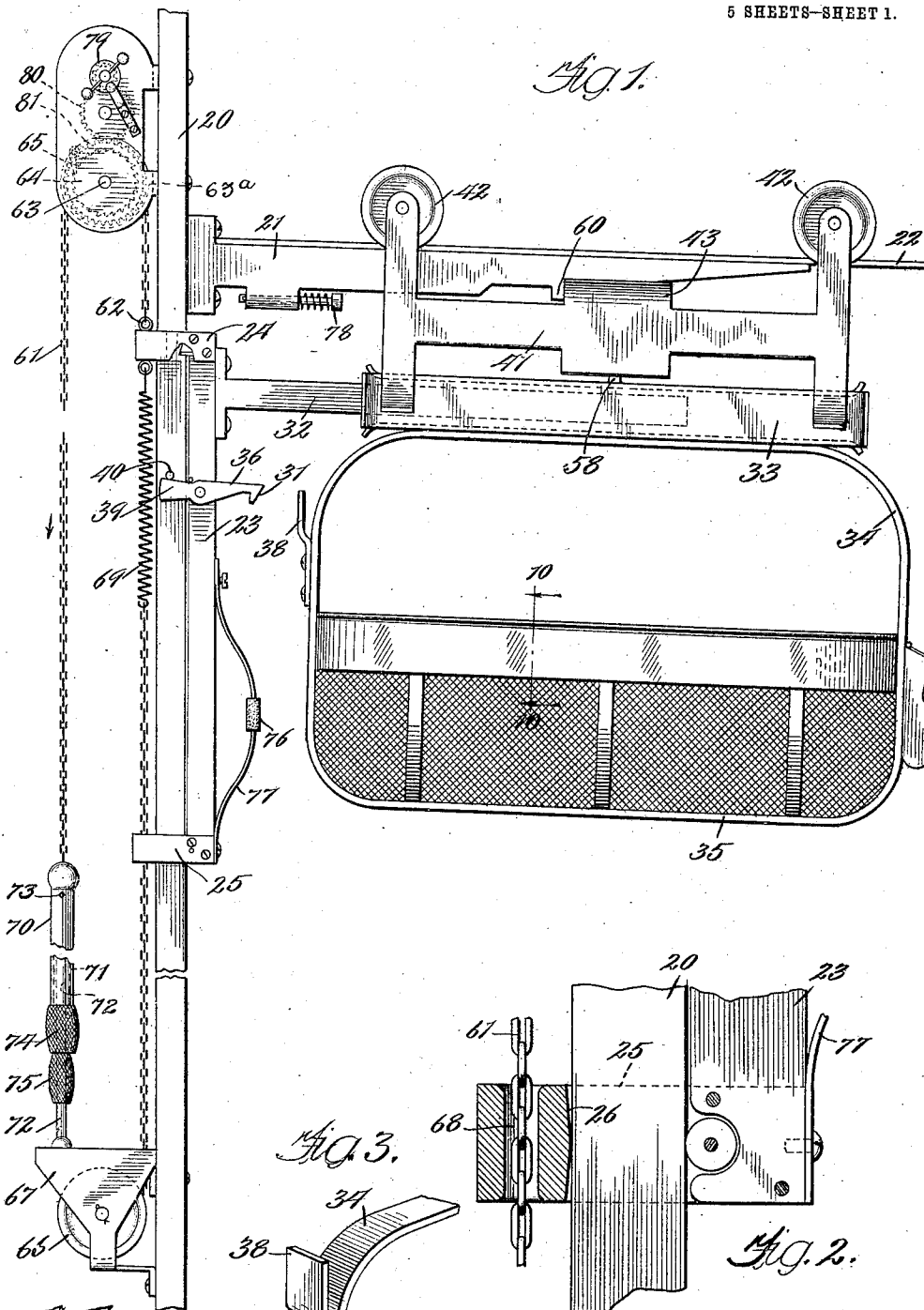


J. P. GATELY.  
STORE SERVICE APPARATUS.  
APPLICATION FILED JAN. 2, 1909.

986,705.

Patented Mar. 14, 1911.

5 SHEETS—SHEET 1.



Witnesses:  
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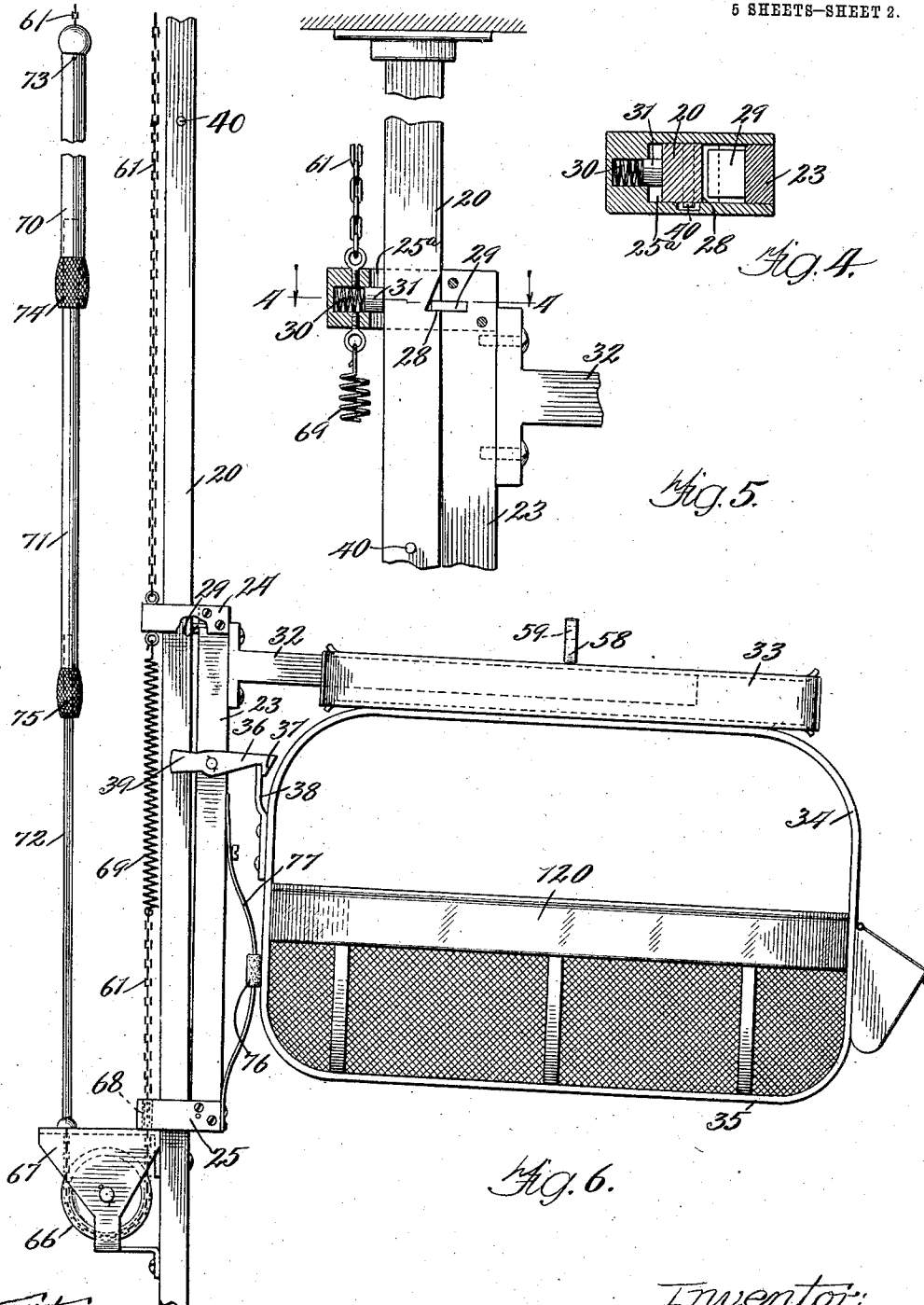
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5 SHEETS—SHEET 2.



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5 SHEETS—SHEET 3.

Fig. 7.

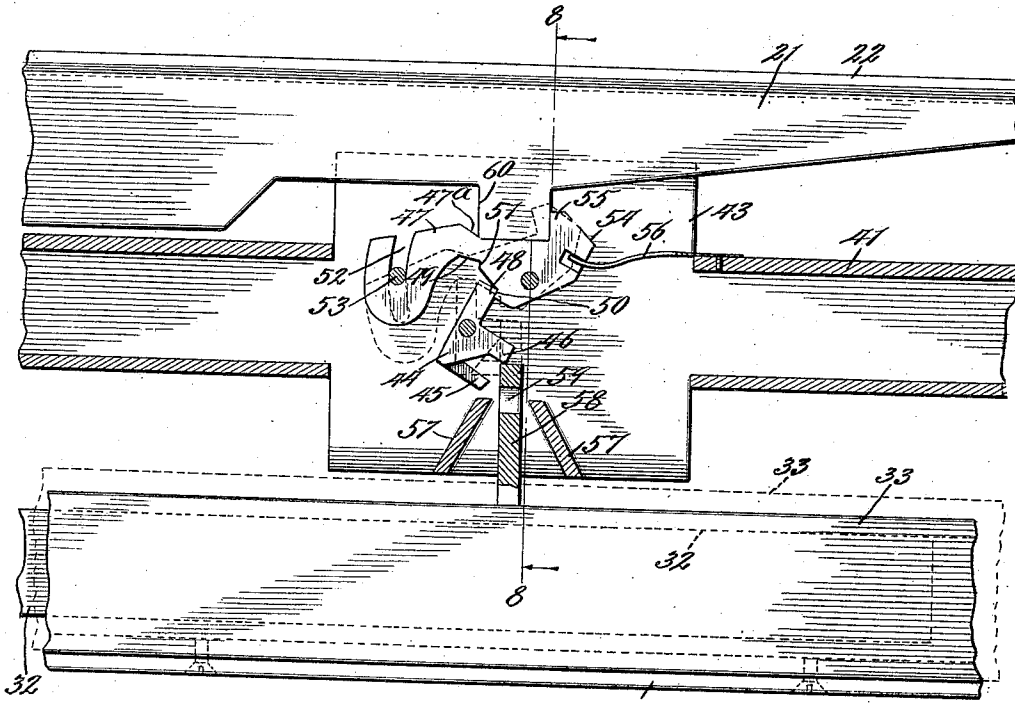


Fig. 8.

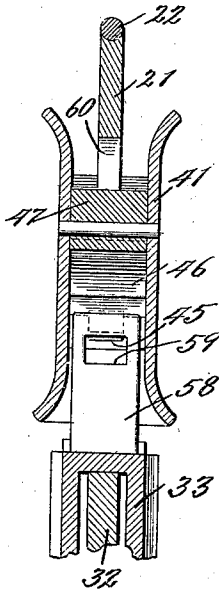


Fig. 9.

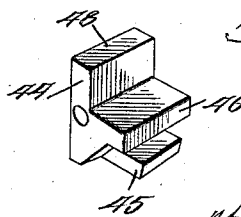
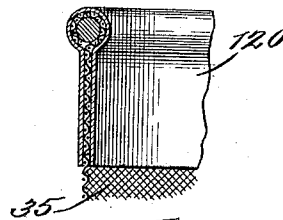


Fig. 10.



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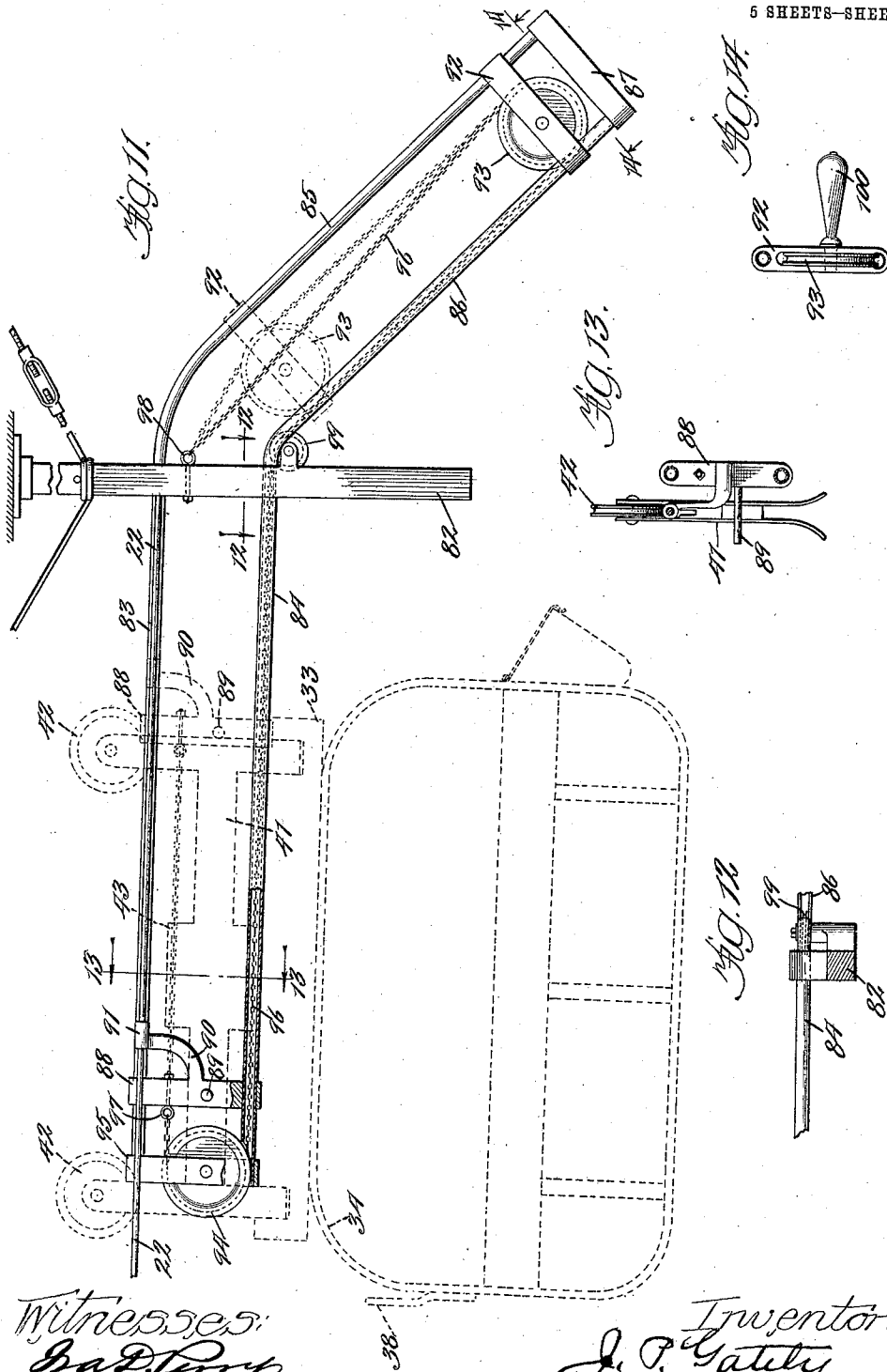
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6 SHEETS—SHEET 4.



Witnesses:  
B. D. Perry  
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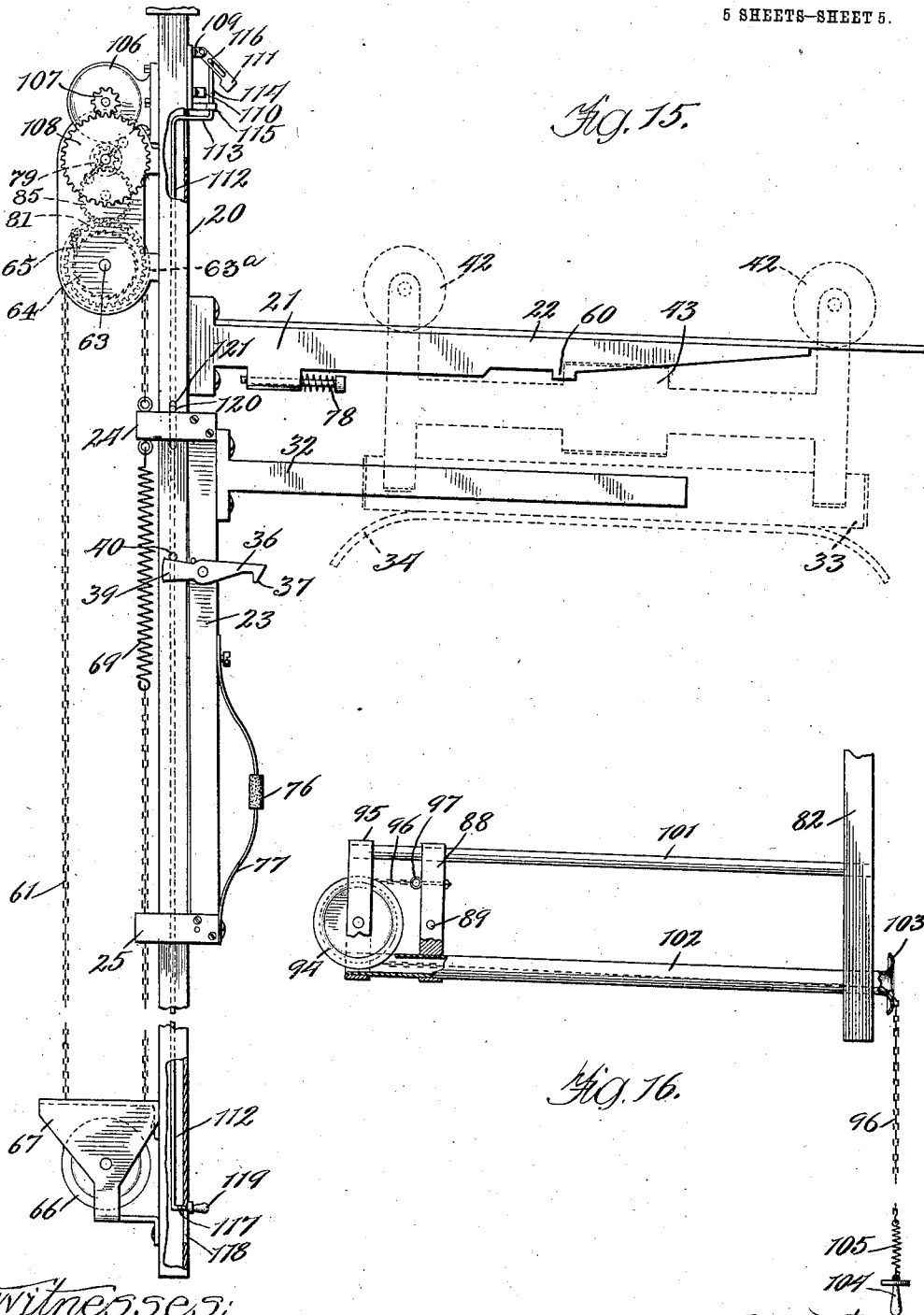
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5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

JOHN P. GATELY, OF CHICAGO, ILLINOIS, ASSIGNOR TO JOHN A. KELLY, OF CHICAGO, ILLINOIS.

## STORE-SERVICE APPARATUS.

986,705.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed January 2, 1909. Serial No. 470,497.

*To all whom it may concern:*

Be it known that I, JOHN P. GATELY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

This invention relates to improvements in store service apparatus and more particularly to that type of apparatus wherein there is employed a carrier which is adapted to travel upon a suspension track or wire for conveying articles from one part of the store to another part, and the primary object of the invention is to provide improved means for raising and lowering the carrier to and from the supporting track or wire without shifting the track or wire or any portion thereof.

A further object is to provide improved means for automatically releasing the receptacle for the article from the carrier, and for automatically lowering the receptacle when so released.

A further object is to provide improved means for locking or securing the receptacle to the carrier.

A further object is to provide improved means for arresting the movement of the carrier at one end of the track or wire, and improved means for starting the carrier toward the other end of the track or station.

A further object is to provide improved means for automatically raising the receptacle for the article to a position to be connected to the carrier.

A further object is to provide an improved device of this character which will be simple, durable and cheap in construction, and effective, efficient and automatic in action.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings, illustrating the embodiment of the invention, and in which—

Figure 1 is an elevation of one terminal of this improved apparatus showing the car-

rier and article receptacle adjacent the terminal. Fig. 2 is an enlarged detail view partly in section showing one end of the support for moving the article receptacle toward and away from the carrier. Fig. 3 is an enlarged detail perspective view of the projection on the receptacle by means of which the receptacle is locked to the support. Fig. 4 is an enlarged detail sectional view on line 4—4 of Fig. 5. Fig. 5 is a detail elevation partly in section of the upper extremity of the support for moving the article receptacle toward and away from the carrier. Fig. 6 is a detail elevation similar to Fig. 1 showing the article receptacle locked to the support and in a lowered position. Fig. 7 is an enlarged detail sectional view showing the locking mechanism for securing the receptacle to the carrier. Fig. 8 is an enlarged sectional view on line 8—8 of Fig. 7. Fig. 9 is a detail perspective view of the catch for locking the receptacle to the carrier. Fig. 10 is an enlarged detail sectional view on line 10—10 in Fig. 1. Fig. 11 is an elevation of another terminal of the apparatus. Fig. 12 is a detail sectional view on line 12—12 of Fig. 11. Fig. 13 is a detail sectional view on line 13—13 of Fig. 11. Fig. 14 is a detail sectional view on line 14—14 of Fig. 11. Fig. 15 is a modified form of one terminal of the apparatus. Fig. 16 is a modified form of the terminal shown in Fig. 11.

Referring more particularly to the drawings, the numeral 20 designates a guide or hanger which may be constructed of any suitable material and of any desired configuration, but is preferably angular in cross section and is suspended from any suitable overhead support, such as the ceiling. The hanger may be of any desired length convenient for use and preferably terminates at a point adjacent the counter. Secured to the hanger at any convenient point is a bracket 21 to which one extremity of the supporting wire or track 22 is secured.

A support 23 is slidably mounted on the guide or hanger 20 in any desired or suitable manner, preferably by means of clips 24, 25, one located adjacent the top and the other adjacent the bottom of the support 23. The clip 24 projects beyond the face

of the hanger 20 opposite to that against which the support 23 moves, to form a space 25<sup>a</sup> between the clip and the hanger, and the clip 25 at the opposite end of the support is provided with a rounded face 26 adapted to stand in close proximity to the hanger 20 and a suitable anti-friction roller 27 is rotatably mounted in the extremity of the support 23 to engage the face of the hanger 20 opposite to the face 26 of the clip, so that the upper extremity of the support 23 may be moved toward or away from the face of the hanger 20, the rounded face 26 permitting such movement, for a purpose to be hereinafter set forth.

The hanger 20 is provided with a shoulder 28 adjacent the bracket 21 and the support 23 is provided with a projection 29 adapted to engage the shoulder 28 when the support is raised and to hold the support in its elevated position until the latter is rocked in the manner already set forth to move the projection 29 out of engagement with the shoulder 28. Any suitable means may be provided for normally holding the upper extremity of the support 23 in engagement with the face of the hanger 20 to cause the projection 29 to engage the shoulder 28 and for that purpose there may be provided an elastic member 30, such as a coil spring or the like, which is seated within the clip 25, and a member 31 is also provided which is so positioned that one face thereof will be engaged by the elastic member 30 to force the opposite face into engagement with the hanger 20 and thereby lock the support in its elevated position. The tension of the elastic member 30 is such that when a strain is exerted upon the upper extremity of the support 23 to move the latter away from the hanger 20, it will yield to permit the projection 29 to disengage the shoulder 28, but when the strain is relieved, it will draw the projection 29 into a position to engage the shoulder.

The support 23 is provided with an arm 32 which is secured thereto by one extremity and projects laterally from the support in a direction substantially parallel with the bracket 21 and is adapted to project into a tube 33 supported by the frame 34 of the receptacle 35 into which latter the articles are placed.

Pivotally mounted upon the support 23 is a catch 36 which is provided with a hook-shaped extremity 37 adapted to engage over a projection 38 on the frame 34 of the receptacle 35 to lock the receptacle to the support 23. One extremity of the catch 36 projects beyond the pivot as at 39 and is adapted to engage a projection 40 on the guide or hanger when the support 23 is raised, to rock the catch and release the receptacle.

A carrier, designated generally by the reference numeral 41, is provided with rollers 42 which rest and move upon the track or wire 22. This carrier 41 is preferably in the form of a truck and comprises spaced side members, as shown more clearly in Fig. 8. The carrier is supported by the rollers 42 so as to project or stand below the track or wire 22 and is provided with an enlarged portion 43 preferably located adjacent the center thereof or midway between the rollers 42.

Pivotally mounted upon the carrier 41, between the enlarged portion 43, is a catch 44 which is provided with spaced lateral projections 45, 46, and a locking member 47 is also pivotally supported within the enlarged portion of the carrier and above the end 48 of the catch 44. The locking member is cut-away as at 49 on the lower edge thereof to form two shoulders 50, 51, and is so pivoted that the end 48 of the catch 44 will project into the cut-away portion 49 so that the shoulders 50 and 51 will engage the end 48 of the catch to lock the same in an operative or inoperative position. One extremity of the member 47 is provided with a slot 52 into which a projection 53 extends to form a guide for the member when it moves about its pivot. The other extremity 54 of the member 47 on the other side of the pivot is provided with a projection 55 and an elastic member 56 such as a spring or the like, is secured by one extremity to the carrier 41 and the other extremity has engagement with the member 47 and tends normally to raise the adjacent end so that the shoulder 51 will engage the end 48 of the catch 44 when the latter is in an upright position, as shown in dotted lines in Fig. 7, to lock the latter against movement. Suitable guides 57 are provided within the enlarged portion 43 of the carrier, and are adapted to guide a projection 58 on the tubular member 33 into a position so that the projection 45 on the catch 44 will enter an aperture 59 in the projection to lock the receptacle to the carrier. The bracket 29 is provided with a depending projection 60 which is adapted to engage and rock the member 47.

The support 23 is adapted to be moved upon the guide or hanger 20 toward and away from the bracket 21 by means of a flexible member 61, preferably in the form of a chain, one extremity of which is secured as at 62 to the clip 24 from which point the chain passes over a suitable sprocket 63<sup>a</sup> having an axle 63 which is journaled in suitable bearings adjacent the top of the guide or hanger. A ratchet wheel 64 is secured for rotation with the shaft 63 and a locking dog or pawl 65 is pivotally supported by a gear 81 loosely mounted on

the shaft 63 and is adapted to engage the ratchet wheel 64 to lock the gear 81 for rotation with the shaft 63, when the sprocket wheel 63<sup>a</sup> is moved in the direction to lower the basket but when the sprocket wheel is moved in the opposite direction during the raising of the basket, the dog will slip over the teeth of the ratchet wheel. The specific construction, however, of the mechanism just described forms no part of the present invention but may be of any ordinary and well known type; suffice it to say that the mechanism is such that when the basket is lowered, the governor will be locked for operation by the pulley so as to retard the descent of the basket, but when the basket is raised, the pulley may rotate freely in the opposite direction so as not to affect the governor. The chain 61 also passes over a pulley 66 journaled in suitable bearings 67 adjacent the lower extremity of the guide or hanger 20 and passes through an opening 68 (see Fig. 2) in the clip 25. The free extremity of the chain is preferably connected to an elastic member 69 which latter is secured to the clip 24 so that the chain 61 together with the elastic member 69, will form an endless flexible member, which is adapted to be moved over the pulleys when one or the other runs thereof is moved by the hands of the operator to raise or lower the support 23 together with the arm 32 thereon.

A suitable handle may be provided for moving the chain 61 and preferably comprises a plurality of telescoping sections 70, 71, 72, through which the chain passes. One of the sections, preferably the section 72, is secured to a fixed support, preferably the support 67 of the pulley 66 and another section, preferably the section 70, is secured as at 73 to the chain 61 and the sections 70. Two of the sections, preferably the sections 70 and 71, are provided with grip handles 74, 75, by means of which the operator may adjust the sections with respect to each other. When the receptacle 35 is in an elevated position to be connected to the carrier, as shown in Fig. 1, the handle sections will be collapsed with respect to each other, as shown in Fig. 1. When the receptacle is released from the carrier and descends, the handle sections will be extended with respect to each other, as shown in Fig. 6.

When the receptacle is connected to the carrier 41 the catch 44 and the locking member 47 will assume their normal position during the travel of the carrier upon the wire or track 22, as shown in dotted lines in Fig. 7, that is, with the projection 45 entering the aperture 59 in the extension 58 of the tube 33 and this projection 45 is so located with respect to the arm 32 on the

support 23, that the tube 33 will be raised to the position shown in dotted lines in Fig. 7 out of engagement with the arm 32. A projection 60 on the bracket 21 is arranged within the path of movement of the projection 55 on the member 47 so that when the carrier 41, with the receptacle 35 connected thereto, is running upon the track or wire 22, the projection 55 on the locking member 47 will engage the depending projection 60 on the bracket 21. This projection 60 is located a sufficient distance from the support 23 to permit the carrier to travel a short distance after the projection 55 has engaged the same. This movement will cause the locking member 47 to be rocked about its pivot from the position shown in dotted lines to that shown in full lines in Fig. 7 to release the catch 44 by moving the shoulder 51 out of engagement therewith. When the catch is thus released, the weight of the receptacle 35, together with the tube 33, will rock the catch 44 about its pivot to move the extremity 48 thereof into engagement with the shoulder 50 on the member 47, which shoulder will move into the path of movement of the extremity 48 of the catch when the catch is released from its locked position. Thus released, the receptacle and tube will drop until the tube rests upon the arm 32 of the support 23. The weight thus applied to the arm 32 will rock the support 23 in the manner already set forth to move the projection 29 out of engagement with the shoulder 28 on the guide or hanger 20, thereby releasing the support and when thus released, the receptacle 35 together with the support 23 will gravitate toward the bottom of the hanger or guide 22, thereby automatically lowering the receptacle into a position convenient for the user. After the carrier has moved a sufficient distance to trip the locking member 47, the projection 38 on the frame 34 of the receptacle 35 will pass under the hook 37 of the catch 36 to lock the receptacle against accidental displacement from the arm 32, and when the projection 38 passes under the hook of the catch, the receptacle will engage a bumper 76 on an elastic member 77 to compress the latter to exert a tension thereon, which tension serves as a means for assisting in starting the receptacle to the other terminal of the apparatus when it is again connected to the carrier 41 and the latter released in a manner to be set forth. A bumper or cushion 78 may be also provided on the bracket 21 and arranged in the path of the movement of the carrier 41 to overcome the jar which would be caused by suddenly arresting the movement of the carrier. Any suitable means may be provided for arresting or retarding the descent of the receptacle and



for this purpose there may be provided a suitable governor 79 which may be of any desired construction, such as the fly ball type, and which governor may be connected by means of the gear 80 to the gear 81 which latter is mounted to move freely in one direction on the shaft 63, and is locked to the shaft during its movement in the opposite direction by means of the dog 65.

When the receptacle 35 has been released from the carrier and is in a lowered position, as shown in Fig. 6, and the article placed therein, the receptacle may be raised to the carrier 41 by grasping either of the handles 74, 75, on the sections 70, 71, and drawing downwardly upon the same, which movement will tend to raise the support 23 to a position to permit the extension 58 on the tube 33 to pass between the guides 57 on the carrier so that the extremity of the extension will engage the projection 46 on the catch 44 to rock the latter and cause the projection 45 to enter the aperture 59. Before the extremity of the extension 58 engages the projection 46 on the catch 44, the extremity 39 of the catch 36 on the support 23 will engage the projection 40 on the guide or hanger 20 to release the receptacle and when thus released the tension on the elastic member 77 will move the receptacle 35 forward slightly on the arm 32 so as to move the carrier 41 a sufficient distance to permit the elastic member 56 to rock the locking member 47 to cause the shoulder 51 to engage the extremity 48 of the catch when the latter is moved into the position shown in dotted lines in Fig. 7, by the engagement of the extension 58 with the projection 46 thereon, so that when the receptacle is thus released and locked to the carrier, the latter will move upon the track or wire 22 toward the other terminal of the apparatus. The track or wire 22 is arranged in a plane normally inclining from the hanger 20 toward the hanger 82 arranged at the opposite end of the apparatus, as shown in Fig. 11. When the arm 32 is relieved of the weight of the receptacle 35, the elastic member 30 within the clip 25 will move the projection 29 into a position to engage the shoulder 28 and lock the support in an elevated position to receive the carrier when the latter is returned from the opposite terminal. Arranged at the said opposite terminal or the other end of the apparatus are spaced guides 83, 84, one of which, preferably the guide 84, is tubular in construction and the extremities 85, 86, of these guides beyond the hanger 82 are preferably deflected in an inclined plane as shown in Fig. 11, and their extremities are connected by means of a suitable connection 87. Slidably mounted upon the guides 83, 84, is a slide 88, which is provided with a projection 89 arranged within the path of movement of one of the hangers of the carrier 41 and the slide 88 is provided with an arm 90 having a tubular portion 91 which surrounds the track or wire 22. A second slide 92 is arranged between and adapted to move upon the inclined extremities 85, 86, of the guides 83, 84 and a pulley 93 is journaled to the slide. A similar pulley 94 is journaled to a fixed support 95 at the forward extremity of the guides 83, 84 and in advance of the slide 88. A suitable flexible member 96, such as a chain or the like, is secured by one extremity as at 97 to the slide 88 and passes over the pulley 94 through the tubular guide 85 and through the guide 86 which may also be tubular in construction, through a suitable opening in the extremity of the guide 86, over the pulley 93, and is secured by its free extremity as at 98 to the hanger 82. The slide 92 is adapted to freely move upon the guides 85, 86, and the slide 88 is arranged a sufficient distance from the hanger 82 so that when the carrier advances upon the track or wire 22 and the hanger engages the projection 89, the momentum of the carrier as it engages the slide 88 will move the same toward the hanger 82 to the position shown in dotted lines in Fig. 11. The momentum of the carrier is arrested by means of the slide 92 which latter may be of any desired weight and is adapted to be drawn toward the hanger 82 to the position shown in dotted lines in Fig. 11 when the slide 88 is moved toward the hanger. If desired, a suitable pulley 99 may be provided for guiding the chain 96 as it passes into the guide 86, as shown in Figs. 11 and 12. The slide 92 engages the guides 85, 86, with sufficient friction to check or arrest the movement of the carrier and will not move the carrier away from the guides 83, 84, to send the carrier toward the opposite hanger 20 until some force is applied thereto. The carrier may be returned to the hanger 20 in any desired manner but preferably by means of a sudden movement of the slide 92 away from the hanger 82 and downwardly upon the guides 85, 86. For this purpose there may be provided a suitable handle 100 which is adapted to be grasped by the operator when the slide 92 is in the position shown in dotted lines in Fig. 11. By grasping the handle 100 and moving the slide 92 suddenly toward the free extremities of the guides 85, 86, the slide 88 will be moved from the position shown in dotted lines toward the entrance end of the guides 83, 84, and this sudden movement will move the carrier 41 onto the track or wire 22 with sufficient force to send the same up the slight incline of the track toward the hanger 20 and when the carrier reaches the hanger 20 the receptacle

will be automatically released from the carrier and lowered in the manner already described.

In the exemplification of the invention shown in Fig. 16, the guides 101, 102 may be provided in place of the guides 83, 84, and the slide 88 will move upon these guides in the same manner when the carrier engages the projection 89 thereon; but in this exemplification of the invention, the tubular guide 102 is preferably provided with an enlarged or flared extremity 103 and the flexible member 96 which passes over the pulley 94 and through the tubular guide 102 may be provided with a handle 104 and also an elastic section 105 adjacent the handle. The flexible member 96 is of such a length that when the slide 88 is moved on the guides toward the hanger 82, the handle will engage the extremity 103 of the tubular member to arrest the advancing movement of the carrier and the elastic section 105 will yield to prevent injury to the parts from being jarred by the sudden engagement or stopping of the carrier. When it is desired to start the carrier toward the other end of the apparatus with this modified form of the invention, the operator simply grasps the handle 104 and draws the same suddenly away from the hanger 82 to move the slide 88 rapidly toward the forward end of the guides which will send the carrier up the inclined track or wire to the opposite end of the apparatus.

In the modification of the invention shown in Fig. 15 there is shown improved means for automatically raising the support 23 to a position to connect the receptacle to the carrier and for this purpose there is provided a motor 106 of any desired construction, which is connected by means of a suitable gear 107 to a gear 108 which in turn is connected to a gear preferably on the same shaft with the gear 80. The motor may be provided with energy from any suitable source, the conductors being connected to contacts 109, 110, and a switch 111 may be provided for connecting the contacts. In this exemplification of the invention the hanger 20 is preferably tubular and arranged within the hanger is a bar or rod 112, one end of which is deflected as at 113 and the extremity 114 thereof passes through a suitable guide 115 and has a loose connection as at 116 with the switch 111. The other extremity of the bar or rod 112 is deflected as at 117 at a point adjacent the lower end of the hanger and projects through a suitable opening 118 in the hanger and is provided with a handle 119 arranged at a convenient position for the operator so that by depressing the handle 119 the switch 111 may be shifted to make or break the circuit through the motor. The bar or rod 112 is

provided with a projection 120 which extends through a suitable slot or opening 121 in the hanger and this projection 120 is arranged within the path of the upward movement of the clip 24. When the carrier is moving into the position shown in dotted lines in Fig. 15 to release the receptacle 35, the receptacle together with the support 23, will be automatically lowered in the manner already set forth. When it is desired to elevate the receptacle 35 to again connect the same to the carrier, all that is necessary is to depress the handle 119 which will move the bar or rod 112 to cause the switch 111 to connect the contacts 109, 110 and thereby start the motor. As the motor operates it will raise the receptacle. During the upward movement of the support 23, the clip 24 will engage the projection 120 on the bar or rod 112 and raise the same to automatically shift the switch 111 to stop the motor. Obviously the projection 120 will be so arranged that the switch will be shifted at the time when the receptacle is in a proper position to be connected to the carrier.

In order to prevent damage to the articles when being placed in or removed from the receptacle 35, a suitable guard or shield 122 in the form of fabric or the like, may be secured to the receptacle 35 to project over the edge thereof, as shown more clearly in detail in Fig. 10 of the drawings.

In order to prevent the carrier 41 from gravitating on the inclined track or way 22 after the article receptacle or holder has been detached therefrom, and to hold the carrier in position to receive the holder, the locking member 47 is provided with a shoulder 47<sup>a</sup> which is adapted to cooperate with the projection 60 on the track 21 so that when the projection 55 engages the projection 60 to rock the member 47 into the position shown in full lines in Fig. 7, the shoulder 47<sup>a</sup> will move into a position behind the projection 60. The elastic member 58 will serve to disengage the shoulder 47<sup>a</sup> at the proper time to permit the carrier to travel upon the track.

In order that the invention might be fully understood, the details of the foregoing embodiments thereof have been thus specifically described, but

What is claimed as new is—

1. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, and means for automatically conveying the holder away from the carrier when released therefrom.

2. In a store service apparatus, the combi-

nation of a stationary track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, and means for automatically conveying the holder away from the carrier when released therefrom.

3. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, and means controlled by the weight of the holder for automatically conveying the holder away from the carrier when released therefrom.

4. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, a shiftable support, means for locking the support in position to receive the holder when released from the carrier, and means whereby the weight of the holder will automatically release the support.

5. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, a shiftable support, means for locking the support in position to receive the holder when released from the carrier, and means whereby the weight of the holder will automatically release the support and shift the same to convey the holder away from the track or way.

6. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically releasing the holder from the carrier when the carrier has arrived at the end of its travel on the track, a shiftable support, means for locking the support in position to receive the holder when released from the carrier, means whereby the weight of the holder upon the support will automatically release and lower the same to convey the holder away from the track or way, and means for retarding such movement of the support.

7. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder de-

tachably connected to and movable with the carrier, a shiftable support for receiving the holder, means for locking the support in position to receive the holder, means for automatically releasing the holder when the carrier reaches the said support, means whereby the weight of the holder will automatically release the support and shift the latter to move the holder away from the carrier, and means for shifting the support to move the holder to the carrier.

8. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a shiftable support for receiving the holder from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder from the carrier when the carrier arrives at the end of its travel on the track, means for securing the holder to the support, and means whereby the weight of the holder will automatically release and shift the support.

9. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a shiftable support for receiving the holder from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder from the carrier when the carrier arrives at the end of its travel on the track, means for securing the holder to the support, means whereby the weight of the holder will automatically release and shift the support, and governor mechanism for controlling such movement of the support.

10. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a shiftable support for receiving the holder from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder from the carrier when the holder arrives at the end of its travel on the track, means for securing the holder to the support, means whereby the weight of the holder will automatically release and shift the support, means for shifting the support to move the holder to the carrier, and means for automatically releasing the holder from the support.

11. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a support for receiving the holder, means for releasing the holder from the carrier, means whereby the weight of said holder will automatically release and

shift the support to move the holder away from the carrier, and telescoping members operatively connected to the support for shifting the support to move the holder toward the carrier.

12. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a support for receiving the holder, means for releasing the holder from the carrier, means whereby the weight of said holder will automatically release and shift the support to move the holder away from the carrier, an endless flexible member operatively connected to the support for shifting the support toward the carrier, and a handle comprising telescoping sections for moving said endless member.

13. In a store service apparatus, the combination of a stationary track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a support for receiving the holder from the carrier, means for automatically releasing the holder from the carrier when the carrier arrives at the end of its travel on the track, the weight of the holder serving to shift the support to convey the holder away from the carrier, and an endless flexible member operatively connected to the support for moving the support in the opposite direction, said flexible member being provided with an elastic section.

14. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a hanger, a support mounted for bodily movement thereon for receiving the holder from the carrier and for moving the same toward and away from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means whereby the weight of the holder will first automatically release the support and then move the same bodily upon the hanger away from the carrier, and means for moving the support and holder toward the carrier.

15. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a hanger, a support mounted for bodily movement thereon for receiving the holder from the carrier and for moving the same toward and away from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means whereby the

weight of the holder will first automatically release the support and then move the same bodily upon the hanger away from the carrier, and a handle operatively connected to the support for moving the support and holder toward the carrier, said handle comprising telescoping sections.

16. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, a hanger, a support mounted for bodily movement thereon for receiving the holder from the carrier and for moving the same toward and away from the carrier, means for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means whereby the weight of the holder will first automatically release the support and then move the same bodily upon the hanger away from the carrier, means for retarding such movement of the support, and means for moving the support in a direction to position the holder with respect to the carrier.

17. In a store service apparatus, the combination of a track or way, a carrier mounted to move thereon, a holder detachably connected to and movable with the carrier, a hanger, a support bodily movable upon the hanger and adapted to receive the holder from the carrier, interengaging means on the support and hanger for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, and means whereby the weight of the holder upon the support will first shift the same to release the said inter-engaging means and then bodily shift the support on the hanger to move the holder away from the carrier.

18. In a store service apparatus, the combination of a track or way, a carrier mounted to move thereon, a holder detachably connected to and movable with the carrier, a hanger, a support bodily movable upon the hanger and adapted to receive the holder from the carrier, inter-engaging means on the support and hanger for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means whereby the weight of the holder upon the support will first shift the same to release the said inter-engaging means and then bodily shift the support on the hanger to move the holder away from the carrier, and means for moving the support and holder in the opposite direction and toward the carrier.

19. In a store service apparatus, the combination of a track or way, a carrier mount-

ed to move thereon, a holder detachably connected to and movable with the carrier, a hanger, a support bodily movable upon the hanger and adapted to receive the holder  
 5 from the carrier, inter-engaging means on the support and hanger for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means  
 10 whereby the weight of the holder upon the support will first shift the same to release the said inter-engaging means and then bodily shift the support on the hanger to move the holder away from the carrier,  
 15 means for moving the support and holder in the opposite direction and toward the carrier, means for automatically connecting the holder to the carrier, and means for shifting the support when relieved of the  
 20 weight of the holder to permit the support to be secured in position to again receive the holder.

20. In a store service apparatus, the combination of a track or way, a carrier mounted to move thereon, a holder detachably connected to and movable with the carrier, a hanger, a support bodily movable upon the hanger and adapted to receive the holder from the carrier, inter-engaging  
 30 means on the support and hanger for securing the support in position to receive the holder, means for automatically releasing the holder when the latter arrives at the support, means whereby the weight of the holder upon the support will first shift the same to release the said inter-engaging means and then bodily shift the support on the hanger to move the holder away from the carrier, means for securing the holder  
 40 to the support, means for moving the support and holder toward the carrier, means for automatically connecting the holder to the carrier, means for automatically releasing the holder to permit the carrier to move  
 45 the same from the support, and means for shifting the support when relieved of the weight of the holder to permit the support to be secured in position to receive the holder.

50 21. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for moving the carrier  
 55 to a position to receive the holder from the carrier, said carrier being provided with a tubular portion into which the support is adapted to project, and means for automatically releasing the holder from the carrier  
 60 to deliver the holder to the support when the carrier arrives at the support, the weight of the said holder serving to move the support away from the carrier.

22. In a store service apparatus, the com-

65 bination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable in the carrier, means for moving the carrier to a position to receive the holder from the carrier, means for securing the support in position to receive the holder, said carrier being  
 70 provided with a tubular portion into which the support is adapted to project, means for automatically releasing the holder to deliver the same to the support when the  
 75 holder arrives at the support, and means whereby the holder will rock the support to first release the same and then move the support away from the carrier.

23. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for moving the carrier to a position to receive the holder from the carrier, said carrier being provided with a tubular portion into which the support is adapted to project, means for automatically releasing the holder to deliver the same to the support when the holder arrives at the support, means whereby the holder will rock the support to first release the same and then move the support away from the carrier, and means for moving the support and holder in the opposite direction to position the holder to be connected to the carrier.

24. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically detaching the holder from the carrier when the carrier arrives at the end of its travel on the track, means for receiving and automatically moving the holder away from the carrier when detached, and means for moving the holder back to and connecting the same to the carrier.

25. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to and movable with the carrier, means for automatically detaching the holder from the carrier when the carrier arrives at the end of its travel on the track, means for receiving and automatically moving the holder away from the carrier when detached, and means under the control of the operator for moving the holder back to and connecting the same to the carrier.

26. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, means supported adjacent one end of the track or way for arresting the movement of the carrier and projecting into the path of movement of the

carrier to be engaged and moved thereby, and yielding means for normally holding the last said means in a position to be engaged and moved by the carrier, said yielding means also serving to move the carrier in the opposite direction.

27. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, a guide supported adjacent the track or way, a slide mounted to move on the guide, a flexible member connected to the said slide, a counterweight connected to the flexible member for holding the slide under tension, means whereby the carrier will move the slide upon the said guide against the tension of the counterweight to retard and limit the movement of the carrier, and a guide for the counterweight.

28. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, a guide supported adjacent the track, a slide mounted to travel on the guide, a flexible member connected to the slide, a counterweight connected to the flexible member for holding the slide under tension, means whereby the carrier will move the slide upon the said guide against the tension of the counterweight to retard and limit the movement of the carrier, a guide for the counterweight, and means whereby the counterweight may be moved in its guide by the operator for moving the slide rapidly along its guide to cause the carrier to move along the track or way.

29. In a store service apparatus, the combination of a track or way, a carriage guides mounted upon the support, said adjacent one end of the track or way, spaced guides mounted upon the support said guides being substantially parallel with the track or way, spaced guides adjacent the first said guides and deflected at an angle thereto, a member movable upon the horizontal guides, a member movable upon the deflected guides and comprising a counterweight, a pulley at the forward end of the horizontal guides, a flexible member one extremity being secured to the movable member on the horizontal guide, said member passing over the said pulley and around the said counterweight, the free extremity of the flexible member being secured to the said support, and means whereby the carriage will engage the movable member on the horizontal guides to draw upon the flexible member to move the counterweight in its guides to arrest the movement of the carriage.

30. In a store service apparatus, the combination of a track or way, a carriage mounted to travel thereon, a support adjacent one end of the track or way, spaced

guides, mounted upon the support, said guides being substantially parallel with the track or way, spaced guides adjacent the first said guides and deflected at an angle thereto, a member movable upon the horizontal guides, a member movable upon the deflected guides and comprising a counterweight, a pulley at the forward end of the horizontal guides, a flexible member, one extremity being secured to the movable member on the horizontal guide, said member passing over the said pulley and around the said counterweight, the free extremity of the flexible member being secured to the said support, means whereby the carriage will engage the movable member on the horizontal guides to draw upon the flexible member to move the counterweight in its guides to arrest the movement of the carriage, and a handle operatively connected to the counterweight for adjusting the same to force the carrier along the track or way.

31. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally mounted upon the carrier, means operatively related to the said holder and adapted to engage the catch for securing the holder to the carrier, means for locking the catch against movement, and means arranged within the path of movement of the last said means along the track or way for shifting the locking means to release the catch.

32. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally mounted upon the carrier, there being a projection on the said holder, said catch being provided with a projection adapted to be engaged by the projection on the holder for rocking the catch to lock the holder to the carrier, a locking member for the catch, and means arranged within the path of movement of the locking member for automatically tripping the same as the carrier moves on the track to release the said catch.

33. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally mounted upon the carrier, there being a projection on the said holder, said catch being provided with a projection adapted to be engaged by the projection on the holder for rocking the catch to lock the holder to the carrier, a guide for directing the projection on the holder into engagement with the catch, a locking member for the catch, and means arranged within the path of movement of the locking member for automatically tripping the same as the carrier moves on the track to release the said catch.



34. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally supported by the carrier, said catch being provided with a projecting portion, said holder being provided with a projection adapted to engage the projecting portion on the catch to rock the catch to secure the holder to the carrier, a locking member for the catch, means for automatically shifting the said member to lock the catch, and means arranged within the path of movement of a portion of said member during its movement on the track or way to shift the member to release the catch.

35. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally supported by the carrier, said catch being provided with a projecting portion, said holder being provided with a projection adapted to engage the projecting portion on the catch to rock the catch to secure the holder to the carrier, a locking member for the catch, elastic means for automatically shifting the said member to lock the holder to the carrier, and means operatively related to the track or way adapted to be engaged by the locking member as the carrier moves along the track for automatically shifting the member to release the catch to permit the holder to be disengaged from the carrier.

36. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally supported by the carrier, said catch being provided with a projecting portion, said holder being provided with a projection adapted to engage the projecting portion on the catch to rock the catch to secure the holder to the carrier, a locking member for the catch, and elastic means for shifting said member to lock the holder to the carrier, and said track or way being provided with a projecting portion arranged to be engaged by said member during the movement of the member thereon for rocking the member to release the catch to permit the holder to be detached from the carrier.

37. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, a catch pivotally supported by the carrier, said catch being provided with a projecting portion, said holder being also provided with a projection adapted to engage the projection on the catch to rock the latter to secure the holder to the carrier, a member for locking the catch in each of its positions, and means adapted to be engaged by a portion of said member

during the movement of the member on the track or way for automatically adjusting the same to release the catch to disconnect the holder from the carrier.

38. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder separate from the carrier, locking means supported by the carrier for securing the holder thereto, and means arranged within the line of travel of the said locking means along the track adapted to be engaged by the locking means for automatically tripping the latter to release the said holder as the carrier reaches the end of its travel on the track.

39. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to the carrier, a hanger, a support mounted to travel upon the hanger and adapted to receive the said holder from the carrier, means for automatically releasing the holder and delivering the same to the support when the holder arrives at the support, means whereby the weight of the said holder will move the support away from the carrier, means under the control of the operator for moving the support toward the carrier, and means for automatically limiting the last said movement of the support.

40. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to the carrier, a support for receiving the holder from the carrier, means for automatically releasing the holder from the carrier when the carrier arrives at the support, the weight of the said holder being adapted to move the support away from the carrier, means under the control of the operator for moving the support back to the carrier, and means operatively related to the support for limiting the last said movement thereof.

41. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder detachably connected to the carrier, a support for receiving the holder from the carrier, means for automatically releasing the holder from the carrier when the carrier arrives at the support, the weight of the said holder being adapted to move the support away from the carrier, a motor for moving the support and holder toward the carrier, means under the control of the operator for starting the motor and means for automatically stopping the motor when the holder is in a proper position to be connected to the carrier.

42. In a store service apparatus, the combination of a track or way, a carrier mounted to travel thereon, an article holder de-

tachably connected to the carrier, a support  
for receiving the holder from the carrier,  
means for automatically releasing the holder  
from the carrier when the carrier arrives at  
5 the support, the weight of the said holder  
being adapted to move the support away  
from the carrier, a motor for moving the  
support and holder toward the carrier, a  
switch for the motor, a member connected to  
10 the switch for operating the same, means  
under the control of the operator for mov-  
ing the member to shift the switch to start

the motor, and means arranged within the  
path of movement of the support for auto-  
matically moving the said member to shift 15  
the switch to stop the motor.

In testimony whereof I have signed my  
name to this specification, in the presence of  
two subscribing witnesses, on this 16th day  
of December A. D. 1908.

JOHN P. GATELY.

Witnesses:

J. H. JOCHUM, Jr.,  
M. W. CANTWELL.

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