March 27, 1934. B. G. RAND 1,953,024

FILING CABINET

Filed July 30, 1932 4 Sheets-Sheet 1

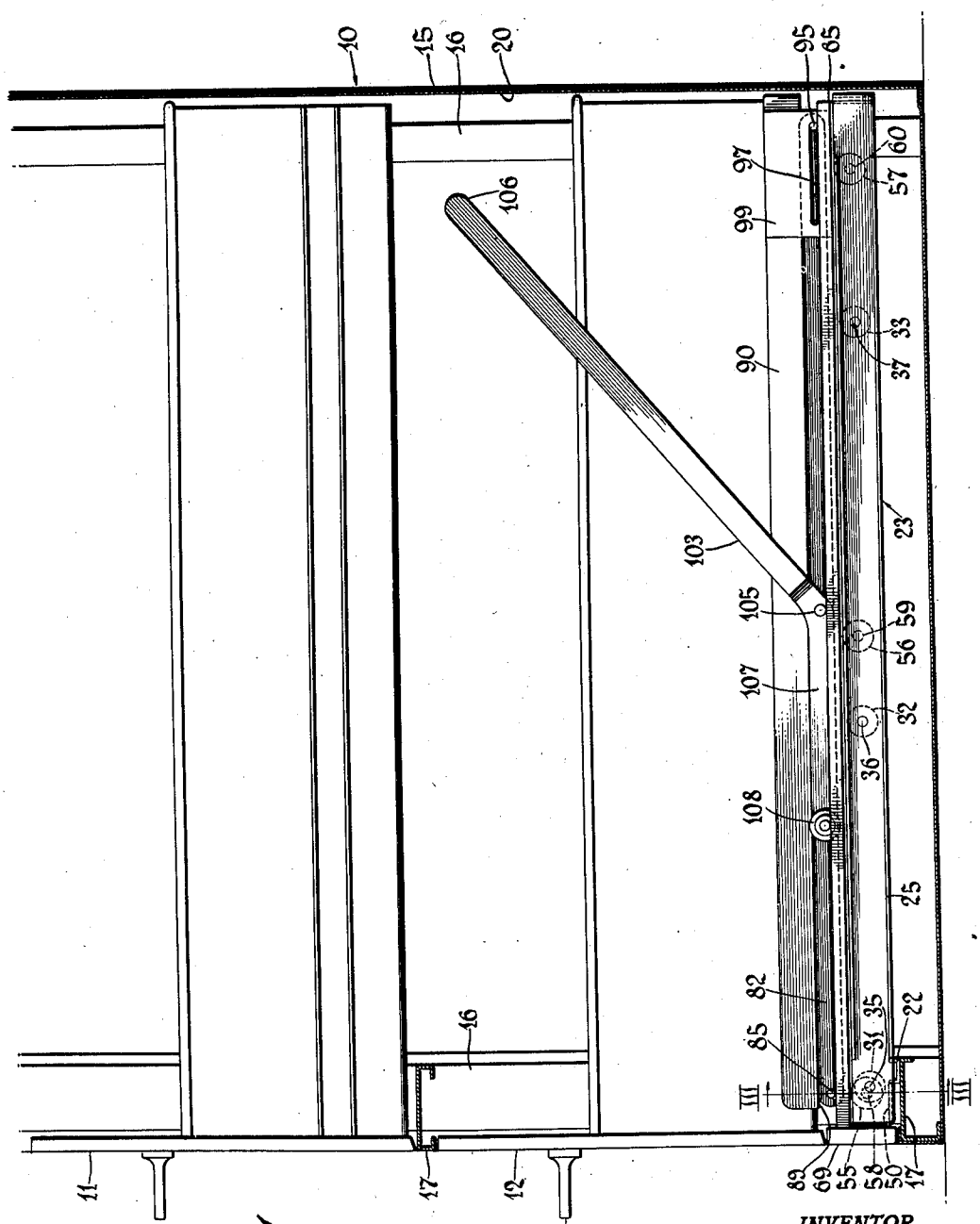


Fig. 1.

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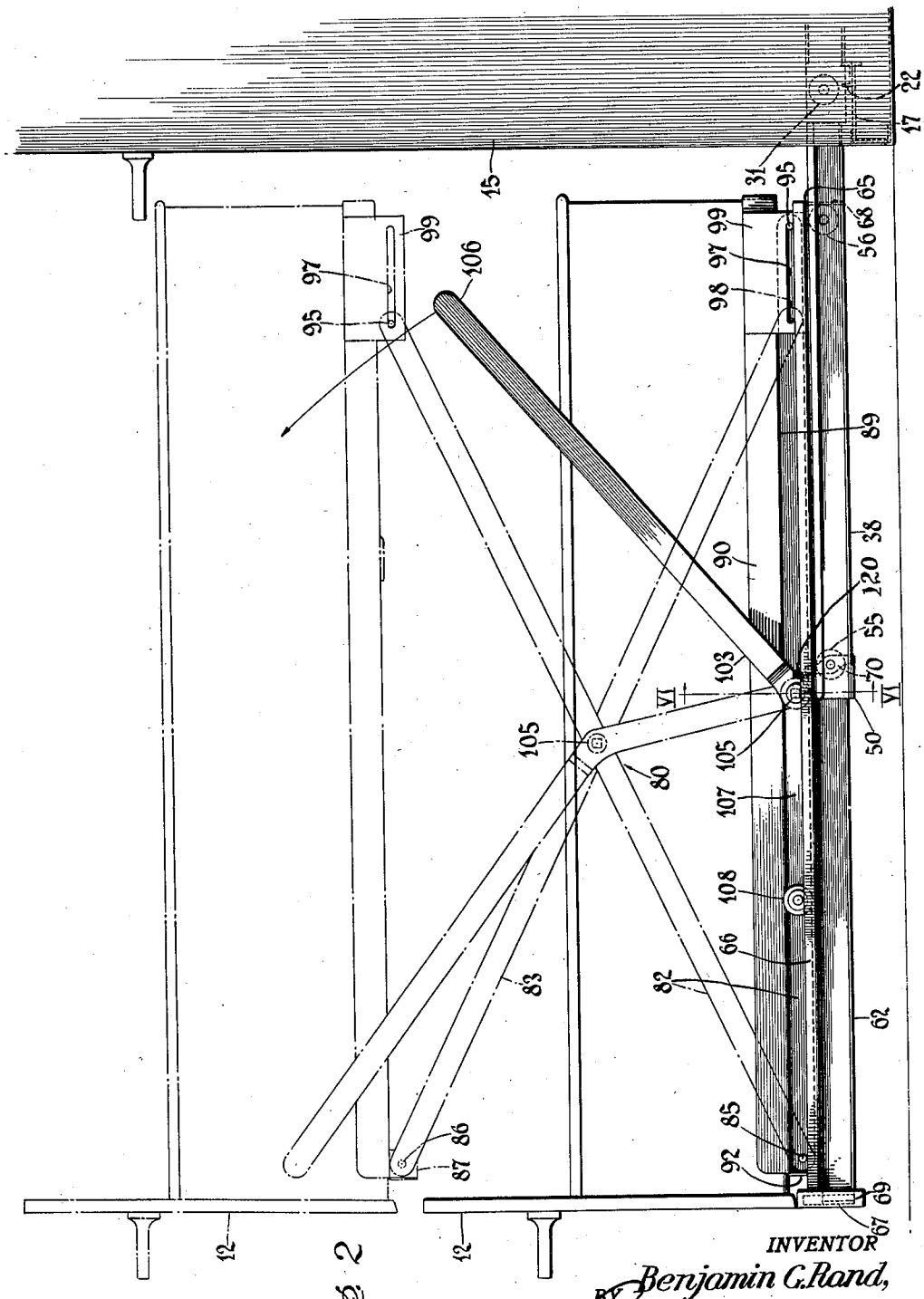


Fig. 2

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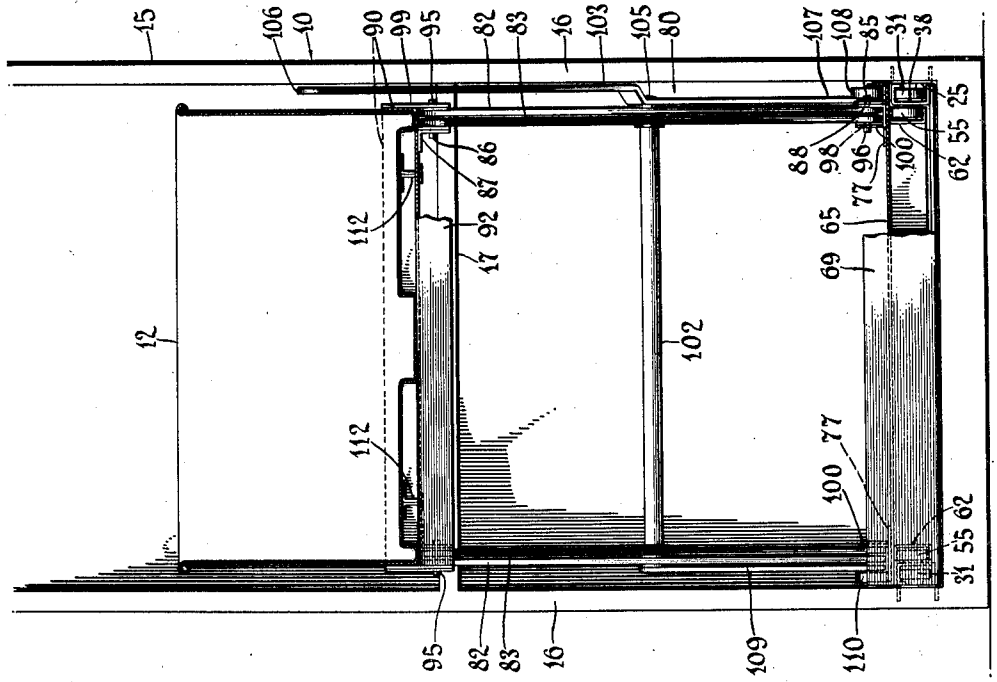


Fig. 4

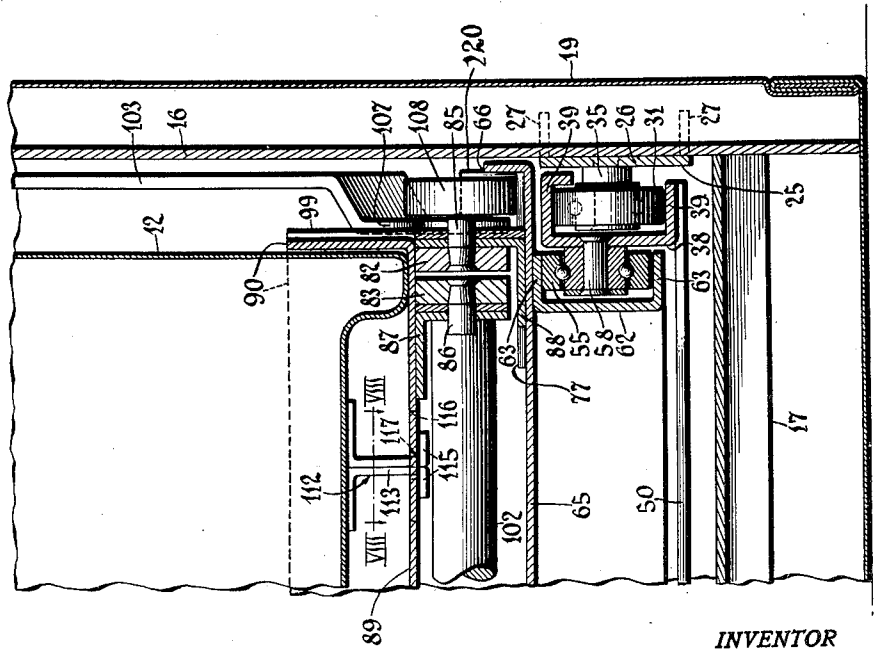


Fig. 3

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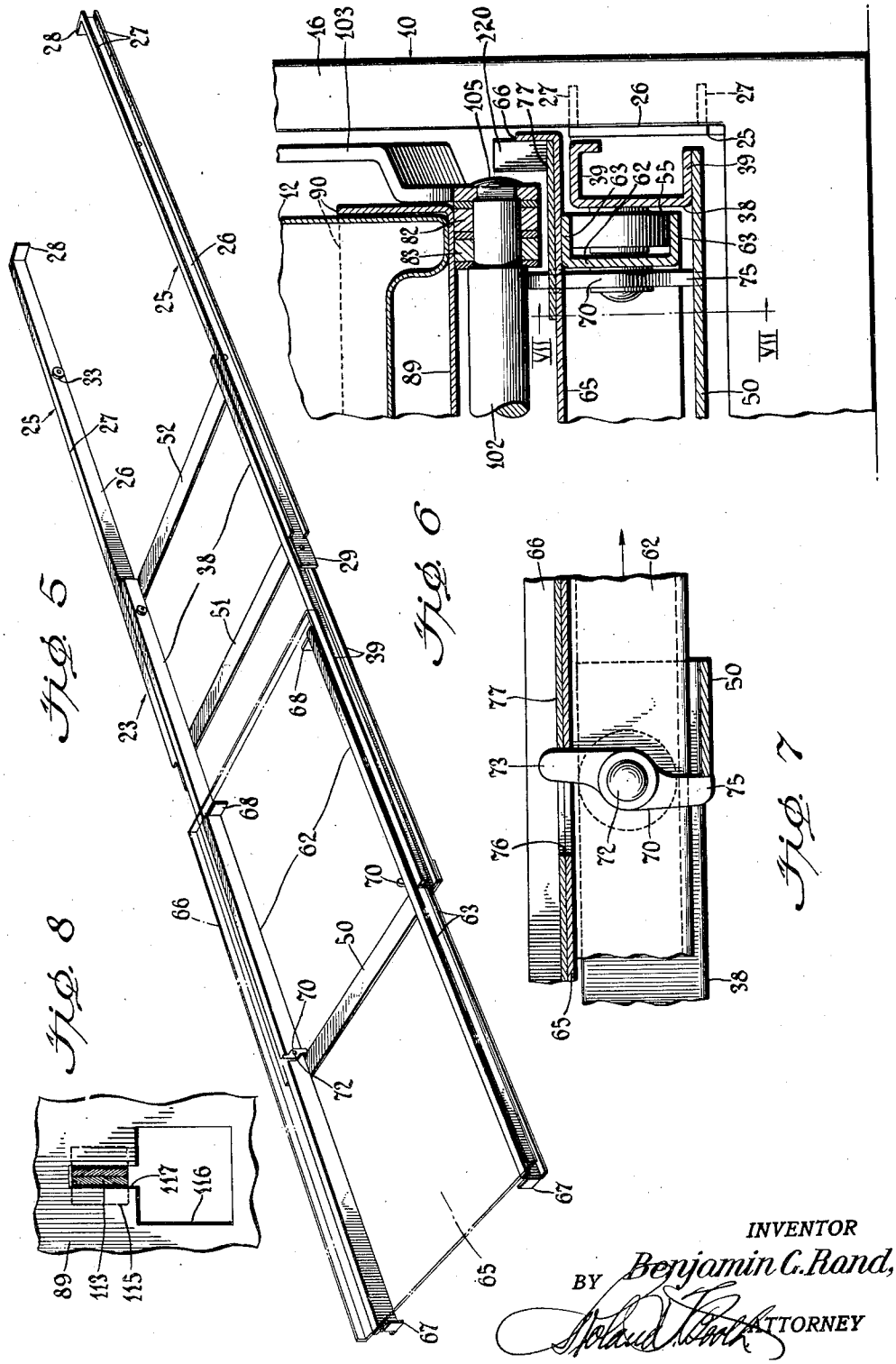


Fig. 5

Fig. 6

Fig. 7

Fig. 8

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UNITED STATES PATENT OFFICE

1,953,024

FILING CABINET

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Application July 30, 1932, Serial No. 626,698

11 Claims. (Cl. 45—2)

This invention relates to filing cabinets and it has for one of its objects the provision of a filing cabinet construction in which the lower filing drawer can be elevated to a convenient height for use without disconnecting it from the cabinet casing.

Another object of the invention is to provide a filing unit including extensible supports adapted to carry a drawer withdrawn entirely from the cabinet, and manually operable elevating mechanism for positioning the drawer at a convenient height for utilization.

Filing cabinets of the type in which a tier of drawers are installed in a casing have previously been so arranged that the lowermost drawer is disposed immediately adjacent the floor upon which the cabinet rests, and in this position requires filing clerks and others who have access to the files to stoop excessively while filing papers or withdrawing them from the files. Examination of the files in this position is also likely to be injurious to the eyes. Since many files of this type are relatively heavy it is inconvenient to withdraw them entirely from the casing and lift them to a table or other elevation where they can be conveniently utilized. In such construction a considerable space is customarily left unused at the bottom of the casing because of the inconvenience and disadvantages referred to above.

According to this invention a cabinet is provided in which the lowermost drawer is mounted upon a carriage or frame which is extensible and can be withdrawn to expose the entire length of the drawer. Then by manipulating a handle a mechanism elevates the drawer to a convenient height at which it remains until the handle is operated in the other direction to restore the drawer to its lower normal position. Then the drawer can be easily forced back into the cabinet casing. This mechanism requires relatively small space and is not complicated in its structure or operation. It is especially suitable for installation in the type of cabinets in which the drawers are relatively heavy and where it is desirable to utilize the filing space immediately adjacent the floor.

In the drawings:

Fig. 1 is a fragmentary elevation of a filing cabinet drawer in its closed position and a sectional view of portions of a cabinet casing.

Fig. 2 is an elevation of a cabinet casing and drawer in open position with portions thereof shown both in elevated and normal positions.

Fig. 3 is a fragmentary cross-section, on a large scale, taken substantially along the line III—III of Fig. 1.

Fig. 4 is a fragmentary front elevation of a drawer elevating mechanism and cross-sections of certain elements of the drawer construction.

Fig. 5 is a perspective of a carriage or drawer supporting frame.

Fig. 6 is a fragmentary cross-section, on a larger scale, taken substantially along the line VI—VI of Fig. 2.

Fig. 7 is a fragmentary cross-section taken substantially along the line VII—VII of Fig. 6, and showing in detail a stop device for limiting movement of certain elements of a telescoping frame; and

Fig. 8 is a cross-section, taken substantially along the line VIII—VIII of Fig. 3.

In practicing the invention a filing cabinet 10 is provided including several superposed drawers 11 and 12 mounted in a cabinet casing 15. Vertical reinforcing members 16, transverse drawer division members 17, side and rear walls 19, and 20, comprise the cabinet casing and are constructed and assembled in a conventional manner. Drawer stops 22 of U-shape are rigidly secured adjacent the front of the casing upon the lower transverse member 17.

A telescoping or extensible carriage frame 23 is mounted in the lower portion of the casing 15 and includes horizontal channel members 25 rigidly secured along the lower portions of the casing side walls 20. Each channel member 25 comprises a web 26, outwardly extending flanges 27, and a rear inwardly turned flange stop 28 that facilitates welding or otherwise securing the panel member to the rear wall of the casing. The front end of the channel has a flat or plane portion 29 which is secured against the inner side of the front corner reinforcing casing member 16. A plurality of rollers 31, 32, and 33 located at the front end, intermediate portion, and adjacent the rear end, respectively, of each channel member are disposed upon the side of the web 26 opposite the flanges 27 and are journalled upon stud pins 35, 36 and 37.

A second pair of channel members having their flanges 39 extending outwardly in opposite directions are telescoped inside or between the channels 25, and the flanges 39 constitute tracks in which the rollers 31, 32 and 33 are disposed. Transverse members 50, 51 and 52 rigidly secured at the front end, intermediate portions, and rear ends, respectively, of the channel members 38 provide a horizontally slidable rigid frame or carriage section wherein the channel members or

tracks are supported by the rollers 31, 32 and 33. It will be observed that the transverse members are secured upon the lower sides of the channel members and that the intermediate transverse member 51 is located nearer the rear ends of the channel members 38 than the front ends thereof. A plurality of rollers 55, 56 and 57 journalled upon stud pins 58, 59 and 60, respectively, are mounted at the front, intermediate, and rear portions of the channel members 38.

A third pair of channel members 62 having their channel flanges 63 extending outwardly are movable between the channel members 38, and their flanges provide tracks which ride upon the rollers 55, 56 and 57. A plate 65 having upwardly turned side flanges 66 is rigidly secured by welding or other means to the channel members 62 to provide a unitary drawer carrying structure or drawer carrier member. Front and rear inwardly turned flanges 67 and 68 are provided upon the channel members 62, and a front facing strip 69 is rigidly secured to the flanges 67 across the front ends of the channel members 62.

Opposed dogs 70 are pivotally mounted, as indicated at 72, upon the sides of the channel members 63 opposite the flanges 63 at locations substantially midway between the channel member ends, and opposite ends 73 and 75 of each dog (Fig. 7) extend upwardly and downwardly beyond the edges of the respective channel members. The lower end 75 of the dog is relatively heavy and consequently it always tends to assume a vertical position, as illustrated in Fig. 7.

As best shown in Fig. 1 the frame 23 is in its normal unextended position inside the casing and the facing strip 69 is flush with the front of the casing. The rear flanges 28 of the channel members 25 serve as stops for arresting rearward movement of the flanges 68 of the channel members 62. Rearward movement of the channel members 38 is limited by the transverse member 50 abutting the stops 22, and forward movement of these members is limited by the transverse member 51 abutting the opposite side of the stops 22. Forward and outward movement of the channel members 62 which are carried by the channel members 38 is limited by one end 75 of each dog 70 abutting the transverse member 50 while the other end 73 of each dog is impinging upon the walls of registering slots 76 extending through the bottom of the plate 65 and through a reinforcing strip 77 fastened upon the upper surface of the plate. In the normal rearward movement of the channel members 62, the dogs remain in an upright position and do not strike any of the elements of the casing or frame. The stops 22 are so positioned as to be out of the path of movement of the dogs.

However, by moving the channel member 62 slightly to the right, as viewed in Fig. 5, the dogs may be manually pivoted or tilted and the channel members 62 withdrawn from the channel members 38. In assembling these members the dog automatically pivots and rides over the transverse member 50 as its upper end swings into the slots 76.

The lazy-tong drawer elevating device 80 mounted upon the plates 65 includes pairs of links 82 and 83 having their front or outer ends pivotally connected upon pins 85 and 86 secured in angle brackets 87 and 88. One bracket 87 is rigidly secured to the upper surface of the plate 65 while the other bracket 88 is rigidly secured to the lower surface of a drawer receiving channel or support member 89 that supports the drawer 12. Side and rear upwardly disposed flanges 90 serve to position the drawer firmly and a front downwardly disposed flange 92 reinforces the front portion of the channel.

The rear or inner ends of the links are provided with pins 95 and 96 rigidly connected thereto for horizontal sliding movement in horizontally disposed slots 97 and 98, (Figs. 2 and 6), formed in plates 99 and 100 that are rigidly secured to the plate 65 and to the side flanges 90 of the channel 89, respectively. A set of links 82, 83 is disposed on each side of the drawer 12. Opposite ends of a horizontal transverse rod 102 are pivotally supported by intermediate portions of the links 82 and 83 and an angular elevating lever 103 has its intermediate angular portion rigidly secured, as indicated at 105, to one end of the rod. It will be observed that the plate 65 is wider than the channel 89 and drawer 12, and that the flanges 66 of the former extend beyond the edges of the channel.

The lever 103 comprises an off-set handle 106 which is normally disposed in an inclined position, and a relatively shorter arm 107 having a roller 108 journalled in its outer end. In its normal position the arm 107 lies substantially horizontally along the upper surface of the reinforcing strip 77 and the roller 108 rests upon the surface of this strip. At the end of the rod 102 opposite the lever 103, one end of an arm 109 is rigidly secured in the same manner as the lever and corresponds substantially to the arm 107. A roller 110 secured upon the end of the arm 109 and similar to the roller 108 rests upon the upper surface of the reinforcing strip 107 adjacent the edge of the plate opposite the arm 108. Each of a pair of fastening members 112 secured to the bottom of the drawer 12 is provided with a central web 113 and oppositely turned flanges 115 for disposition in slots 116 in the bottom of the channel member 89. These slots are relatively wide for the purpose of receiving the flanges 115 which are disposed therethrough. Then, by relatively sliding the channel and drawer the webs 113 are slipped into narrower slots 117 communicating with the relatively wide slots, and from which the fastening members cannot be released without again relatively sliding the drawer and channel.

In manipulating the drawer 12, it is drawn outwardly from the cabinet casing and the channel members 38 ride outwardly upon the rollers 31, 32 and 33 until the transverse member 51 strikes the stop 22 in the position of the channel members 38 as illustrated in Fig. 2. Then the channel members 62 ride upon the rollers 55, 56 and 57 until the dog end 75 strikes the transverse member 50. The drawer is thus positioned completely outside the casing in the position shown in the full lines of Fig. 2.

In order to elevate the drawer the operator draws the handle 106 upwardly in the direction of the arrow shown at the end of the handle in Fig. 2. During this operation the rollers 108 and 110 of the arms 107 and 109, respectively, roll upon the upper surface of the plate 77 and the pins 95 and 96 of the links slide inwardly in the slots 97 and 98 until the lazy-tong device and drawer are in the elevated or extended position shown in broken lines of Fig. 2. It will be observed that the lever 103 is pivotally actuated upon the rod 102 until the roller 108 passes the dead center with respect to the rod. Thus the lever may be released and the drawer will remain in its elevated position. The operation just de-

scribed is reversed when it is desired to return the drawer to its lower position and to slide or roll it into the casing.

The lever 103 is held in the dotted line position as shown in Fig. 2 after passing dead center, so as to retain the drawer in elevated position by the rollers 108 and 110 engaging stops 120 mounted at opposite sides on plate 65 adjacent side flanges 66. One of these stops is shown clearly in Figs. 2 and 5 and the other is mounted in the corresponding position at the opposite side of plate 65.

Although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

The invention claimed is:

1. In a cabinet, a casing formed with a compartment open at the front end, a drawer carrier, drawer supporting and guiding means mounted in the compartment in said cabinet supporting said drawer carrier for movement into and out of said compartment and for supporting said carrier entirely in front of said casing in one position, a drawer mounted on said carrier, a linkage connected between the drawer and carrier, and manually operable means for operating the linkage and elevating said drawer above said carrier.

2. In a cabinet, a casing having a compartment open at the front end only, a drawer carrier including sections horizontally movable into and out of said compartment in the casing through said open end for transporting and supporting said drawer in a position entirely outside and in front of the casing, said sections including cooperating horizontal guide-ways and rollers to facilitate their movement into and out of the compartment, linkage connected with the drawer and carrier, and manually operable means for operating said linkage and to lift the drawer.

3. In a cabinet, a casing, a drawer carrier including sections movable into and out of the casing for transporting the drawers to a position entirely outside the casing, said sections including cooperating horizontal guide-ways and rollers to facilitate their movement into and out of the casing, one of the sections having transverse members disposed in spaced relation, stops on the casing for limiting inward and outward movement of the carrier, one of the sections having a dog for engaging one of the transverse members and releasably engaging the drawer whereby the drawer supported upon the carrier is adapted to be raised in its outward position and removed from the carrier.

4. In a cabinet, a casing, a drawer carrier including sections movable into and out of the casing for transporting the drawers to a position entirely outside the casing, said sections including cooperating hoirizontal guide-ways and rollers to facilitate movement either into or out of the casing, linkage connected between the drawer and carrier, and a lever having a bearing upon the carrier and pivoted to the linkage for elevating the drawer.

5. In a cabinet, a casing, a drawer carrier including telescoping sections one of which is rigidly mounted in the casing, said sections including cooperating horizontal guideways and rollers to facilitate their movement into and out of the casing, collapsible members connecting the carrier to the drawer, and a lever having a pivotal connection to the collapsible members, said lever also having a portion bearing upon the carrier whereby pivotal movement of the lever serves to extend the collapsible members and raise the drawer, said lever in the raised position of the drawer sustaining the weight of the drawer.

6. In a cabinet, a casing, a drawer carrier including telescoping sections one of which is rigidly mounted in the casing, said sections including cooperating guideways and rollers to facilitate their movement forwardly and rearwardly into and out of the casing, a plurality of links having sets of forward and rear end connections to the forward and rear end portions of the drawer respectively, one of the latter sets of end connections being in the form of lost-motion connections, and a lever pivoted intermediate its ends to the links, one end of the lever having a bearing contact with the carrier whereby pivotal action of the lever will elevate and maintain the drawer in an elevated position.

7. A file cabinet, comprising a casing having a plurality of drawer openings in the front wall in aligned relation from top to bottom, a drawer in each of said openings, means supporting said drawers on said cabinet for movement horizontally into and out of said casing through said drawer openings, a drawer supporting member on said drawer supporting means detachably supporting the bottom drawer in said casing, and manually operable means on said drawer supporting means secured to and supporting said drawer supporting member operable to elevate said member and bottom drawer, when supported in front of said casing, upwardly to a position in front of the drawer next above.

8. A file cabinet, comprising a casing having a plurality of drawer openings in the front wall in aligned relation from top to bottom, a drawer in each of said openings, means supporting said drawers on said cabinet for movement horizontally into and out of said casing through said drawer openings, a drawer carrier member carried by said drawer supporting means for the bottom drawer and said casing and detachably connected with the bottom drawer, and manually operable elevating and guiding means on said carrier member operable to elevate said drawer substantially vertically upward when supported in advance of said cabinet into a position substantially in front of the drawer next above in said casing.

9. A file cabinet, comprising a casing having a plurality of drawer openings in the front wall in aligned relation from top to bottom, a drawer in each of said openings, means supporting said drawers on said cabinet for movement horizontally into and out of said casing through said drawer openings, a drawer carrier member carried by the drawer supporting means in the bottom of said cabinet for supporting said member for movement into and out of said cabinet through the bottom opening in said casing, the bottom drawer being supported by said carrier member in detachable relation, a drawer supporting member carried by said drawer carrier member and movable vertically relative thereto for receiving and supporting said drawer, and manually operable elevating means engaging between said carrier member and said supporting member for said drawer operable to elevate said supporting member on said carrier member when said carrier member is supported in front of the

cabinet to a positioin substantially in front of the drawer next above.

10. A file cabinet, comprising a casing having a plurality of drawer openings in the front wall in aligned relation from top to bottom, a drawer in each of said openings, drawer supporting and guiding means mounted in said casing and movable through each drawer opening in the front of said cabinet, the drawer guiding and supporting means movable through the bottom opening in said cabinet being formed for supporting the bottom drawer in the extended position completely in advance of the front of said casing, a drawer carrier member mounted on said drawer supporting and guiding means for the bottom drawer of said cabinet and movable therewith through said bottom drawer opening into and out of said casing, a drawer supporting member carried by said drawer carrier member and detachably receiving said drawer therein, link mechanism for retaining said drawer carrier and supporting members in substantially parallel relation during movement of said drawer supporting member vertically relative to said carrier member, and manually operable means for elevating said drawer supporting member relative to said carrier member to support the drawer carried thereby in front of the drawer next above.

11. A file cabinet, comprising a casing having a plurality of drawer openings in the front wall in aligned relation from top to bottom, a drawer in each of said openings, means supporting said drawers on said cabinet for movement horizontally into and out of said casing through said drawer openings, a drawer carrier member mounted on the drawer supporting means in the bottom of said cabinet and movable into and out of said cabinet through the bottom drawer opening, a drawer supporting member superposed on said drawer carrier member, pairs of pivoted link members operably connected to said drawer supporting and carrier members, and manually operable means engaged with said link members and said drawer carrier member operable to move said links relative to each other for elevating said drawer supporting member substantially vertically relative to said drawer carrier member to a position in advance of the drawer next above in said cabinet, said drawer carrier member being in extended position relative to said cabinet for the elevation of said drawer supporting member, said drawer supporting member detachably receiving and supporting a drawer in superposed relation thereon.

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