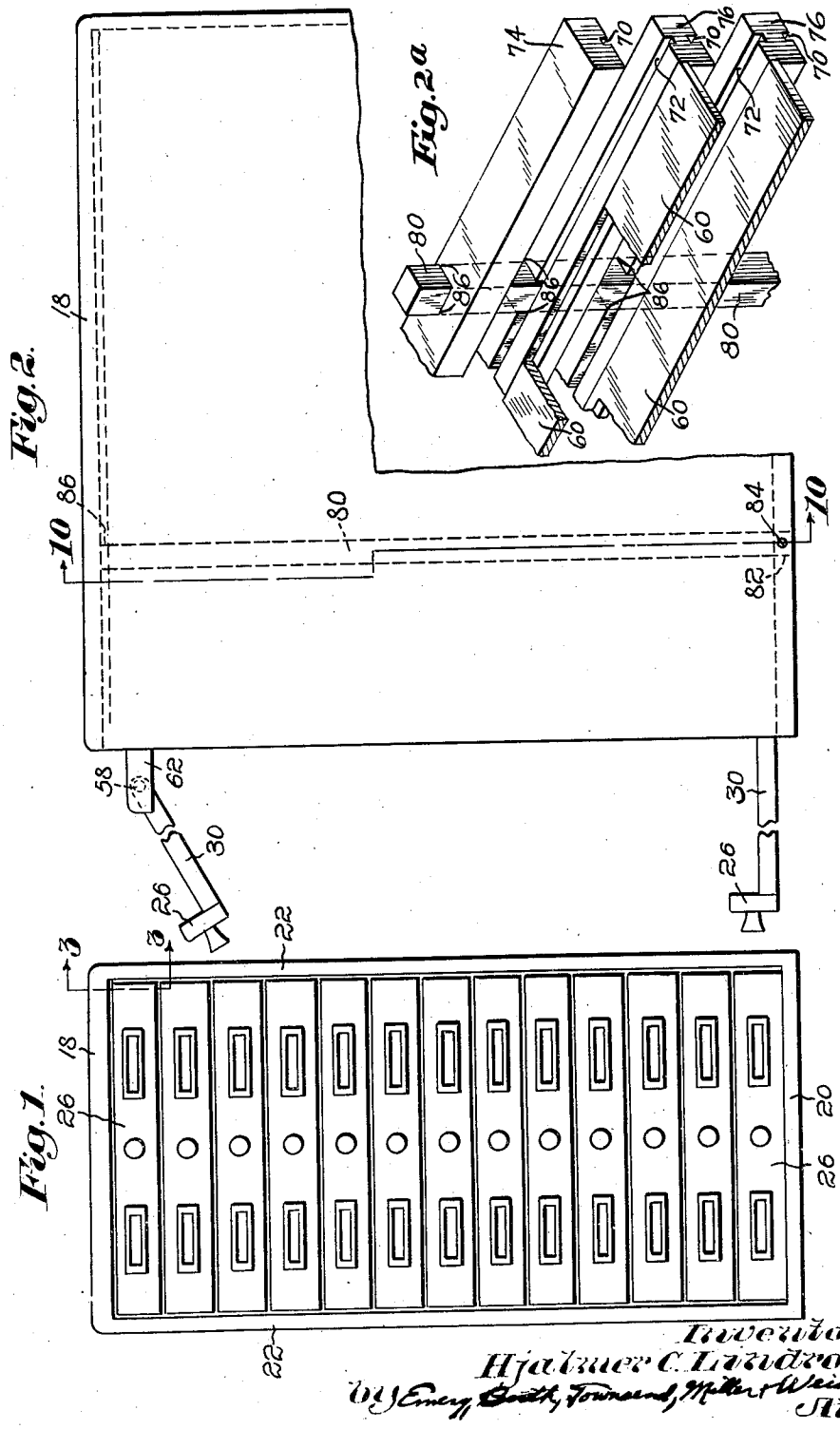
March 27, 1945. H. C. LINDROS 2,372,504

FILE CABINET

Filed May 29, 1943 4 Sheets-Sheet 1



Inventor:
Hjalmer C. Lindros,
By Emery, Booth, Townsend, Miller & Weidner
Attys.

March 27, 1945. H. C. LINDROS 2,372,504

FILE CABINET

Filed May 29, 1943 4 Sheets-Sheet 2

Fig. 3

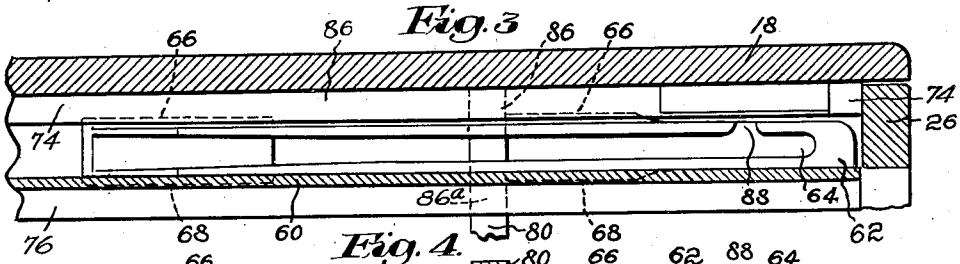


Fig. 4.

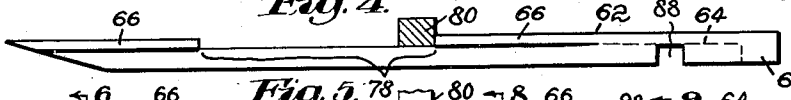


Fig. 5.



Fig. 6.

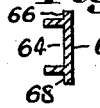


Fig. 7.

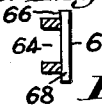


Fig. 8.

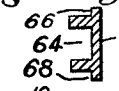


Fig. 9.

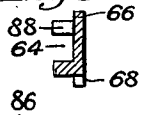
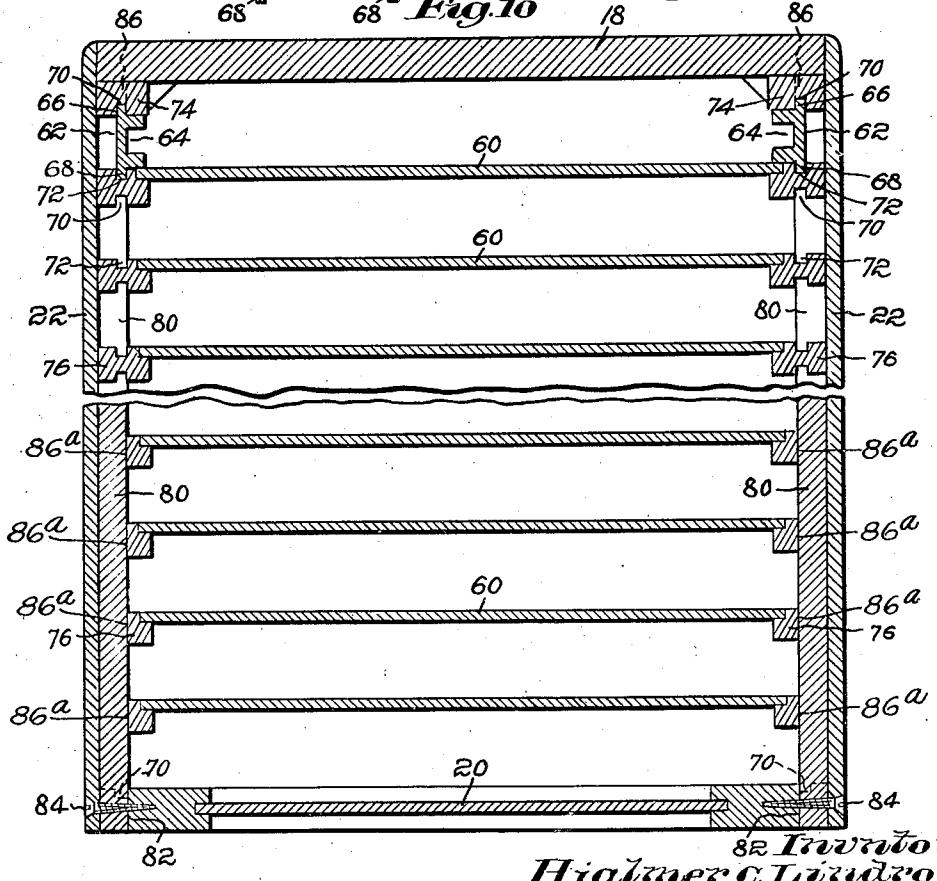


Fig. 10



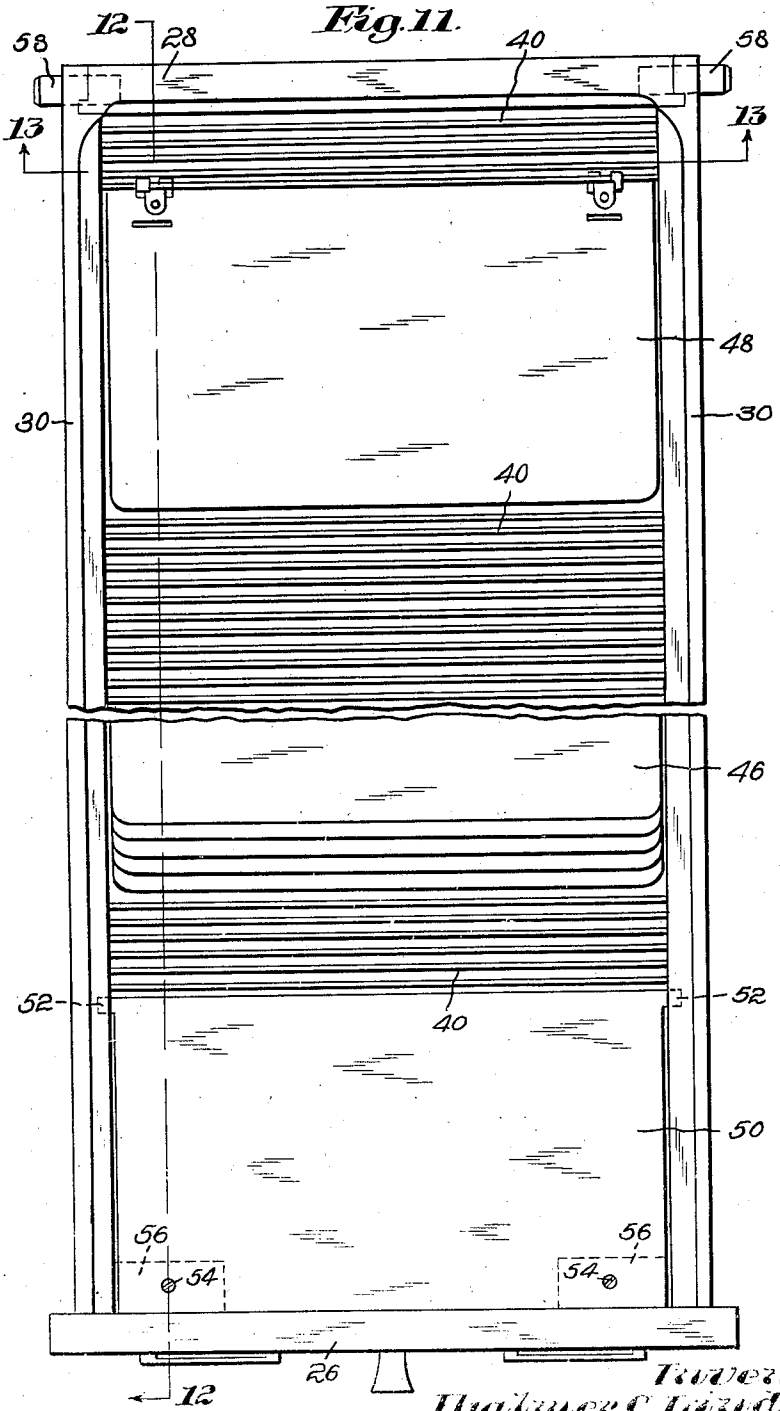
Inventor:
Hjalmer C. Lindros,
By Emery, Booth, Townsend & Miller & Underwood
Attys

March 27, 1945. H. C. LINDROS 2,372,504

FILE CABINET

Filed May 29, 1943 4 Sheets-Sheet 3

Fig. 11.

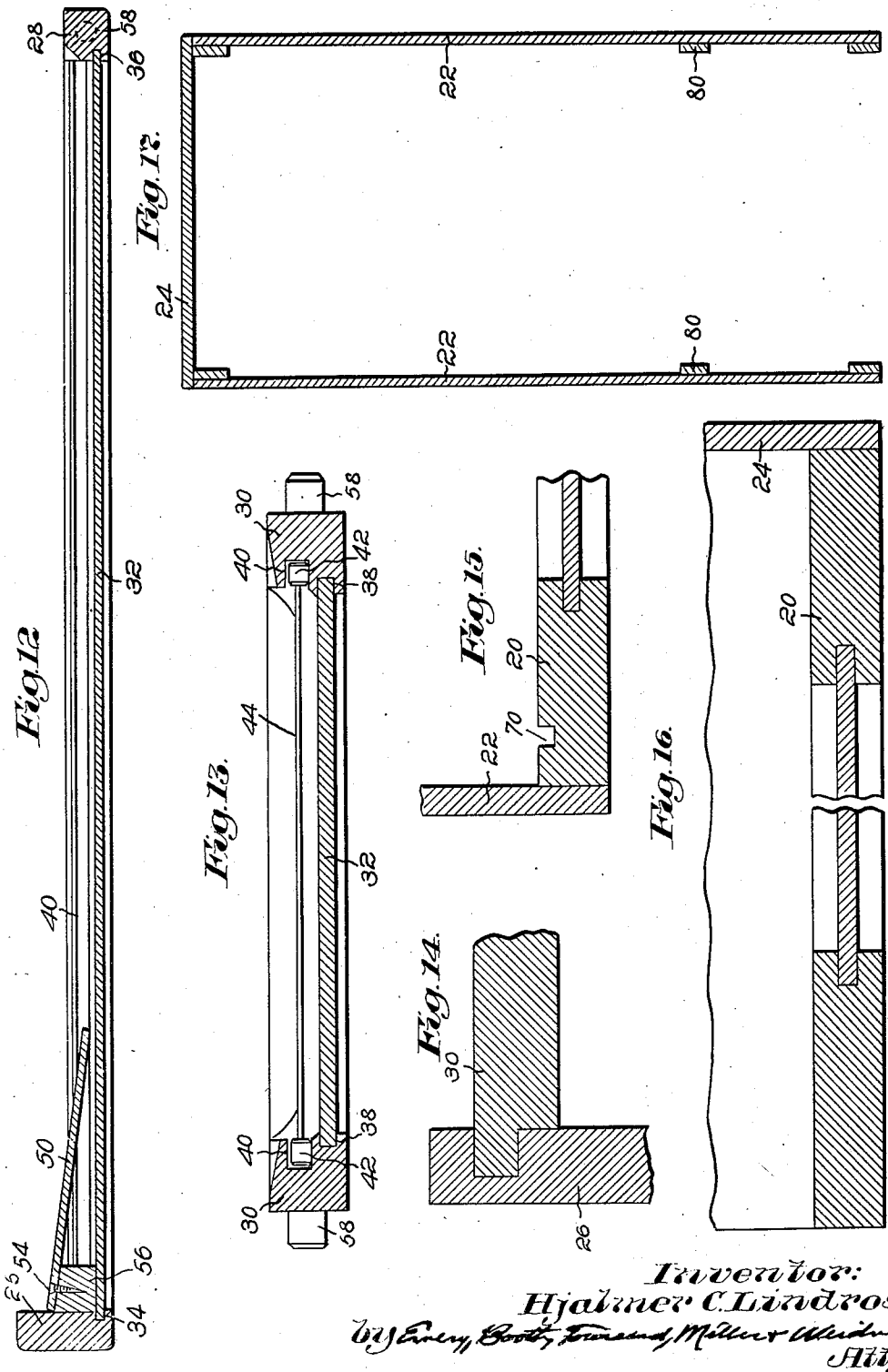


Inventor:
Hyalmer C. Lindros.
by Emery, Booth, Townsend, Miller & Maxner
Attys

March 27, 1945. H. C. LINDROS 2,372,504

FILE CABINET

Filed May 29, 1943 4 Sheets-Sheet 4



Inventor:
Hjalmer C. Lindros,
by Emery, Booth, Townsend, Miller & Maginnes
Attys

Patented Mar. 27, 1945 2,372,504

UNITED STATES PATENT OFFICE

2,372,504

FILE CABINET

Hjalmer C. Lindros, Jamestown, N. Y., assignor to Art Metal Construction Company, Jamestown, N. Y., a corporation of Massachusetts

Application May 29, 1943, Serial No. 488,961

12 Claims. (Cl. 45—96)

This invention relates to file cabinets of the class employed for the filing of overlapping index cards, and is more particularly concerned with novel features of the card-filing trays and of the extension slides for supporting the trays when withdrawn from the housing and swung downwardly for the inspection of the cards and the making of records.

The invention will best be understood by reference to the following description when taken in connection with the accompanying drawings of one specific embodiment thereof while its scope will be pointed out more particularly in the appended claims.

In the drawings:

Fig. 1 is a front elevation of a cabinet embodying the invention;

Fig. 2 is a side elevation of the cabinet with the lowermost drawer partially drawn out and remaining in a horizontal position and with the uppermost drawer and its extension slides drawn out, the drawer being in an inclined position and supported by the slides;

Fig. 2*a* is a perspective view illustrating the relative arrangement of a plurality of horizontally disposed guides provided with notches and a vertically disposed stop bar received in said notches;

Fig. 3 is a sectional view on an enlarged scale on line 3—3 of Fig. 1;

Fig. 4 is a plan of one of the extension slides and the associated slide stop, the latter being shown in horizontal section;

Fig. 5 is a side elevation of the same;

Figs. 6, 7, 8 and 9 are sectional views on corresponding section lines of Fig. 5;

Fig. 10 is a sectional view on line 10—10 of Fig. 2;

Fig. 11 is a plan of one of the card-filing trays;

Fig. 12 is a sectional view on line 12—12 of Fig. 11;

Fig. 13 is a sectional view on line 13—13 of Fig. 11;

Fig. 14 is a horizontal sectional view of one front corner of a tray;

Fig. 15 is a vertical, transverse, sectional view of a lower corner of the housing;

Fig. 16 is a vertical, longitudinal, sectional view of the lower portion of the housing; and

Fig. 17 is a horizontal sectional view of the housing.

Referring to the drawings and to the embodiment of the invention illustrated therein by way of example, and having reference at first to Figs. 1 and 2, there is shown a file cabinet having a housing comprising a top 18, a bottom 20, side walls 22, and a rear wall 24, the front of the housing being entirely open except for the fact that it is occupied by the fronts or heads 26 of trays now to be described.

Referring now to Fig. 11, each tray comprises a rectangular frame composed of the front or head 26, a rear strip 28, and two side strips 30, the rear strip being tenoned into the side strips and the latter (see Fig. 14) being tenoned into the front or head 26. A panel 32 (see Figs. 12 and 13) has its margin received in a groove 34 in the front or head 26, a groove 36 in the rear strip 28, and grooves 38 in the side strips 30. The side strips 30 are provided with channels 40 to receive trunnions 42 on the ends of resilient wires 44 which constitute supports for cards 46 (see Fig. 11) to be filed in overlapping fashion, the degree of overlap being determined by the diameter of the trunnions.

A rear writing support is afforded by an extra heavy card 48, of pressboard for example, supported on one of the wires. A front writing support 50 is suitably secured in place as by lugs 52 at its rear received in the channels 40, and at its front by screws 54 extending through the support 50 into blocks 56. The rear end of each tray (see Fig. 11) is provided with laterally projecting pivots 58 in the nature of dowels which extend through the side strips 30 into the rear strip 28 and reinforce the rear corners, as well as providing pivotal support for the tray when the latter is drawn to its extreme forward position as hereinafter explained. Normally, these pivots have no part in the support of the tray, but the latter is supported solely by a horizontal partition 60 (see Fig. 10) except in the case of the lowermost tray which is supported by the housing bottom 20. Normally, also these pivots are disposed far beyond the rear ends of the extension slides now to be described.

Referring now to Fig. 10, each tray is associated with two extension slides 62 having grooves 64 to receive the hereinbefore described pivots 58 at the rear end of the tray when the latter is drawn forwardly. The slides are guided by providing them with upper and lower fins 66 and 68 travelling in grooves 70 and 72. In the case of the uppermost tray, the grooves 70 are provided in guides 74 at the top of the housing. In the case of the lowermost tray, the grooves 70 are provided in guides presented by the bottom 20 of the housing. In the case of the intermediate trays there are guides 76 each having a groove 70 at the bottom and a groove 72 at the top.

These guides insure smooth and positive operation.

The travel of the extension slides is short (in fact only a small fraction of the travel of the trays) and is predetermined by a novel arrangement which will now be described, reference being had at first to Fig. 4 which shows one of the slides in plan. The slide is provided in its outer side (next to the adjacent side wall) with a notch **78** (which interrupts the fins **66** and **68**) and the notches of the entire vertical series of extension slides are occupied by a stop **80** in the nature of a vertical bar introduced through an opening **82** in the bottom **20** (see Fig. 10) and held in place as by a screw **84** through the side wall **22**. The upper end of the bar is snugly received in a notch **86** in the uppermost guide **74** and in like notches **86A** in the guides **76**. If it should ever become necessary to replace one of the extension slides, this can easily be accomplished by taking out the screw **84** and withdrawing the stop bar **80** downwardly, after which the extension slide can be withdrawn by sliding it forward out of the cabinet housing.

The cooperative action of a tray and its associated extension slides will now be described, reference being had to Fig. 3 which shows the right-hand slide. The slide normally rests in the position shown with its front end just behind the drawer front or head **26** whose outer face is now flush with the front of the cabinet housing. At this time, the pivot pins **58** at the rear end of the tray are near the rear wall **24** of the housing, and far to the rear of the rear ends of the extension slides. After the tray has been drawn forwardly a sufficient distance, the pivot pins **58** enter the rear ends of the grooves **64** in the extension slides **62**. To facilitate the entrance of each pivot pin **58** into its groove **64**, the latter is widened rearwardly (see Fig. 3) so that, at its rear end the groove is, for example, nearly twice as wide as at its front end.

When, in the forward movement of the tray, the pivot pins **58** arrive at the front ends of the grooves **64**, the extension slides start to move forwardly and continue to the extent permitted by the stop bars **80** in the notches **78** in the slides. The extension slides are now projected from the front of the housing (see Fig. 2) and the tray can be swung downwardly and rested upon the front of a lower tray partially withdrawn from the housing. If desired, one of the slides may be provided with a notch **88** (see Figs. 3 and 4) leading upwardly from the groove **64** to permit the upward displacement of the pivot pin **58** from the groove and the removal of the tray from the slides, when the latter are projected from the housing.

When, in returning the tray to the housing, the tray front or head **25** strikes the front ends of the extension slides **62**, the latter are pushed rearwardly until the stop bars **80** prevent their further movement, whereupon the pivot pins **58** traverse the grooves **64** in the slides **62**, emerge from the rear ends of said grooves, and finally come to rest near the rear wall **24** of the housing. The final position of the tray is determined by the striking of the rearwardly facing surfaces of the tray front or head **26** against the front faces of the extension slide guides **74** or **76**, as the case may be.

Having thus described one embodiment of the invention, what I claim and desire by Letters Patent to secure is:

1. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray within said housing, fixed tray supporting means normally affording complete support for said tray, a pair of forwardly and rearwardly movable extension slides, each slide having a recess facing outwardly toward the adjacent side wall and having an inwardly facing groove closed at its front end and open at its rear end, a pair of pivot pins projecting laterally from said tray and normally disposed rearwardly of said slides but arranged to enter said grooves during forward movement of said tray and to leave said grooves during rearward movement of said tray, said slides being provided with top and bottom fins, top and bottom guides having grooves in which said fins travel forwardly and rearwardly, and stops disposed between said side walls and side slides and extending into said recesses of said slides to limit their forward movement beyond the front of said housing and to limit their rearward movement to a travel less than the rearward travel of said tray.

2. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray within said housing, fixed tray supporting means normally affording complete support for said tray, a pair of forwardly and rearwardly movable extension slides, each slide having a recess facing outwardly toward the adjacent side wall and having an inwardly facing groove closed at its front end and open at its rear end, a pair of pins projecting laterally from said tray and normally disposed rearwardly of said slides but arranged to enter said grooves during forward movement of said tray and to leave said grooves during rearward movement of said tray, guides for said slides, and stops disposed between said side walls and said slides and extending into said recesses of said slides to limit their forward movement beyond the front of said housing and to limit their rearward movement to a travel less than the rearward travel of said tray.

3. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray within said housing, tray supporting and guiding means, a pair of forwardly and rearwardly movable extension slides, each slide having an inwardly facing groove closed at its front end and open at its rear end, a pair of pins projecting laterally from said tray and normally disposed rearwardly of said slides but arranged to enter said grooves during forward movement of said tray and to leave said grooves during rearward movement of said tray, guides for said slides, and stops disposed between said side walls and said slides to limit their forward movement beyond the front of said housing and to limit their rearward movement to a travel less than the rearward travel of said tray, said tray having lateral projections to engage the front ends of said slides and to move them rearwardly from their forwardly extended positions to positions in which they do not extend beyond the front of said housing.

4. In a cabinet, the combination of a housing having side walls, a vertical series of forwardly and rearwardly movable trays, two vertical series of forwardly and rearwardly movable tray-supporting, extension slides whose front ends normally are disposed rearwardly of the front face of said housing, each slide having a lateral notch facing outwardly toward the adjacent side wall of said cabinet, a pair of vertically disposed stop bars each common to a vertical series of slides,

and received in said notches, respectively, of the entire vertical series of slides to limit forward and rearward movement of said slides, and cooperative means on said tray and said slides to utilize forward and rearward movement of said tray to cause forward and rearward movement of said slides.

5. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray, a pair of forwardly and rearwardly movable tray-supporting, extension slides whose front ends normally are disposed rearwardly of the front face of said housing, each slide having a lateral notch facing outwardly toward the adjacent side wall of said cabinet, a pair of vertically disposed stop bars received in said notches, respectively, to limit forward and rearward movement of said slides, said stop bars being mounted for vertical movement, and said housing being provided with openings through which said stop bars may be introduced into and withdrawn from said housing by such vertical movement, and cooperative means on said tray and said slides to utilize forward and rearward movement of said tray to cause forward and rearward movement of said slides.

6. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray, a pair of forwardly and rearwardly movable tray-supporting, extension slides whose front ends normally are disposed rearwardly of the front face of said housing, each slide having a lateral notch facing outwardly toward the adjacent side wall of said cabinet, a pair of vertically disposed stop bars received in said notches, respectively, to limit forward and rearward movement of said slides, means preventing horizontal movement of said stop bars, said stop bars being mounted for disengaging movement to disengage them from said notches, means normally to prevent such disengaging movement, and cooperative means on said tray and said slides to utilize forward and rearward movement of said tray to cause forward and rearward movement of said slides.

7. In a cabinet, the combination of a housing having side walls, a forwardly and rearwardly movable tray, a pair of forwardly and rearwardly movable extension slides, means including abutments on said slides to limit movement of said slides to a distance less than the movement of said tray, said means including also a pair of members mounted for movement into and out of cooperative relationship with said abutments, means preventing horizontal movement of said members, and cooperative means on said tray and said slides to utilize forward and rearward movement of said tray to cause forward and rearward movement of said slides.

8. In a cabinet, the combination of a housing, a tray normally housed in said housing and arranged to be projected forwardly from the front of said housing, a pair of tray-supporting, extension slides arranged to support said tray when said slides and said tray are projected forwardly from the front of said housing, said slides being provided with abutments, guides for said slides, said housing having vertical side walls which are disposed laterally of and support said guides, and vertically disposed stop bars between the inner faces of said walls and said guides and arranged to limit the forward movement of said slides by engagement with their said abutments, said bars being distinct from and movable vertically with relation to said walls and said guides.

9. In a cabinet, the combination of a housing having lateral walls, a tray normally housed in said housing and arranged to be projected forwardly from the front of said housing, a pair of guides secured to said walls, respectively and provided with notches, a pair of tray-supporting, extension slides supported by said guides, respectively, and arranged to support said tray when said slides and said tray are projected forwardly from the front of said housing, said slides being provided with abutments, and means projecting from said walls into said notches and cooperating with said abutments to limit forward displacement of said slides.

10. In a cabinet, the combination of a housing having lateral walls, a tray normally housed in said housing and arranged to be projected forwardly from the front of said housing, a pair of guides secured to said walls, respectively, and provided with notches, a pair of tray-supporting, extension slides supported by said guides, respectively, and arranged to support said tray when said slides and said tray are projected forwardly from the front of said housing, said slides being provided with abutments, and vertically disposed bars projecting from said lateral walls into said notches and cooperating with said abutments to light the forward displacement of said slides.

11. In a cabinet, the combination of a housing having lateral walls, a tray normally housed in said housing and arranged to be projected forwardly from the front of said housing, a pair of guides secured to said walls, respectively, and provided with notches, a pair of tray-supporting, extension slides supported by said guides respectively and arranged to support said tray when said slides and said tray are projected forwardly from the front of said housing, said slides being provided with abutments, and vertically disposed bars projecting from said lateral walls into said notches and cooperating with said abutments to limit the forward displacement of said slides, said bars being movable out of said notches to permit complete forward withdrawal of said slides.

12. In a cabinet, the combination of a housing having lateral walls, a tray normally housed in said housing and arranged to be projected forwardly from the front of said housing, a pair of guides secured to said walls, respectively, and provided with notches, a pair of tray-supporting, extension slides supported by said guides, respectively, and arranged to support said tray when said slides are projected forwardly from the front of said housing, said slides being provided with abutments, and means normally projecting inwardly from said walls into said notches and cooperating with said abutments to limit forward movement of said slides, said means being mounted for movement out of said notches and out of cooperation with said abutments to permit complete withdrawal of said slides.

HJALMER C. LINDROS.

CERTIFICATE OF CORRECTION.

Patent No. 2,372,504. March 27, 1945.

HJALMER C. LINDROS.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 18, claim 1, for "side slides" read --said slides--; page 3, second column, line 34, claim 10, for "light" read --limit--; 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 12th day of June, A. D. 1945.

Leslie Frazer

Acting Commissioner of Patents.

(Seal)