Dec. 26, 1933. W. OCHSE 1,940,877

EXTENSION SHELVING FOR DISPLAY CABINETS

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Fig. 1.

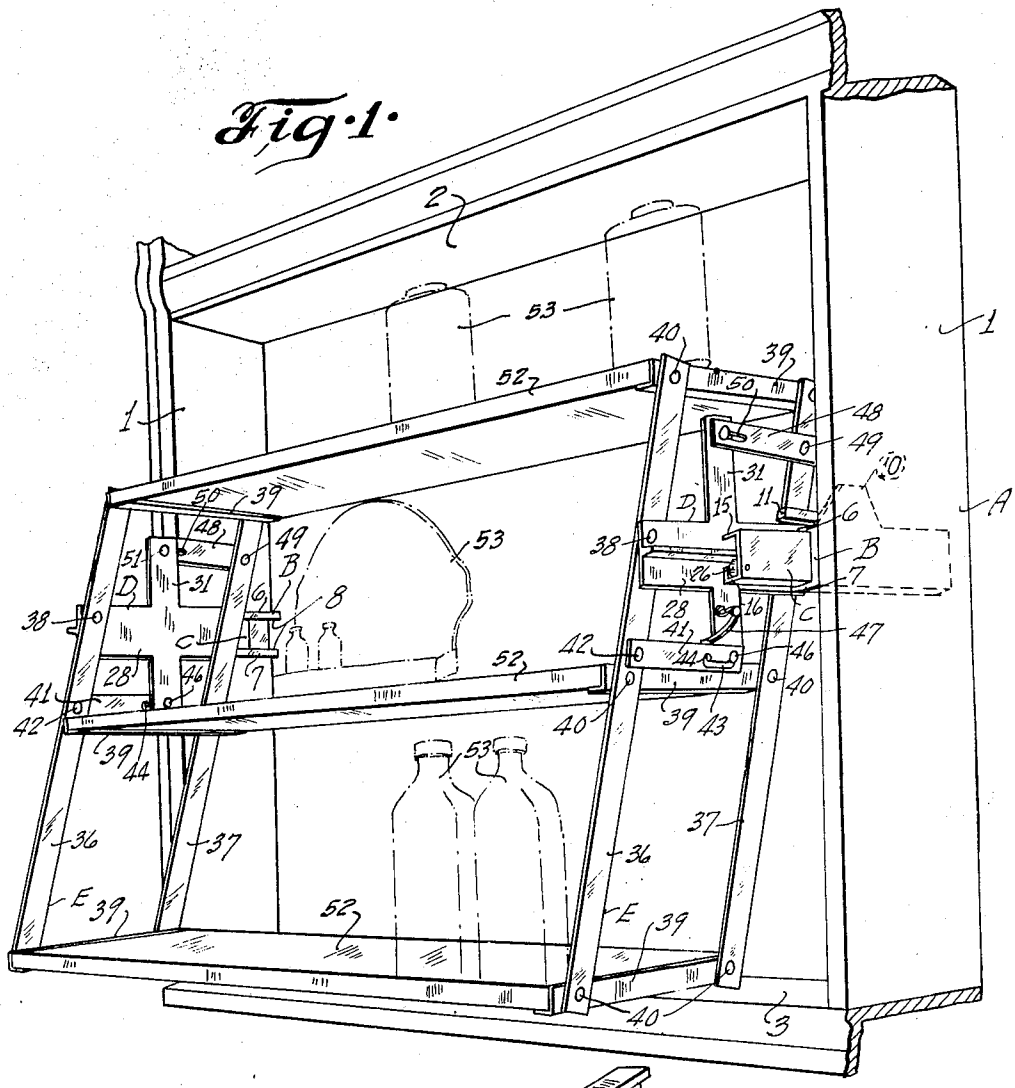
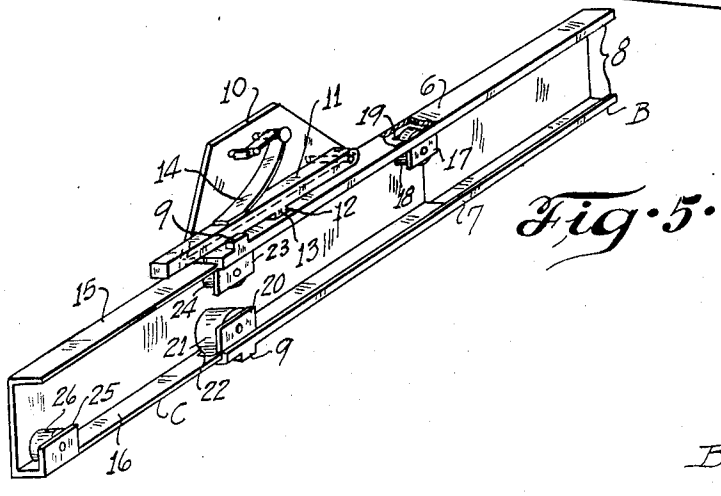



Fig. 5.




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Fig. 3.

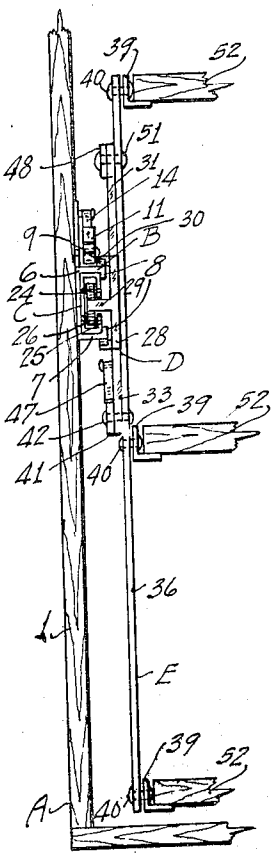



Fig. 2.

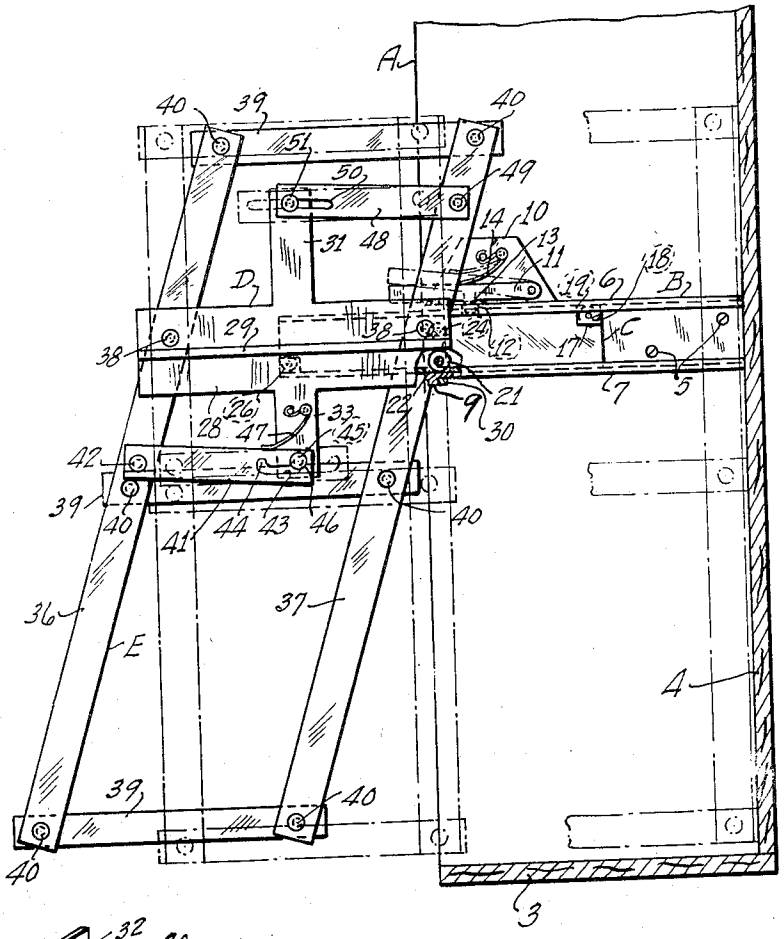
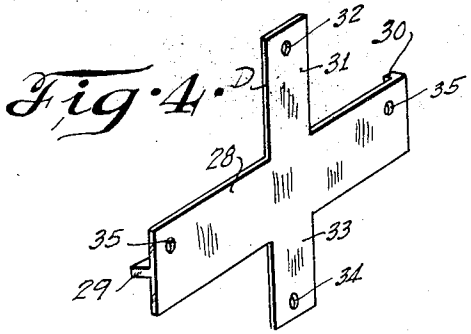



Fig. 4.




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Patented Dec. 26, 1933

1,940,877

# UNITED STATES PATENT OFFICE

1,940,877

## EXTENSION-SHELVING FOR DISPLAY CABINETS

William Ochse, San Antonio, Tex.

Application November 21, 1932
Serial No. 643,649

12 Claims. (Cl. 211—185)

This invention relates generally to display apparatus and has more particular reference to an extension-shelving for display-cabinets and the like.

In the retailing of merchandising, that particular form of store management known as the "self-serve" system is economically becoming of increasing importance. Inasmuch as in such systems, the customer helps him- or her-self to the merchandise desired, it is requisite for the successful carrying on of the "self-serve" system that the merchandise to be retailed be disposed and displayed in highly convenient and accessible form and arrangement.

Heretofore, so far as I am aware, and particularly in the drug-and-sundries trade, the average retail store has comprised a series of shelving fixed in show-cases and cabinets, which arrangement, while adequate for the purpose when served by clerks and salespersons, has been found unsatisfactory as a display medium for "self-serve" store-systems.

My present invention has for its prime object the provision of an unique display apparatus which may with ease and facility and at small expense be incorporated in the conventional form of display-cabinet fixtures for providing a shelving arrangement supported by, and which for the purposes of display may be shifted or extended in prominent position from, the cabinet-fixture.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings (two sheets),—

Figure 1 is a perspective view of a cabinet show-case incorporating an extension-shelving of my invention, the latter being shown in extended position;

Figure 2 is a fragmentary vertical sectional view through the cabinet, showing the shelving-supporting frames in side elevation;

Figure 3 is a fragmentary front elevation of one end of the cabinet and shelving;

Figure 4 is an enlarged detail perspective view of a shelf-frame carriage; and

Figure 5 is an enlarged detail perspective view of the track and its extension slide for supporting the carriage in the cabinet.

Referring now more in detail and by reference characters to the drawings, which illustrate a preferred embodiment of my invention, A designates a display or show-cabinet or casing, which includes side-members or walls 1, and also, in the present instance, a top-wall 2, bottom-wall 3, and back-wall 4.

Mounted transversely in opposing registration on the side-walls 1, as by respective securing elements 5, is a pair of track-members B, each comprising a horizontally disposed channel-shaped body whose opposed upper and lower way-providing flanges 6, 7, respectively, are presented inwardly and provided or formed longitudinally upon their inner face with vertically opposed way-bounding or marginal ribs or guides 8, as best seen in Figures 3 and 5, said flanges being also provided adjacent their respective front ends and upon their outer face with vertically opposed stop-lugs 9, for purposes soon appearing.

Adjacent its front end, each track B carries an upstanding bracket 10, on which at its rear end is pivotally mounted a latch-lever 11 having a length to extend forwardly over an aperture 12 provided in the subjacent flange 6, the lever 11 having a depending detent 13 swingably shiftable into and out of the aperture 12 and the lever 11 being normally at its free end downwardly biased by a tensional member in the form preferably of a leaf-spring 14 also mounted suitably on the bracket 10, all as best also seen in Figure 5.

Having their respective opposed upper and lower flanges 15, 16, respectively, presently inwardly and telescopically registering or fitting for longitudinal shiftable movement in the ways provided by the track-flanges 6, 7, are opposed channel-shaped extension-slides C.

At its rear end and upon the inner margin of its upper flange 15, each slide C is provided with a depending ear 17, and journaled for rotation intermediate the ear 17 and the web of the slide C, is a roller 18 which peripherally projects through an aperture 19 provided in the flange 15 for rollably engaging the superjacent track-flange 6, as best seen in Figure 5.

Intermediate its ends and upon its inner margin, the lower flange 16 of each slide C is provided with an upstanding ear 20, and likewise journaled for rotation intermediate the ear 20 and the web of the slide C, is a second roller 21, which similarly peripherally projects through a suitable aperture 22 provided in the flange 16 for rollably engaging the subjacent track-flange 7, also as best seen in Figure 5.

Also intermediate its ends and upon its inner margin, the upper flange 15 of each slide C is provided with a depending ear 23, between which and the web of the slide C is rotarily mounted a

roller 24, and similarly at its front end and upon its inner margin, the lower flange 16 of each slide C is provided with an upstanding ear 25, between which and the web of the slide C is rotarily mounted a roller 26, as best seen in Figures 2 and 5.

The upper slide-flange 15 is further provided, at a suitable point intermediate its ends, with an aperture 27 for registration with the aperture 12 for receiving therethrough the detent 13 of the latch-lever 11, all for purposes presently appearing.

Telescopically, in turn, supported on the slide C, is a substantially cross-shaped carriage D, which comprises a horizontal plate 28 provided with a longitudinal outwardly projecting tongue or flange 29, which is disposed through the open-sides of and into the interfitting track B and slide C for normally at its lower face engaging the lower pair of rollers 21, 26, for support of the carriage D rollably on the slide C. However, under certain presently appearing conditions, the carriage D may rock on the roller 26 for at its upper face engaging as a counterbalance the roller 24, as will be understood from Figures 2 and 3.

At its rear end, the plate 28 is provided with a pair of vertically spaced projecting lugs or bumpers 30, which are respectively disposed above and below the track-member B for impingement with the stop-lugs 9 thereof on outward movement of the carriage D by and with the slide C, as will presently more fully appear.

Intermediate its ends, the plate 28 is provided with an upstanding arm 31 having in its upper or free end a pin-receptive aperture 32, the plate 28 being also provided with a depending arm 33 having in its lower or free end a pin-receptive aperture 34, and in its respective opposite ends the plate 28 is provided with pivot-apertures 35, as best seen in Figure 4.

E designates an articulated display-support or frame, which comprises a pair of front and rear vertically disposed vibratory levers 36, 37, respectively, each intermediately its ends pivotally mounted on a pin 38 engaging a respective pivot aperture 35 in the plate 28 for oscillation of the levers 36, 37, in a vertical plane on the carriage D, the pair of levers 36, 37, being maintained in parallel relation by means of a series of horizontally disposed vertically spaced links or shelf-supports 39, in the present instance three in number, each at its opposite ends pivotally, as at 40, connected to and supported on the respective levers 36, 37, as best seen in Figure 2.

A latch-link 41 is pivotally at its forward end connected, as at 42, to the front lever 36 substantially below, or vertically spaced downwardly from, its pivot 38. At its rear free end-portion, the link 41 is formed longitudinally with a substantially U-shaped slot 43, which provides at its opposite ends front and rear latch-notches 44, 45, respectively.

A latch-pin 46 is mounted in the aperture 34 of the carriage-arm 33 for working in the slot 43, and mounted on the arm 33, is a tensional-member or spring 47, which engages the latch-link 41 for biasing the same for co-operable latching engagement at its respective notches 44, 45, with the pin 46, as best seen in Figure 2.

A stop-link 48, pivotally at its rear end connected, as at 49, to the rear lever 37 substantially above or vertically spaced upwardly from the pivot 38, is provided at its forward free end with a longitudinal slot 50, in which works a stop-pin 51 mounted in the aperture 32 of the carriage-arm 31, the pin 51 being engageable alternately with the opposite end walls of the slot 50 on oscillation of the levers 36, 37, for limiting the movement thereof in position for engagement of the corresponding notch 44 or 45, as the case may be, of the lever 41 with the pin 43 of the carriage D for latching the frame E in respective articulated or tilted positions, as will presently appear, and as best seen in Figure 2.

The shelf-supports 39 are each preferably of angle-section, one leg thereof being turned horizontally inwardly for supporting the adjacent end of a shelf or display-member 52 extending between the frames E in tier-arrangement for support of the displayed articles 53, as best seen in Figure 1.

In use and operation, the carriages D are drawn or rolled outwardly on the respective slides C, the lower intermediate rollers 21 at such time engaging the flanges 7 of the tracks B and the tongues 29 of the carriages D, whereby the slides C are propelled outwardly on the tracks B at half the speed and distance of the carriages D, the rollers 18 engaging the flanges 6 of the tracks B for counteracting the so-projecting or cantilevered front end of the slides C and their supported carriages D.

Outward travel of the carriages D is terminated on engagement of the carriage-bumpers 30 with the track-stops 9, the detents 13 of the slide-levers 11, which meanwhile have had merely sliding engagement with the top flanges 6 of the slides C, now dropping, under bias of the springs 14, into the latch-apertures 12 of the slides C for locking the same releasably in extended position on the tracks B.

The frame-latches 41 being released from the latch-pins 46, the frames E are then tilted for disposing the shelves 52 in rearward ascending step-wise arrangement, the lowermost shelf 52 being considerably extended forwardly of the cabinet A and the carriages D rocking on the front lower rollers 26 for engaging the tongues 29 with the upper intermediate rollers 24 for counteracting the unbalanced condition of the so-tilted frames E.

The levers 36, 37 of the frames E meanwhile assume oscillated or oblique parallel positions until the stop-pins 51 on the carriages D engage the respective front end walls of the slots 50 in the stop-links 48, the latch-pins 46 then engaging the rear notches 45 in the latch-links 41 for locking the frames E releasably in tilted displaying-position for ready access of a customer to the articles 53 disposed on the shelves 52, as best seen in Figures 1 and 2.

However, if it is desired to dispose the shelves 52 in vertical tier-like arrangement, the latches 41 are lifted for disengaging the same from the latch-pins 46, and the frames E are then swung each on its carriage D for disposing the levers 36, 37 in vertically parallel relation, until the stop-pins 51 on the carriages D engage the respective rear end walls of the slots 50 in the stop-links 48, whereupon the latch-pins 46 engage the front latch-notches 44 for latching or retaining the frames E in vertical position, as shown by dot-dash lines I in Figure 2.

From such latter position, the frames E and their carried shelving 53 may with ease and facility be shifted rearwardly into non-projected displaying position in the cabinet A by merely lifting the latch-levers 11 for disengaging the detents 13 from the slide-apertures 12, whereupon the entire structure may, in the manner reversely

to that set forth for drawing the shelving from the cabinet, be snugly and compactly disposed in the cabinet A, as illustrated by the dot-dash lines II in Figure 2.

The employment of my unique extension-shelving makes it possible to convert any conventional form of cabinet and show-case equipped store into a "self-serve" store with the effect of practically revolutionizing the display arrangement of the store, more especially in the merchandising of drugs, sundries, and packaged or bottled merchandise.

The installation of my shelving equipment in existing show-cabinets and show-cases of a store may be effected with facility and economy without interference with the carrying on of trade in the store. The shelving is simple, durable, attractive, and highly efficient for its purpose, and by its use the trading capabilities of a store may be greatly benefited and largely profitably increased.

It will be understood that changes and modifications in the several parts of my extension shelving may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is,—

1. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, shelving pivotally supported by the carriages for movement into and out of and swingably relatively to the cabinet, and means comprising co-operable members on the trackway and slides for releasably retaining the shelving in outwardly projected position relatively to the cabinet.

2. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, shelving carried by the slides for movement into and out of the cabinet, and means including a spring-pressed lever on one of the slides for engagement with a track-member for releasably retaining the shelving in outwardly projected position relatively to the cabinet.

3. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with said slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving tiltably mounted on the carriages for movement into and out of the cabinet, and means for releasably retaining the shelving in outwardly projected position relatively to the cabinet.

4. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, spaced rollers on the slides, carriages having longitudinal tongues engaging the rollers for longitudinal shiftable movement of the carriages relatively to the slides and trackway, and a tier of shelving mounted on the carriages for movement into and out of the cabinet.

5. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with said slides for longitudinal shiftable movement relatively to the slides and trackway, and a tier of shelving pivotally mounted on the carriages for swingable movement relatively to the carriages and cabinet.

6. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relatively to the carriages and cabinet, and means including co-operable members on the carriages and shelving for releasably retaining the shelving selectively in swung or upright position relatively to the cabinet.

7. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relatively to the carriages and cabinet, and means for releasably retaining the shelving selectively in swung or upright position relatively to the cabinet, said means including a lateral arm on one of the carriages, a latch-member pivotally attached at an end to the shelving, said latch-member being provided longitudinally with a substantially U-shaped slot, and a pin on the carriage arm engagingly working in said slot.

8. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relatively to the carriages and cabinet, and means comprising co-operable members on the carriages and shelving for limiting the swingable movement of the shelving.

9. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relatively to the carriages and cabinet, and means for limiting the swingable movement of the shelving relatively to the carriages, said means including a lateral arm on one of the carriages, and a latch-member pivoted at an end on the shelving and having at its other end slot-and-pin connection with the carriage arm.

10. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising

opposed registering members fixed on said walls, extension slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relative to the carriages and cabinet, means for selectively retaining the shelving in swung or upright position relatively to the cabinet, and means for limiting the swingable movement of the shelving relatively to the carriages and cabinet.

11. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension-slides supported for longitudinal slidable movement by the trackway, carriages having engagement with said slides for longitudinal shiftable movement relatively to the slides and trackway, and a tier of shelving including spaced connected vibratory levers pivotally mounted intermediate their respective ends on the carriages for movement into and out of and swingably relatively to the cabinet.

12. In a display-apparatus, a show-cabinet having spaced side walls, a trackway comprising opposed registering members fixed on said walls, extension slides supported for longitudinal slidable movement by the trackway, carriages having engagement with the slides for longitudinal shiftable movement relatively to the slides and trackway, a tier of shelving pivotally mounted on the carriages for swingable movement relative to the carriages and cabinet, means for selectively retaining the shelving in swung or upright position relatively to the cabinet, and means for releasably retaining the shelving in outwardly projected position relatively to the cabinet.

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