March 21, 1961 T. E. DEVINE 2,976,097

CARD REFERENCE AND POSTING FILE

Filed Aug. 27, 1958 4 Sheets-Sheet 1

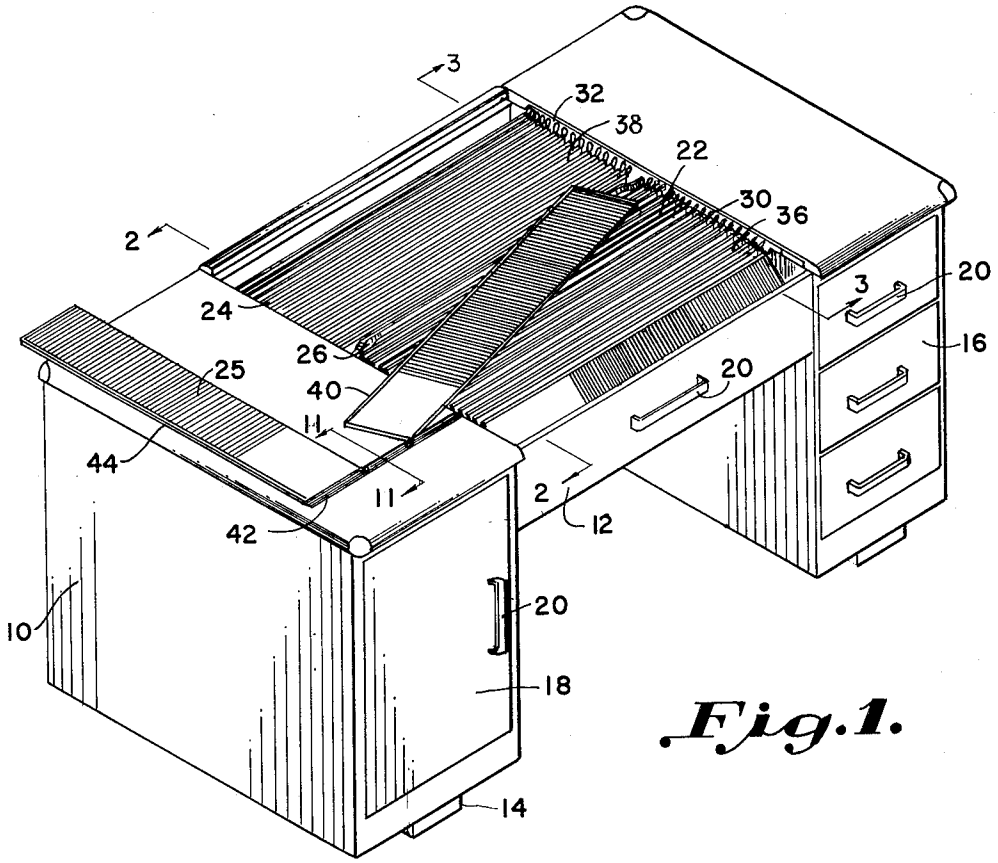


Fig. 1.

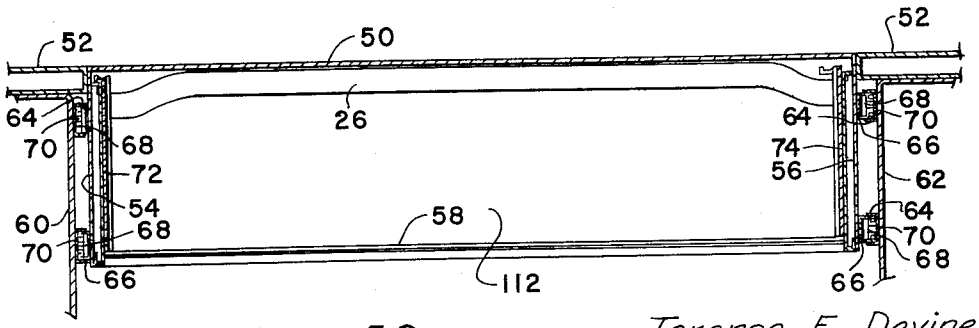


Fig. 13.

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CARD REFERENCE AND POSTING FILE

Filed Aug. 27, 1958 4 Sheets-Sheet 2

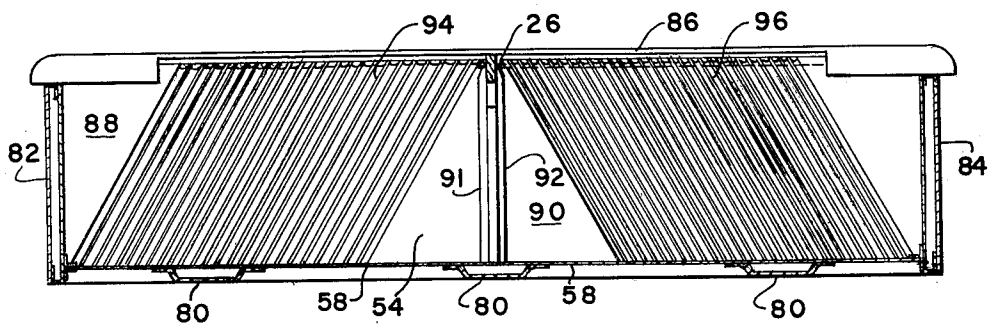


Fig. 2.

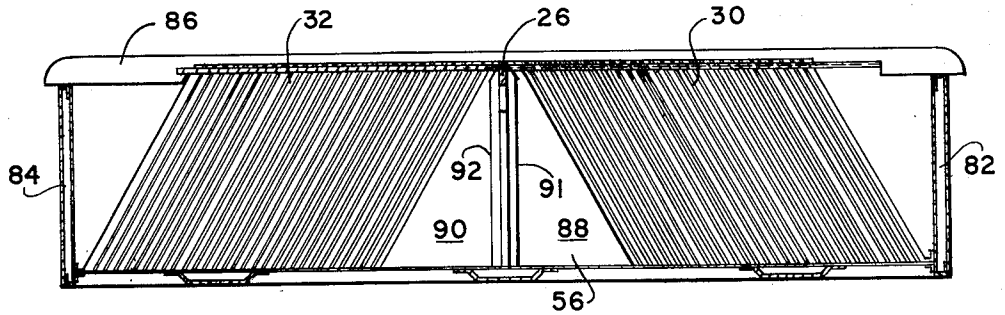


Fig. 3.

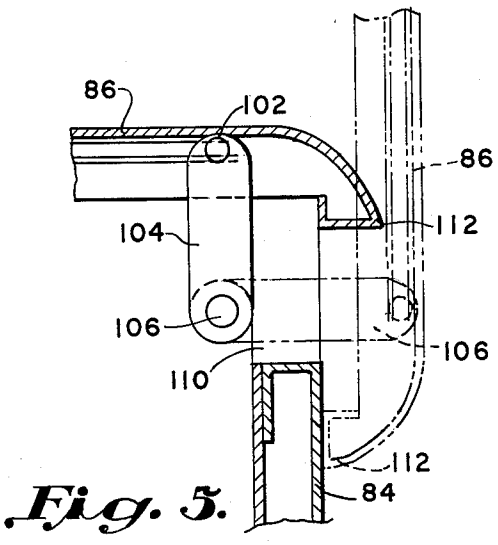


Fig. 5.

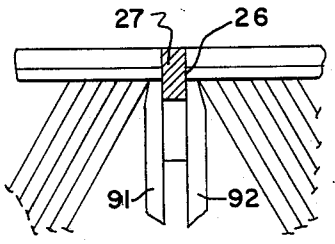


Fig. 4

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CARD REFERENCE AND POSTING FILE

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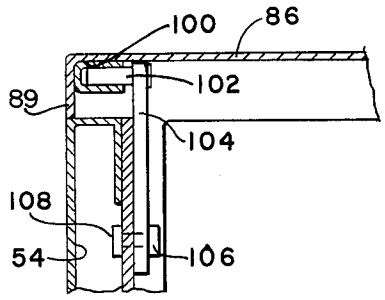


Fig. 6.

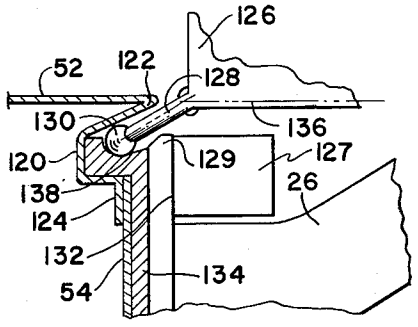


Fig. 7.

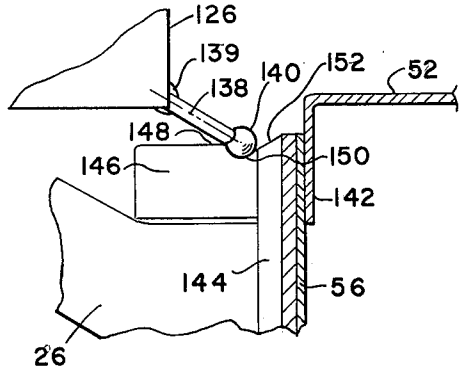


Fig. 8.

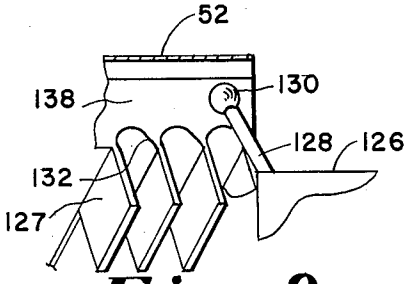


Fig. 9.

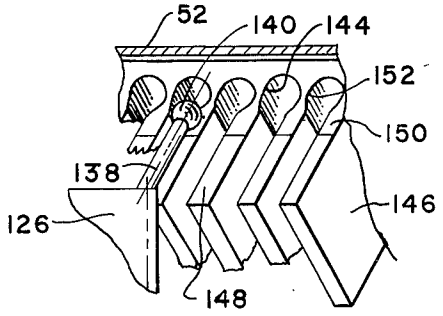


Fig. 10.

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CARD REFERENCE AND POSTING FILE

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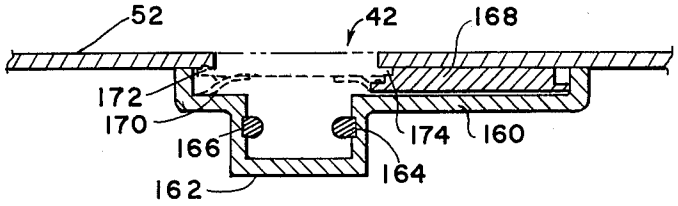


Fig. 11.

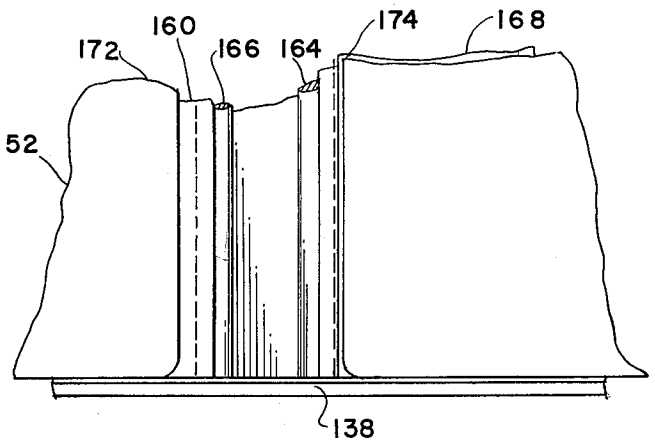
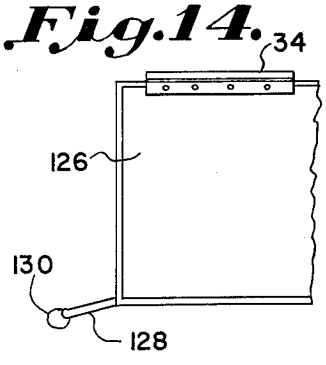


Fig. 12.

Fig. 14.



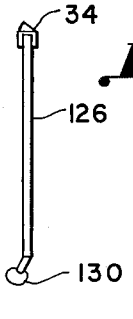


Fig. 15.

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2,976,097

CARD REFERENCE AND POSTING FILE

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Filed Aug. 27, 1958, Ser. No. 757,573

16 Claims. (Cl. 312—184)

This invention relates to a novel filing system and more particularly is directed to a novel card reference and posting file which may be incorporated in a desk or other similar office furniture.

Because of the keen competition for profit and the current tax structure, the operation of modern business facilities requires the keeping of a large amount of records. Vast amounts of money are spent in keeping a substantial clerical force in operation to meet the demand for recorded information. In view of these facts, it is imperative that the filing and retrieval systems be simple and efficient in avoiding wasted motion particularly in posting operations which are often repeated time and time again. The present invention provides such a file arrangement which may be incorporated in a conventional office desk. When files are to be referred to, the operator merely pushes back the top of the desk and exposes a semi-vertical card file. The operator sits in a natural working position and all the information is directly in front of him, visible and in easy reach with no movement of the body.

The novel card file of the present invention provides an arrangement wherein the cards are at a convenient level and easy to read and post without the necessity of shifting toward the information or moving the data to a separate side table. Thus, fatigue and boredom are reduced to a minimum and fast, efficient and money saving card filing is provided. The file operates with a maximum card capacity in a minimum of space, requiring for example, less than 9 square feet in desk form with a capacity of over 5,000 standard file cards. The file is inexpensive to manufacture having light weight and simplicity of design and insures trouble-free operation with a minimum of moving parts. The cards are maintained within the desk and out of sight when not in use adding to the eye appeal of the file arrangement. A desk file arrangement according to the present invention provides increased mobility and is readily protected from fire because of its small size and compact area. The device is durable and easy to operate with a mass of information readily visible at fingertip distance reducing clerical errors to a minimum.

While a large number of file card devices are commercially available, none possesses all of the advantages of the file of the present invention. Presently available systems consistently excel in some few basic features with attendant advantages but uniformly are inadequate in providing even several of the basic features necessary to a truly satisfactory index file.

One object of the present invention is to provide an improved card file in which the recorded information is readily available to an operator for reference and/or posting.

Another object of the present invention is to provide a card reference and posting file for reducing fatigue and boredom to a minimum.

Still another object of the present invention is to provide an improved card file permitting increased speed and efficiency of operation.

Another object of the present invention is to provide an economical card file having maximum card capacity and flexibility in a minimum of space.

An additional object of the present invention is to provide a card file in which the file cards are hidden from sight when out of use.

A further object of the present invention is to provide an improved card file of light weight and simple design having increased eye appeal and durability with a mass of file information readily available.

It is another object of the present invention to provide an improved card file having increased mobility which may be more easily protected against loss from fire.

These and other objects and advantages of the invention will be apparent upon reference to the accompanying specification, claims and drawings in which;

Figure 1 is a perspective view of the novel card file of the present invention incorporated in a conventional office desk;

Figure 2 is a sectional view taken along the lines 2—2 of Figure 1 showing the construction of one side of the card tray receptacle;

Figure 3 is a section taken along the lines 3—3 of Figure 1 showing the other side of the card tray receptacle;

Figure 4 is an enlarged view of a portion of the center support shown in Figures 2 and 3;

Figure 5 shows a detailed view on cross-section of the hinge arrangement for the displaceable desk top;

Figure 6 is a cross-section of the hinge arrangement of Figure 5 as viewed from the front of the desk;

Figure 7 is a partial cross-sectional view of the upper left-hand portion of the receptacle and horizontal guide channel as viewed from the front of the desk shown in Figure 1;

Figure 8 is a similar partial cross-section of the upper right-hand portion of the receptacle of Figure 1;

Figure 9 is an enlarged partially broken away perspective view of the upper left-hand portion of the receptacle shown in Figure 7;

Figure 10 is an enlarged partially broken away perspective view of the upper right-hand portion of the receptacle shown in Figure 8;

Figure 11 is a cross-sectional view of an auxiliary guide channel in the writing surface of the desk taken along the lines 11—11 of Figure 1;

Figure 12 is a plan view of the auxiliary guide channel of Figure 11 showing it in communication with the left-hand horizontal guide channel of the card tray receptacle;

Figure 13 shows in cross-section a modified embodiment of the card tray receptacle in the form of a central drawer constructed so as to be completely removable from the desk.

Figure 14 shows one end of a typical novel card tray employed in the present invention; and

Figure 15 is a side view of the card tray of Figure 14.

Referring to the drawings, Figure 1 shows a conventional desk 10 incorporating the novel card file of the present invention adapted to be completely enclosed in a central receptacle 12. Receptacle 12 may be constructed as an integral part of the desk 10 or may take the form of a removable sliding drawer as shown in detail in Figure 13 and described below. The desk top 10 is supported by the usual legs 14 which may include conventional casters for moving the entire desk and enclosed card file about to any desired position. Desk 10 may also include a plurality of drawers indicated at 16 and a typewriter cabinet 18. The typewriter cabinet and drawers are provided with suitable handles 20 for ready access to the material contained within the desk.

Receptacle 12 which, as pointed out, may be completely removable from desk 10 as a separate unit, houses

a plurality of novel card file trays indicated as the front and rear set of trays **22** and **24**. Positioned approximately midway of receptacle **12** is a central transverse supporting bar **26**. The forward or front set of card file trays **22** is positioned at an angle with respect to the vertical so that all the trays in this set lean away from the operator toward centrally placed bar **26**. In other words the lowermost portion of each tray **22** in its rest position in the file receptacle **12** is closer to the observer than the uppermost edge of each respective tray.

As shown, a plurality of conventional file cards **25** are mounted on the front face of each of the trays **22** in overlapping relation. The file cards **25** are posted from left to right for ready access and ease of handling by an operator.

The rear set of card trays **24** are placed at a similar angle with respect to the vertical and lean toward the operator. That is, card trays **24** are positioned so that the lowermost portion of each tray is further from the observer than the upper edge of the respective tray. Trays **24** carry identical file cards which are placed on the surface of each tray **24** facing away from the operator which will be referred to as the back surface of the tray.

Each tray is restrained against movement about a horizontal axis within the drawer as more fully described below, and is retained by pivot pins in individual spaced angular channels or raceways provided on the inner surface of each side of receptacle **12**. The right hand set of raceways, the upper portions of which are shown in Figure 1, include a first set **30** for each of the forward group of card trays **22** and a second set **32** for the back group of card trays **24**. Each of the card trays in sets **22** and **24** is provided with a longitudinally extending index tab **34** on the upper edge thereof as shown in Figures 14 and 15 which provide gripping edges so that each tray may be easily lifted and removed from the receptacle. Individual trays such as shown at **36** and **38** may be readily lifted from the inclined position and held in a substantially vertical position partially removed from the drawer by the operator. In this way, it is extremely easy for an operator to ascertain the material incorporated upon a single tray by a simple lifting movement of the hand. If so desired, the trays may be completely lifted from the drawer and laid flat over the remaining trays as indicated by individual tray **40** or alternatively a tray may be rested on central support **26** in conjunction with the upper edges of the remaining stacked trays. The front trays **22** are removed from the receptacle and laid flat with the back surface down and with the file cards **25** exposed to the operator for notation or posting. Similarly, a rear tray from the group **24** is drawn from receptacle **12** toward the operator and laid flat with its front surface facing down. Since file cards **25** are positioned along the back surface of trays **24** they face upwardly and are also readily available.

When an individual tray is lifted from the receptacle **12** and placed in flat position as illustrated for example at **40**, the right-hand end of the tray is completely free from its associated raceway **30** or **32** and is free to swing in any direction. As will be more fully described below, the left hand end of the tray passes into a horizontal guide channel and may be translated away from or toward the operator in the plane of the top surface of the desk. If desired a slight pivoting of the card tray acts to disengage the left hand edge of the tray from the horizontal guide channel so that the tray may be completely free from the desk structure and can be carried about a room or to other offices. The aforementioned horizontal channel communicates with an auxiliary channel **42** built into the writing surface of the desk. As shown in the drawing, a tray may be translated along the horizontal guide channel from a position such as is shown at **40** into the auxiliary channel **42** and pivoted so as to lay on the top of the desk in convenient writing position as indicated by the single tray **44**. When it is no longer desired to use a tray, it may be returned along channel **42** to the left-hand horizontal channel in receptacle **12** and moved therealong until it reaches its cooperating slanting raceways on each side of receptacle **12**. The tray is simply and easily reinserted in the cooperating raceways for return to its initial rest position.

Figure 2 is a sectional view taken along the line **2—2** of Figure 1 showing the construction of the inside surface of the left-hand side of receptacle **12** including a receptacle side panel member **54**. Some of the detail forming the upper end of the raceways is omitted to avoid confusion. A bottom plate **58** of the receptacle rests on three support channels **80**. Also shown is a front panel **82** and a rear receptacle panel **84**. The file receptacle is closed by means of a hinged or pivoted desk top **86**. Receptacle **12** comprises front and rear sections **88** and **90** with the central support member **26** securely fastened at each end between a pair of center support members or ribs **91** and **92**. The inner side wall of forward section **88** includes a series of slanted or angled raceways **94** which as shown in the drawing extend upwardly from the bottom to the top of the receptacle at an angle of approximately 30° with the vertical. Raceways **94** angle toward the back wall of the receptacle so that the card trays adapted to be supported therein lean away from an operator seated at the front of the desk. Similarly, the rearward portion **90** of receptacle **12** includes a series of raceways **96** also forming an angle of approximately 30° with a vertical and extending toward the front panel **82** of the receptacle. Raceways **94** and **96** extend in spaced relation adjacent to one another and have a generally semi-cylindrical configuration for retaining the ball-head of a pivot pin or extension arm affixed to the card trays and adapted to be slidingly received within the raceways.

Figure 3 is a section taken along the line **3—3** of Figure 1 with detail omitted and shows the arrangement of the inside surface of the right-hand side of receptacle **12** including a side panel **56**.

Front and back portions **88** and **90** respectively include a series of slanting or angled raceways **30** and **32** partly shown in Figure 1. Each of raceways **30** are aligned with corresponding raceways **94** in Figure 2 and cooperate with raceways **94** to provide end guides for the card trays in the front portion **88** of the drawer. Similarly, individual ones of raceways **32** and **96** are aligned to receive in sliding engagement the end portions of the card trays positioned in rear section **90** of the receptacle.

Figure 4 shows an enlarged view of one of the identical end supporting arrangements for center support bar **26**. Member **26** at each end is adapted to be rigidly positioned between a pair of center support and side panel reinforcing ribs **91** and **92** carried by side panels **54** and **56** and may be secured to the ribs by any suitable fastening means (not shown). In the position indicated the middle portion **27** of center support **26** shown in section in cooperation with the upper edges of the stacked trays acts as a rigid support upon which the card trays may be placed in a flat position substantially in the plane of the top surface of the desk.

Figures 5 and 6 show side and front sectional views respectively of the hinge arrangement for the displaceable top member **86** adapted to be moved completely out of the way when not used to cover file receptacle **12**. Affixed to a flange portion **89** of desk top **86** is a guide channel **100** receiving a guide pin **102** fixedly received in one end of a pivot arm **104**. The other end of pivot arm **104** is apertured to receive a pivot pin **106** riveted to the side panel **54** as shown at **108**. An end panel **84** includes an aperture **110** in the form of an elongated slot permitting rotation of pivot arm **104** about pivot pin **106**. As shown in Figure 5, top **86** is constructed to rotate about pin **106** into the vertical position indicated by the dotted line in the drawing. In this position chan-

nel portion 112 of top 86 is in abutment with the back surface of end panel 84. This latter abutment limits the pivoting motion of the disk 86. When the top 86 reaches a vertical position, a light touch is sufficient to cause the top to slide vertically downward along the back surface of end panel 84 being guided by the engagement of guide pin 102 in guide channel 100. Top 86 can in this manner be moved to the position shown in Figure 1 in which it is completely out of the way and occupies little or no additional space.

Figure 7 shows an enlarged cross sectional view of a single raceway and the horizontal guide channel on the left-hand side of the receptacle 12 shown in Figure 1. Member 52 forming the left-hand upper writing surface of the desk terminates in a generally U-shaped section 120 and includes an overhang 122 jutting out a short distance into the interior of the file receptacle. A lower flange 124 is securely affixed to side panel 54. Also shown is a card tray 126 having adjoined to its lower left-hand edge by any suitable means such as brazing or welding a pivot pin 128 terminating in a small circular ball 130. Ball 130 is adapted to slide vertically in a single raceway 132 two groups or sets of which are shown at 94 and 96 in Figure 2, and upon reaching the top of raceway 132 passes between the upper edges of the raceway, one edge being indicated at 129, slightly to the left to the position shown in Figure 7, into the recess defined by channel portion 120 of member 52. The position of ball 130 is also shown in perspective in Figure 9.

In passing out of raceway 132 ball 130 impinges upon a solid member 134 forming the back wall of the raceway. The upper surface of solid member 134 includes a recess 138 forming a longitudinal continuous horizontal channel in which ball 130 rests. Member 134 forming the back wall of the raceway and the raceway itself may be formed of metal or if desired from hard rubber or a suitable plastic to provide the desired bearing and wear resistant surface for ball 130. A plurality of thin separating plates in the form of extension members 127 are provided between each raceway to separate each tray and to support one end of the tray in upright position to avoid tilting of the trays.

Figures 8 and 10 show enlarged views of the arrangement of the raceways 32 and 30 incorporated in the right-hand panel 56 of Figure 3. A second pivot pin 138 is attached to the lower right hand corner of card tray 126 and terminates in a second ball portion 140. Member 52 forming the writting surface of the desk includes a flange portion 142 affixed to right-hand panel 56 which carries a plurality of raceways one of which is shown at 144. Raceway 144 includes a projecting flat extension plate similar in purpose to plate 127 of Figure 7 which extends beyond the mouth of the raceway toward the central portion of the receptacle. Plates 127 and 146 each must extend inwardly beyond the edges of the trays and between each raceway to provide a support upon which the trays lean. Each of the plates 146 includes a flat top surface 148 and a recessed portion 150 which cooperate with the slanted upper surface 152 to provide a recess for the ball 140. In Figures 9 and 10 only three plates 127 and four complete plates 146 are shown but it will be understood that a proper plate is fixed to the receptacle between each raceway so that each tray may be supported at its left end by a plate 127 and at its right end by a plate 146.

As can be seen from Figures 7–10 each of the card trays is provided with an integral pivot or rod at its outer edge adjacent the bottom of the tray as shown at 128 and 138. The pins may be welded as indicated at 136 and 139 or otherwise secured to each tray. In the preferred embodiment pins 128 and 138 terminating in ball portions 130 and 140 lie slightly out of the plane of the tray 126 as best seen in Figure 15 and form an angle of approximately 150° with lower edge of the tray.

Since trays 126 rest in the desk and are normally withdrawn at an angle to the vertical each raceway is necessarily not symmetrical about a vertical plane through the center thereof but as shown in the drawings faces slightly toward the direction in which the tray retained in the particular raceway leans. This is best seen for example in Figure 9 in which the individual raceways 132 are shown with the open portions thereof slightly angled in the direction of tray 126. In this way raceways 132 accommodate the slight angle at which the pivot pin 128 projects from tray 126 as the tray is moved up and down within the receptacle. Each of the raceways 144 as indicated in Figure 10 is similarly constructed to face slightly in the direction of tray 126 of Figure 10.

In operation as trays 126 are lifted ball members 130 and 140 are propelled along their cooperating raceways until each ball member clears the top of the raceway. The tray may be then moved slightly to the left to the positions shown in Figures 7 and 8. In this position ball member 130 rests in groove or recess 138 and can be further translated horizontally therealong to auxiliary channel 42 shown in Figure 1. In addition, if so desired, a slight twisting of a tray 126 serves to rotate pivot pin 128 shown in Figure 7 into a position such that ball member 130 will clear overhang 122 and the tray in this way can be completely removed from the desk.

As shown in Figures 8 and 10 the right hand ball member 140 in clearing raceway 144 moves to the left in Figure 8 along surface 152 into the recess 150 formed in member 146 positioned adjacent the raceway. The right hand end of the tray is freely supported and may be moved about at will.

Figure 11 is a cross sectional view of the auxiliary channel 42 taken along the line 11—11 of Figure 1. Figure 12 shows a plan view of auxiliary channel 42 and indicates its communication with the horizontal guide channel formed by recess 138 in member 134 in the upper left portion of receptacle 12. Secured to the under surface of desk cover 52 is a channel member 160 having an elongated recess portion 162. Positioned on the inner surface of each side of recessed portion 162 is a longitudinally extending retainer 164 and 166. The rubber retainers serve to contain the ball member 130 of each card tray as it passes through channel 42 along the bottom of recess portion of 162 of the channel member 160. A channel cover 168 shown in the open position as retained in channel member 160 and is spring biased against the bottom surface of desk cover 52. The dotted lines in Figure 11 show channel cover 168 in the closed position in which it forms a smooth continuous surface with the surface of desk cover 52. Channel cover 168 is shown in dotted lines as being urged upwardly by a pair of springs 170. A pair of longitudinally extending flanges 172 and 174 are provided on channel cover 168 for limiting the upward movement of the cover under the influence of spring 170. These latter flanges are adapted to abut the under surface of desk cover 52.

Figure 13 is a cross-section showing a modified embodiment of the receptacle 12 in the form of a removable drawer 112 with the details of the raceways omitted. The file unit top member 50 of drawer 112 is in abutment on each side with the channel-shaped member 52 forming the top or writing surface of the desk. Drawer 112 also includes the pair of upstanding side panels 54 and 56 and a bottom plate 58. The central support bar 26 extends completely across the drawer from side panels 54 to side panels 56. Carried on the desk end sections 60 and 62 are four longitudinally extending drawer guide channels 64 adapted to receive guide channels 66 carried by side panels 54 and 56. A plurality of nylon rollers 68 are enclosed by drawer guide channels 66 and serve to support drawer 112 removably within the desk struc-

ture. Rollers **68** are in turn supported from channel members **64** by means of horizontal shafts **70**.

The side walls of drawer **112** may take the form of Figures 7–10 having attached to the inside surface of left and right-hand panels **54** and **56** a plurality of raceways **72** and **74** identical in all respects to those already described. The drawer type embodiment of Figure 13 operates in the same manner as previously set forth and further description is unwarranted.

Figures 14 and 15 show the end construction of a typical file tray **126**. A plurality of cards as indicated in Figure 1 may be conventionally mounted from left to right in overlapping relation on the trays. Each tray is provided with a visible index tab **34** of sufficient rigidity to form in conjunction with adjacent trays a substantially continuous surface at the top of the file drawer. The tabs extend to a proper height such that a withdrawn tray resting flat upon the other trays or on other trays and center support **26** is at the level of the desk surface for ready handling and posting. If rather brief operation on a single tray is desired it may be pulled up by means of its tab **34** and laid flat over adjacent trays without being moved to the left as shown in Figures 7 and 8. Index tabs **34** therefore serve to provide means for the additional functions of gripping the trays for lifting from the raceways and as contact points for supporting a withdrawn tray in flat posting position. Index tabs **34** need not extend the complete length of a tray but may be staggered over the surface of the receptacle to provide the desired support structure.

It is apparent from the disclosure that the present invention provides a completely new filing system which combines all the features and advantages in a single effective system fully capable of meeting all modern filing and retrieval technique requirements. Assuming that the operator has work to perform on the cards on a particular tray he need only select from the visible index tab the area for work, and with a slight lift has visible for inspection or removal the tray in question. If the operator wishes to withdraw the tray all that is required is that he grasp the top thereof and with a minimum of pressure upward the tray moves through its raceways to the top of the desk. Each tray weighs less than one pound fully mounted. The right hand end of each tray when removed is entirely free of the desk structure and may be moved in any desired direction to improve the writing angle for the individual operator. Alternatively ball **140** may be translated over recesses **150** to bring the tray to desired writing position on top of the stacked trays. Similarly the left hand end of the tray engaged in the horizontal channel allows the tray to be moved toward or away from the operator as desired. The tray can be laid in a flat position and is available for reference or posting. At the operator's option the tray can be translated along the horizontal guide channel to auxiliary channel **42** communicating therewith and off to the left to a perfect writing angle.

The trays may be constructed of varying length and a 30 inch tray for example can hold up to 80 file cards. The entire system requires less than 9 square feet when in desk form as shown with a capacity of over 5,000 cards. The system makes it possible for an operator to have as many as six trays plainly visible for posting or reference at one time. If so desired the tray may be disengaged from the left hand horizontal guide channel by a slight vertical pivot movement of the right hand end of the tray so that the ball member clears the overhang of the top of the desk thus freeing the ball from engagement with the entire unit. This optional feature makes it possible for the tray to be moved about independently of the entire unit.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. In a card reference file the improvement comprising a receptacle having front and rear sections, said receptacle including a front, back and two side walls, a plurality of semi-vertical spaced raceways positioned along one side wall of both the front and rear sections of said receptacle, a plurality of semi-vertical spaced raceways positioned along the other side wall of both the front and rear sections of said receptacle, the raceways in said front section extending upwardly toward the back of said receptacle, the raceways in said rear section extending upwardly toward the front of said receptacle, said raceways in each section being in alignment and parallel to each other to slidably receive a plurality of trays in parallel stacked relation.

2. The improvement according to claim 1 including a horizontal channel extending lengthwise along the top edge of said receptacle adjacent the raceways on one side thereof, said raceways communicating with said channel along substantially the entire length thereof.

3. The improvement according to claim 2 in which said horizontal channel includes longitudinally extending bottom, side and top portions defining a channel having an elongated opening on substantially only one side thereof in communication with said raceways.

4. A reference file comprising support means including a flat writing surface, a card tray receptacle in said support means having front and rear sections, said receptacle including a front, back and two side walls, a plurality of reference card trays supported edgewise in a semi-vertical position within said receptacle, a plurality of raceways along the inner surface of one side wall of both the front and rear sections of said receptacle, a plurality of raceways along the inner surface of the other side wall of both the front and rear sections of said receptacle, the raceways in said front section extending upwardly toward the rear of said receptacle, the raceways in said rear section extending upwardly toward the front of said receptacle, said card trays including elements extending at least partially outwardly from each end thereof and adapted to be slidably received in cooperating raceways on each side of said receptacle, elongated means in communication with the upper ends of the raceways on one side of said receptacle for releasably supporting one end of said card trays and spaced means in communication with the raceways on the other side of said receptacle for freely supporting the other end of said card trays.

5. A reference file as defined in claim 4 in which said card tray elements comprise a pair of pins fixedly secured to the lower edge portion of each end of said trays, each pin terminating in a substantially spherical portion for engagement in said raceways.

6. In a card reference file the improvement comprising a receptacle having front and rear sections, said receptacle including a front, back and two side walls, a plurality of semi-vertical spaced raceways positioned along one side wall of both the front and rear sections of said receptacle, a plurality of semi-vertical spaced raceways positioned along the other side wall of both the front and rear sections of said receptacle, the raceways in said front section extending upwardly toward the back of said receptacle, the raceways in said rear section extending upwardly toward the front of said receptacle, said raceways in each section being in alignment to slidably receive a plurality of trays in parallel horizontally stacked relation, a horizontal channel extending lengthwise along the top edge of said receptacle adjacent the raceways on one side thereof, said race-

ways communicating with said channel along substantially the entire length thereof, the upper ends of said raceways on the other side of said receptacle including spaced flange members projecting into said receptacle and having recessed top surfaces lying substantially in the horizontal plane of said channel.

7. A reference file comprising support means including a flat writing surface, a card tray receptacle in said support means having front and rear sections, said receptacle including a front, back and two side walls, a plurality of reference card trays supported edgewise in a semi-vertical position within said receptacle, a plurality of raceways along the inner surface of one side wall of both the front and rear sections of said receptacle, a plurality of raceways along the inner surface of the other side wall of both the front and rear sections of said receptacle, the raceways in said front section extending upwardly toward the rear of said receptacle, the raceways in said rear section extending upwardly toward the front of said receptacle, said card trays including elements extending at least partially outwardly from each end thereof and adapted to be slidably received in cooperating raceways on each side of said receptacle, elongated means in communication with the upper ends of the raceways on one side of said receptacle for releasably supporting one end of said card trays, spaced means in communication with the raceways on the other side of said receptacle for freely supporting the other end of said card trays, said card tray elements comprising a pair of pins fixedly secured to the lower edge portion of each end of said trays, each pin terminating in a substantially spherical portion for engagement in said raceways, said elongated means comprising a horizontal channel extending substantially the length of said receptacle along which the spherical portion of a pin on one end of said trays is adapted to be moved.

8. A reference file as defined in claim 7 in which said horizontal channel is substantially closed on three sides retaining said trays in said channel against disengagement therefrom in all directions except upwardly toward the center of said receptacle.

9. A reference file as defined in claim 8 in which said horizontal channel is laterally spaced with respect to said upper ends of the raceways outwardly from the center of said receptacle.

10. A reference file as defined in claim 8 in which said spaced supporting means on the other side of said receptacle comprise projecting flanges extending inwardly toward the center of said receptacle having recesses in the top surfaces thereof for receiving the spherical portions of said pins.

11. A reference file as defined in claim 10 including an auxiliary channel in said writing surface for slidably retaining the spherical portions of said pins, said auxiliary channel being in communication with said horizontal channel.

12. A reference file as defined in claim 11 in which said receptacle is removable from said support means.

13. A card reference and posting file comprising a receptacle having front and rear sections, said receptacle including a front, back and two side walls, a plurality of semi-vertical spaced raceways positioned along one side wall of both the front and rear sections of said receptacle, a plurality of semi-vertical spaced raceways positioned along the other side of said receptacle, the raceways in said front section extending upwardly toward the back of said receptacle, the raceways in said rear section extending upwardly toward the front of said receptacle, said raceways in each section being in alignment and parallel to each other, a plurality of trays carrying reference information items slidably received in parallel horizontally stacked relation in each section of said receptacle, said reference information items being carried on the forward face of said trays in said front section and on the back face of said trays in said rear section.

14. A card reference and posting file as defined in claim 13 in which said trays include laterally extending projections on each end thereof received in said raceways.

15. A card reference and posting file comprising a receptacle having front and rear sections, a plurality of upwardly extending raceways positioned along the opposite side of said receptacle, said raceways being in alignment to slidably receive a plurality of trays in stacked relation, a horizontal channel extending lengthwise along the top edge of said receptacle adjacent the raceways on one side thereof, said channel being spaced outwardly of said adjacent raceways but in communication therewith, the upper ends of said raceways on the other side of said receptacle including spaced flange members projecting into said receptacle and having recessed top surfaces lying substantially in the horizontal plane of said channel.

16. A card reference and posting file according to claim 15 in which said horizontal channel includes longitudinally extending bottom, side and top surfaces defining a channel having an elongated opening substantially on only one side thereof in communication with said raceways whereby a tray may be removed from only said one side of said channel.

References Cited in the file of this patent

UNITED STATES PATENTS

967,549	Peterson	Aug. 16, 1910
1,254,916	Lee	Jan. 29, 1918
1,347,658	Proudfit	July 27, 1920
1,820,003	Hutchings	Aug. 18, 1931
2,489,476	Blodget	Nov. 29, 1949
2,706,141	Layer	Apr. 12, 1955

UNITED STATES PATENT OFFICE

CERTIFICATION OF CORRECTION

Patent No. 2,976,097 March 21, 1961

Terence E. Devine

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 5, line 49, for "writting" read -- writing --; column 10, line 11, after "side" insert -- wall of both the front and rear sections --; line 29, for "side" read -- sides --.

Signed and sealed this 22nd day of August 1961.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents