

June 2, 1959

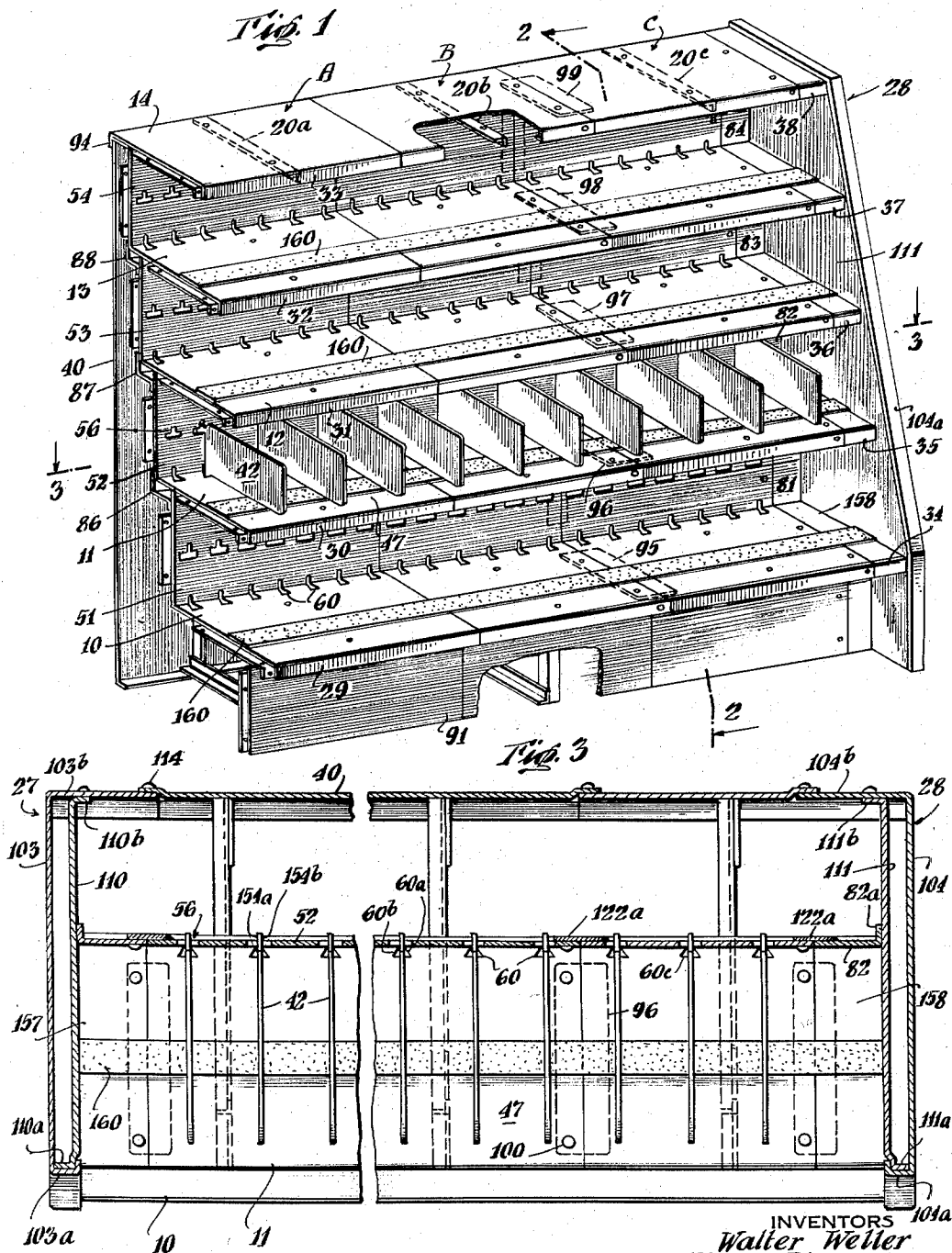
W. WELLER ET AL

2,889,055

SHELF FILE

Filed Nov. 15, 1954

3 Sheets-Sheet 1



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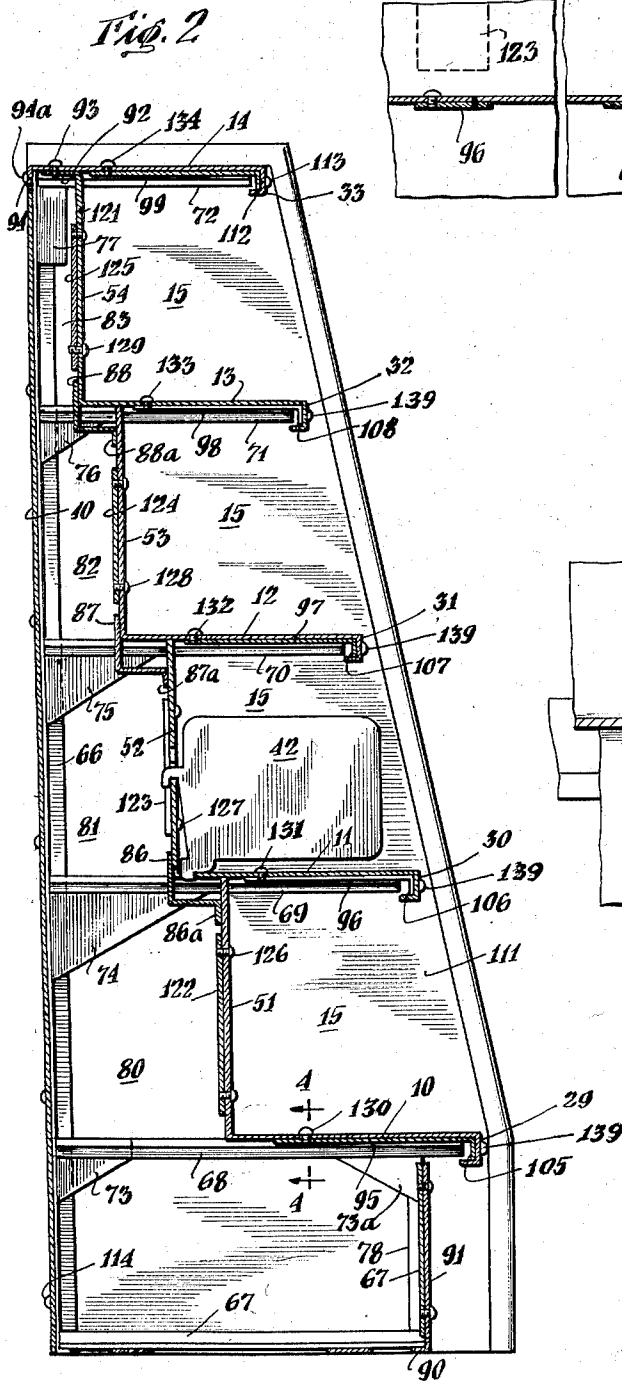
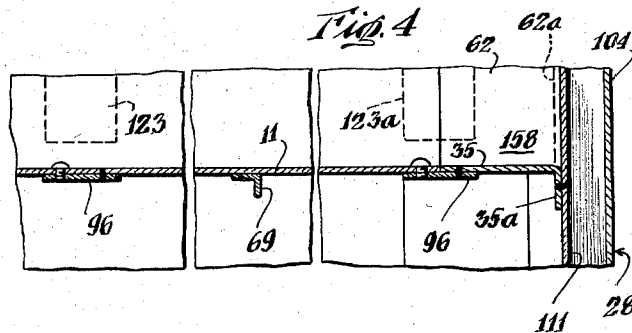
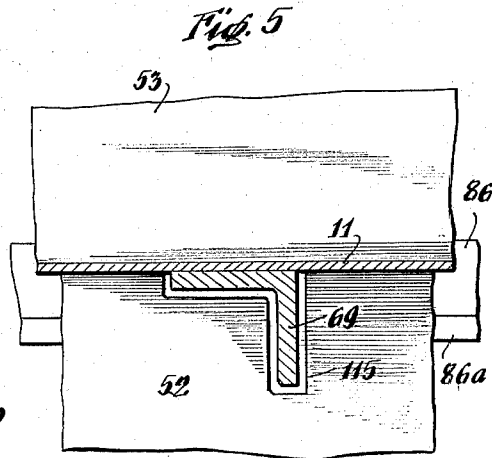
W. WELLER ET AL

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SHELF FILE

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3 Sheets-Sheet 2



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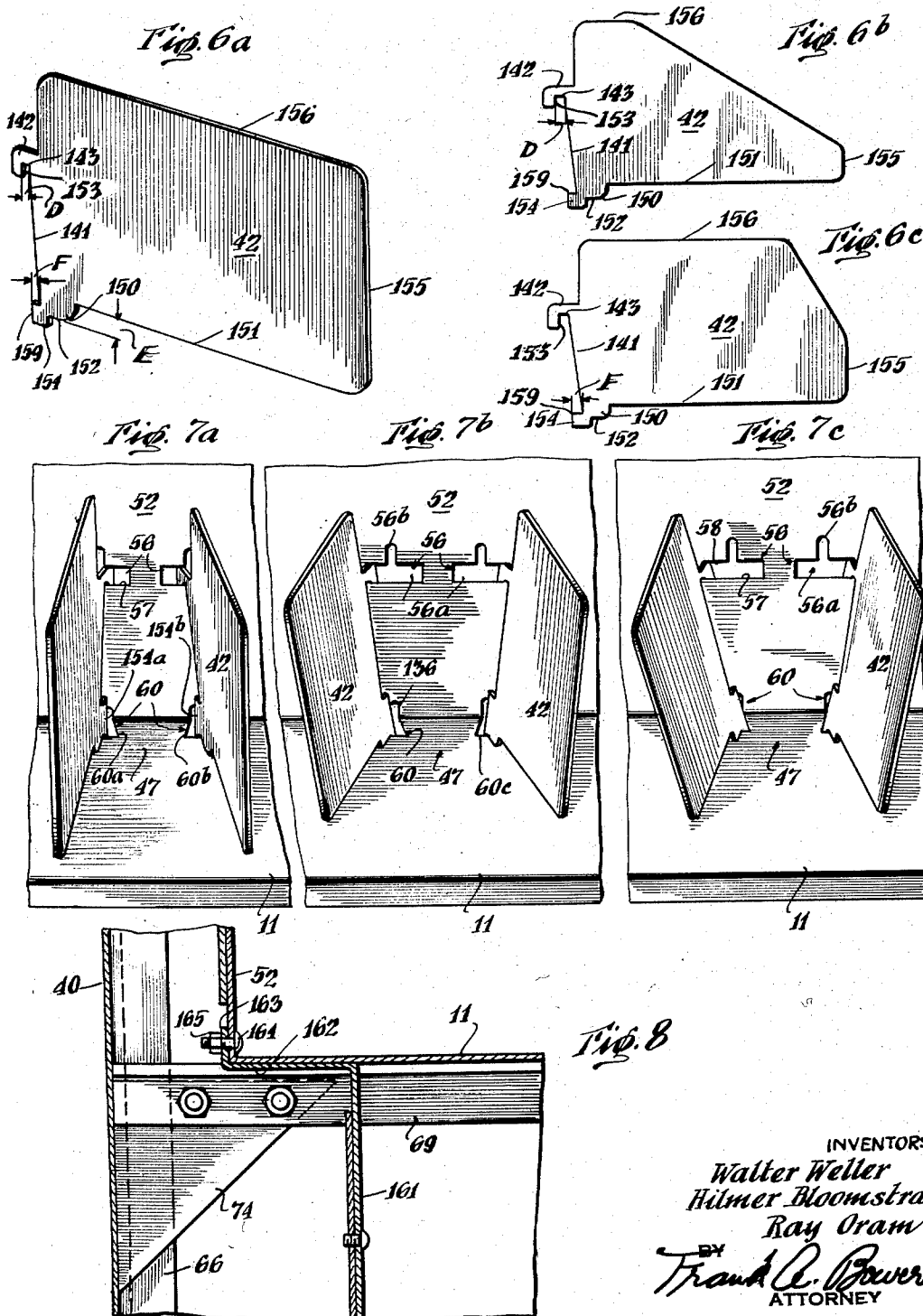
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SHELF FILE

Filed Nov. 15, 1954

3 Sheets-Sheet 3



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2,889,055

SHELF FILE

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Application November 15, 1954, Serial No. 468,656

12 Claims. (Cl. 211—184)

This invention relates to filing systems and particularly to open type filing systems in which the files are exposed for ready accessibility. It particularly relates to filing shelves with control plates or partitions pivotally mounted thereon for separating and supporting the files.

An object of the invention is to provide a filing equipment in which the files are readily accessible at all times.

Another object of the invention is to provide filing equipment with file compartments formed by control plates or file partitions which are readily moved to provide a wide opening for the insertion of files into the file compartment.

Another object of the invention is to provide for the convenient expansion of each file compartment by a special vertical positioning of the files in horizontal rows with a pivoting along the lower edge.

Another object of the invention is to allow for the easy insertion and removal of the files in downward angular directions with a vertical stacking of files arranged in horizontal rows.

A further object of the invention is to provide exposed filing equipment that is inexpensive to manufacture and transport.

Other and further objects will be apparent from the following description taken in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of the file;

Fig. 2 is a sectional view along lines 2—2 of Fig. 1;

Fig. 3 is a sectional view along lines 3—3 of Fig. 1;

Fig. 4 is a fragmentary view of the lateral beams;

Fig. 5 is a fragmentary view of the back plates showing the slots;

Figs. 6a, 6b, 6c are side views of different types of control plates;

Figs. 7a, 7b, 7c are views of control plates in different positions on a shelf; and

Fig. 8 is a sectional view illustrating various modifications of the shelf file.

Referring to Figs. 1 and 2, the shelf file comprises stepped shelves 10, 11, 12, 13 and top 14 extending horizontally and parallel to one another and vertically spaced to form horizontally extending file spaces 15 therebetween (Fig. 2). At the rear of the shelves 10, 11 and 12 are backing plates 51, 52, 53 and 54 closing the file spaces 15 and hingedly supporting control plates 42 in a generally vertical position in cooperation with the shelves 10, 11, 12, 13. The control plates 42 are horizontally spaced to form file compartments 47 and swing about the rear mounting to individually expand a respective file compartment for the insertion or removal of a file.

The shelf file is sectionalized and may comprise as many sections as desired. For purposes of illustration, three sections, A, B and C, are shown in Fig. 1. The sections are individually supported by frames 20 and the contiguous ends of the sections are firmly secured together to provide a rigid structure. At each end of the shelf file there is an end member supporting the shelf file and closing the ends of the file spaces 15. In Fig. 1

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the end member 28 is shown and the end member 27 is removed for purposes of illustration.

The frames 20a, 20b, 20c are similar in construction and like parts have like reference numerals. The frame 20b, shown in section in Fig. 2, has a vertical column 66 having an L-shaped cross-section at the back of the shelf file with horizontally extending beams 67, 68, 69, 70, 71, 72. The beams 68, 69, 70, 71, 72 support the shelves 10, 11, 12, 13 and top 14 respectively and are secured to the column 66 by the angularly shaped gussets 73, 74, 75, 76 and rectangular gusset 77. Each gusset is spot welded to the respective beams and columns. A short, vertical front column 78 is welded to the front end of the beams 67 and 68 to support the front or kick plate 91. A triangular shaped gusset 73a is welded to the beams 68 and column 78 to provide rigidity and strength to the frame 20b in cooperation with the column 66. The beams 69, 70, 71 and 72 are unsupported at the front end to provide a continuous file space 15 extending horizontally along the shelf file. The back sheet 40 is mounted on and evenly spaces the frames 20a, 20b, 20c so that the ends of the shelves are unobstructed.

The shelves 10, 11, 12, 13 and the backing plates 51, 52, 53, 54 respectively are preferably formed as a single piece. The front edges of shelves 10, 11, 12, 13 have U-shaped edges 29, 30, 31, 32 respectively and the top 14 has a U-shaped edge 33. The beams 69, 70, 71, 72 are successively shorter so that the upper edge of the successively higher shelf is spaced rearward of the preceding lower shelf to render the compartments 15 more accessible. The shelves are of substantially uniform depth with each successively higher backing plate positioned rearward of the immediately lower backing plate. Thus the file spaces are offset to expose the file compartments for the insertion and removal of the files and are discussed in detail later herein.

The backing plates 51, 52, 53, 54 extend from the adjoining lower shelves 10, 11, 12, 13 up to the succeeding shelves 11, 12, 13 and top 14 respectively. The backing plates 51, 52; 52, 53; 53, 54 are fastened together by means of the L-shaped coupling members 86, 87, 88 with flanges 86a, 87a, 88a, for securing the coupling members to a respective lower backing plate by bolts extending through the backing plate and threaded in the associated flange. The shelves 10, 11, 12, 13 are supported by the horizontal beams 68, 69, 70, 71 respectively.

The sections are firmly secured together to provide a rigid structure. The shelves 10, 11, 12, 13 of each section have splicing plates 95, 96, 97, 98 along one edge of the respective shelves and the top plate has a splicing plate 99. The splicing plates are stepped below the upper surface of the shelf so that the shelves of the overlapping section abut against the adjacent section and the surface is smooth and even. Thus the shelves 10, 11, 12, 13, backing plates 51, 52, 53, 54, back sheet 40, top 14 and kick plate 91 are divided into sections so that a shelf file of any desired length may be assembled and to provide for easy shipment of the shelf file. Bolts 130, 131, 132, 133 and 134 extend through the splicing plates 95, 96, 97, 98, 99 to thread in the adjacent shelves 10, 11, 12, 13 respectively and top plate 14 respectively. The shelf splicing plates have rectangular edge splicing portions 105, 106, 107, 108 and 112 on the front edge engaging the edge portions 29, 30, 31, 32 and fastened thereto by bolts 139 extending through the edge portions 29, 30, 31, 32, of the adjacent section and threaded in the respective edge splicing portion plate. The top plate has an edge splicing portion 112 with a bolt 113 extending through the adjacent edge 33 and threaded into splicing portion 112. The sections of the back sheet 40 overlap with bolts 114 passing through one section and threaded in the inside section.

The backing plates 51, 52, 53, 54 of each section have splicing plates 122, 123, 124, 125 along one edge and overlap the complementary edge of the backing plates of adjacent sections with bolts 126, 127, 128, 129 extending through adjacent backing plates and threading in the splicing plate to rigidly hold the plates and shelf together.

The beams 69, 70, 71, 72 of the frames 20 pass through the L-shaped openings in the backing plates 51, 52, 53, 54. These openings are similar in shape and location. In Fig. 5 the beam 69 is illustrated passing through opening 115. The opening 115 is L-shaped with one leg notched in the upper edge of the backing plate and the other leg extending normal thereto. The opening fits around the beam 69 so that the upper edge of the backing plate is at the bottom of the succeeding shelf 11. Thus the backing plates provide continuous rear or back surfaces for each of the file spaces. The coupling members 86, 87, 88 are positioned between the frames 20 to provide spaces through which the beams 69, 70, 71 may pass.

At each end of the assembled sections of the shelf file are the end members 27, 28 respectively (Fig. 3). The end members are identical in structure but reversed to fit on opposite ends of the shelf file. Each has outer L-shaped plates 103, 104 with L-shaped front edge portions 103a, 104a and inner plates 110, 111 having flanges 110a, 111a press-fitted inside of the L-shaped edge portions 103a, 104a and having rear flanges 110b, 111b with bolts passing through the rear portions 103b, 104b of the outer members 103, 104 and threaded in the flanges 110b, 111b respectively. Extension stubs are connected between the inner plates 110 and 111 and the shelves by flanges which are normal to the surface of the stubs. This is best illustrated in Figs. 1, 3 and 4.

In Fig. 1 the end member 28 is shown connected to the shelves 10, 11, 12, 13 and top 14 by the extension stubs 34, 35, 36, 37 and 38 respectively and by means of coupling plates 95a, 96a, 97a, 98a, 99a. The backing plates 51, 52, 53, 54 are connected to the end member 28 by the extension plates 61, 62, 63, 64 by means of coupling plates best illustrated in Figs. 3 and 4 in which the extension plate 62 is connected to backing plate 52 by splicing plate 123a. The extension plates 61, 63, 64 are similarly connected to the backing plates 51, 53, 54 respectively. The end member 28 is similarly connected at the other end to corresponding members.

Fig. 4 is a fragmentary sectional view of the shelf 10 showing the extension stub 35. The extension stub 35 is shown welded to the inner member 111 by the flange 35a and the extension plate 62 is similarly welded to the inner member 111 by means of flange 62a (Fig. 3). The extension stubs of the other shelves are similarly secured to the end member 28. The kick plate is extended at extension plate as illustrated in Fig. 1.

The top plate 14 has a rear flange 94 at a 90° angle to the top and attached to the back sheet 40 by bolts 94a and is connected to the backing plate 54 by means of the turned flange 92 and bolt 93 passing through the top 14 and threaded in the flange 92.

The backing plates 51, 52, 53, 54 have horizontally aligned, uniformly spaced T-shaped slots 56 respectively. The T-shaped slots are intermediately positioned between the upper and lower edges of the respective backing plates and have a rectangular portion 56a with a lower horizontal edge 57 and an upper horizontal edge 58 with a vertical notch 56b preferably in the center. The slot preferably has a length substantially greater than the width and is preferably symmetrical about a vertical center line passing through the center of the slot 60. The slot 60 has a generally triangular shape with edges 60a, 60b diverging outwardly in a forward direction with the narrow portion at the crease between the shelf and the backing plate. The slot has a rectangular extension 136 truncating the apex of the slot 60 and extending around

the crease between the shelf and backing plates and vertically upward. The slot 60 and extension 136 are punched in the plate prior to the creasing operation forming the backing plate. The slot 60 is preferably symmetrical about a horizontal centerline normal to the edge of the shelf and aligned with the center of an associated slot 56. An edge 60c extends between the edges 60a, 60b of the slot.

The hook-shaped tab 142 is integral with the main portion of the control plate and is formed with a notch 143 having a width D so that tab 142 fully swings through the slot 56 without the tab 142 or the edge 141 binding, preferably moves clear or spaced from the edge 57 of the slot 56.

In the lower rear corner of the control plate a supporting tab 150 with a flat supporting surface 152 sets on the upper surface of the shelf. The control plate is supported by the surface or edge 152 on the tab 150 and the surface or edge 153 of the tab 142 engages the rear surface of the backing plate adjacent the edge 57. The edge 153 and surface 152 hold the control plate from tipping forward. The supporting tab 150 spaces the lower edge 151 of the control plate a distance E above the surface of the shelf.

A tab 154 extends downwardly from the supporting tab 150 and fits into the slot 60. The tab 154 has a rear vertical edge 159 pivoting against the backing plate. The tab 154 extends longitudinally in the slot 60 and as the plate pivots with sides 154a, 154b of the tab 154 engages the edges 60a, 60b respectively of the slot 60 thus limiting the swing of the control plate. The edge 141 is spaced from the backing plate a distance F and is at a slight angle to the backing plate so that the space diverges and increases in width from the tab 142 towards the tab 154.

The control plate 42 pivots about the edges 159 and 153 with the edge 152 sliding along the surface of the shelf. The control plate 42 may pivot about the edge 152 with the edge 153 sliding along the rear surface of the backing plate and the edge 159 turning slightly against the front surface of the backing plate. Thus there are two components of the movement of the control plate: one component swings the edge 155 of the control plate through a vertical arc and the other component swings the edge 156 through a horizontal arc. The first component opens the file space or file compartment between the control plates to permit the ready insertion or removal of a file in a front to rear direction. The second component permits an opening of the file compartment for the insertion of the file in a vertical direction. The combination of these movements produces an opening of the file compartment that permits the angular insertion or removal of a file at an angle to the shelf. Adjacent control plates may be moved in opposite directions to provide a wide opening to the file compartment. The adjacent control plates may move in the same direction so that a series of plates may be turned from one position to another and retain the files in the compartments in proper order and condition for handling. Thus a row of control plates is flexible and easily swung as a group from one position to another when a particular file compartment is opened up for examination or the insertion or removal of a file.

Free spaces 157, 158 are provided at each end of a shelf to permit the end control plates to swing unobstructed. Each of the file compartments may be filled by a respective file and still an intermediate file compartment may be opened by swinging the control plates on each side so that the successive files and control plates on each side of the compartment being opened will swing together.

Anti-slipping strips 160 extend longitudinally along the upper shelf surface. The upper surface of the strip is slightly raised above the surface of the shelf so that the files in the compartments will primarily rest on the sur-

face of the strip. The strip may be made of cork, rubber or other similar material that will hold the edge of the file in place so that as the adjacent control plates are pivoted the file will pivot about the edge in an engagement with the surface of the anti-slipping strip. The inner surface of the shelf may be covered with the anti-slipping material but only a strip intermediately positioned, preferably near the center of the shelf, is necessary.

The control plates may be made of a thin steel sheet with rounded edges and corners. The control plate may have a triangular shape with an upper diagonal edge extending downwardly from the rear of the compartment to permit the opening of the file without swinging the control plate or permit the opening of the file when the plate is swung to one extreme position or the other. The control plate may also have a rectangular shape which is only slightly wider than the distance between the tabs 142 and 150.

The width of the control plates may be accommodated to the particular size file that is used. With the rectangular shaped control plates the upper outer corners may be angularly formed to the top and front edges to permit the exposure of the tabs on the files between the control plates.

In Fig. 8 a modification of the means for coupling the shelves together is illustrated. The backing plate 161 has a horizontal coupling member 162 extending rearwardly from the backing plate and contiguous to the succeeding upper shelf file and having a turned flange 163 for securing the coupling member to the succeeding upper backing member. The coupling member and the backing member are made from a single piece of sheet metal.

It is thus seen from the foregoing description that the files may be stacked along their bottom edges in horizontal rows so that each file is equally accessible. A plurality of rows may be stacked above one another and with the rearward stepping of the shelves each row is exposed for the easy downward insertion of a file. The top shelf has a height so that a person seated in a chair of ordinary height may easily insert a file into a compartment. The files are readily adaptable to be extended in long horizontal rows with a filing clerk moving along the file in a sitting position inserting and removing the files. In the preferred embodiment the top portion is eleven inches deep and approximately fifty-six inches above the floor. The shelves 13, 12, 11 and 10 are approximately forty-four inches, thirty-four inches, twenty-two inches and ten inches above the floor. The edge of shelf 13 extends approximately two inches further forward than the edge of the top portion 14 and the edge of each succeeding lower shelf extends approximately two inches beyond the edge of the preceding upper shelf so that the front edge of the shelf 10 is approximately twenty inches from the back sheet 40.

The flexibility of the mounting of the plates forming the partitions between the files provides for the pivoting of the vertically positioned files to turn on the bottom edges permitting individual file compartments to be expanded for the insertion of the files. The file is supported by the shelf and the bottom edge is held against slipping by the friction strip while the plates forming the compartments separate the files and support them along the sides in a generally vertical position. Thus, each file compartment can be opened for the easy insertion and removal of a file. The swing of the plates is limited and therefore the amount the files are tilted by the edges of the slots and openings is also limited. The files are generally at an angular position but are easily shifted from one position to another by swinging the file.

Instead of the backing member having the row of longitudinal slots to provide an engaging edge for the tab 142, a rail or track with a vertical lip spaced from the front surface of the backing member may be provided to permit the insertion of the tab between the front sur-

face and the lip. The rearwardly facing surface of the lip forms a surface for the edge of the hooked tab to hold the plate.

Various modifications may be made without departing from the scope of the invention as set forth in the accompanying claims

We claim:

1. Filing apparatus comprising a file member having a flat horizontal shelf and a backing member extending vertically and forming with said shelf a horizontal file space readily accessible from the front for insertion of files, control plates in a generally vertical position lateral to said file space and horizontally spaced to form lateral file compartments between adjacent companion plates, mounting means pivotally supporting said control plate at the lower portion thereof, and at an upper portion of said control plate with said backing member and permitting horizontal movement of the control plate to vary the file space between adjacent control plates, said control plates longitudinally swinging on said mounting means in the same direction to pivotally swing said file compartments and on movement of a control plate away from the companion plate opening said file compartment therebetween for insertion of a file.

2. Filing apparatus as claimed in claim 1 wherein a plurality of file members are provided vertically stacked in stepped relation with the front edge of each successively higher file member set rearwardly of the front edge of the lower file member and substantially forward of the rear edge of the lower file member so that the file spaces are accessible from an angularly downward position.

3. Filing apparatus as claimed in claim 1 wherein said mounting means comprises a longitudinal row of longitudinal slots in said backing member and a row of openings in said shelf along the rear edge spaced from said slots.

4. Filing apparatus as claimed in claim 3 wherein said control plate has a rear edge and a bottom edge, and a hooked tab is mounted on said rear edge and an insert tab projecting from the lower bottom edge and fitting into said opening.

5. Filing apparatus as claimed in claim 4 wherein said hooked tab is in the plane of said control plate and is spaced from said rear edge to provide clearance with said backing member.

6. Filing apparatus as claimed in claim 5 wherein said insert tab has a horizontal edge setting on said shelf adjacent a respective opening to hold a respective control plate in cooperation with the hooked tab engaging the rear surface of said backing member in position and space said bottom edge above the surface of the shelf.

7. Filing apparatus as claimed in claim 6 wherein said openings have opposite edges diverging towards the front of the shelf to limit the vertical arc of movement of the front edge by engagement of the sides of the insert tabs with a respective diverging edge.

8. Filing apparatus as claimed in claim 6 wherein each of said hooked tabs longitudinally moves in said slot to pivot a respective control plate about the edge of the insert tab to move the upper edge of the control plate through a horizontal arc to open a respective file compartment on movement away from one another.

9. Filing apparatus as claimed in claim 8 wherein a portion of the surface of the shelf has a high coefficient of friction to hold the edge of the files in place.

10. A control plate comprising a thin flat partition plate having a rear edge and a bottom edge, a hooked tab intermediately positioned along the rear edge and having a lateral portion and a longitudinal portion spaced from said rear edge to form a clearance therewith, a flat insert tab extending from the bottom edge adjacent the rear edge in the plane of the partition plate to fit into

a generally triangular shaped opening in a shelf and having an edge generally parallel to the bottom edge for resting on said shelf to hold the partition plate in a generally vertical position in cooperation with the longitudinal portion engaging a slot in a backing plate of said shelf.

11. A filing apparatus comprising a transverse shelf means extending longitudinally for supporting a row of stationary paper files, a backing member lateral to said shelf means and extending longitudinally therewith to form with said shelf means a file space, control plates in a generally vertical position extending generally transverse to said file space and longitudinally spaced to form transverse file compartments between adjacent control plates, said control plates having a transverse edge and a lateral edge, a first supporting member on said lateral edge spaced from said transverse edge, a second supporting member on said transverse edge adjacent to said lateral edge, said backing member being a thin sheet material and having a row of spaced slots spaced from said shelf means, each of said slots extending longitudinally to permit a longitudinal arc movement of the first supporting member inserted therein, said shelf means having a row of second slots with each slot corresponding to a respective slot in said first row, said second slots extending transversely in said shelf means and having a width greater than the thickness of said second supporting member inserted therein to permit a longitudinal arc movement of said second supporting means so that said control plate swings longitudinally along the front and upper portions to provide a spreading of the opening between adjacent control plates for the insertion of a file therebetween.

12. A filing apparatus comprising a transverse shelf means extending longitudinally for supporting a row of stationary paper files, a backing member lateral to said shelf means and extending longitudinally therewith to form with said shelf means a file space, thin sheet-like control plates in a generally vertical position extending generally transverse to said file space and longitudinally spaced to form transverse file compartments between ad-

jacent control plates, said control plates having a transverse edge and a lateral edge, a first supporting member on said lateral edge spaced from said transverse edge and having means spaced from the lateral edge and engaging the backing member to hold the control plate transversely, a second supporting member on said transverse edge adjacent to said lateral edge and extending longitudinally from said control plate to fit into said shelf means, said backing member being a thin sheet material and having a row of spaced slots spaced from said shelf means, each of said slots having said supporting member extending therethrough and said means engaging the side opposite to said backing member from said control plates and extending longitudinally to permit a longitudinal arc movement of the first supporting member inserted therein, said shelf means having a row of second slots with each slot corresponding to a respective slot in said first row, said second slots extending transversely in said shelf means and having sides at the end adjacent to said backing member to restrict the longitudinal movement of said second supporting member and said slots increasing in width from said backing member to permit a longitudinal arc movement of said second supporting means so that said control plate swings longitudinally along the front and upper portions to provide a spreading of the opening between adjacent control plates for the insertion of a file therebetween.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,889,055

June 2, 1959

Walter Weller et al

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.

In the grant, lines 1, 2 and 3, for "Walter Weller, Hilmer Bloomstran, and Ray Oram, of Jamestown, New York; Mary M. Oram, executrix of the estate of said Ray Oram, deceased," read -- Walter Weller, Hilmer Bloomstran, and Ray Oram, of Jamestown, New York; Mary M. Oram, executrix of the estate of said Ray Oram, deceased, assignors to Watson Manufacturing Company, Inc., of Jamestown, New York, a corporation of New York, --; lines 12 and 13, for "Walter Weller and Hilmer Bloomstran, their heirs or assigns, and Mary M. Oram, as executrix, her successors" read -- Watson Manufacturing Company, Inc., its successors --; in the heading to the printed specification, lines 3, 4 and 5, for "Walter Weller, Hilmer Bloomstran, and Ray Oram, Jamestown, N. Y.; Mary M. Oram, executrix of the estate of said Ray Oram, deceased" read -- Walter Weller, Hilmer Bloomstran, and Ray Oram, Jamestown, N. Y.; Mary M. Oram, executrix of the estate of said Ray Oram, deceased, assignors to Watson Manufacturing Company, Inc., Jamestown, N. Y., a corporation of New York --; column 1, line 20, for "provide a filing" read -- provide filing --; column 3, line 16, for "shelf 11" read -- shelf 12 --; column 4, line 13, for "binding," read -- binding and --; same line 13, before "spaced" insert -- is --; column 7, line 5, for "basking" read -- backing --.

Signed and sealed this 22nd day of March 1960.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents