April 30, 1929. N. S. WELK 1,710,753

FILING TRAY

Filed Feb. 25, 1926 3 Sheets-Sheet 1

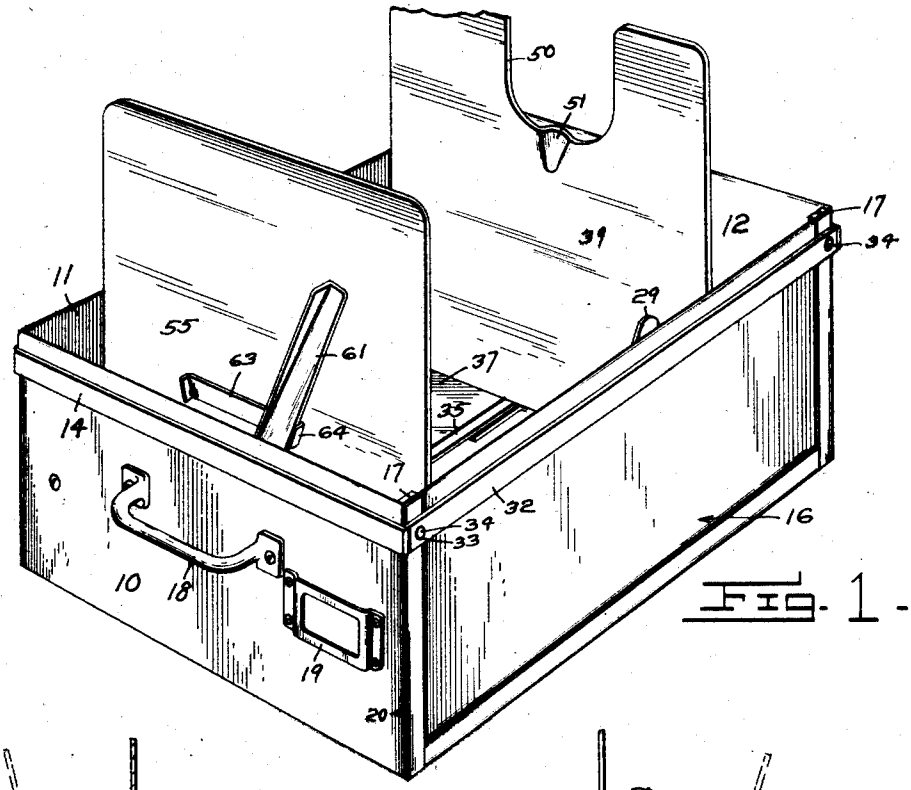


Fig. 1.

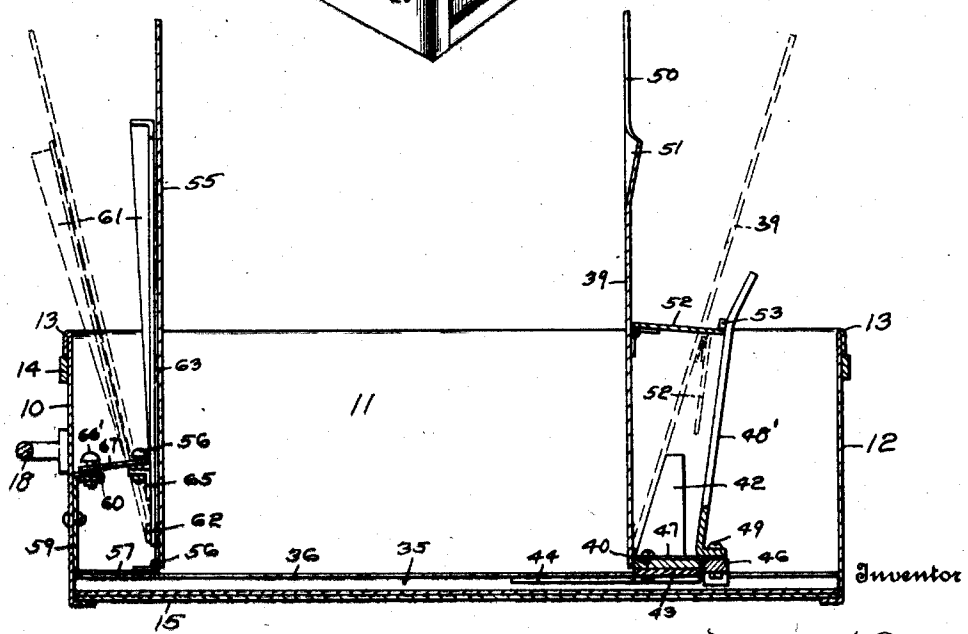


Fig. 2.

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FILING TRAY

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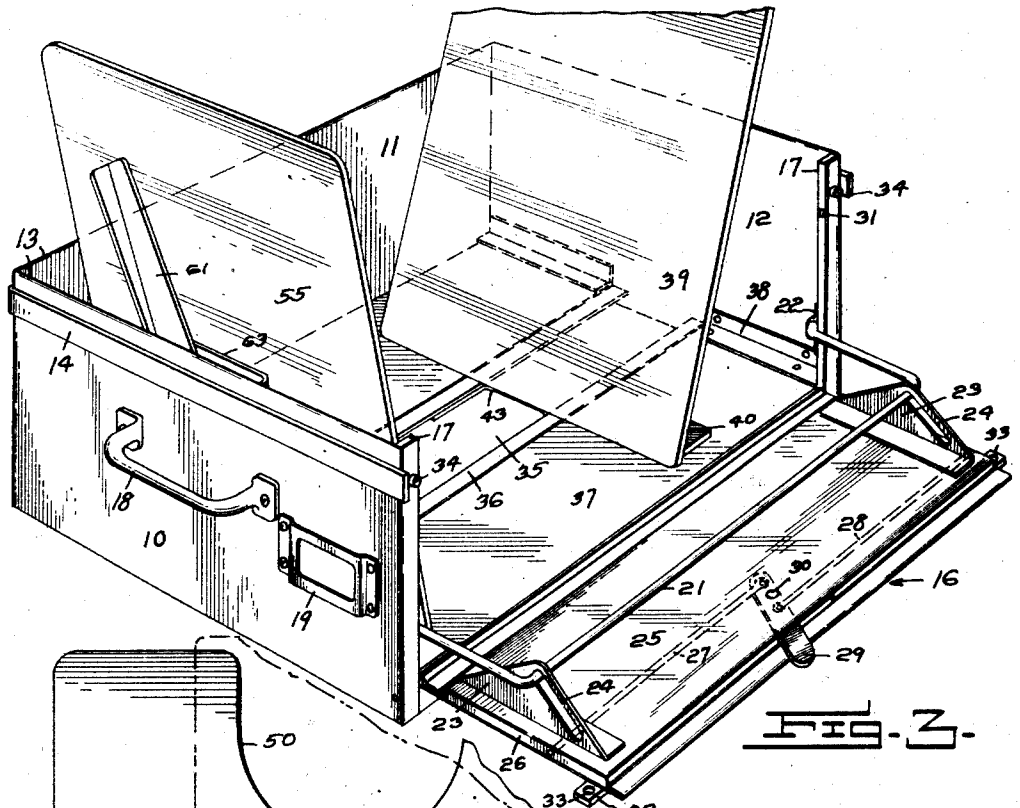


Fig. 3.

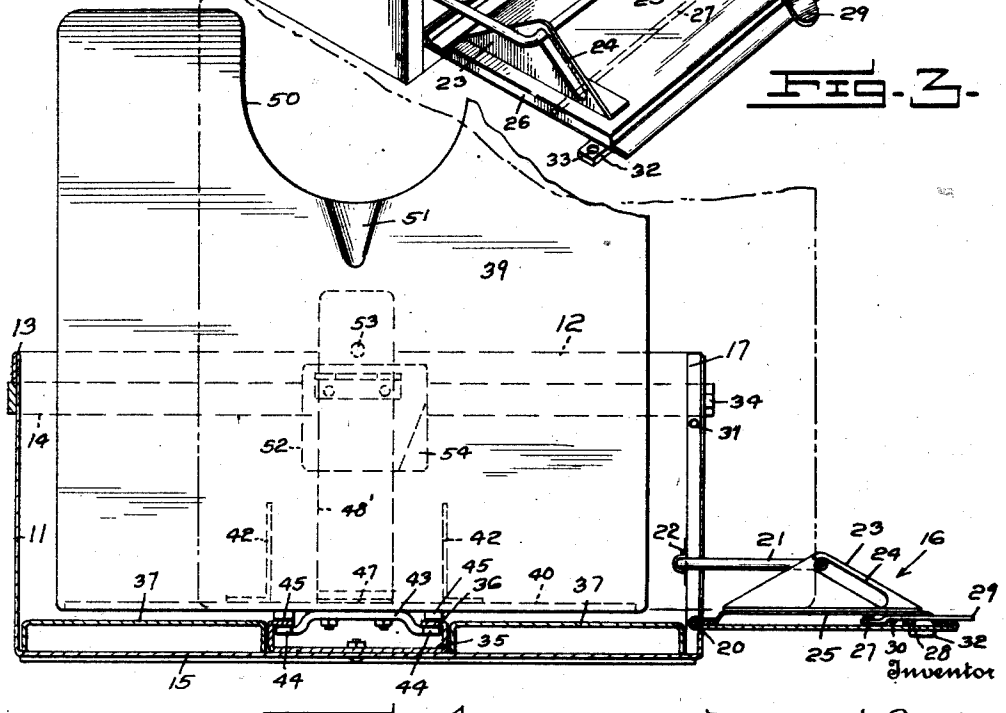


Fig. 4.

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FILING TRAY

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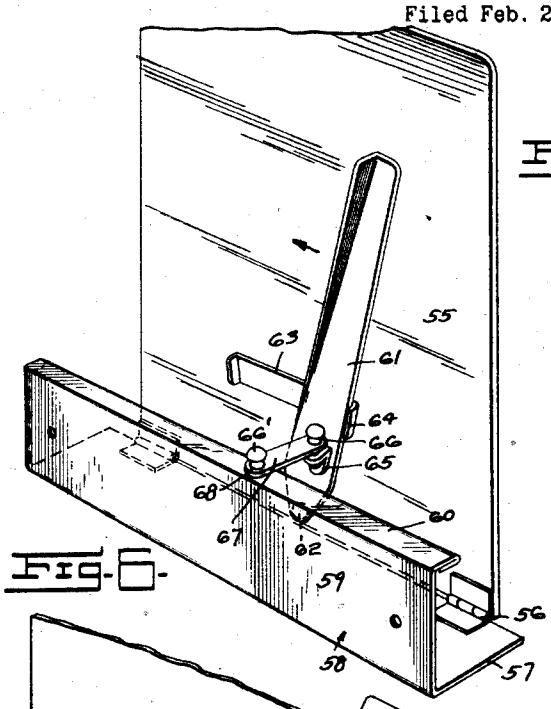


Fig. 6.

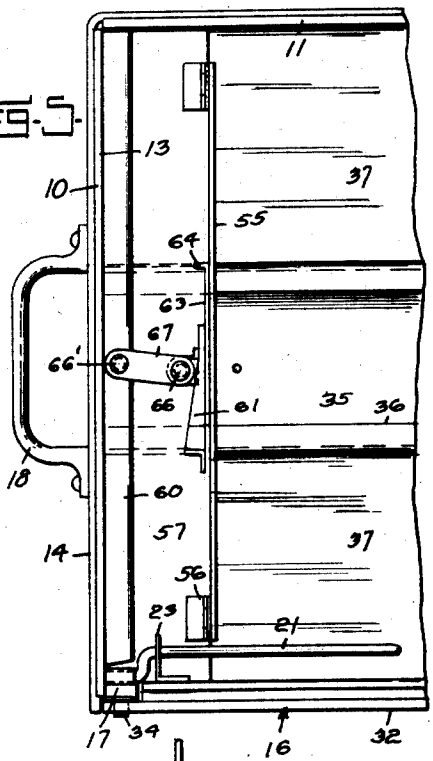


Fig. 5.

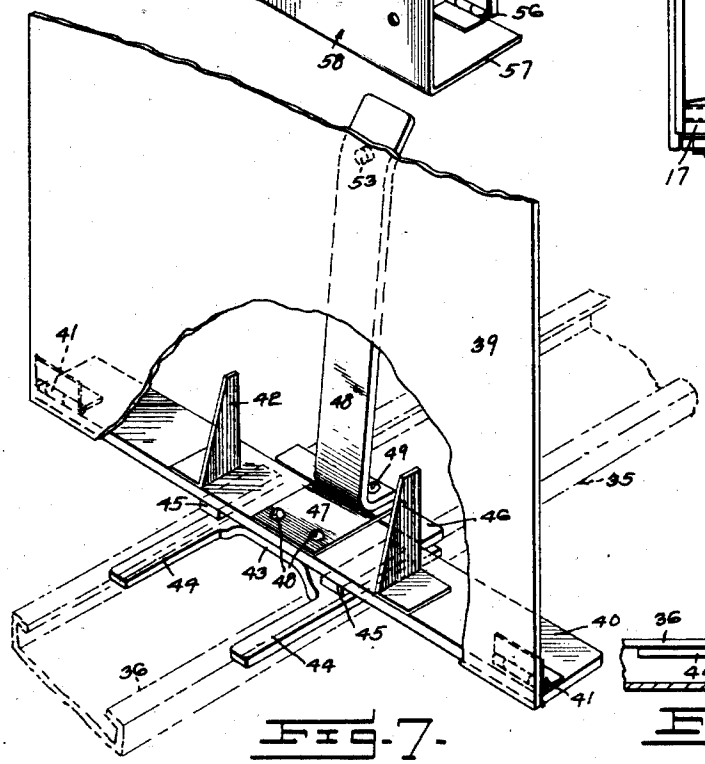


Fig. 7.

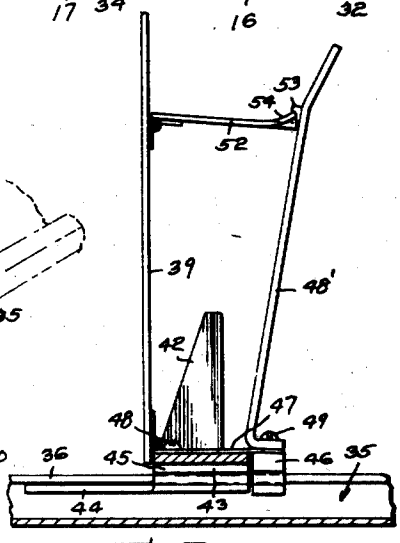


Fig. 8.

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UNITED STATES PATENT OFFICE.

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FILING TRAY.

Application filed February 25, 1926. Serial No. 90,475.

This invention relates to filing trays, and has particular reference to such trays for use in filing cards and similar matter, although not restricted to this use.

It is a particular object of the present invention to provide a file tray having a drop side, whereby cards, etc., filed in the tray may be conveniently and expeditiously inspected and moved outwardly of the body of cards for further reference.

A further object of the invention is the provision of a file tray, provided with an adjustable follower, whereby filed matter may be adequately held in position.

A further object is the provision of a tray of the above-mentioned construction, having a clamping plate, adjustably mounted and adapted to work in conjunction with the follower plate.

Another object of the invention resides in the extremely simple and conveniently arranged mechanism having few moving parts, and being strong, durable, and highly efficient in use.

Other important objects and advantages of the invention will be apparent during the course of the following description, reference being had to the accompanying drawings, in which like numerals are employed to designate like parts throughout.

Referring to the drawings:

Fig. 1 is a perspective view of a file tray constructed in accordance with the invention,

Fig. 2 is a central, vertical, longitudinal, sectional view therethrough,

Fig. 3 is a perspective view of the tray, parts being shifted to the open position,

Fig. 4 is a transverse, vertical section of the tray with parts in the position illustrated in Fig. 3,

Fig. 5 is a plan view of the forward portion of the tray,

Fig. 6 is perspective view of a clamping plate and its associated support, removed from the tray,

Fig. 7 is a perspective view of a follow plate and associated carriage removed from the tray, and

Fig. 8 is a central, vertical, longitudinal section of the structure shown in Fig. 7, parts being shown in elevation.

Referring specifically to the drawings, the numeral 10 designates the front wall of the tray, 11 the side wall and 12 the rear wall. The walls, 10, 11 and 12, may be formed from a single sheet of suitably stiff sheet metal, bent upon itself at its upper edges, as indicated at 13, to provide a reinforced and smooth contacting surface. The walls are further reinforced by a substantially rigid band 14, extending therearound, adjacent the upper edges, and projecting slightly beyond the front and rear walls 10 and 12. A bottom 15 is suitably attached to the side and end walls. The opposite side of the tray is formed open and is normally closed by a swinging door, designated as a whole by the numeral 16. The ends 10 and 12, adjacent such opening, are further reinforced by vertical corner posts 17, welded or otherwise attached thereto. The front end 10 is provided with a handle 18 and an open card pocket 19.

The door 16 is adapted to partake of vertical swinging movement and when in the outermost position, lies in a substantially horizontal plane. The purpose of the door 16 is to enable the operator to gain ready access to the cards contained in the tray, and, if desired, to slide a card or cards outwardly for further reference, such cards being supported upon the surface of the door. The door is formed of stiff sheet metal, bent upon itself at top and bottom. The bending of the metal at the lower edge of the door supports a hinge pin 20, extending beyond the ends of the door, and having bearings in openings formed in the corner posts 17.

The numeral 21 designates a combined supporting rod for the door, and a means for limiting the outward movement of the cards. This rod is U-shaped, and is pivotally supported in bearings 22, carried by the posts 17. The numeral 23 designates V-shaped supporting brackets, rigidly fixed to the inner surface of the door. The brackets are provided with slots 24 extending at an acute angle with the plane of the door, for the reception of the U-shaped rod 21. It will thus be seen, by referring to Figs. 3 and 4, that outward or downward movement of the door is limited by the engagement of the rod 21 at the end of the slots 24, and when in this outermost position, the door lies in a substantially horizontal plane. The door is reinforced by a second sheet of metal 25, spaced therefrom and retained in position by the bent-over edges of the door.

The space between the outer and inner sheets of the door, adjacent the ends thereof, is filled by bars 26, suitably rigidly affixed therein.

Means are provided for retaining the door in the uppermost or closed position, comprising a pair of rods 27 and 28, positioned between the plates of the door, and operating through openings formed in the bars 26. The rods, at their inner ends are pivotally connected to an operating lever 29, upon opposite sides of its pivot 30. The lever 29 extends through a suitable opening near the upper edge of the door, and slightly above the door, for engagement by the finger of the operator. It will thus be seen that movement of the lever in one direction will result in the rods being projected outwardly of the bars 26 and, when so projected, they are adapted to engage in openings 31 formed in the corner posts 17.

It is desirable that means be provided to prevent distortion of the tray due to the door opening, and to overcome this objection, a strip 32 is welded or otherwise attached to the outer surface of the door, in alignment with the band 14, and extending beyond the ends of the door to form in effect a continuation of the band 14. The projecting ends of the strip 32 are provided with openings 33, for the reception of pins 34 carried by the corner posts 17. It will thus be seen that when the door is in the closed position, the pins will engage the openings 33, consequently any stress upon the ends of the tray will be supported by the strip 32.

It will be observed from the description so far given that an exceptionally strong and convenient file tray has been provided. The drop side provides a means of ready access to the cards in the file and enables the operator to slide a card outwardly for further reference, such card contacting with the rod 21 and resting upon the surface of the door, which acts as a shelf. As before stated, the rod 21 serves the double purpose of a support for the door and a means to limit the outward sliding movement of the cards. When the door is in the closed position, the rod 21 lies in close contact therewith, and is entirely out of the way of the filing matter in the tray.

The numeral 35 designates a substantially U-shaped track, extending longitudinally of the tray for its entire length, and bolted or otherwise rigidly attached to the bottom thereof, as shown. This track is provided with inturned flanges 36, to be engaged by the carriage of a follower, to be described. Inverted U-shaped fillers 37 are positioned upon the bottom of the tray upon opposite sides of the track 35, and completely cover the bottom of the tray. The purpose of these fillers is to bring the level of the tray bottom up to the level of the track 35. The fillers may be bolted or otherwise rigidly attached within the tray, as shown at 38.

The numeral 39 designates a follower plate, hingedly mounted upon a transverse bar 40, as shown at 41. The plate 39 is limited in its forward swinging movement by engagement of its lower edge with the forward edge of the bar 40. Rearward movement of the plate is limited by a pair of diagonal brackets 42, suitably rigidly attached to the bar 40. The bar 40, together with the plate 39, is adapted to partake of longitudinal sliding movement upon the track 35. The bar 40 has rigidly attached thereto a horizontal U-shaped carriage 43, the downwardly offset arms 44 of which engage beneath the flanges 36, and have sliding contact therewith. As clearly shown, the carriage 43 is offset sufficiently to raise the bar 40 above the working surface of the tray, whereby undue friction will be avoided during the movement of the follower. To avoid tilting of the follower laterally, filler strips 45 have been provided, which are rigidly affixed to the bottom of the bar 40 directly over the flanges 36, and are adapted to slide thereon.

It becomes necessary to provide means for locking the follower plate against accidental movement under pressure of the filed matter, and to accomplish this, a block 46 is arranged adjacent the rear edge of the bar 40, and connected thereto through the medium of a flat leaf spring 47. The spring 47 is bolted to the bar 40 by means of bolts 48, such bolts serving to also attach the carriage 43. The block 46 is grooved at its ends for engaging over the flanges 36, and adapted to slide thereon with the bar 40 and carriage 43. The spring 47 is bowed downwardly and exerts a downward movement to the block 46. It will therefore be obvious that such movement under the action of the spring 47 will clamp the block 46 in frictional engagement with the flanges 36. To release this frictional engagement, it is necessary to raise the block 46 against the tension of the spring sufficient to bring the same into alignment with the carriage 43, at which time the bar and associated elements may be freely moved along the track.

To facilitate the movement of the follower and to release the locking block 46, an arm 48′ is bolted to the block 46, as at 49, and is slightly rearwardly offset from the vertical. The upper end of the arm 48 is bent rearwardly at a greater angle, for engagement by the finger of the operator. As clearly shown in Figs. 1 and 2, the plate 39 is notched out, as at 50, and is further provided with a depression 51, which acts as a seat for the thumb of the operator. When it is desired to release the carriage for movement, the operator engages the plate 39 with

the thumb and the arm 48 with the finger, pressing them together, at which time the carriage is released and the follower is free for sliding movement.

In order to retain the follower in rigid vertical position, and to positively hold the carriage in locked position, a hinged plate 52 is carried by the rear wall of the plate 39, and is adapted to be swung upward and into contact with the arm 48. Upward movement of the plate 52 is limited by a stop lug 53, carried by the arm 48. One corner of the plate 52 is bent upwardly as at 54, whereby the operator may readily engage the same with the finger.

In order to provide a means of retaining the filed cards in compact and upright position, a compression or clamping plate has been provided in the forward end of the tray. This plate is designated by the numeral 55, and is adapted to swing from a vertical or clamping position, forwardly to a position for relieving pressure on the cards. The plate 55 is hingedly supported as at 56, to the horizontal flange 57 of a substantially L-shaped supporting member 58. The member 58 extends transversely of the tray, and has its vertical wall 59 bolted or otherwise rigidly attached to the front wall of the tray, as shown. The material of the member 58, at its upper edge, is bent inwardly, and upon itself, for forming a horizontal flange 60.

The numeral 61 designates an operating level for controlling the pressure of the plate 55. This lever is pivotally mounted as at 62, adjacent the lower end of the plate, and adapted for swinging movement across the face of such plate. A combined wear strip and limiting means 63 is secured to the plate 55, and this strip has inturned ends 64 for limiting the swinging movement of the lever 61 in either direction. The lever 61 is provided with an L-shaped pivot member 65, carrying a pivot pin 66. A corresponding pivot pin 66′ is carried by the flange 60, and these pins 66 and 66′ receive a rigid link 67, the openings 68 of which are sufficiently large to enable such link to partake of slight vertical movement, while swinging in a horizontal plane, due to the swinging of the lever 61 about its pivot. It will thus be seen that movement of the lever in the direction of the arrow, (Fig. 6) will result in the plate being moved forwardly or to the release position, as shown in dotted lines (Fig. 2). Movement of the lever in the opposite direction will result in the plate being moved to the clamping position, and when in such position, the link 67 will have moved to a past center position, consequently, the plate 55 will be retained in clamping position, against accidental release by the pressure of the cards.

The operation of the device is as follows:

Assuming that the tray contains filed matter such as cards, and that the parts are in the position illustrated in Fig. 1. It is now desired to inspect the cards, and to make this possible, the lever 61 is swung over to the left, thereby releasing the clamping plate 55. The plate 52 is then moved down to permit the plate 39 to swing rearward against the brackets 42. It is now possible to inspect the cards, as all pressure has been relieved therefrom. If it is desired to insert additional cards, the operator places the thumb in the seat 51, and with the finger or fingers, presses the arm 48 toward the plate 39. This action, due to the rigid connection of the arm 48 with the block 46, results in raising the block 46 upward slightly against the tension of the spring 47, thus straightening said block into alignment with the carriage 43, and when the parts are in this position, said carriage and associated elements may be readily moved along the track 35. Removal of the hand of the operator from the plate 39 and arm 48, will immediately result in the locking of the carriage against movement.

It is desirable at times to insert slips or otherwise mark certain cards for further reference and to avoid the difficulty of again locating such card or cards. To obviate this difficulty, the operator releases the locking rods 27 and 28, permitting the door to drop downward to the position illustrated in Figs. 3 and 4. The cards may then be slipped outwardly until they engage the rod 21, where they may be readily referred to without removing the cards from their proper places in the file.

It will be observed from the foregoing that an extremely simple and efficient form of filing tray has been provided. The parts are few and so arranged as to make them easily accessible to the operator. The provision of the door is an unusually advantageous feature, which avoids much undue time and labor in the filing of those cards which require constant inspection.

It is to be understood that the invention is not limited to the precise construction set forth but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described my invention, what I claim is:

1. A filing tray of the character described, comprising a rectangular sheet metal body portion open at top and side, a track carried within said tray, a follower plate adjustably supported upon said track, a clamping plate mounted within said tray, a support for said clamping plate, means for adjusting said clamping plate toward said follower, a door hingedly mounted within said open side, and adapted to swing outwardly, means for lim-

iting such outward swinging movement whereby said door will be held in a horizontal plane, and locking means carried by the door and slidingly engaging the body of the tray at each side of the door for holding said door in its closed position.

2. A file tray of rectangular formation, open at its top and side, a follower and a clamping plate mounted within said tray, a door hingedly supported within said open side and adapted to normally close said opening, means to limit the outward swinging movement of said door, such means comprising a U-shaped rod, supported by the tray, brackets carried by said door for engagement with said rod, and locking means carried by said door for engagement with the tray, to retain the door in its closed position.

3. A filing tray of the character described, comprising a rectangular sheet-metal body portion, open at its top and upon one side, reinforcing members carried by said body portion adjacent said side opening, a door hingedly mounted within said side opening, a rod for limiting the outward swinging movement of said door, whereby said door will be retained in a horizontal position at the limit of its movement, bearings for supporting the ends of said rod, brackets carried by said door, and having slots formed therein to be engaged by said rod, said rod adapted to slide in said slots during the swinging movement of the door, and locking pins carried by the door to engage said body portion when said door is in the closed position.

4. A device of the character described, comprising a rectangular sheet-metal body portion open at its top and upon one side, a follower and a clamping plate mounted within said body portion, reinforcing posts carried by said body portion adjacent said side opening, a door hingedly supported within said side opening and adapted to swing outwardly to a horizontal position, a U-shaped supporting rod, bearings carried by said posts for supporting the ends of said rod, brackets carried upon the inner surface of the door, said brackets provided with slots extending at an angle to said surface, said slots adapted to receive said rod, for sliding during swinging movement of the door, said rod adapted to support said door when swung to its outermost position, by engagement at the end of said slot, said rod adapted, when the door is swung to a closed position, to lie at the opposite end of said slots, and against the surface of the door, and locking rods carried by said door for engagement within openings formed in the reinforcing posts.

5. A device of the character described, comprising a rectangular sheet-metal body portion, open at top and one side, said body portion provided with reinforcing posts adjacent said side opening, lugs carried by said posts outwardly of the body portion and adjacent the tops of said posts, a door hingedly mounted within said side opening, a reinforcing strip carried outwardly of said door and adjacent its top edge, said strip projecting beyond the ends of said door and having openings formed therein, said openings adapted to engage over said lugs when the door is in the closed position, means to limit the outward swinging movement of said door, locking means for retaining the door in its closed position, a trackway mounted within said body portion and bolted to the bottom thereof, said track having inturned flanges to be slidably engaged by a follower plate, a follower adjustably supported upon said track, a clamping plate adjustably supported within the forward portion of the device, and filler members supported upon said bottom and upon opposite sides of the trackway, all substantially as shown and described.

NELSON S. WELK.