fig. 4 is a front view of one of the improved separators with one pivot roller assembled thereto;

Fig. 5 is an enlarged section through one of the separator pivot roller members taken on the line 5—5, Fig. 4;

Fig. 6 is an enlarged fragmentary view illustrating one of the improved separator pivot roller members secured to a separator;

Fig. 7 is an enlarged perspective view of one element of the improved separator pivot roller member;

Fig. 8 is an enlarged perspective view of another element of the improved separator pivot roller member.

Similar numerals refer to similar parts throughout the various figures of the drawings.

The improved filing appliance is described in detail herein with particular reference to the handling of machine posted records in connection with the operation of bookkeeping or billing machines and the like. However, the improvements of the present invention are not limited to use in a filing appliance handling machine posted records because any type of record card may be handled or filed in the improved filing appliance.

The term "record card" as used herein is intended to include, and without limitation, any type of card, sheet or form of almost any thickness from light weight bond or ledger paper to heavy index bristol board and cardboard, on which records are printed, typed, photographed or otherwise entered and including photographic negatives and prints and sound recording records.

The filing drawer or tray with which the new and improved separator is generally used and which is more particularly and specifically shown and described in U. S. Patent No. 2,581,730 is generally indicated at 10. This drawer or tray is usually characterized by a base member 11 of substantial vertical thickness and having a top wall 12 forming the inner bottom of the tray. At each end, the top wall 12 is formed with an upstanding end wall 13 having the upper portion turned outwardly to form an angular stop wall portion 14. The base member 11 is additionally provided along the length of one side thereof with an upstanding side wall 15 projecting for a substantial distance above the top wall 12.

Two elongated slots 16 are formed in the top wall 12, such slots being spaced inwardly from and parallel to the side edges of the base member 11. Secured to the underside of the top wall 12 beneath each of the slots 16 are support members 17 for the pivot roller means forming a part of the separator members, to be hereinafter described. Lock means, generally indicated at 18, are provided to permit the selective insertion or removal of the separator pivot roller means into and out of the slots 16.

As seen in Figs. 1 and 3, end support members 19 are pivotally secured in the base member to extend upwardly therefrom transversely of each end of the base member. The end members 19 are of stiff, reinforced construction and are provided with curved handle portions 20 extending outwardly from above the end walls 13. These end support members 19 serve as lifting handles for the tray member and as supports for the separator members 30, hereinafter to be described, when the separators are in their angular positions toward one or the other end of the tray 10.

Referring now particularly to the separator members 30, the construction and characteristics of which form the primary embodiment of the instant invention, and which are clearly illustrated throughout the several views, the separators are preferably formed of some thin, stiff material such as fiber board to have a lower edge 31, side edges 32, and a recessed top edge 33 having upwardly projecting tab portions 34.

Each separator member 30 has two hinge roller members generally indicated at 35 secured to its lower portion. Each roller member 35 is preferably formed of two elements 36 (Fig. 7) and 37 (Fig. 8). The element 36 has a cylindrical portion 38 terminating in two strap portions 39 formed with notches or recesses 40; and each strap portion 39 is formed with inwardly depressed buttons 41 and 41a. The upper end of each strap portion 39 is curved or arch-shaped as indicated at 42.

The element 37 is formed with a cylindrical portion 43 and projecting ears 44 and the element 37 is telescoped within element 36 so that cylinder 43 is within and reinforces cylinder 38 and so that ears 44 lie between straps 39 adjacent cut-out notches 40.

In assembling the roller members 35 to separator members 30, spaced holes 45 (Fig. 4) are formed in the separators 30 spaced apart a distance equal to the space between buttons 41 and 41a and having a slightly larger diameter than the diameter of the projecting portions of buttons 41 and 41a as best seen in Fig. 5. The strap portions 39 are then engaged over the faces of separator member 30 with the projecting buttons 41 and 41a entering holes 45 and the adjacent faces of the buttons are contacted and spot welded together as indicated at 46, thus securely and rigidly clamping the roller members to the separator 30. At the same time, spot weld 47 may be formed between overlying strap members 39 and underlying ears 44.

It is important that the roller members 35 on the bottoms of the separators 30 be rigid and stiff and yet the metal thickness of the strap portions should be very thin so as to avoid reducing the effective or useful space between adjacent separators. Accordingly, with the particular construction, very light gauge sheet metal may be used for forming elements 36 and 37, yet the cylindrical portions 38—43 are heavy and reinforced so as to maintain a truly cylindrical roller shape; and four thicknesses of metal are provided adjacent the cut-out notches 40 which are necessary for a purpose to be described.

Furthermore, by forming the arch-shaped upper ends 42 on the strap members which die out at the upper buttons 41a whose locations are inward of the outer surfaces of strap members 39, there is no sheet metal edge at the top of roller members 35 upon which record cards will catch as they are slipped downward along either surface of any separator member 30.

The top edge of the sheet metal strap members 39 is located within the upper button receiving hole 45, as indicated at 48 in Figs. 5 and 6 so that any record card sliding downward along either surface of separator member 30 slides along angled edge 49 (Fig. 5) on either side of separator member 30. Accordingly, the particular sheet metal hinge construction for fiber board separators provides for rigidity, strength and stiffness

and yet the sheet metal strap portions do not project beyond the faces of the separator members 30 in such a manner as to provide a shoulder upon which record cards slipped downward between separator members can catch.

In Fig. 4, only one roller member 35 is illustrated attached to the separator member 30 in order that the attaching holes 45 may be shown, but it is understood that another roller member 35 will be attached to separator member 30 by holes 45 shown in the lower lefthand corner. The particular roller construction, in addition to the advantages just described, is very simplified and avoids the use of rivets and the like for attaching a sheet metal member to a fiber board member.

For the facility and ease of the operator in using a file appliance of the general character set forth, thumb knobs or like indexing members generally indicated at 50 are secured to the upper ends of the separators.

A full complement of separator members 30 is mounted on the base member as illustrated in Figs. 1, 2 and 3 and when they are so mounted, the pivot axes of the end support members 19 and separator members 30 all lie in the same horizontal plane as shown in Fig. 3, which axes plane is located closely adjacent the smooth top surface of base top wall 12.

The diameters of the separator rollers 35 are substantially equal to the thickness of the thumb knobs 50 thus providing a series of compartments 51 of equal size and spacing throughout between adjacent separator members, as shown in Figs. 1 and 3.

A series of record cards 52 may be housed in any or all compartments 51 formed between adjacent separators, as illustrated, with the bottom edges of the record cards 52 resting on the smooth flat top surface of the top base wall 12. The cut-out portions 33 in the top edges of separators 30 are located a slight distance below the top edges of the record cards 52 as shown generally in Fig. 1 so that record cards may be readily grasped between thumb and fingers for removal from the tray. Likewise, the record cards 52 may be indexed or guided by cards similar in size and shape to the record cards 52 but having projecting index tabs thereon located between the tabs 34 on the separators.

When it is desired to inspect or remove any particular record card or groups of record cards, assuming that all of the separator and end members are angled to the right in the position of the righthand group in Fig. 1, the operator may quickly inspect the index or guide tabs for quickly ascertaining the general location of the particular record card desired, and a thumb may then be inserted in provided thumb grooves of adjacent thumb knobs 50 and the forward group of separators and end members is pulled forwardly thereby to the position shown by the lefthand block in Fig. 1 thereby forming a wide V-opening 53 at the general location of the particular record card desired. The particular record card may then be quickly located by riffling or blading the cards and when located, its entire front surface is readily visible to the operator because of the large V-opening.

If, for any reason, it is desired to temporarily segregate particular record cards from those filed between the separators on the tray 10, the cards may be offset laterally from the separators to that side away from the side wall 15 of the tray in either their normal vertical positions or in horizontal positions resting on their side edges.

Referring to Fig. 1, the arc through which any separator or end member swings in moving from a rearwardly to a forwardly angled position is indicated in dot-dash lines at 54 with reference to the rear end support member 19.

In some instances where it is not desired to provide for offsetting record cards, an upstanding flange may be provided at the right side of the tray similar to the upstanding flange 16 at the left side of the tray, and the separators and end support members 3 and 4 will have a width somewhat less than the distance between said upstanding flanges as shown in the Bockius and Erickson, Filing Appliance, application Serial No. 622,297, filed October 15, 1945, now Patent No. 2,574,523.

The improved filing appliance saves considerable time and speeds work in handling machine posted records because of its compactness, convenience and flexibility. Because of the elimination of compressors, angle plates, followers, pins and the like, there is no waste space, resulting in greater record card capacity. A business machine operator may begin posting record cards filed in the tray immediately and when finishing, the tray is closed without any "before" and "after" operations.

The improved filing appliance construction provides split-second location of any record and with faster finding because of the easier accessibility to more records and of the smooth, effortless operation of the roller bearing pivoted separators, the operator has more records available ready to post in less time and with fewer operations than in prior art constructions.

The guiding or indexing is completely independent of the separators which is an aid in using the improved filing appliance, and the top edges of all records are accessible above the cut-out portions in the end supports and separators so as to permit rapid riffling of the record cards and segregation of any particular card or group of cards.

The wide opening V-space 53, which is automatically formed as the separators are tilted forward, remains open until it is intentionally closed so that visibility and accessibility for reference to or removal of any record card is complete. The record cards stand naturally on the smooth top wall 12 of the tray base 11 and even though these bottom edges may slide slightly along the smooth flat top 12 of the tray base 11, there is no damage nor appreciable wear to the bottom edges of the cards. These edges, being the "machine-feed" edges are therefore always protected.

The appliance is easily operated regardless of whether the filling sections formed by the multiple separators are filled to capacity or are completely empty; and the filing sections provide ample stuffing space when desired.

Whole sections of records may be removed for checking elsewhere without causing the remaining records to collapse; and the filing space for the records removed is always maintained, thus assuring correct refiling.

The multiple separator construction prevents buckling or curling of the records even though the record cards are formed from light weight bond or ledger paper; and the accessibility of the top edges of the record cards which permits rapid riffling or blading eliminates the formation of "dog-ears."

The improved construction likewise facilitates efficient manufacture of the trays for accommodating almost any size of record say from 5" to

17'' wide and 3'' to 14'' high. A few stock sizes of bases may be made varying in width by steps of from 1'' to 2''. Each width of tray will accommodate any height of record card and the separators, guides and record cards are all formed to the same size and may be assembled with a base. Any standard base width will accommodate a change in width of separators, cards and guides within the limits for which a standard base is designed simply by shortening or lengthening the width of the record cards, separators, etc. at the righthand edges thereof.

Accordingly, the present invention provides an improved construction and arrangement for separator members for use with a filing tray structure of the type generally defined, the combination of which provides an improved and simplified construction of unique design and generally overcoming those difficulties enumerated with respect to prior art devices and attaining the new results described.

The embodiment of the present improvements illustrated and described herein is by way of example, and the scope of the present invention is not limited to the exact details of construction of the various parts.

Finally, in the foregoing description, certain terms have been used for brevity, clearness and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are used for descriptive purposes herein and not for the purpose of limitation, and are intended to be broadly construed.

Having now described the features of the invention, the construction, operation and use of preferred embodiments thereof, and the advantageous, new and useful results obtained by the improved filing appliance; the new and useful devices, arrangements, elements, parts, constructions, combinations, sub-combinations, and filing appliances, and reasonable mechanical equivalents thereof, obvious to those skilled in the art, are set forth in the appended claims.

We claim:

1. In a filing tray appliance in which a plurality of separator members are pivotally mounted on a base, a non-metallic separator sheet having substantial thickness, there being a set of holes formed one above another in said sheet adjacent each lower corner thereof, sheet metal roller members each having a cylindrical portion terminating in two strap portions, a plurality of buttons formed in each strap portion projecting toward the other strap portion, the top edge of each strap portion terminating in one of said buttons, the strap portions being engaged over the faces of the lower corner portions of said sheet with the buttons engaged in said holes and with the top button-terminating edge of each strap portion located within one of said holes, and the buttons of opposite strap portions engaged within each hole being spot welded together to rigidly clamp the separator sheet between the strap portions and to provide a pivot roller projecting from the lower edge adjacent each lower corner of the separator sheet.

2. In a filing tray appliance in which a plurality of separator members are pivotally mounted on a base, a non-metallic fiber board separator sheet having at least two spaced holes formed adjacent each lower corner thereof, a sheet metal pivot roller secured to the lower edge of said sheet adjacent each lower corner thereof including a roller element and a reinforcing element, each roller element being formed with a cylindrical portion terminating in two strap portions each formed with inwardly depressed buttons engaged within said holes, the inwardly depressed buttons in each hole being spot welded together, each reinforcing element including a cylindrical portion and projecting ears, a reinforcing element being telescoped within a roller element with its cylindrical portion within and reinforcing the cylindrical portion of the roller element, and the ears of each reinforcing element being located between and spot welded to the strap portions of its roller element.

3. In a filing tray appliance in which a plurality of separator members are pivotally mounted on a base, a non-metallic separator sheet having substantial thickness, there being at least two spaced holes formed one above another in said sheet adjacent each lower corner thereof, a sheet metal pivot roller secured to the lower edge of said sheet adjacent each lower corner thereof, each roller including two strap portions, a plurality of inwardly depressed buttons formed in each strap portion one above another, the top edge of each strap portion terminating in one of said buttons, the strap portions being engaged over the faces of the lower corner portions of said sheet with the depressed buttons located in and engaged in said holes and with the top button-terminating edge of each strap portion located within one of said holes, and the inwardly depressed buttons in each hole being spot welded together to rigidly secure the pivot rollers to the separator sheet.

4. In a filing tray appliance in which a plurality of separator members are pivotally mounted on a base, a non-metallic separator sheet having substantial thickness, there being at least two spaced holes formed one above another in said sheet adjacent each lower corner thereof, a sheet metal pivot roller secured to the lower edge of said sheet adjacent each lower corner thereof, each roller including two strap portions, a plurality of inwardly depressed buttons formed in each strap portion one above another, each hole in the separator sheet having a diameter slightly larger than the diameter of the depressed buttons, the top edge of each strap portion terminating in one of said buttons, the strap portions being engaged over the faces of the lower corner portions of said sheet with the depressed buttons located in and engaged in said holes and with the top button-terminating edge of each strap portion located within one of said holes, and the inwardly depressed buttons in each hole being spot welded together to rigidly secure the pivot rollers to the separator sheet.

5. In a filing tray appliance in which a plurality of separator members are pivotally mounted on a base, a non-metallic separator sheet having substantial thickness, there being at least two spaced holes formed one above another in said sheet adjacent each lower corner thereof, a sheet metal pivot roller secured to the lower edge of said sheet adjacent each lower corner thereof, each roller including two strap portions, the upper end of each strap portion being arch-shaped, a plurality of inwardly depressed buttons formed in each strap portion one above another, the arch-shaped end of each strap portion dieing out in the depressed portion of one of said buttons, the strap portions being engaged over the faces of the lower corner portions of said sheet with the depressed buttons located in and engaged in said holes and with the top button-terminating

arch-shaped end edge of each strap portion located within one of said holes, and the inwardly depressed buttons in each hole being spot welded together to rigidly secure the pivot rollers to the separator sheet.

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ROBERT W. FINLEY.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
730,399	Rand	June 9, 1903
731,330	Woodruff	June 16, 1903
868,118	Pardee	Oct. 15, 1907
1,073,248	Kouba	Sept. 16, 1913
2,359,376	Martin	Oct. 3, 1944
2,364,640	Martin	Dec. 12, 1944
2,422,935	Straubel et al.	June 24, 1947

FOREIGN PATENTS

Number	Country	Date
725,993	France	Feb. 22, 1932
110,512	Australia	May 1, 1940