April 2, 1968 A. L. DIXON ET AL 3,375,830

TRAY WITH TILTABLE ENDS FOR RECORD CARDS

Filed Jan. 12, 1967 2 Sheets-Sheet 1

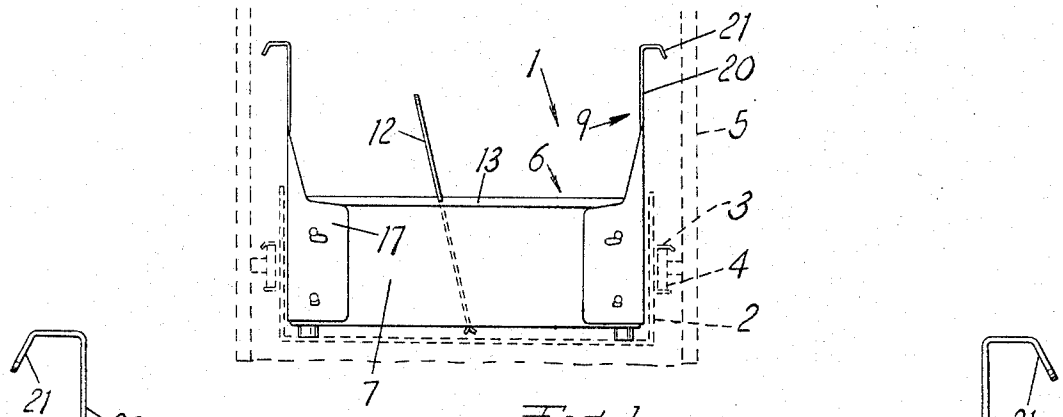


Fig. 1

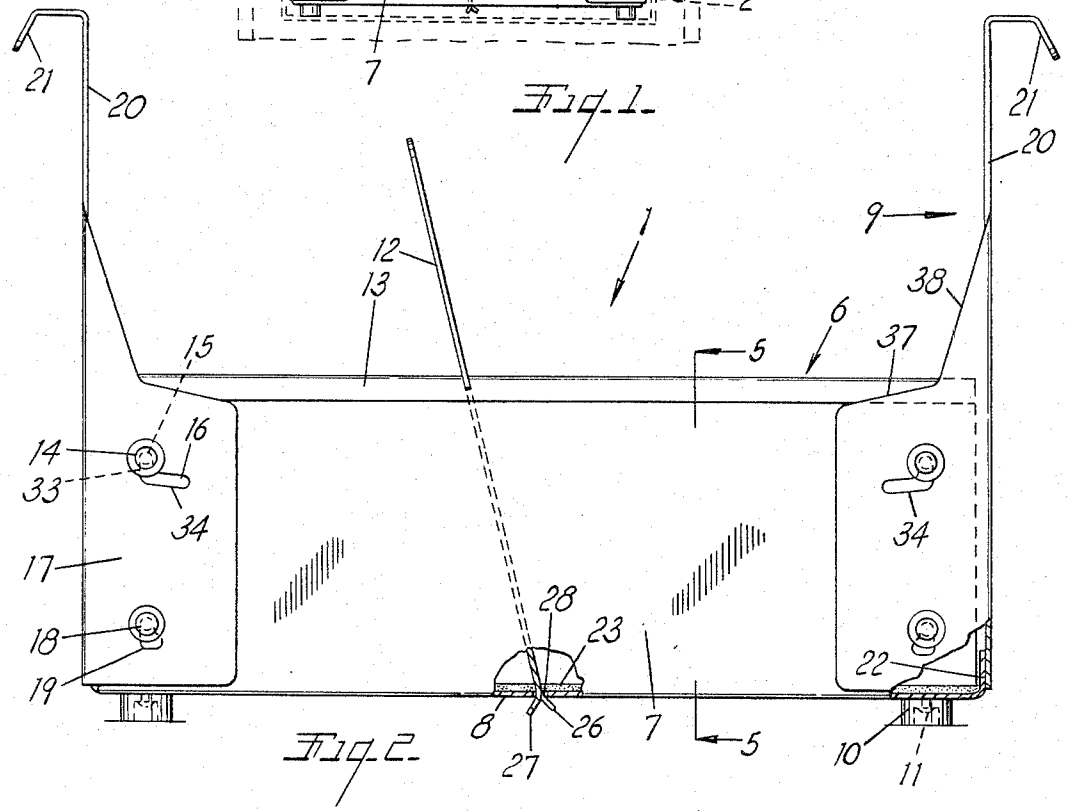


Fig. 2

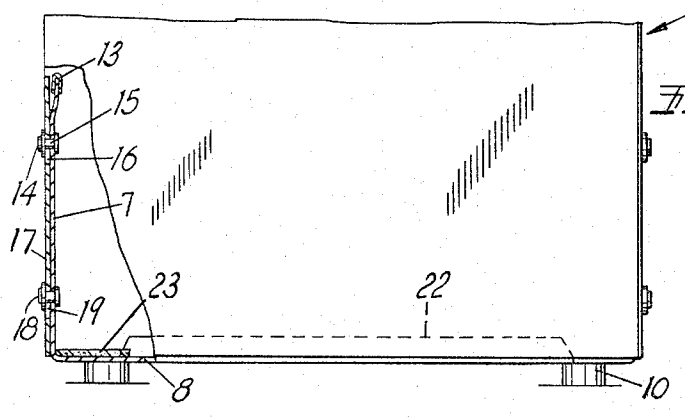


Fig. 3

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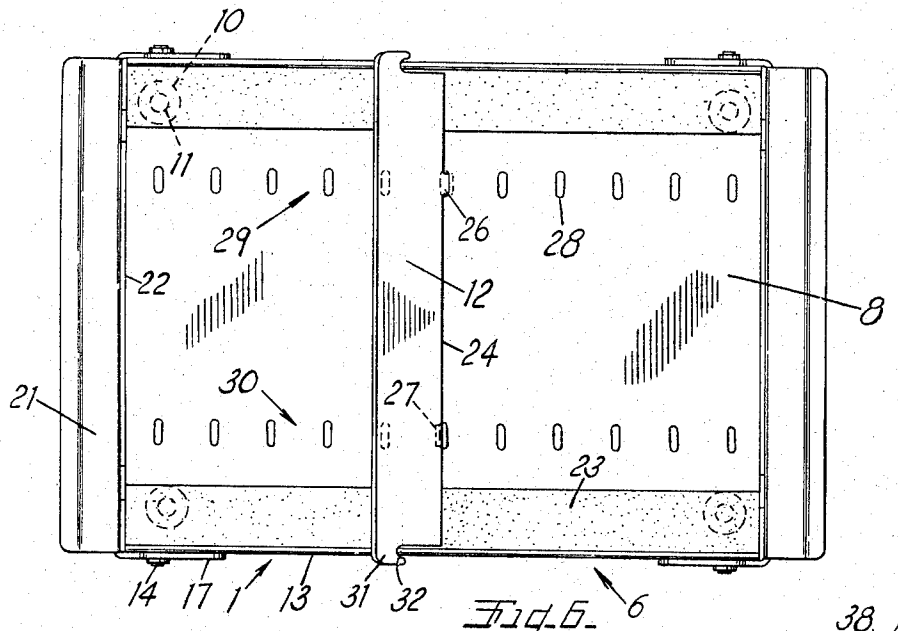


Fig. 6.

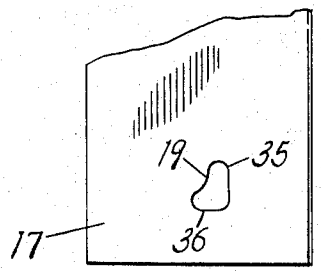


Fig. 7.

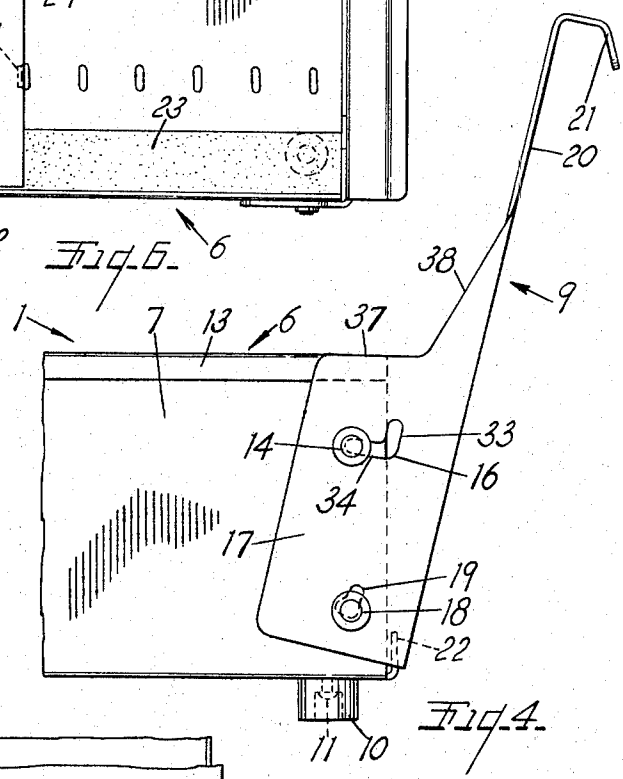


Fig. 4.

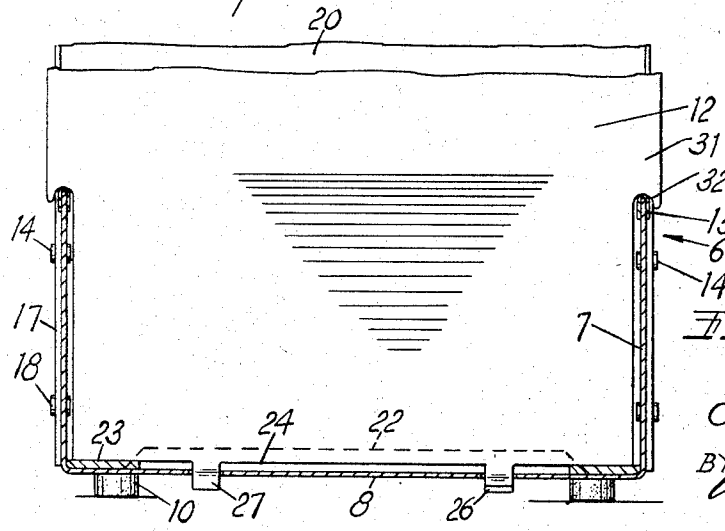


Fig. 5.

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TRAY WITH TILTABLE ENDS FOR RECORD CARDS

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6 Claims. (Cl. 129—16)

ABSTRACT OF THE DISCLOSURE

The application discloses a tray for record cards that is sized to fit crosswise in a standard file drawer, and which has foldable end members that function as handles for inserting and removing the tray from a drawer, and which swing outwardly to permit spreading the tops of record cards and to support the cards in forwardly and rearwardly tilted positions. The disclosure includes a tray divider plate with a selective, tiltable, and releasably retained engagement with the bottom of the tray.

Field of invention

The invention relates to receptacles designed to hold record cards, such as customer account cards, inventory cards, or cards for other information, in compact position for storage or handling of the entire file of cards, or for open titlable positioning of the cards when it is desired to see indexing or identifying information on the upper ends of the cards.

Prior art

Filing boxes or trays for card files have been provided that function to store cards in compact, face to face, position of the cards, and which open to release the upper portions of the cards for easy access and viewing of the upper parts of the cards. These prior trays may be stored on any suitable support such as a shelf, and when properly sized, may be stored in drawers of filing cabinets.

Summary of invention

The present inventon provides a tray of the foregoing nature that is relatively inexpensive to manufacture, and which occupies a minimum amount of space surrounding the file cards which it is capable of containing. The ends of the tray act first as handles for moving the file from storage and use positions, and further fold outwardly to free the upper ends of the file cards for visual observation and separate tilting to expose successive or desired cards. The ends are connected to the body of the tray by flanges that have an inexpensive tiltable connection to the sides of the tray, and which protectively overlie the upper corners of the tray in all adjusted positions of the ends. The protective overlie permits the body of the tray to be inexpensively manufactured with a minimum of provision for the removal or covering of rough or sharp edges, contact of a clerk's hands and fingers with any such edges being prevented by the flanges of the end members in all positions of the end members.

The tray of the invention also features a file divider plate that is selectively engageable in the tray and tiltable to limited inclined positions and which is accessible from the sides of the tray to tilt groups or sections of file cards in the tray.

The drawings of which there are two sheets illustrate a preferred embodiment of the tray.

FIGURE 1 is a side elevational view of the tray in operative position within the drawer of a filing cabinet, the drawer and cabinet being indicated by broken lines.

FIGURE 2 is an enlarged side elevational view of the tray with portions broken away in cross section.

FIGURE 3 is a fragmentary end elevational view of the tray with portions broken away in cross section.

FIGURE 4 is an enlarged fragmentary side elevational view of one end of the tray with the end member tilted upwardly.

FIGURE 5 is a fragmentary transverse cross sectional view taken along the plane of the line 5—5 in FIGURE 2.

FIGURE 6 is a top plan view of the tray.

FIGURE 7 is an enlarged fragmentary side elevational view of a portion of one of the end members illustrating the shape of one of the pivot hole connections for the end member.

FIGURE 1 illustrates the tray indicated generally at **1** in collapsed storage position within a drawer **2** of a filing cabinet, the sides of the drawer being provided with guide or slide rails **3** supported on rollers or slides **4** secured to the sides **5** of the cabinet as is common.

More particularly the tray **1** consists of a U-shaped body indicated generally at **6** which is conveniently and inexpensively formed by bending a piece of light sheet material to provide side walls **7** extending upwardly from a bottom **8**. Tiltably connected to the ends of the body are end members generally indicated at **9**. Non-marring or cushioning feet **10** are secured to the underside of the bottom **8** by suitable means such as the rivets indicated at **11** and one or more divider plates **12** are selectively and tiltably mounted within the body as will be more particularly described presently. The upper edges of the side walls **7** are covered by protective strips **13** which both stiffen the side walls and cover any rough or sharp edges on the side walls.

The side walls are provided near their ends with upper connecting pins or headed rivets **14** and shanks **15** which extend through L-shaped slots **16** formed in side flanges **17** bent longitudinally from the lower portion of end members **9**. Spaced below the rivets **14** are other pins or rivets **18** which are connected to the side walls and project through openings **19** formed in the side flanges **17** of the end members. The end members **9** are flat metal plates having upstanding portions **20** projecting substantially above the body **6** and having outwardly and downwardly turned handle portions **21** on their upper edges. As appears in FIGURE 1 the handles **21** overlie the sides of the drawer and the supporting slide rails **3** when the tray is sized to fit crosswise within the drawer **2**. Since filing cabinets are more or less standardized in size it is practical to form trays according to the invention which will make maximum use of the space within filing cabinet drawers.

Within the U-shaped body **6** the bottom **8** has upturned flanges **22** at the ends which form stops for the lower edges of cards or papers filed in the tray. Desirably strips **23** of soft material having a relatively high friction surface are secured within the body **6** along the sides of the bottom **8** where they cover the ends of leg attaching rivets **11** and support the lower edge **24** of the divider plate **12** as well as the lower edges of cards stored in the tray. Projecting downwardly from the lower edge **24** of the divider plate are a pair of lugs or tabs **26** and **27** which project downwardly through selected pairs of holes **28** in the spaced lines of holes **29** and **30**. One tab **26** is bent slightly in one direction while the other tab **27** is bent oppositely so that the divider plate resists removal from the pair of holes with which it is engaged. Desirably the upper portion of the divider plate **12** is provided with laterally projecting side portions **31** with downwardly facing notches **32** on their lower edges which engage over the finishing strips **13** to limit the titlting of the divider plate within the body.

The L-shaped holes **16** have upright edges or portions

33 connecting at their lower ends with relatively long downwardly and inwardly inclined edges 34. The L-shaped openings 19, as appears more clearly in FIG. 7, have upstanding edges 35 connected at their lower ends to relatively short inwardly extending edges 36. When the tray is in collapsed storage position as shown in FIGURES 1 and 2 the shanks of the connecting rivets 14 and 18 are disposed in or below the upright edges 33 and 35 of the slots 16 and holes 19 and when the tray is lifted out of the drawer 2 or from any storage portion, the handles 21 may be pulled laterally on the tray as shown in FIGURE 4 thus opening the space between the end members and permit selective tilting of the cards in the tray to expose their upper faces. When the tray is returned to a cabinet drawer the weight of the body and the cards stored therein naturally moves the rivets 14 and 18 to the lower ends of the slots 16 and openings 19 and camming sections of the sides of the drawers against the outer surface of the end members 9 automatically forces the end members inwardly, thus moving to the outer end of the edges 34 and 36 so that downward pressure on the handles 21 may force the end members downwardly in locked upright position where they cannot interfer with normal opening and closing movement of the drawer 2.

The side flanges 17 of the end members have downwardly and inwardly inclined upper edges 37 which merge smoothly at their outer ends with upwardly and outwardly tapering portions 38. In the raised and outwardly tilted positions of the end members as shown in FIGURE 4 the edges 37 lie approximately along the ends of the finishing strips 13 and the end edges of the side walls 7. When the end members are tilted upwardly and inwardly as shown in FIGURES 1 and 2 the tapered portions 38 of the side flanges move into overlapping protective relation to the ends of the finishing strips so that a clerk working rapidly with cards in the tray cannot bring her fingers into contact with any sharp or rough edges on the ends of the body 6 or the trim strips 13. Additionally the trim strips 13 generally overlie the inner ends of the rivets 14 and 18 forming smooth side guides for the edges of cards in the trays so that the full capacity of the tray can be utilized for storing record cards. The mutual supporting and reinforcing relation between the side flanges on the end members and sides of the body and the finishing strips 13 permits the tray to be made of relatively thin gage material so that maximum use of the space in a drawer 2 may be used for card storage while permitting a series or set of cards to be removed from the drawer for more convenient handling and working with the cards.

What is claimed as new is:

1. A tray for holding record cards on edge comprising,
a body of U-shaped cross section having a bottom with upright side walls,
short upstanding stops on the ends of said bottom,
end members of greater height than said side walls having laterally turned flanges along the lower portions of said side edges lapped along the outer sides of the ends of said side walls and outturned handle portions on their upper edges,
first connections between the lower portions of said flanges and said side walls permitting pivoting and limited longitudinal and vertical movement of the end members relative to said body,
second connections spaced upwardly from said first connections and engaged between said flanges and said side walls,
said second connections permitting greater longitudinal movement but approximately the same vertical movement of the end members relative to the body as said first connections,
spaced longitudinal lines of transversely extending slots formed in said bottom,
a card divider plate fitting swingably between said side walls and having tabs on its lower edges selectively engageable in opposed slots in said lines,
said tabs being bent oppositely from the plane of said plate,
support ridges extending along the inside of said bottom,
and cushion feet on the bottom of said body to support the tray with clearance for the lower ends of said tabs.

2. A tray as defined in claim 1 in which said first connections comprise headed studs secured to said side walls with shanks projecting through L-shaped holes in said flanges,
said holes having relatively short lower leg portions extending inwardly from upright leg portions and having cam-like inclined edges connecting the inner edges of the legs,
said second connections comprising other headed studs secured to said side walls with shanks projecting through L-shaped slots in said flanges, said slots having relatively long lower leg portions inclined downwardly and inwardly from the lower ends of upright leg portions.

3. A tray as defined in claim 1 in which said divider plate has a lower portion fitting between said side walls and a widened upper portion overhanging the edges of said side walls with downwardly facing notches engageable with the edges of the side walls.

4. A tray as defined in claim 1 in which said stops are narrow integral flanges turned up from the ends of said bottom,
said support ridges being strips of soft material secured to said bottom over the connections to said feet and having relatively non-slip upper surfaces.

5. A tray as defined in claim 1 in which the upper edges of said flanges lie alongside the upper edges of said side walls in the upward and outwardly tilted positions of said end members,
and tapered extensions merging smoothly with the upper edges of said flanges and extending thereabove to the edges of said end members,
said extensions laterally overlapping the upper corners of said side walls in the downward and inwardly tilted positions of said end members.

6. A tray as defined in claim 2 in which said body is sized to fit crosswise in a standard file drawer with said end members in upright position with said handle portions overhanging the sides of the file drawer.

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