Aug. 20, 1935. S. B. FREIBERG 2,011,679

CARD TRAY CONSTRUCTION AND GUIDE

Filed Dec. 12, 1928 3 Sheets-Sheet 1

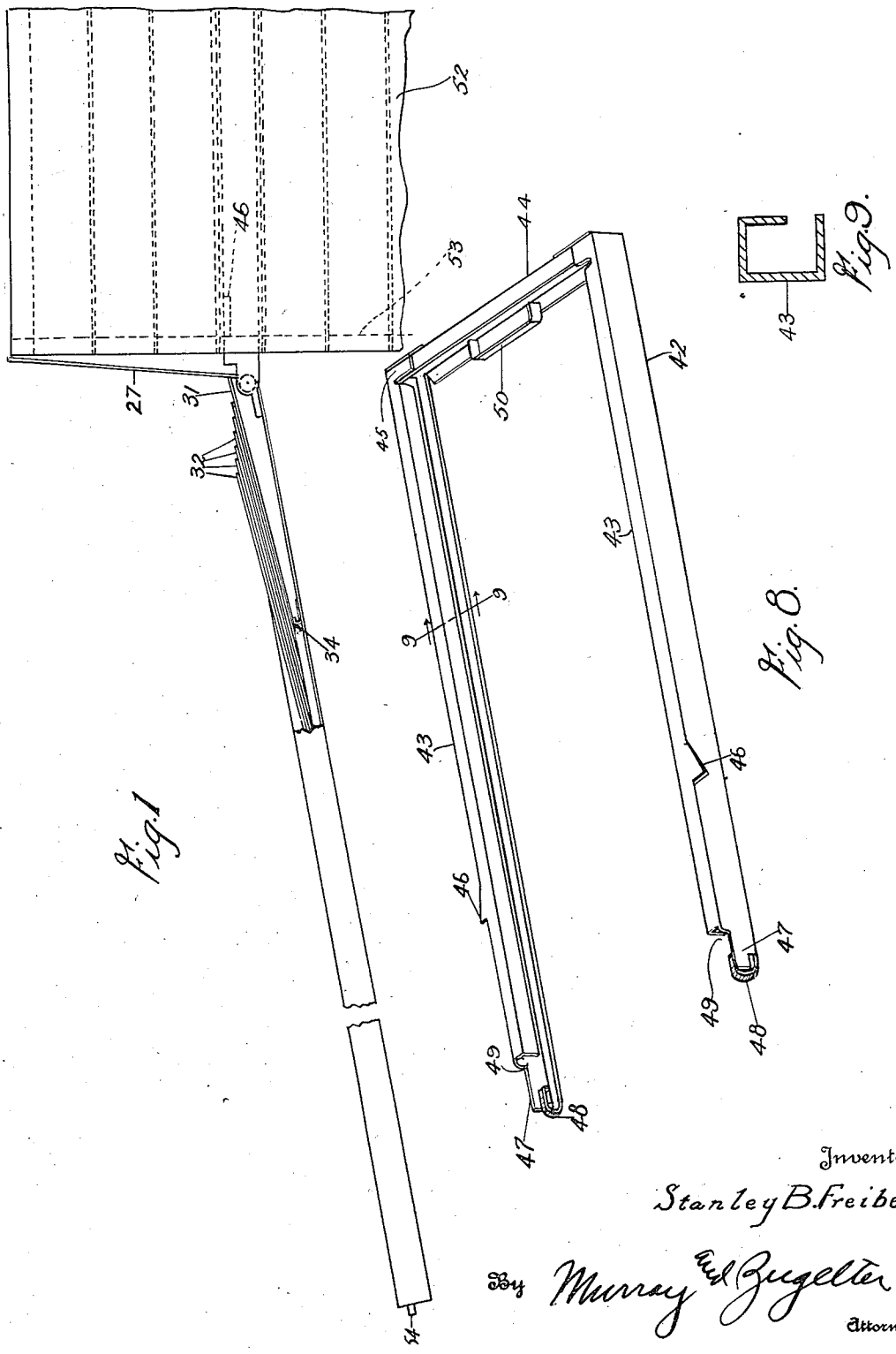

Fig. 1.

Fig. 8.

Fig. 9.

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CARD TRAY CONSTRUCTION AND GUIDE

Filed Dec. 12, 1928 3 Sheets-Sheet 2

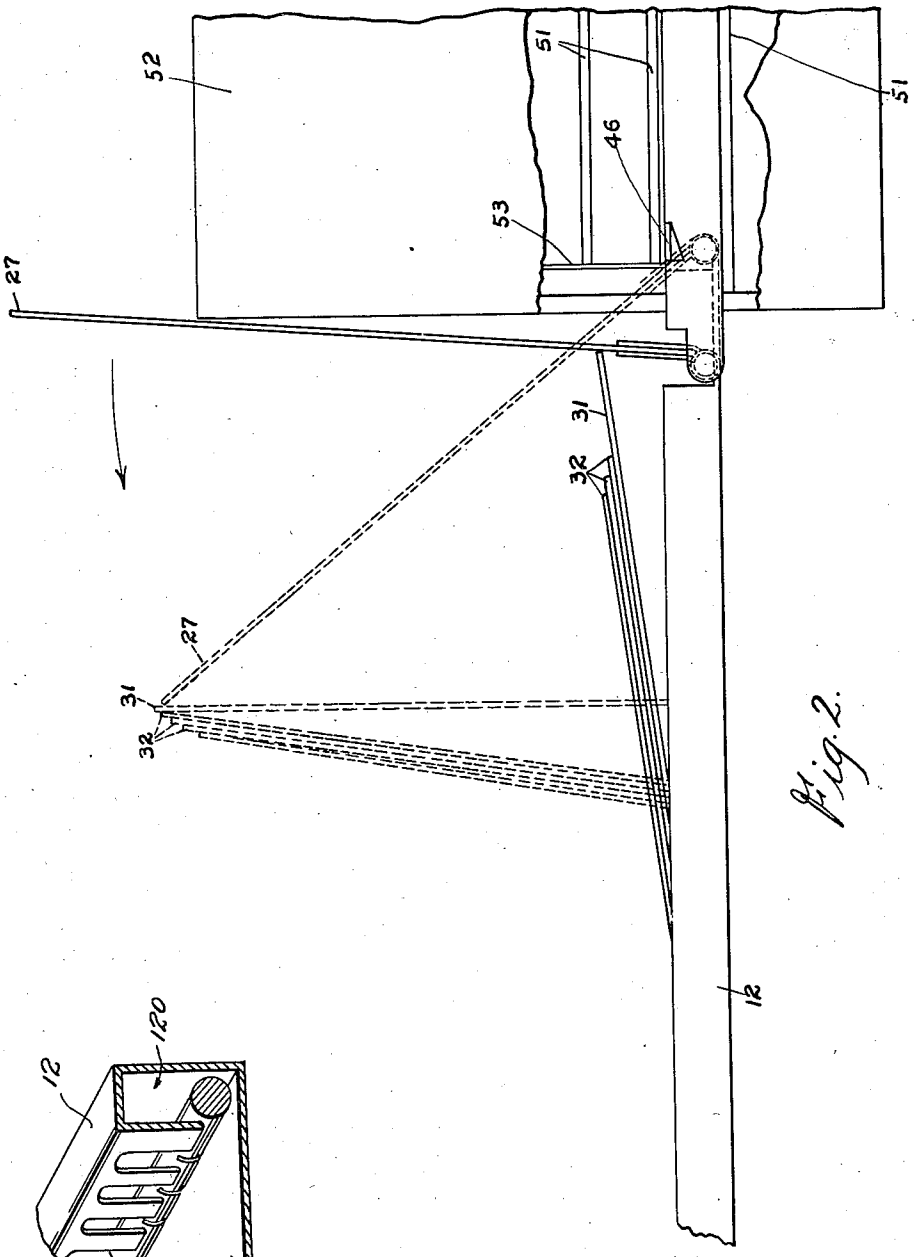

Fig. 2.

Fig. 10.

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CARD TRAY CONSTRUCTION AND GUIDE

Filed Dec. 12, 1928 3 Sheets-Sheet 3

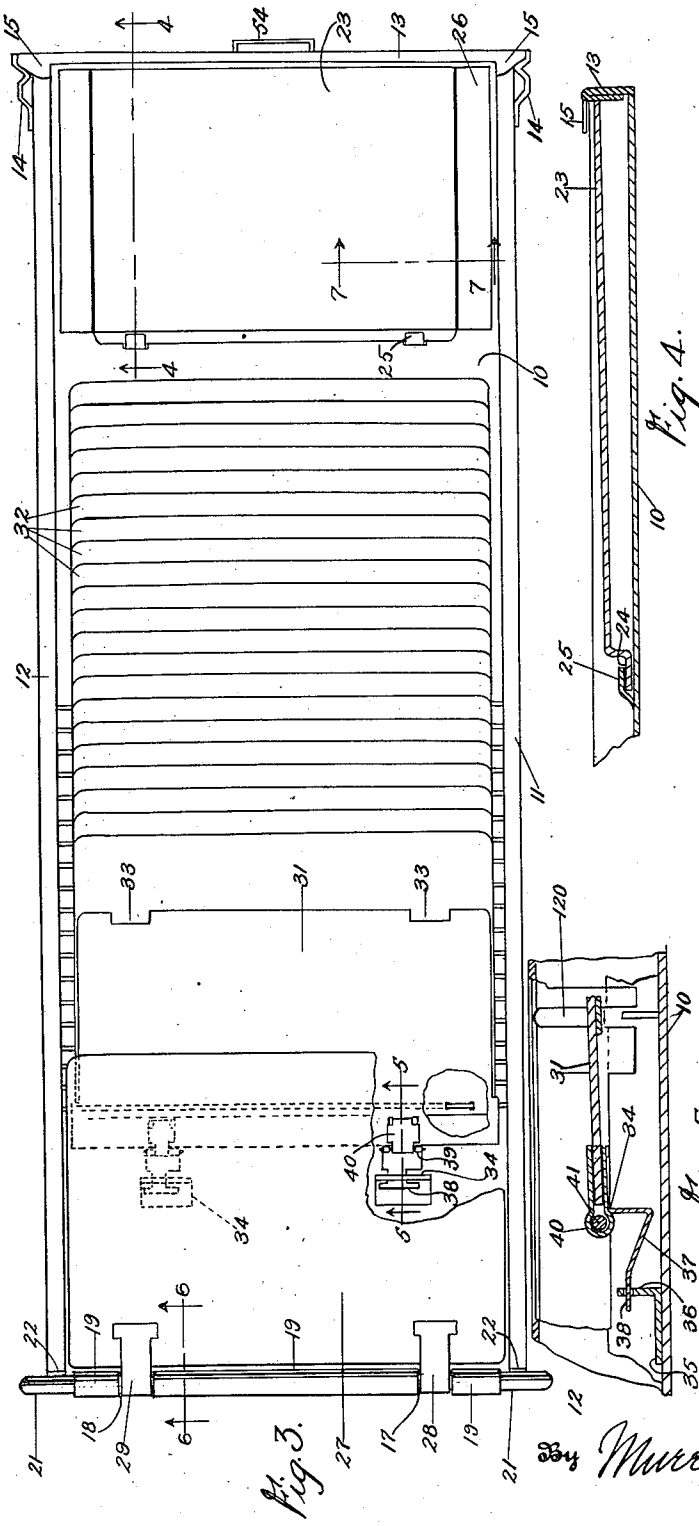

Fig. 3.

Fig. 5.

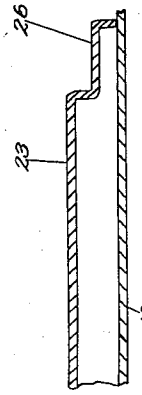

Fig. 7.

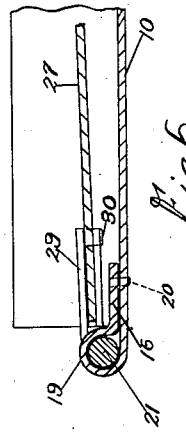

Fig. 6.

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CARD TRAY CONSTRUCTION AND GUIDE

Stanley B. Freiberg, Cincinnati, Ohio

Application December 12, 1928, Serial No. 325,589

23 Claims. (Cl. 129—16)

This invention pertains to a tray or drawer for use in filing cabinets.

An object of the invention is to provide a tray, simple in construction and operation, and having a new cooperation of its parts.

Another object is to provide a tray with a new and efficient form of mounting.

Another object is to provide a tray having means by which the filing cards are automatically reversed and returned to an inoperative position when the tray is pushed into its cabinet.

These objects are attained in the present invention, the construction and operation of which are explained in the accompanying specification and drawings.

In the drawings, Fig. 1 is a side elevational view partly broken away of the tray and its guide mounted in a suitable cabinet.

Fig. 2 is an enlarged view of a portion of Fig. 1, but showing parts in different relative positions.

Fig. 3 is a top plan view of the tray with parts broken away.

Fig. 4 is a view on line 4—4 of Fig. 3.

Fig. 5 is a view on line 5—5 of Fig. 3.

Fig. 6 is a view on line 6—6 of Fig. 3.

Fig. 7 is a view on line 7—7 of Fig. 3.

Figs. 8 and 9 are views of the guide in which the tray is mounted.

Fig. 10 is a fragmentary perspective view of one side of the tray.

The tray proper is formed of a single stamped sheet of metal and has the flat base 10 and the vertical sides 11 and 12 which are turned in and suitably channeled and slotted to accommodate filing cards as indicated at 120 (Fig. 5). The vertical front wall 13 is turned inwardly along its top and has at either end the formed extension 14 which is turned backwardly and attached to the outer faces of sides 11 and 12. This extension 14 is one of the cooperating elements of a lock which is shown and claimed in my copending application Serial Number 342,645 filed February 25, 1929. A flat tab 15 is cut from the turned-in portion of front wall 13 adjacent either end thereof. Each tab 15 is turned down upon the adjacent top edge of sides 11 and 12 and secured thereon for the purpose of firmly holding together the front wall and the sides of the tray.

The rear end extension 16 of base 10 is initially longer than the sides 11 and 12 of the tray. The side edges of extension 16 are inwardly offset so that extension 16 can be turned upon itself upwardly and inwardly, without interference with sides 11 and 12, in order to form the hinge member or bearing 19. Perforations 17 and 18 may be provided in extension 16 before the latter is formed into a hinge member. The extreme endwise edge of extension 16 may be secured to base 10 as indicated at 20. A rod or hinge pin 21, extending outwardly beyond sides 11 and 12, is secured in hinge member or bearing 19. Rod 21 abuts the turned-in vertical flaps 22 formed on the end portions of the tray sides 11 and 12.

In the forward portion of base 10, is positioned a filler 23, the purpose of which is to facilitate handling of the filing cards by preventing their flat contact with base 10. Filler 23 is a metal plate provided with short side walls which decrease in height from the front to the rear of the plate. The greatest height of these side walls, however, is somewhat less than the height of tray sides 11 and 12. Rear portion 24 of filler 23 is flattened against base 10 and spurs or lugs 25, which are struck up from base 10, are pressed down upon portion 24, thus retaining filler 23 in position. Side ledges 26, receding from the upper face of plate 23, permit the fingers of one using the file to be easily inserted beneath the edges of the cards and permit limited depression of the lateral edge portions of the cards for facilitating such insertion.

A primary cover plate 27 preferably of some fibrous material is hinged upon rod 21. Hinge members 28 and 29 may be metal strips looped about rod 21 at the open spaces afforded by perforations 17 and 18. The leaves of hinges 28 and 29 extend on opposite sides of cover plate 27 and may be secured to cover plate 27 in any suitable manner and by any suitable means, for example, teeth 30 which extend through cover plate 27.

Secondary cover plate 31, similar to primary cover plate 27, is hinged upon base 10 adjacent the rear end thereof and in alignment with plate 27. Cover plate 31 is slightly shorter than filing cards 32, while plate 27 is longer than plate 31 and cards 32. Plate 31 is attached by hinges 34 to base 10. The pivotal mountings of plates 27 and 31 are spaced by a distance less than the length of plate 31. Hence, when the plates 27 and 31 are inclined backwardly plate 31 is not permitted to lie flat but necessarily rests against the lower portion of plate 27. The apertures 33 in plate 31 permit unobstructed sliding movement of plate 31 over the hinges 28 and 29. Plates 27 and 31 are positioned so that their grain extends longitudinally of the tray, warping of the plates after a period of use being thus prevented. The width of plate 31 is slightly less

than that of cards 32 so that in a horizontal position, the side edges of the cards covered by the plate are visible and conveniently handled. Hinges 34 are made up of three parts. The base portion 35 thereof, is secured to tray base 10 and provides an upstanding slotted lug 36. V-member 37 has an integral T-shaped arm 38 by which V-member 37 is pivotally fastened in the slotted lug 36. V-member 37, on the corners of its free edge, provides bearings 39. Between these bearings 39 is positioned the clamp 40, similar to hinges 28, being an integral strip doubled upon itself to afford two leaves and looped at its base to provide a bearing, through which, and through bearings 39, extends a pin 41. The leaves of clamps 40 secure plate 31 between them. The plate so hinged is adapted when lying forwardly, to assume a perfectly flat position on varying thicknesses of cards that may be used in the tray at different times.

Drawer guide 42 is a U-shaped member. Its arms 43 and back 44 are channel-shaped with their open sides facing inwardly. Arms 43, at their rear ends provide extensions 45 within which the back 44 is suitably secured, as by welding. Lugs 46 are struck out from the top portions of arms 43 adjacent the front ends thereof and at opposite points. The front ends of arms 43 are formed so as to afford the narrowed portions 47 having curved end abutments 48. Aligned openings 49 are provided in the upper sides of the arms 43, just beyond narrowed portions 47. A suitable bumper 50 extends inwardly from the back 44 of guide 42.

Guide 42 is adapted to fit snugly between two of the shelves 51, and between the sides of a suitable cabinet 52. The length of guide 42 is less than the cabinet's length. As guide 42 is somewhat resilient, it yields slightly to permit lugs 46 to pass the front inner edge abutment 53 of the cabinet, this abutment being normally provided by the turned-in front edges of the cabinet. After lugs 46 have thus passed abutment 53, guide 42 spreads and lugs 46 prevent its withdrawal past abutments 53 unless arms 43 are again pressed toward one another.

When guide 42 is placed as in Fig. 1 the tray can be operatively positioned by inserting the outer ends of rod 21 through openings 49, rod 21 being slightly shorter than the distance between arms 42. The tray may now be allowed to hang down vertically, suspended from guide 42, with the ends of rods 21 held by the curved abutments 48. The normal operative position of the tray is shown in Fig. 1, the convenient method of thus supporting the tray being to pull out one of the trays immediately beneath.

The cards 32 and cover plates 27 and 31 are now in the position shown in Fig. 3. The card to be used is turned over, which action causes the cards behind and the two cover plates to assume the position shown in Fig. 1. Plate 27 is inclined backwardly against the cabinet, or against the tray fronts above, with plate 31 resting against the lower portion of plate 27. As the tray is pushed in, plate 27 is moved in the direction indicated by the arrows, and through the positions shown in Fig. 2. The upper edge of plate 31 continues to rest against plate 27, and rides up on plate 27 as the latter assumes a vertical position. Thereafter, the relative positions of the two plates are reversed as shown in dotted lines in Fig. 2. The cards 32 are of course, simultaneously actuated by plate 31, so that the pushing in of the tray returns cards and cover plates to the position shown in Fig. 3. It is to be noted that at no time in the process of movement of cards and plates, does plate 27 come into contact with the tops of the cards 32, so that no fraying of the latter occurs.

In the closing process just described guide 42 moves backward into the cabinet until it contacts the rear thereof. Thereupon, the ends of rod 21 slide backward in the channels afforded by the arms 43, and the tray moves into the cabinet upon its shelf until it contacts the bumper 50. A suitable handle 54 is positioned upon the outside of the front wall 13.

The present invention, therefore, increases efficiency and convenience in filing systems. The trays provide for swift manipulation of the cards. The cover plates add much to the life of the cards by greatly reducing the amount of handling necessary. The suspension of the trays exteriorly of the cabinet provides for a convenient writing position with none of the inconveniences that would result if the trays were removed from operative connection with the cabinet.

What is claimed is:

1. In combination with a filing cabinet, a filing tray comprising a base having vertical sides and front, bearings at the rear of the base and formed by doubling a section of the base upon itself, said section being provided with rectangular perforations in that portion forming the bearings, a rod secured in the bearings, the ends of the rod extending beyond the sides of the tray, a plate hinged upon the rod in the spaces provided by the perforations, and a second plate hinged to the base in front of the first plate at a distance less than the length of said first plate; and a U-shaped guide member with channeled sides opening inwardly of the guide, said guide being adapted to fit into the cabinet, lugs adjacent the free ends of the guide to prevent normal withdrawal of the guide from the cabinet, abutments closing the free ends of the channels of said U-shaped guide, the guide being adapted to receive in its sides the ends of the above rod whereby to support the tray when the latter is drawn from the cabinet.

2. A filing tray with a transverse rod secured at the rear thereof, the ends of the rod projecting at both sides of the tray, a U-shaped guide member adapted to slidably hold the ends of said transverse rod, the guide being receivable in the cabinet and having its free ends closed; lugs adjacent the free ends of the guide to limit movement of the guide from the cabinet, a flat plate hinged to the transverse rod and adapted to lie forward within the tray, its backward pivotal movement being limited by contact with the cabinet parts; and a second flat plate hinged within the tray in front of the first plate, its backward pivotal movement being limited by contact with the first plate, said second plate being placed directly behind the filing cards normally pivoted within the tray.

3. A hinge for use with cover plates and the like, and comprising a base portion adapted to be secured to a suitable surface, said base providing a perforated upstanding lug; a second member having a V-shaped channel opening upwardly, one edge of said channel providing an arm pivotally secured in said upstanding lug, the other edge of the channel providing bearings, a third member adapted to clamp a cover plate or the like, and means for hingedly holding said third member within said bearings.

4. In combination with a filing cabinet and a tray with cards pivotally held therein, a pair of

spaced plates transversely pivoted in the tray adjacent the rear thereof, the front plate being adapted to support the cards, the rearward plate being adapted to support the front plate and to be itself supported against the cabinet when the tray is drawn out therefrom.

5. In combination a cabinet, a tray movable to positions within and without the cabinet, means for movably connecting the tray and the cabinet, a pair of plates transversely pivoted within the tray, said plates being so positioned that when the tray is drawn out to its limit, one plate may be pivoted backwardly beyond the vertical to rest against the cabinet, and the other plate may be pivoted backwardly to a substantially horizontal position, its top edge overlapping and resting against the bottom portion of the other plate.

6. The combination with a filing cabinet and a tray having cards transversely pivoted therein and lying substantially horizontal, two plates transversely pivoted in spaced relation in the tray behind the cards, the rearmost plate in the outdrawn position of the tray being adapted to be pivoted rearwardly into contact against the cabinet and to support the other plate in a rearwardly pivoted position, said plates adapted to reverse the cards from a rearwardly projecting to a forwardly projecting position upon movement of the tray into the cabinet.

7. The combination with a filing cabinet, of a tray having cards transversely pivoted therein and two plates hinged in spaced relation in the tray behind the cards and one plate adapted to contact the cabinet to pivot the plates and cards forwardly upon movement of the tray into the cabinet.

8. A filing cabinet, a tray guide in the cabinet, a tray having pivotal and sliding conection with said guide, a row of cards pivoted on the tray and means for reversing the cards upon movement of the tray into the cabinet, the tray and the card-reversing means being movable on a common pivotal axis.

9. The combination of a filing cabinet, a tray having cards pivotally mounted thereon, means for mounting the tray for pivotal movement relative to the cabinet when withdrawn and means for reversing the cards upon movement of the tray into the cabinet, the tray and the card-reversing means being movable on a common axis.

10. A filing tray comprising a base with upturned sides and front, the rear of the base having aligned perforations and being bent transversely upon itself along the line of said perforations to form bearings, a rod secured in the bearings and extending outwardly beyond the sides of the tray, and tabs integral with the front of the tray and secured to the tray sides for binding together the front and sides of the tray.

11. In combination, a filing tray having filing cards pivotally held therein transversely thereof, aligned spaced bearings at the rear end of the tray, a rod held in said bearings and extending outwardly beyond the tray sides to provide for pivotal mounting of the tray, a flat plate hinged to the rod in the spaces between said spaced bearings, and a second flat plate hingedly held within the tray immediately behind said filing cards and in alignment therewith, the distance between said two plates being less than the length of said second plate.

12. The combination with a filing tray having a row of overlapping cards pivotally held therein and normally adapted to lie flat against the base thereof, of means secured to the base of the tray for spacing the cards at one end of the row from the base and for permitting limited depression of the lateral portions thereof.

13. In combination with a filing tray having base and sides, and means adapted to pivotally hold cards normally positioned flat against the base, a filler plate positioned adjacent the front of the tray and comprising a plate spaced from the base by side walls decreasing in height from the front to the rear portion of the plate, the greatest height of said walls being less than the height of the sides of the tray, the plate being provided with ledges extending laterally thereof and within the side walls of the plate, the surface of the ledges being disposed substantially beneath the surface of the plate, said plate being adapted to space the front cards in the tray from the base and said ledges affording a clearance beneath the lateral edges of the cards to permit convenient handling thereof.

14. In combination with a filing tray having cards pivotally held therein and normally adapted to lie flat against the base thereof, a filler plate positioned in the front of the tray and having lateral supports spacing the plate from the base and supporting the plate angularly within the tray so that the front portion rests in a higher plane than the rear portion thereof, the surface of the plate being adapted to support the front cards in the tray and falling within the lateral edges thereof whereby said edges are held clear for convenient handling.

15. The combination with a tray and a row of overlapping cards, carried by the tray and movable therein, of means for supporting the overlapping portions of the cards at one end of the row, for spacing said supported portion of the cards from the bottom of the tray and for permitting depression of the lateral edges thereof.

16. The combination of a tray, a row of cards each having an end with a spaced transverse pivoted connection with the tray whereby the cards overlap at their free ends, when reposing in the tray, and means at one end of the tray for supporting the free end of the endmost card at the front of the tray and for permitting depression of the lateral edges thereof.

17. The combination of a tray, a row of overlapping flexible cards pivotally carried by the tray, the row of cards extending longitudinally of the tray and in their normal positions reposing substantially parallel with the bottom of the tray, and a plate at one end of the row of cards and having a depression extending longitudinally of the tray, the plate supporting the cards at one end of the row when the cards are in their normal positions, and the cards being adapted for flexing into the depression for facilitating grasping of adjoining cards supported above the plate.

18. In combination with a filing cabinet, a filing tray comprising a base having vertical sides and front, bearings at the rear of the base and formed by doubling a section of the base upon itself, said section being provided with rectangular perforations in that portion forming the bearings, a rod secured in the bearings, the ends of the rod being disposed at the sides of the tray, a plate hinged upon the rod in the spaces provided by the perforations, and a second plate hinged to the base in front of the first plate at a distance less than the length of said first plate; and a U-shaped guide member with channeled sides opening inwardly of the guide, said guide being adapted to

fit into the cabinet, lugs adjacent the free ends of the guide to prevent normal withdrawal of the guide from the cabinet abutments closing the free ends of the channels of said U-shaped guide, the guide being adapted to receive in its sides the ends of the above rod whereby to support the tray when the latter is drawn from the cabinet.

19. A filing tray comprising a base with upturned sides and front, the rear of the base having aligned perforations and being bent transversely upon itself along the line of said perforations to form bearings, a rod secured in the bearings and being with its ends disposed at the sides of the tray, and tabs integral with the front of the tray and secured to the tray sides for binding together the front and sides of the tray.

20. The combination with a tray having a substantially flat bottom and upstanding sides of a row of overlapping cards pivoted at their opposite ends along the upstanding sides of the tray, and an inclined plate at one end of the tray, said plate extending substantially across the tray between the upstanding sides and rising upwardly toward the end of the tray at which the plate is disposed, the lateral edges of the plate being depressed whereby the central portion of the plate may support the cards at the end of the row adjacent said plate and whereby the lateral edges of cards so supported may be depressed, the depressed portions of the plate limiting the extent to which the lateral card edges may be depressed.

21. A filing tray comprising a base with upturned sides and front, the rear of the base having aligned perforations and being bent transversely upon itself along the line of said perforations to form bearings, a rod secured in the bearings and extending outwardly beyond the bearings, and tabs integral with the front of the tray and secured to the tray sides for binding together the front and sides of the tray.

22. The combination of a cabinet, a tray guide reciprocally received in the cabinet, a tray reciprocally received in the guide, the cabinet, guide and tray being so related that the tray may be fully withdrawn from the cabinet without disturbing the operative relation of said members, without separating the tray from the guide and without separating the guide from the cabinet, a row of record cards having pivotal axes at one end disposed transversely of the tray, guide and cabinet, the rearmost record card having its axis disposed so far forwardly of the cabinet when the tray is fully projected or withdrawn from the cabinet that the free end of said record card may project in a substantially horizontal plane toward the cabinet for exposing the under face thereof and permitting said under face to lie substantially flat in relation to the tray, and means for automatically turning said record card on its axis for projecting the free end of said card forwardly of the tray upon return of the tray into the cabinet.

23. The combination of a cabinet, a tray, a row of overlapping record cards pivotally supported at one end transversely of and by the tray, the cards adapted to be moved about their supports to selectively dispose the free ends of the cards toward opposite ends of the tray, a connection between the tray and cabinet whereby the tray may have pivotal movement on an axis substantially parallel with the axes or pivots of the record cards, and a plate having pivotal movement about the axis of the tray, said plate adapted to have contact with the rearmost record card and with the cabinet, whereby the plate will turn the record cards upon their axes to project the free ends of the cards forwardly of the tray upon movement of the tray into the cabinet.

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CERTIFICATE OF CORRECTION.

Patent No. 2,011,679. August 20, 1935.

STANLEY B. FREIBERG.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, first column, line 13, claim 19, strike out the word "being"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 8th day of October, A. D. 1935.

Leslie Frazer

(Seal) Acting Commissioner of Patents.