Sept. 23, 1958 S. L. MILLER ET AL 2,853,354

MULTIPLEX TUB FOR CARD FILES

Filed Oct. 24, 1952 2 Sheets-Sheet 1

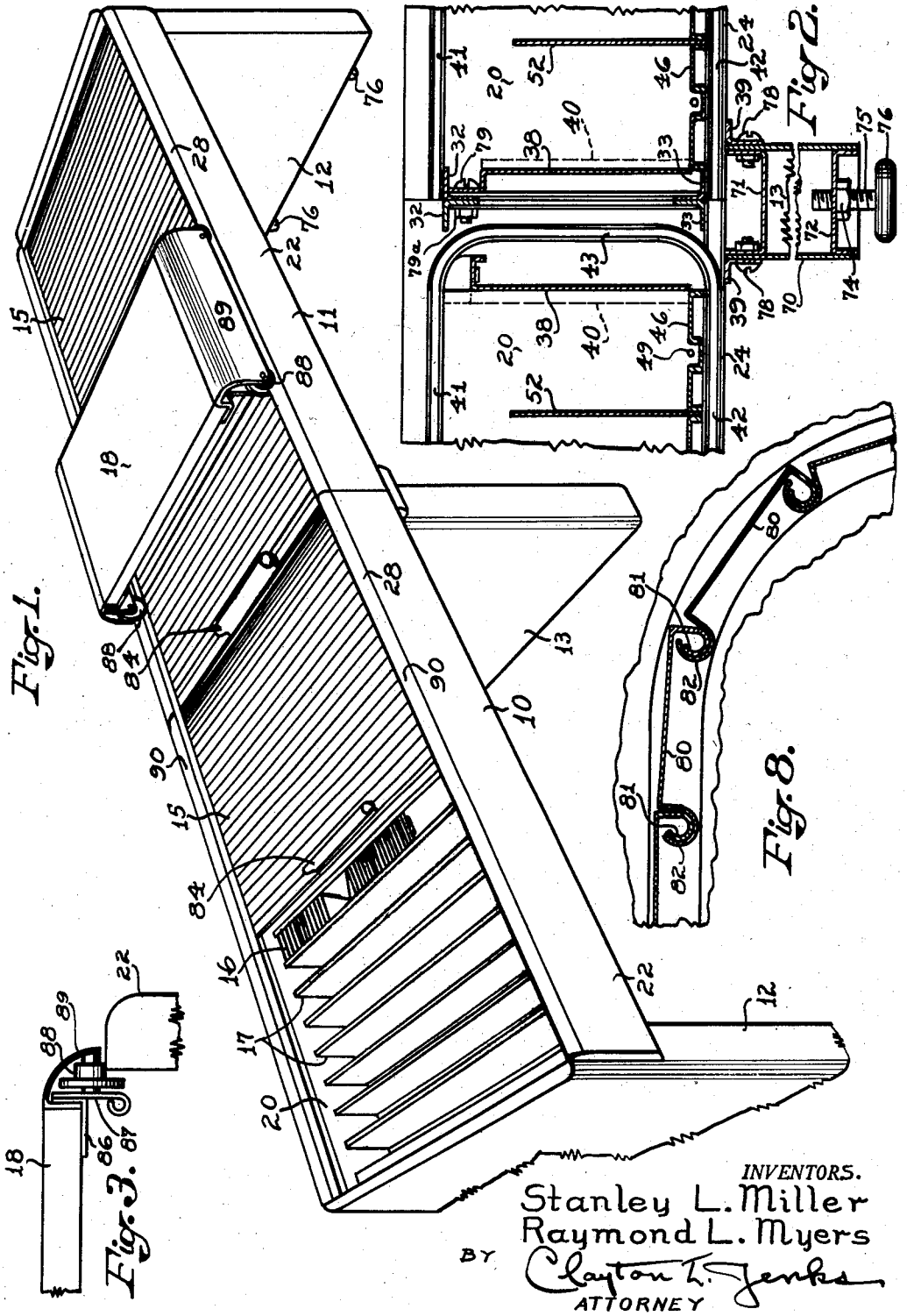


Fig. 1.

Fig. 2.

Fig. 8.

Fig. 3.

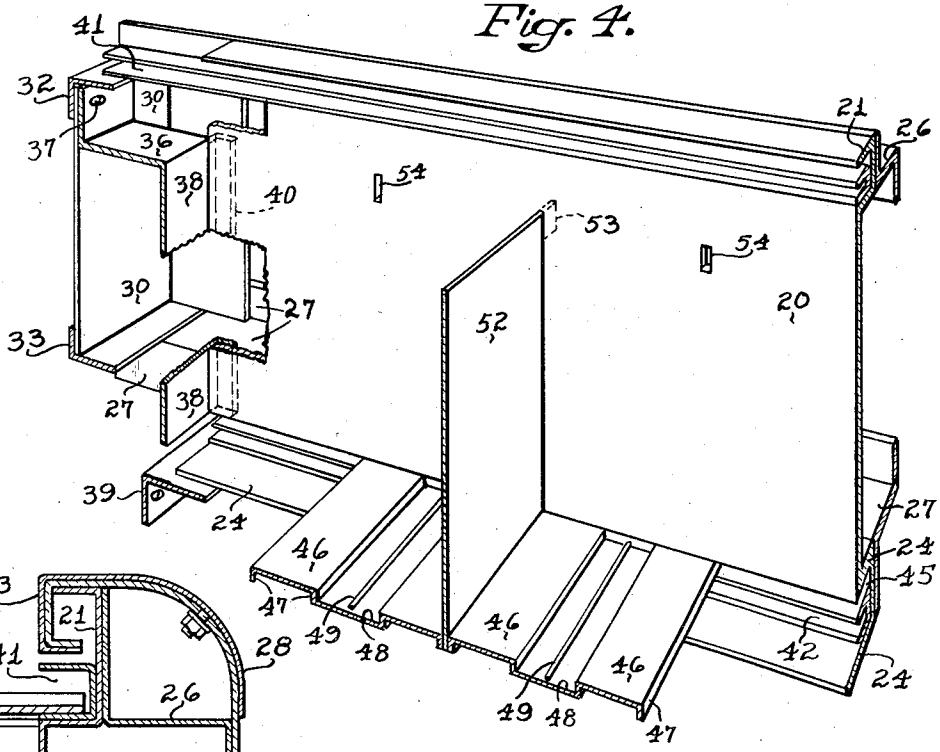
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Filed Oct. 24, 1952 2 Sheets-Sheet 2

Fig. 4.



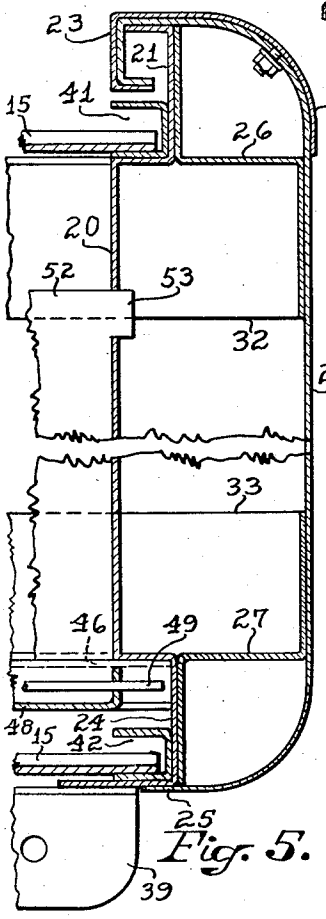


Fig. 5.

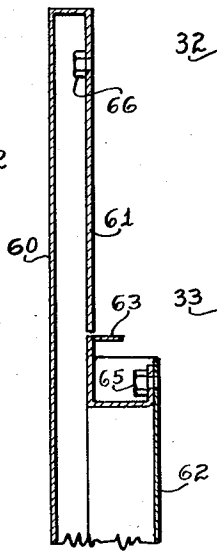


Fig. 6.

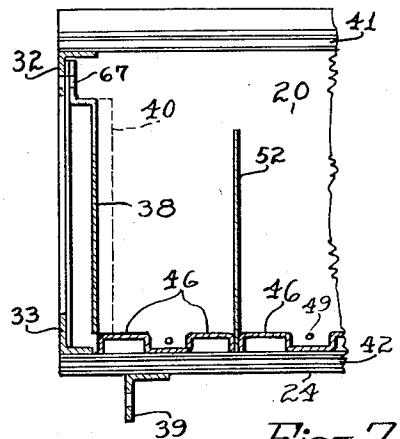


Fig. 7.

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MULTIPLEX TUB FOR CARD FILES

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Application October 24, 1952, Serial No. 316,638

1 Claim. (Cl. 312—297)

This invention relates to a multiplex tub for card files and more particularly to a shallow horizontal tub file mounted on supporting legs and provided with a cover which is arranged to hold and protect cards arranged vertically therein.

In tub files of this type, cards are supported either in removable trays or between vertical partitions fixed in the tub. The legs are made of such heights that the user of the card file may either stand or sit down in front of the cards. The increasing use of the electric accounting machine and the requirement for storing the cards punched thereby, as well as the necessity for quick access to and removal of the cards for feeding them through the machine, makes it important that the cards be stored in compact and readily accessible condition and yet be protected from dust and damage. As the accounting department grows, the need for further files creates a space problem, and it is desirable that the card tubs be so placed that they occupy a minimum of space and permit easy access thereto.

In accordance with our invention we have provided a card index tub construction which provides for the use of a single tub or a series of tubs connected end to end as a unitary structure and wherein the cards are protected by means of one or more sliding covers arranged thereover.

The primary object of this invention is to provide a construction of this type and satisfy the above indicated space requirements and which is so made that a plurality of tubs may be rigidly connected together and an intermediate leg may be substituted for an end leg and rigidly mounted at the connection between two tubs and wherein a tambour cover may be slidably mounted on each tub section so that it may cover the cards fully or in part and be withdrawable longitudinally into the space at the ends of and beneath each tub and wherein these tambour covers and tub sections are so mounted that a single posting board may traverse the entire length of the assembled group of tubs without interference. Further objects will be apparent in the following disclosure.

Referring to the drawings illustrating a preferred embodiment of the invention:

Fig. 1 is a perspective view of a complete unit formed of two connected tubs with an intermediate supporting leg;

Fig. 2 is a vertical section partly broken away through two adjacent tubs which shows the track arrangement and the mounting of the intermediate leg;

Fig. 3 is a fragmentary detail showing the mounting of the posting board on one side of the tub;

Fig. 4 is a fragmentary perspective sectional view showing an inner tub side wall, the bottom and the corner construction, without the side cover panel, and having some of the bottom plates in place;

Fig. 5 is an enlarged fragmentary vertical section showing the front side of one tub;

Fig. 6 is a fragmentary vertical section through an end leg;

Fig. 7 is a fragmentary vertical section of the left hand intermediate end of the right hand tub of Fig. 1 and which is in position to be moved horizontally and mounted on the adjacent end leg of Fig. 6 to form a single tub unit; and

Fig. 8 is a fragmentary sectional detail of the tambour or slide cover in its track.

The drawings illustrate a multiplex tub file comprising two tub units **10** and **11** assembled end to end and supported on duplicate end legs **12** and an intermediate leg **13**. Each tub unit **10** and **11** is provided with a separate slidable tambour cover **15**. Although the construction is adapted for carrying removable card tray units, it has been shown as comprising sets of cards **16** mounted between partitions **52** fixed within the file tub. A posting board **18** is movably mounted on rollers which ride on tracks formed by the tops of the front and rear walls of the tubs, and the tubs are so constructed that the side walls form a continuous track for the posting board irrespective of the number of tub units that are assembled end to end. The legs **12** and **13** are removably secured to the tubs, and the latter therefore form complete individual units which may be assembled singly on two end legs **12** or in a multiplex unit having two end legs **12** and one or more intermediate legs **13**.

The tub units are identical in construction. Each comprises an inside side wall **20** (Figs. 4 and 5) forming either the front or the back of the tub. This wall is shaped at its upper end to provide an inwardly opening and outwardly projecting U-shaped or flanged portion **21** having an in-turned end shaped to carry an outside panel **22**. The lowed end of the wall **20** is likewise shaped to form an inwardly opening U-shaped channel portion **24**. Two strengthening Z-shaped angle members **26** and **27** are respectively welded to the outer sides of the U-members **21** and **24**. The side panels **22** are shaped plates having inwardly curved top portions **23** hooked around the upper wall portion **21**. The bottoms of the panels have inwardly projecting flanges **25** snapped into place under the bottom of the U-portion **24** and suitably secured. The Z-shaped angleirons **26** and **27** locate and support the middle portion of the panel **22**. A shaped cap **28** of stainless steel is suitably secured as by a bolt to the top corner and interlocked with the inwardly turned flange of the portion **21** of the panel **20**.

Each end of the tub is a frame comprising two vertical angle plates **30** (Fig. 4) forming the four corner posts of the tub. A pair of spaced upper and lower horizontal angleirons **32** and **33** are secured to the corner plates and thus form a rectangular frame. The corner posts **30** fit inside of these angleirons **32** and **33** and are welded thereto. An inwardly extending Z-shaped plate **36** is bolted at **37** to the downwardly depending flange of the angleiron **32**. The vertical portion **38** of the plate **36** forms the inner end wall at the left hand end of the tub compartment. The vertical portion **38** has a flange **40** welded to the side wall **20** which insures rigidity. The right hand plate **38** (Fig. 2) which forms a side of a card compartment has a flange at its top welded to and supported only by the side wall **20**, and it depends to a position near the bottom **46** and above the channeled tambour trackway **24** which has its vertical portion **43** between the plate **38** and the end wall frame.

As shown in Fig. 2, the right hand plate **38** is spaced inwardly to provide room for the descending portion **43** of the tambour track, and it extends downwardly to form a stop for the bottom plates.

The tambour track is a U-shaped channel bar bent in the form of a U, as shown in Fig. 2, and shaped to provide upper and lower horizontal portions **41** and **42** connected by a vertical portion **43**. This track occupies the lower portion of the channel **21**, the upper part of

the channel serving for securing the ornamental side and corner portions **22** and **28**. The tambour **15** rides in the track and is arranged to move from a fully closed position in the upper track portion **41** to a fully open position where it is concealed in the vertical and lower portions **43** and **42** of the track.

The lower horizontal part **42** of the tambour track is spaced from the upper part of the in-turned U-portion **24** of the wall **20** (Fig. 4) to provide a horizontal slot **45**. The bottom of the tub is formed of a set of shaped plates **46**. Each plate has downwardly projecting flanges **47** and a U-portion **48**. A rod **49** is removably secured in the portion **48** by means of upwardly bent tabs, and it is arranged to pass through holes in the index cards to form divisions between groups of cards mounted in place on the bottom **46**. Each bottom plate **46** is a separate piece and it is slid horizontally sidewise from the left through the slot **45** until stopped by the right hand end plate **38**. Vertical partitions **52** are plates loosely inserted between each pair of bottom plates **46** and are moved along into place, where outwardly projecting tabs **53** on each plate **52** is inserted into holes **54** in the front and back side plates **20**, the plate **52** being suitably bent to spring the tabs **53** into place. After the bottom plates **46** and the vertical plate **52** have been assembled, then they may be suitably secured as by means of screws engaging the last bottom plate. The two end plates **38** at the opposite ends of the tub form the sides of the end compartments for the cards.

The end legs **12** are made of substantially rectangular cross section and as shown in Figs. 1 and 6 they may be ornamentally shaped with rounded corners or otherwise to provide a pleasing appearance. Each comprises a sheet metal member **60** forming a smooth outer wall and shaped to provide a short downwardly extending inner plate portion **61**. A plate **62** bent to a vertical U-shape forms the inside wall of the leg and is suitably welded to the leg piece **60**. Strengthening angleirons may be inserted inside of the leg, if desired. A shaped piece **63** has a lower flange secured to the leg plate **62**, and its upper horizontal flange forms a ledge to carry the angleiron **33** (Fig. 7) of the end wall frame. Figs. 6 and 7 may be considered as an exploded view of the leg and tub. An angleiron **39** is suitably welded to the underside of the flange **24** of the side wall **20** and positioned to project downwardly from the bottom of the tub where two or more bolts may connect that angleiron with nuts **65** that are suitably welded inside of the up-turned U-portion of the U-piece **63** that is secured to the wall **62**. Also, two or more nuts **66** are suitably welded inside of the upper portion of the plate **61** and adapted to be engaged by bolts passing through holes **67** in the wall **38** and flange **32** of Fig. 7. Thus the tub is held in place by the two sets of bolts and nut **65** and **66** of which there may be a suitable number extending horizontally and lengthwise of the leg.

When two tub units are to be connected together, as indicated in Fig. 1, the inner end leg **12** of each of these units is removed and replaced by the intermediate leg **13**. This leg **13**, as shown particularly in Figs. 1 and 2, comprises sheet metal shaped to form a hollow tubular body **70** of substantially rectangular cross section. The upper part of this leg has a strengthening U-shaped channel iron **71** inserted horizontally therein and welded in place. A further channel member **72** is secured in place at the bottom of the leg, as by welding, and this has a nut **74** welded thereto, which supports the screw **75** of an adjustable disk shaped button or foot **76**. These parts are so arranged that the supporting button **76** may be raised or lowered to level the tub. Each of the end legs **12** may be likewise shaped at its lower end and provided with similar buttons **76** that are adjustable in height, so as to regulate the height of the legs and adjust the tubs into an exact horizontal position. To fasten the intermediate leg in place, this leg is connected by the bolts **78** (Fig. 2)

to the vertical flanges of the downwardly projecting angleirons **39** (Figs. 2 and 7) of the two tubs. Also, a further bolt **79** (Fig. 2) passing through the adjacent upper flanges **32** of the tubs is secured by a nut **79***a* on the inside of one flange **32**. This secures the tubs rigidly together.

The tambour or slide cover may be suitably constructed. As illustrated in Fig. 8, it comprises sheet metal slats **80** which are shaped at their long edges to provide an inside partially cylindrical portion **81** at one edge which slidably interfits in the enlarged portion **82** of another slat. That is, each slat has the interfitting portions **81** and **82** at its respective edges. These parts are so shaped and arranged, and the width of the slats is such that the tambour cover may slide around in the two opposed U-shaped tracks **41**, **42**, **43** located at the front and back of the tub. The tambour of each tub is a separate unit that slides lengthwise of the tub, and it is so arranged that it may expose all of the cards or only part at one end of the tub. A handle **84** on each tambour is so shaped as to prevent the cover from escaping downwardly into the lower U-slot **42** and it serves for sliding the cover to and from its desired positions.

As shown in Figs. 1 and 3, the posting board **18** is preferably constructed to provide an upper horizontal tray of wood or plastic which is carried on two opposed angleirons **86**, each of which is welded to a downwardly projecting member **87** that serves to support the inner ends of a pair of flanged rollers **88**. The outer end of each roller is carried on a downwardly projecting part **89** of an angle member suitably welded to the angleiron **86**. The top **90** of the front and back side plates **22** or the ornamental Monel part **28** secured thereon are level and so arranged as to form a continuous rail having their parts in contact at the intermediate joints when the middle leg **13** is used. The posting board **18** is high enough above the handles **84** so that there is no interference as the posting board is moved from one end to the other of the multiplex tub.

In this construction, each tub is formed of two metal end wall frames made of the flanged members **30**, **32** and **33** rigidly welded or otherwise secured to the two shaped vertical front and back metal walls **20** as shown in Fig. 4. The walls **20** are shaped to provide the lower horizontal flanges **24**, and strong angleirons **39** are welded on the under side thereof. These angleirons **39** are so positioned that they will serve to secure either an end leg or an intermediate leg in position, as shown in Figs. 2, 6 and 7. There is preferably no bottom to the open frame structure except the slidable bottom plates **46**, and these are slid into place as described with the vertical partitions **52** therebetween to form the card supports and provide for the locking rod **49**, as well as compressors which may be mounted in the groove **48** to hold the cards tightly clamped together when desired. Since the tambour is moved lengthwise of the tub, the metal slats of the tambour are supported by the front and back walls which are much more closely spaced than are the end walls. This construction is therefore such that each unit of the multiplex tub is complete in itself, and yet one of its end legs may be removed and the end frame at that end may be bolted to a similar end frame of an adjacent tub and to an intermediate leg that is supported by the same flanges which initially carried the end legs. It is to be noted that the end legs are single units extending the full height and width of the tub and forming a part of the ornamental design as well as imparting rigidity to the tub. The intermediate leg **13** likewise extends substantially the full width of the tub and so is a single unit adapted to replace two single end leg units and to be mounted by the same fastenings.

Various advantages will be apparent in this structure, and it will be appreciated that suitable constructional modifications may be made within the principles of the

invention herein described. The drawings and description set forth a preferred embodiment of the invention, and the claims are to be interpreted as not being limited thereby.

We claim:

A card file tub comprising end walls and front and rear side walls rigidly secured together and forming an open tub body, said side walls being shaped metal plates having inwardly opening upper and lower horizontal channels, a flexible tambour, U-shaped channeled tambour slideways mounted in said channels and slidably supporting the tambour, said lower channel being wider than the slideway therein and providing a space, separate floor plates slidably mounted in said space in the lower channel and forming the tub bottom, and partitions between and positioned by the floor plates which are secured to the side walls.

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