J. M. WALKER.

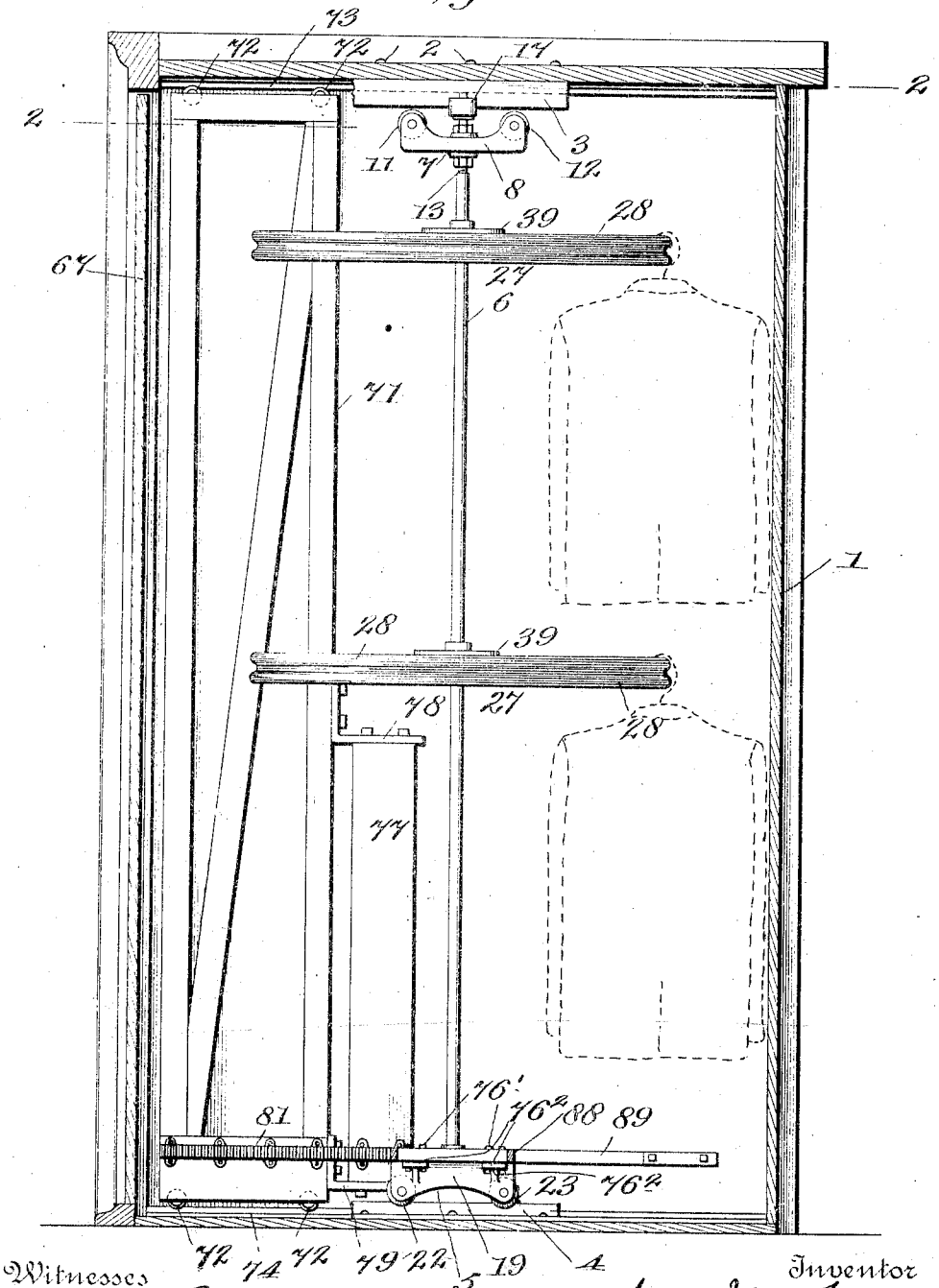
STORE FIXTURE.

APPLICATION FILED JULY 11, 1907.

901,665. Patented Oct. 20, 1908.

5 SHEETS—SHEET 1.

Fig. 1.




Witnesses

Geo. H. Byrne.

H. E. Montague

Inventor

James Miller Walker

By Johnson & Kolb

his Attorney

J. M. WALKER.

STORE FIXTURE.

APPLICATION FILED JULY 11, 1907.

901,665. Patented Oct. 20, 1908.

5 SHEETS—SHEET 2

Fig. 1.

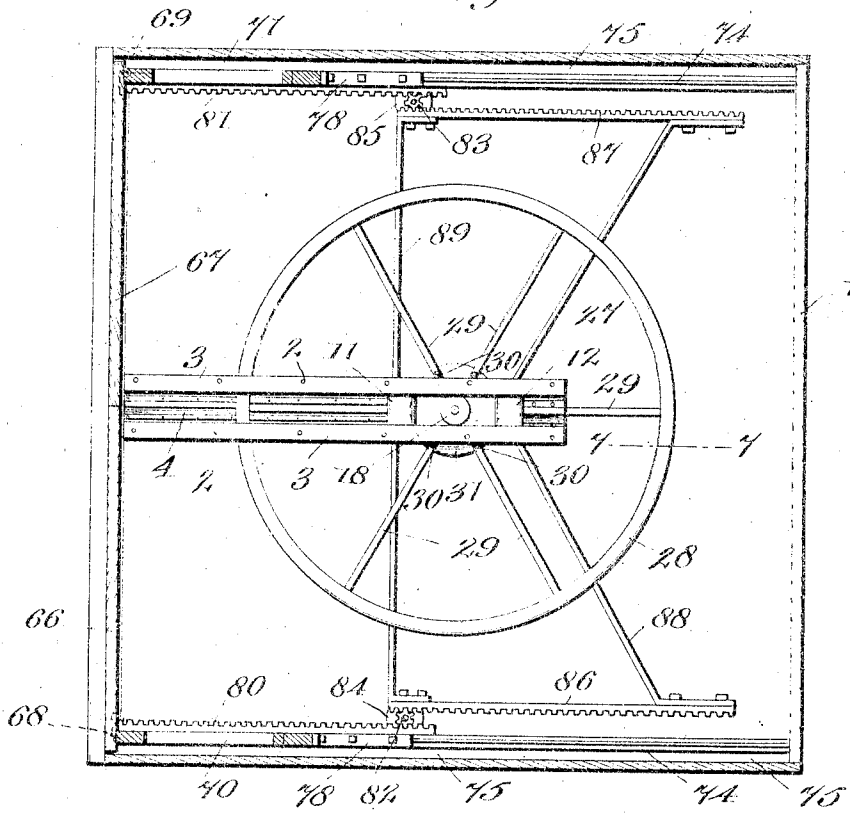



Fig. 3.

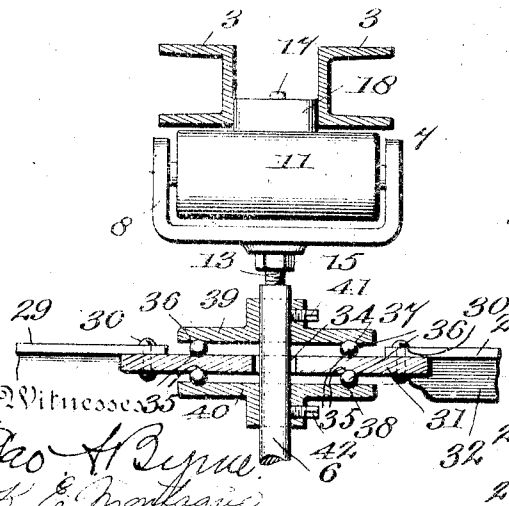



Fig. 4.

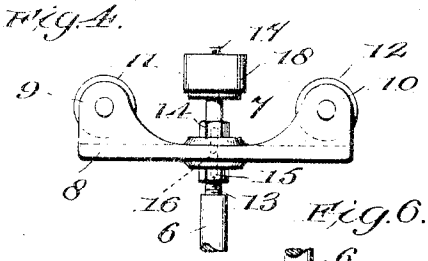
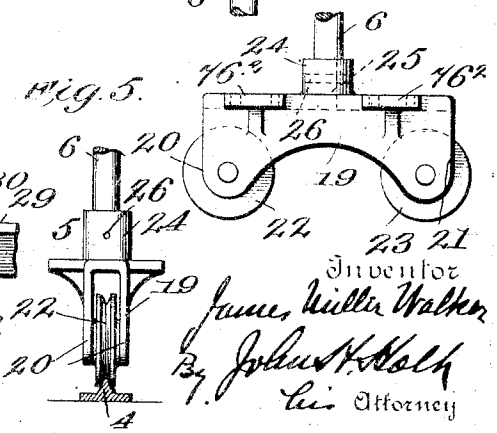



Fig. 6.

Fig. 5.




Witnesses:
Geo. H. Byrne.
H. E. Montague.

Inventor
James Miller Walker
By John H. Holcombe
His Attorney

J. M. WALKER.

STORE FIXTURE.

APPLICATION FILED JULY 11, 1907.

**901,665.** Patented Oct. 20, 1908.

5 SHEETS—SHEET 3.

Fig. 7.

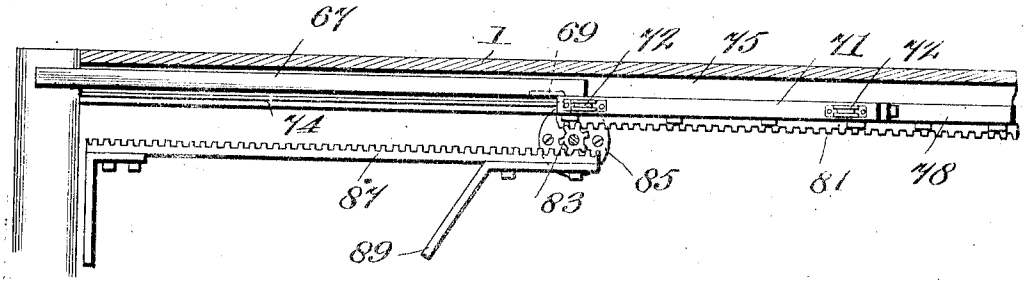



Fig. 8.

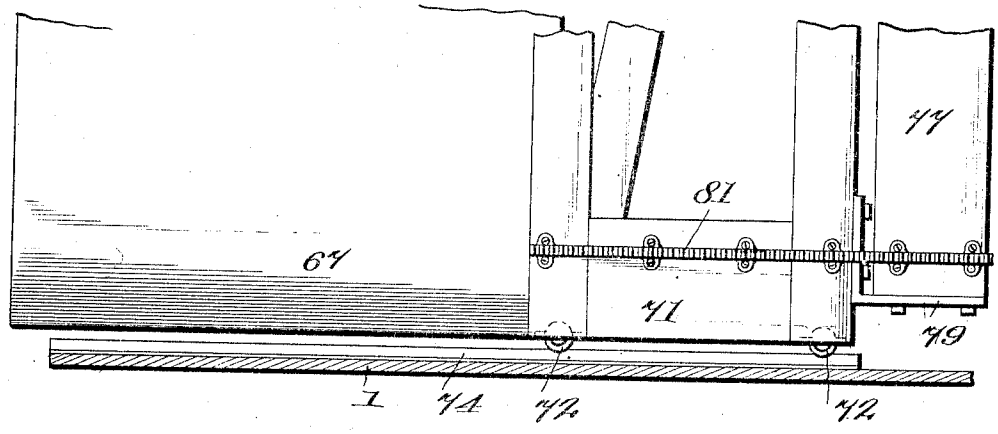



Fig. 9.

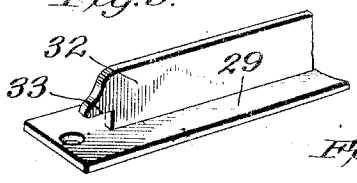



Fig. 10.

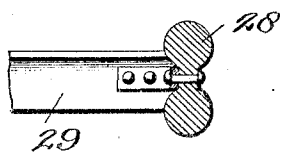
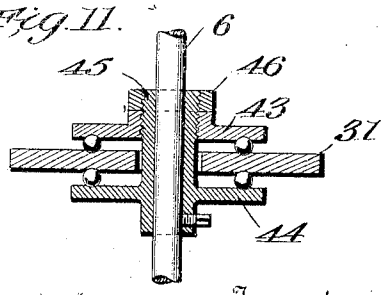



Fig. 11.




Witnesses

Geo. A. Bruce

K. E. Montague.

Inventor

James Miller Walker

By John S. Keating

his Attorney

J. M. WALKER.

STORE FIXTURE.

APPLICATION FILED JULY 11, 1907.

**901,665.** Patented Oct. 20, 1908.

5 SHEETS—SHEET 4.

Fig. 12.

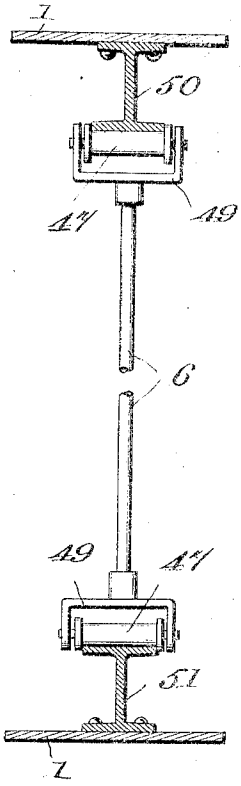



Fig. 13.

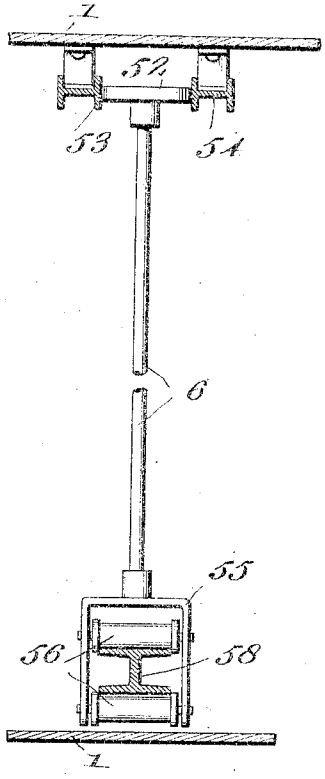



Fig. 14.

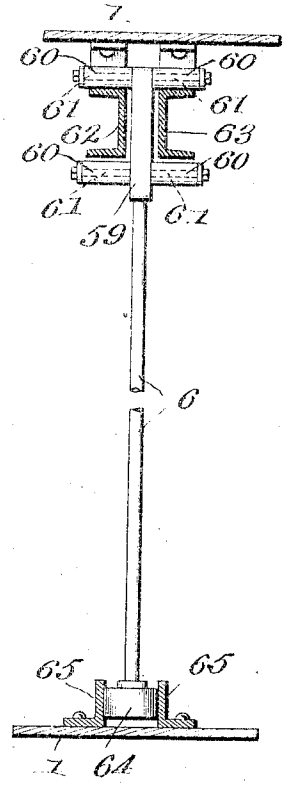



Fig. 16.

Fig. 15.

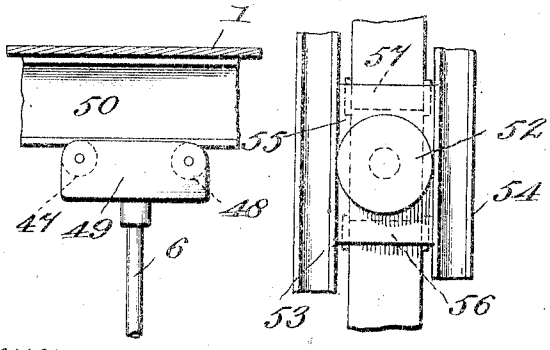
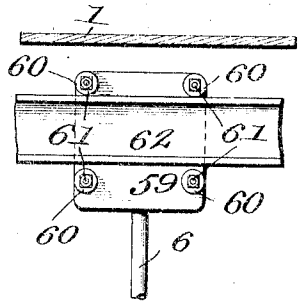



Fig. 17.




Witnesses

Geo. H. Bruce.

F. E. Montague.

Inventor

James Miller Walker

By John H. Holt

His Attorney

J. M. WALKER.

STORE FIXTURE.

APPLICATION FILED JULY 11, 1907.

901,665. Patented Oct. 20, 1908.

5 SHEETS—SHEET 5.

Fig. 18.

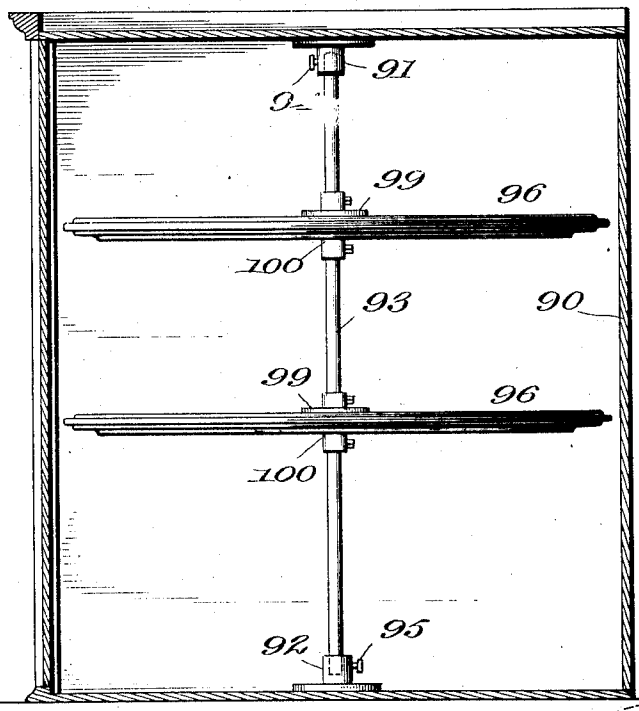



Fig. 19.

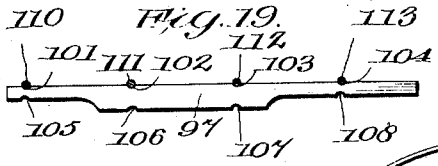



Fig. 20.

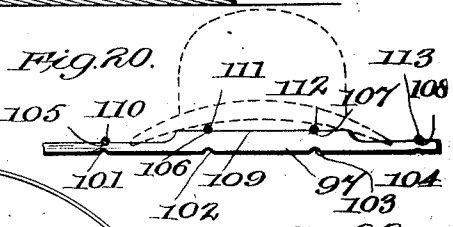



Fig. 21.

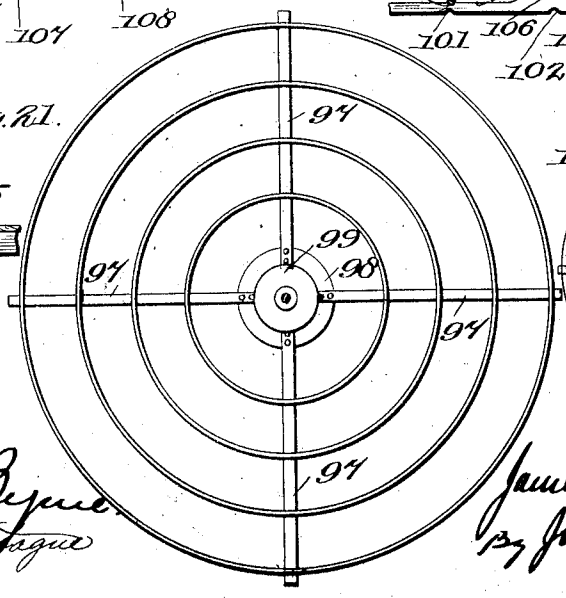



Fig. 22.

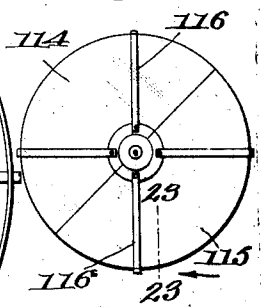
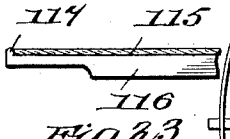



Fig. 23.




Witnesses:
Geo. H. Beyer
H. E. Montague

Inventor
James Miller Walker
by John H. Holt
his Attorney

# UNITED STATES PATENT OFFICE.

JAMES MILLER WALKER, OF AUGUSTA, GEORGIA.

## STORE-FIXTURE.

No. 901,665. Specification of Letters Patent. Patented Oct. 20, 1908.

Application filed July 11, 1907. Serial No. 383,312.

*To all whom it may concern:*

Be it known that I, JAMES MILLER WALKER, a citizen of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented certain new and useful Improvements in Store-Fixtures, of which the following is a specification.

This invention relates more especially to improved means for supporting and displaying goods and also to the combination with such supporting means of an inclosing cabinet designed to protect the goods from dust and other injury.

Said invention further relates to the combination between the supporting means and the cabinet door or doors whereby the said door or doors are automatically drawn back into the cabinet by the action of the goods supporting means traveling forward or towards the front of the cabinet, and shifted in the reverse direction when the goods support is pushed back in the cabinet.

My invention consists further in the novel combination and arrangement of parts hereinafter described and more particularly pointed out in the accompanying claims.

In order to more fully describe my said invention, reference will be had to the accompanying drawings which form a part of this specification, and wherein,

Figure 1, represents a vertical section through a clothes cabinet embodying one form of my said invention, the garment supporting device being shown in side elevation; Fig. 2, a section on line 2—2, Fig. 1, looking down; Fig. 3, an enlarged detail view showing the top trolley, shown in Fig. 1, in side elevation, its guide rails in section, and also showing in section the bearings for supporting the upper garment rack. Fig. 4, a detail side elevation of the said top trolley, showing also in side elevation the upper portion of the rod for supporting the garment rack; Fig. 5, a detail end elevation of the lower trolley shown in Fig. 1, showing its track in section; Fig. 6, a detail side elevation of the trolley shown in Fig. 5; Fig. 7, a fragmentary detail view partly in section and partly in top plan of the door shifting rack mechanism and one side of the cabinet shown in Fig. 1, showing the door pushed back into the cabinet. Fig. 8, a fragmentary detail side elevation of the lower portion of one of the cabinet doors with its supporting frame and shifting rack attached thereto showing the floor of the cabinet in section, the said parts being shown in the same relative position as in Fig. 7; Fig. 9, a fragmentary detail perspective view of one of the radial arms of the garment rack; Fig. 10, an enlarged fragmentary section taken on line 7—7 Fig. 2; Fig. 11, a detail vertical central section of a modified form of bearing for supporting the garment rack; Figs. 12, 13, and 14 represent partly in section and partly in elevation three alternative arrangements for supporting the garment supporting rack rod; Fig. 15, a fragmentary side elevation of the upper trolley and guide rail shown in Fig. 12, showing a portion of the cabinet top in section; Fig. 16, a fragmentary top plan view of the upper trolley and guide rail shown in Fig. 13; Fig. 17, a fragmentary side elevation of the upper trolley and guide rail shown in Fig. 14, showing a portion of the cabinet top in section; Fig. 18, represents partly in vertical section and in elevation a modified form of cabinet and display stand embodying my invention; Fig. 19, a detail side elevation of one of the radial arms of the rack shown in Fig. 18, showing the supporting rings of said rack in section; Fig. 20, a similar view of the same part turned 180° on its longitudinal axis to support hats as indicated in dotted lines; Fig. 21, a top plan view of one of the circular racks shown in Fig. 18; Fig. 22, is a top plan view on a smaller scale of a modified form of one of such racks, and Fig. 23, a fragmentary section on an enlarged scale taken along line 23—23, Fig. 22, looking in the direction of the arrow in said figure.

Referring first to the form of my invention shown in Figs. 1 to 10 inclusive, of the accompanying drawings, 1 represents a cabinet of desired construction in the upper portion of which is rigidly supported by means of bolts 2 or in any other suitable manner, a pair of guide rails 3 which are shown in the form of channel beams, the said guide rails extending from a suitable point near the front of the cabinet to a suitable point preferably in the rear of the center thereof and lying preferably midway between the sides of the cabinet as shown most clearly in Fig. 2. These guide rails are spaced apart longitudinally to accommodate a trolley wheel which runs between them as hereinafter described. Made fast to the bottom of the cabinet and occupying a position directly beneath the space separating said guide rails longitudinally, is a track 4.

On this track is adapted to run a trolley 5 which is connected by means of a vertical shaft or rod 6 to a trolley 7, adapted to run on guide rails 3.

The top trolley 7 consists among other parts of a frame 8 having upwardly extending pairs of wings 9 and 10 between which are journaled respectively the rollers 11 and 12 (See Figs. 3 and 4.) Extending upward through the center of the trolley frame is an exteriorly screw-threaded spindle 13, with respect to which the trolley frame 8 is held rigidly in position by lock nuts 14 and 15 and key 16. The upper end of the spindle 13 is reduced in diameter as at 17 to form a journal for a roller 18 mounted for rotation on said journal as a vertical axis. The lower end of the spindle is screwed into the upper end of the rod 6, or may be integral therewith.

In the operative position, the periphery of the roller 18 engages or runs between the inner faces of guide rails 3, while the rollers 11 and 12 extend across the space between said rails and run directly beneath the lower faces of said rails.

The lower trolley 5, consists among other parts (see Figs. 5 and 6) of a frame, 19, having pairs of wings, 20 and 21, between which are journaled respectively flat peripherally grooved rollers 22 and 23 adapted to run on the track 4. On the center of the top of the frame 19 is formed a preferably integral upwardly extending lug 24, having a vertical opening adapted to receive the reduced portion 25, of the lower end of the rod 6, the said rod and lug being held against relative movement by pin 26.

The rod 6 forms a support for one or more supporting racks 27 consisting each, in the case shown, of a preferably light metal ring 28, to the inner periphery of which is rigidly secured a plurality of preferably light metal arms 29 converging towards the center of said ring and made fast by bolts 30 or otherwise at their inner ends to a plate 31. In the specific form shown, the arms 29 are T-shaped in cross section and at one end of each the web 32 (see Fig. 9) is cut away as at 33 to receive the plate 31. This makes a very strong and rigid connection. Any other suitable arm and connection, however, may be used without departing from the spirit of my invention.

The plate 31 of each rack has an opening 34 through its center, and annular grooves 35 formed in opposite faces of said plates. Through the opening 34 passes the rod 6, allowing the plate 31 to rotate relative thereto, while the grooves 35 form race-ways for balls 36, which also run in race ways 37 and 38 in plates 39 and 40, mounted loosely on the rod 6 and held rigidly in position by means of set screws 41 and 42. The plate 31, balls 36 and plates 39 and 40 constitute a ball bearing support for the rack which not only permits the rack to be easily rotated, but prevents the same from side tilting by an unequally distributed load thereon.

It will be readily seen that by loosening the set screws 41 and 42 the rack may be raised or lowered to any suitable position on the rod 6.

A modified form of the ball bearing support above described is shown in Fig. 11. In this latter form the two plates 39 and 40 are replaced by two plates 43 and 44, the former being interiorly screw-threaded to receive a sleeve extension 45 on the plate 44, which is screwed into the plate 43, the plate 43 being held in position by lock nut 46. By means of this arrangement the bearing may be slid along on the rod 6 without disturbing the relative positions of the plates to each other and therefore without having to readjust the bearing after each such movement.

Coats or other garments may be suspended from the racks as indicated in Fig. 1, except that in practice the coats will be distributed around the circular racks, though the racks are supported in such manner as not to tilt to one side when the distribution of the load becomes unequal as by removing more garments from one side of the rack than from the other.

Owing to the rotatable feature of the racks the garments supported may be readily inspected; while the mounting of these racks on the rod 6 which is in turn movable back and forth in the cabinet on the trolley supports described, permits the racks to be pulled out to the front of the case to better display the goods. Obviously as many racks may be placed on one rod 6 as desired in any special case. In some cases, for example, in supporting rain coats, overcoats or other long garments, only one rack may be used on a rod. It should also be understood that I do not confine my invention to the specific way of supporting the rod 6, which I have above described. Several other ways of doing this, any of which I may employ, are shown in Figs. 12 to 17 inclusive.

In the form shown in Figs. 12 to 15, the upper and lower trolleys are alike and consist each of a pair of flanged rollers 47 and 48 mounted in a bracket 49, made fast in any suitable way to the end of the rod 6. The tracks for these trolleys consist respectively of I beams 50 and 51, one made fast to the top of the cabinet and the other fast to the cabinet floor.

In the arrangement shown in Figs. 13 and 16, the upper end of the rod 6 carries merely a horizontal roller 52 journaled thereon, and adapted to travel between two guide rails 53 and 54 supported in any suitable manner in the upper portion of the cabinet. The lower end of the rod 6 is made fast to a trolley embodying features similar to the one described in U. S. Patent No. 830,813, granted to me

September 11, 1906. This trolley consists of a U-shaped frame 55 in which is mounted two pairs of flanged rollers 56, 57; the rollers of each pair being located one above the other and the pairs of rollers spaced apart, the upper rollers engaging the top of an I-beam 58 and the lower rollers beneath the bottom of the I-beam, the said I-beam being made fast in any suitable manner near the bottom of the cabinet.

In Figs. 14 and 17, I have shown the trolley at the upper end of the rod 6 as consisting of a guide plate 59 made fast to the end of said rod, said plate being provided with four rollers 60 extending horizontally from each side of said plate and rotatable respectively on spindles 61 made fast to said plate. The plate 59 travels between two guide rails 62 and 63 which pass respectively between pairs of rollers 60 on the said guide plate, thereby limiting the rocking of the rod 6 longitudinally of said guide rails. On the bottom of the rod 6, in this case, is journaled a roller 64 which travels between the inner faces of two guide rails 65 made fast to the bottom of the cabinet.

My present invention contemplates further the combining with a supporting rack such as described, or other traveling rack, of mechanism for automatically operating thereby the door or doors of the cabinet to cause them to travel back into the cabinet or otherwise get them out of the way when the supporting rack is pulled out, and to cause the doors to travel in the opposite direction when the said rack is pushed towards the rear of the cabinet. I accomplish this result in one way by the arrangement shown in the accompanying drawings, wherein I provide the cabinet with a pair of doors 66 and 67 which are hinged respectively as at 68 and 69 to two supporting frames 70 and 71. These frames are provided top and bottom with small grooved rollers 72 which engage and run on tracks 73 at the top of the cabinet and tracks 74 at the bottom of the cabinet. These tracks are located a sufficient distance away from the sides of the cabinet to form a space 75 to permit the doors to travel in when opened wide and pushed back as shown in Fig. 7.

For the purpose of counterbalancing the weight of the doors, I attach to each of the frames 70 and 71 a weight 77 on the opposite side of the frames from the doors. These weights may consist each as in the case shown of a flat iron plate mounted between brackets 78 and 79. By counterbalancing the weight of the door in this manner all of the weight is brought upon the lower rollers 72, of the door supporting frames and this greatly reduces any tendency of the rollers to bind and prevent easy action in pushing the doors in or pulling them out of the cabinet.

For the purpose of automatically pulling the doors 66 and 67 back into the cabinet when the garment rack is drawn to the front of the cabinet, and imparting travel to them in the opposite direction when the garment rack is pushed into the cabinet, I make fast to the respective door supporting frames 70 and 71, toothed racks 80 and 81 which engage respectively with pinions 82 and 83 mounted for rotation on brackets 84 and 85 made fast to the cabinet floor. Also meshing with said pinions 82 and 83 are two toothed racks 86 and 87 respectively, which are rigidly supported by means of bracket arms 88 and 89, extending outwards from a plate 76 resting on the lower trolley and made fast thereto by means of bolts $76^1$ passing through lugs $76^2$ formed on the trolley frame 26 for that purpose. It will therefore be readily seen from Fig. 2, that when the doors 66 and 67 are opened outward so as to be in line with the spaces 75 at the sides of the cabinet and the garment supporting racks are pulled out, this forward motion will transmit through the rack and pinion mechanism described, motion to said doors to pull them back into the spaces 75, thus getting them out of the way. In a similar manner, when the rod 6 and garment supporting racks are pushed back into the cabinet, the doors will travel outward automatically.

It will of course be understood that the rack and pinion arrangement shown is but one of the many ways in which the desired motion may be transmitted from the garment rack to the doors, and I do not wish to be understood as confining my invention to any specific mechanism for accomplishing this result.

In Figs. 18 to 23 inclusive I have shown a modified form of my invention wherein 90 represents a show case or cabinet of any desired construction; 91 and 92 sockets made fast to the top and bottom respectively of said cabinet, and 93 a rod mounted at its ends in said sockets and held from rotation by the set screws 94 and 95. On this rod I mount one or more supporting racks 96, consisting each of a plurality of arms 97 radiating from a plate 98 to which they are made fast in any suitable way. The plate 98 may be of the same construction as plate 31 (Fig. 3) and is mounted between ball bearings carried by plates 99 and 100 corresponding to the plates 39 and 40 of Fig. 3, the ball bearings in each case being identical.

On a corresponding edge of each of the arms 97, I provide a series of notches 101, 102, 103 and 104; while at correspondingly opposite points on opposite edges of the same arms I provide a series of notches 105, 106, 107 and 108, the center notches 106 and 107 being located in a portion 109 of the arm which extends beyond the line of the notches 105 and 108, the object of which will hereinafter more fully appear. Adapted to rest in

these notches, depending upon which edge of the arms is turned up, are a series of rings 110, 111, 112, and 113 preferably of some light metal. When the rings 110—113 rest in the notches 101—104, as shown in Figs. 19 and 21, the arrangement is especially adapted for supporting articles with flat surfaces, such for example as hat boxes, flat brimmed hats and the like. When, however, the arms are reversed as shown in Fig. 20, the notches 106 and 107, owing to the raised portion 109 of the arm, will be elevated above the line of the notches 105 and 108, so that the rings 110—113 when laid in the notches 105—108 will occupy the relative positions shown. This arrangement of the rings is especially adapted for supporting derby hats which are placed on the rings as shown. (See Fig. 20.) In this case the hats are supported normally entirely by the center rings 111 and 112, but the rings 110 and 113 act to catch the hats if accidentally knocked forward or backwards and thereby prevent the same from falling off the rack. It will therefore be seen that the arms 97 are reversible for use with the same set of rings 110—113 whether used with the flat edge uppermost as in Figs. 19 and 21 or with the raised portion 109 uppermost as shown in Fig. 20.

A further modification of this form of my invention consists in replacing the rings 110—113 by glass or other supporting plates 114 and 115 which may be in the form of two half circular disks or other desired shape. When the rings 110—113 are replaced by the glass or other plates the arms 97 having notches therein as described may be replaced by arms 116 having each plane edges and a small upward extension or lug 117 at its outer end to hold the plates 114 and 115 in place. The rack 96 and modifications described are not confined to use alone with the form of rod support and cabinet shown in Fig. 18, for these racks may be interchangeable with the racks 27.

Having thus described my invention, what I claim is:—

1. In a device of the character described, the combination with a rod, of a trolley secured to each end of said rod, guide rails for the respective trolleys, means to support said guide rails, bearing plates mounted on said rod, a plate interposed between said bearing plates and loosely encircling said rod, a supporting frame secured to and supported by the said central plate, and rolling bearings between the said central plate and the said plates between which it is interposed.

2. The combination with a cabinet, of a pair of guide rails mounted therein in the upper portion thereof, said guide rails being separated by a space extending longitudinally thereof; a trolley comprising a frame, a roller mounted therein to run in the said space between said guide rails, and rollers on opposite sides of said rollers adapted to run beneath said guide rails; a track in the lower portion of said cabinet beneath the said space separating said guide rails; a trolley adapted to run on said track, said trolley comprising a frame and two peripherally grooved rollers journaled therein and adapted to run on said track; a rod secured to and connecting said trolleys and vertically disposed in said cabinet; a supporting rack comprising a frame encircling said rod, and means to mount said frame for rotation on said rod as an axis.

3. The combination with a cabinet provided with a movable door, of a goods supporting rack mounted to travel in said cabinet, and operative connection between the said door and said rack whereby the said travel of said rack automatically moves said door.

4. The combination with a cabinet having hinged doors adapted to swing outward and then disappear into said cabinet, of a goods-supporting rack mounted to travel back and forth in said cabinet, an operative connection between said traveling rack and said door to cause said door to travel back into the cabinet when the said rack travels forward, and forward when said rack travels backward.

5. In a device of the character described, a goods supporting rack comprising a plurality of radiating arms each having an elevated ring supporting portion and a ring supporting portion below the level of said elevated portion, rings of different diameters supported by said elevated portion in a given horizontal plane, a ring of smaller diameter than said rings and a ring of larger diameter than the first mentioned rings supported on the said ring supporting portion of said arms below the level of and surrounding the axis of the first mentioned rings, substantially as described.

6. A display rack, comprising a rotatable support; a plurality of arms radiating from said support and mounted thereon; a pair of supporting rings of different diameters mounted on said arms in substantially the same horizontal plane; a second pair of supporting rings, both being of smaller diameter than the larger of the first mentioned pair of rings, but of larger diameter than the smaller of the first mentioned pair of rings, said arms being provided with an extension for supporting the second mentioned pair of rings in a horizontal plane above the first pair of rings.

7. A display rack, comprising a rotatable support; a plurality of arms radiating from said support and mounted thereon; a pair of supporting rings of different diameters mounted on said arms in substantially the same horizontal plane; a second pair of supporting rings, both being of smaller diameter than the larger of the first mentioned pair of rings, but of a larger diameter than the

smaller of the first mentioned pair of rings, said arms being adjustable to support all of said rings in the same plane or the second mentioned pair of rings in a horizontal plane above the first mentioned pair of rings.

8. A display rack for hats, comprising an annular support upon which alone the hats are adapted to rest normally, and means extending around the axis of said support and located in a horizontal plane beneath the same both inside of said support and outside thereof to limit the movement of the hats crosswise of said support.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES MILLER WALKER.

Witnesses:
JOHN A. MURPHY,
CHARLES LOWELL HOWARD.