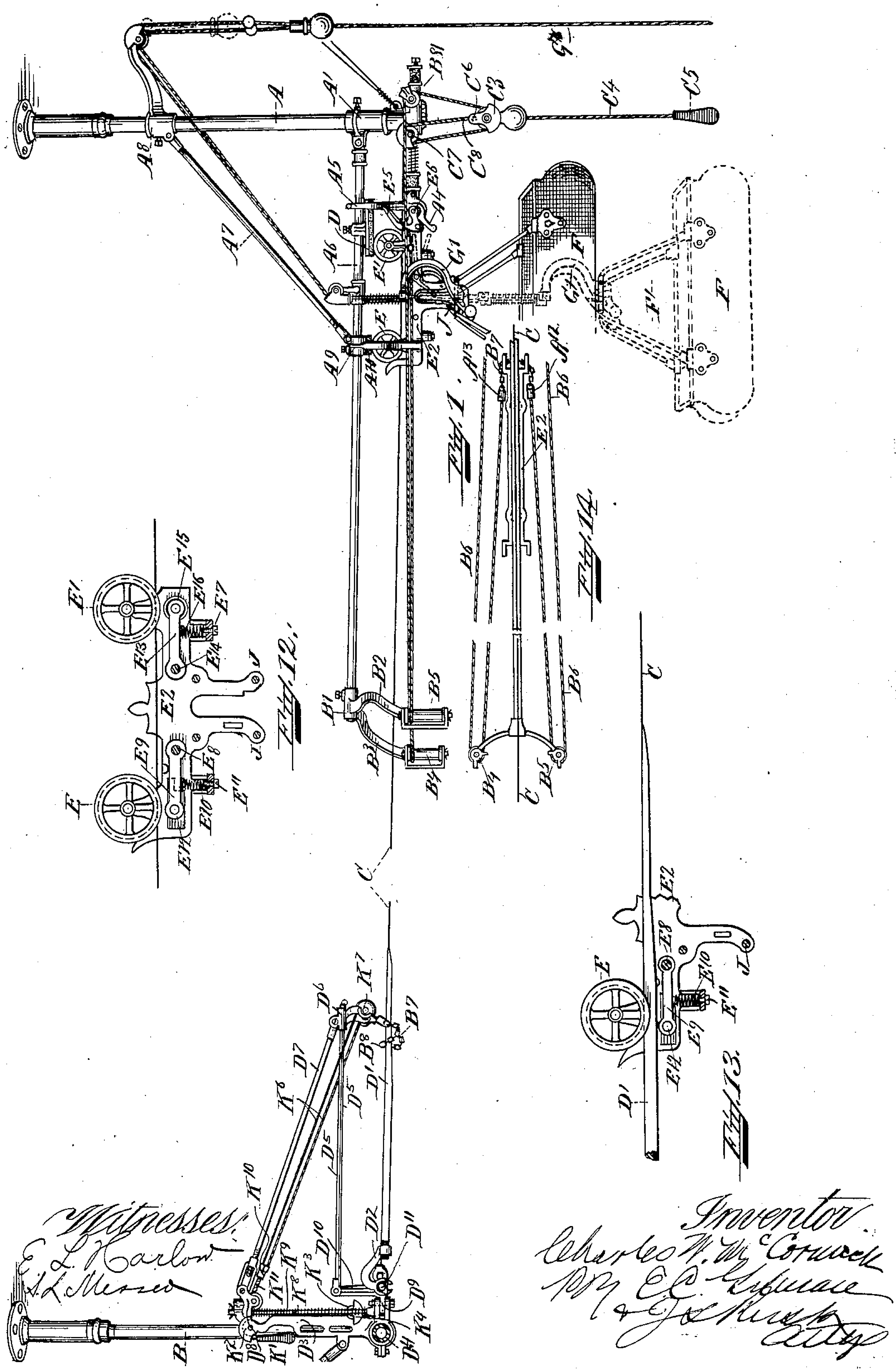
No. 896,747. PATENTED AUG. 25, 1908.

C. W. McCORMICK.

STORE SERVICE APPARATUS.

APPLICATION FILED FEB. 20, 1905.

4 SHEETS—SHEET 1.



No. 896,747. PATENTED AUG. 25, 1908.

C. W. McCORMICK.

STORE SERVICE APPARATUS.

APPLICATION FILED FEB. 20, 1905.

4 SHEETS—SHEET 2.

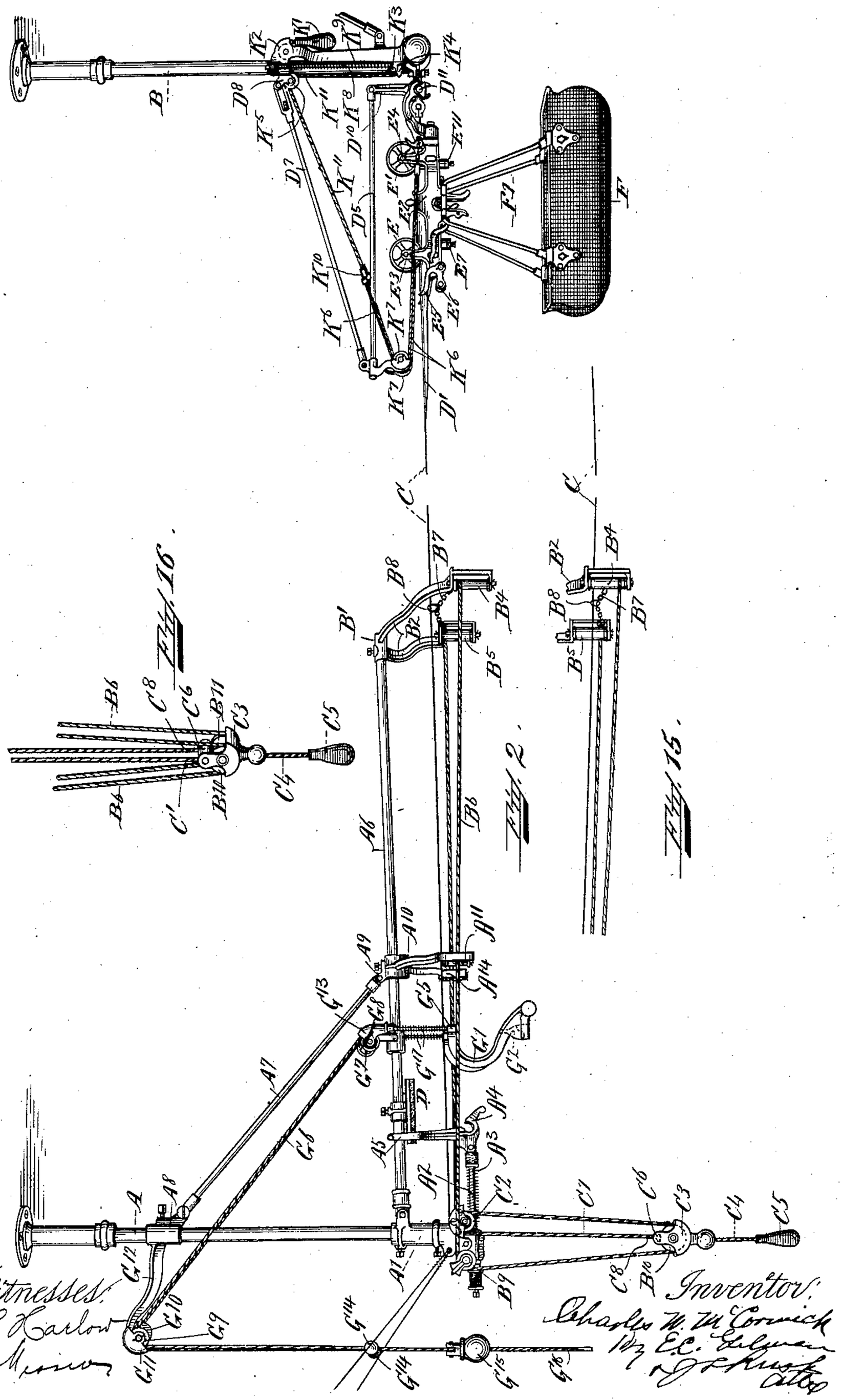


Fig. 2.

Fig. 15.

No. 896,747. PATENTED AUG. 25, 1908.

C. W. McCORMICK.

STORE SERVICE APPARATUS.

APPLICATION FILED FEB. 20, 1905.

4 SHEETS—SHEET 3.

Fig. 3.

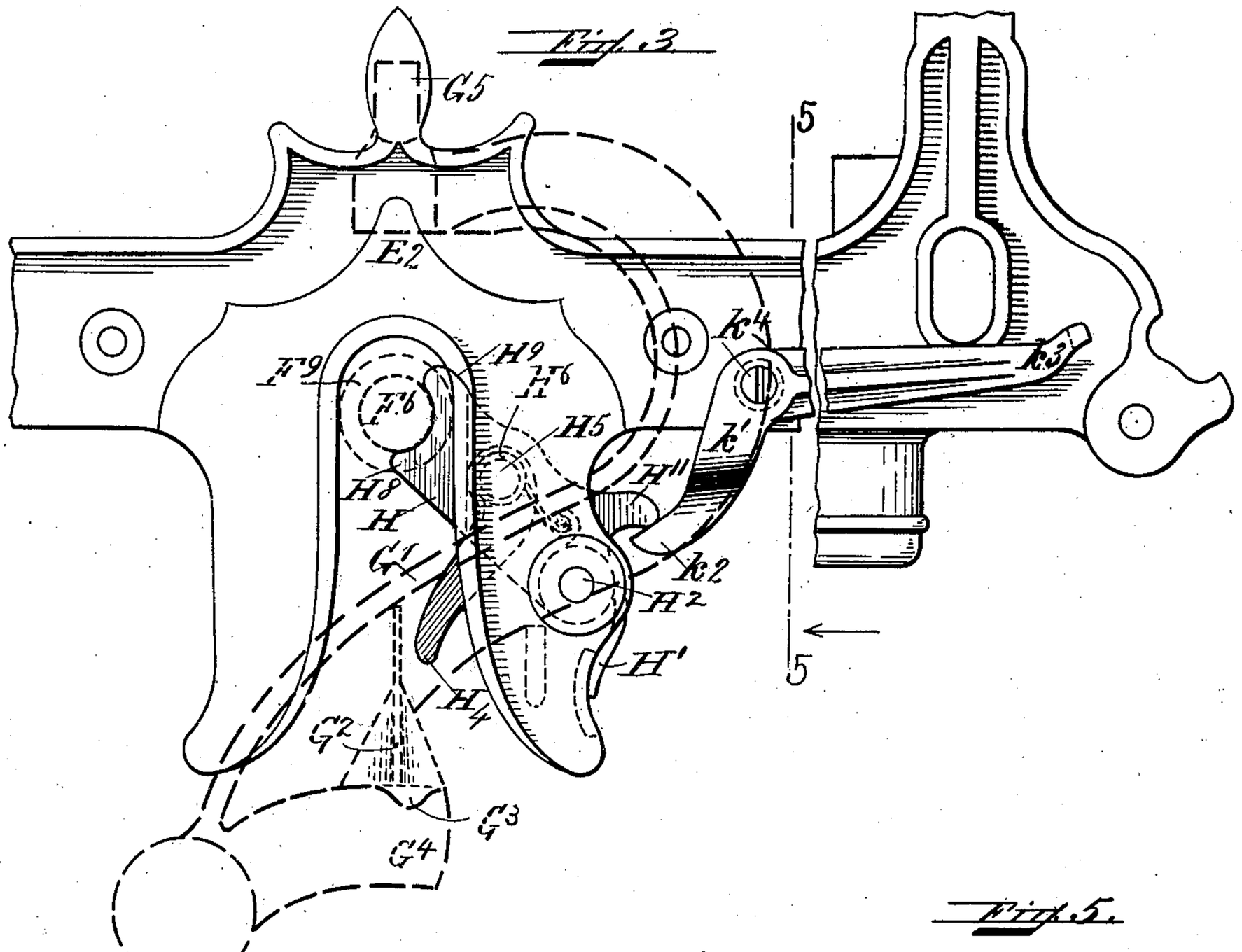
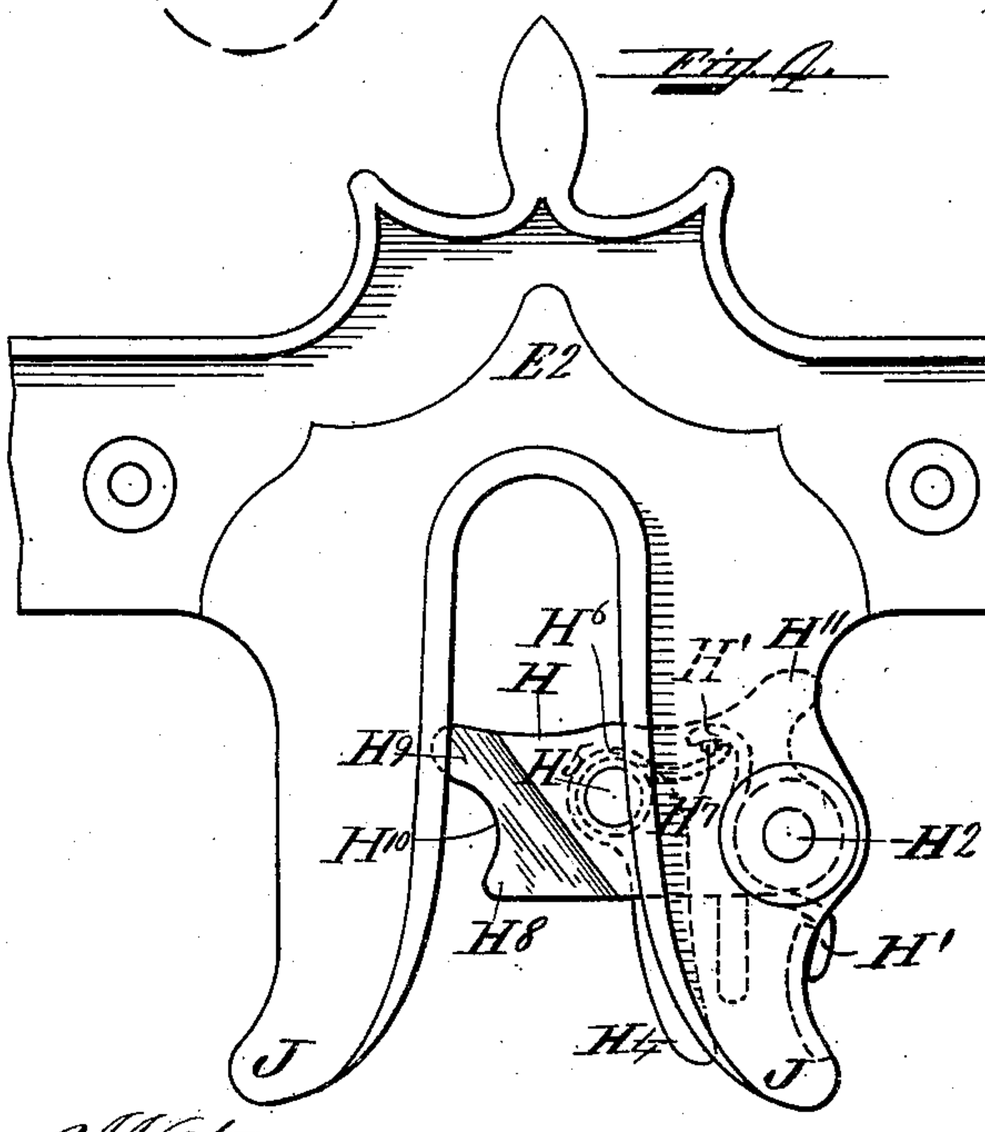
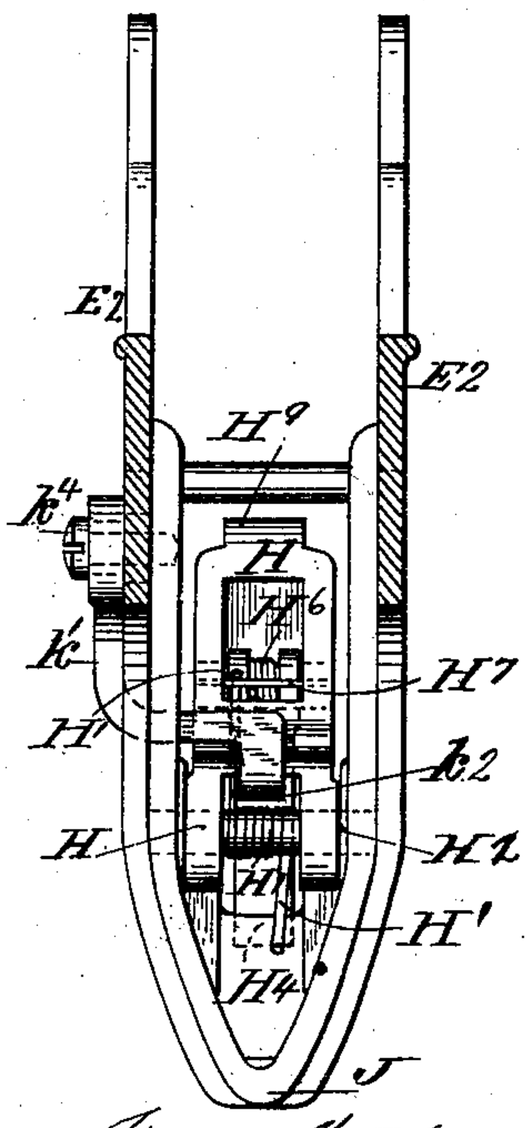


Fig. 5.

Fig. 4.





Witnesses:
E. L. Harlow
A. L. Mercer

Inventor:
Charles W. McCormick
By E. E. Lemon
Dickerson Atty

No. 896,747. PATENTED AUG. 25, 1908.

C. W. McCORMICK.

STORE SERVICE APPARATUS.

APPLICATION FILED FEB. 20, 1905.

4 SHEETS—SHEET 4.

Fig. 6.

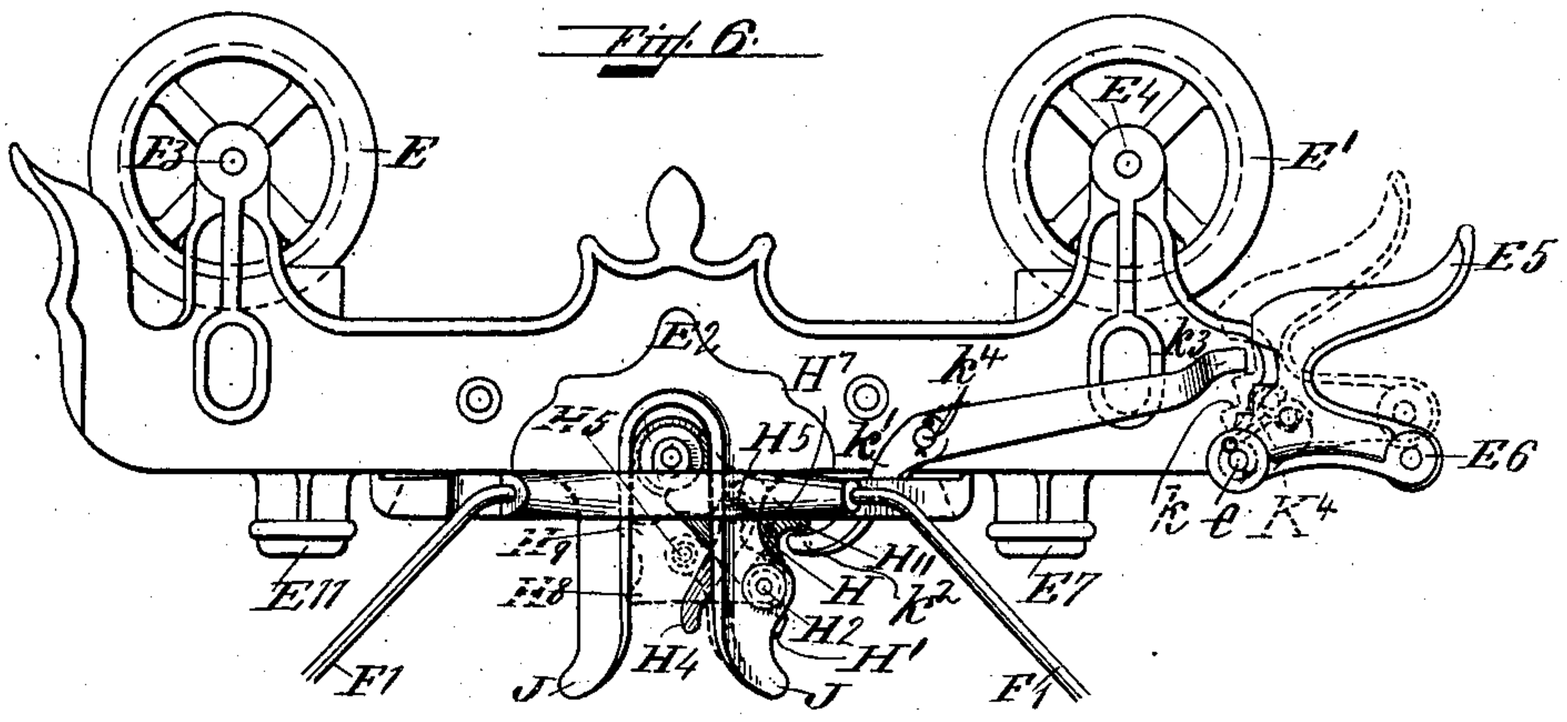


Fig. 8.

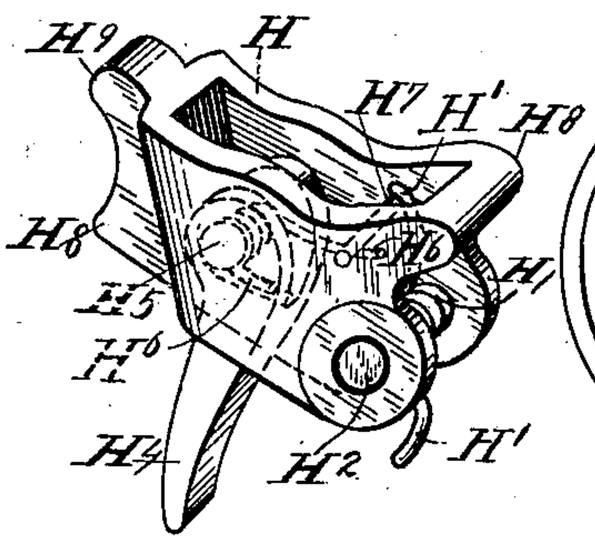


Fig. 7.

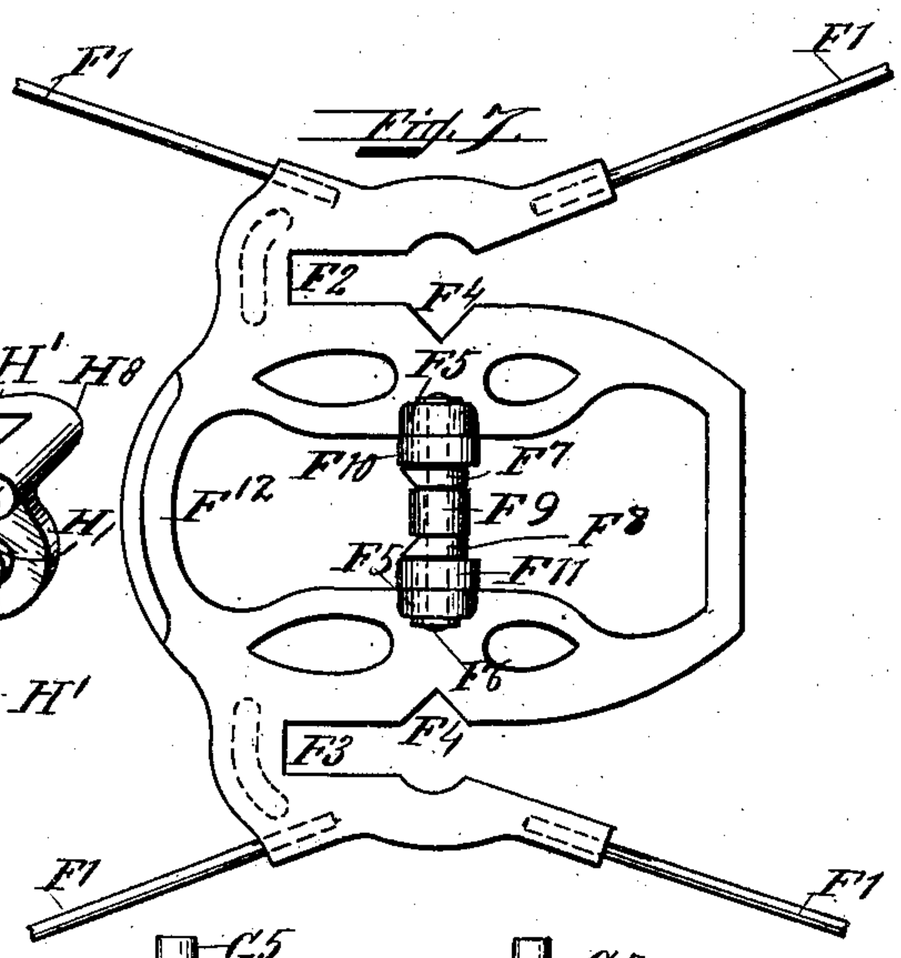


Fig. 11.

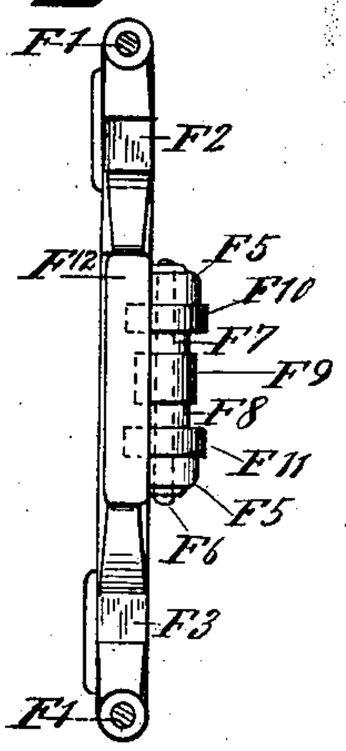


Fig. 9.

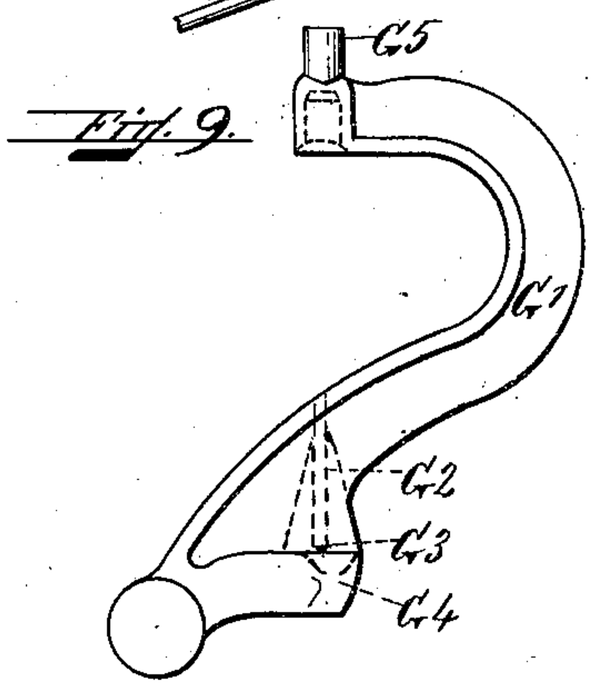
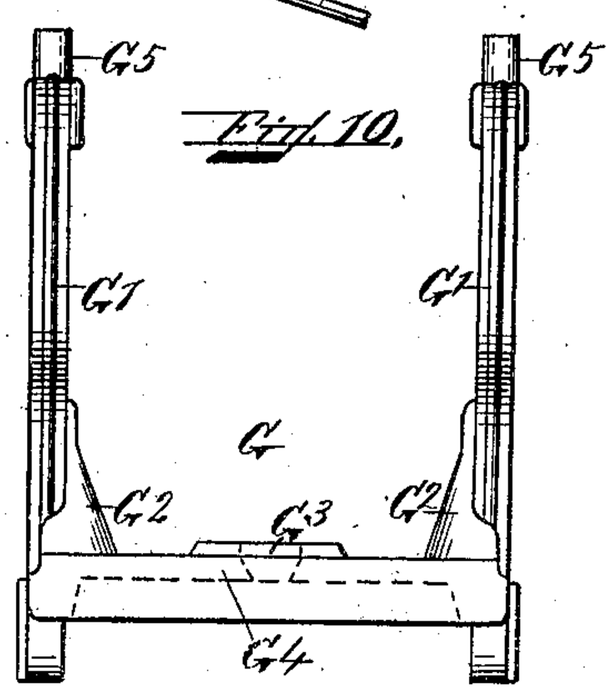


Fig. 10.



Witnesses:
E. L. Harlow
H. L. Munson

Inventor:
Charles W. McCormick
by E. G. Siggers
his Attorneys

UNITED STATES PATENT OFFICE.

CHARLES W. McCORMICK, OF EMPORIA, KANSAS, ASSIGNOR TO LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

STORE-SERVICE APPARATUS.

No. 896,747. Specification of Letters Patent. Patented Aug. 25, 1908.

Application filed February 20, 1905. Serial No. 246,402.

To all whom it may concern:

Be it known that I, CHARLES W. McCORMICK, of Emporia, in the county of Lyon and State of Kansas, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention relates to improvements in cash and package carriers and to that class in which a suitable basket or receptacle is detachably connected to a carrier adapted to run upon a suspended wire.

One object of the invention is to provide automatic mechanism for locking the basket to and releasing it from the carrier.

Another object is to provide improved propelling mechanism for despatching the carrier.

These and other objects are accomplished by the mechanism hereinafter particularly described.

In the accompanying drawings which illustrate a construction embodying my invention, Figure 1 is a side elevation of a cash and package carrier embodying the features of my invention, and showing a carrier at the salesman's station. Fig. 2 is a similar view from the opposite side showing the carrier at the cashier's desk or elevated station. Fig. 3 is an enlarged detail view of part of the carrier frame showing the lock by which the basket is held to the carrier and other details hereinafter described. Fig. 4 is a similar view to Fig. 3 showing the lock on the carrier before the basket is raised for engagement. Fig. 5 is an end view partly in section and showing the lock in a similar position to that shown in Fig. 3, in which the basket is locked to the carrier. Fig. 6 is a side elevation of the carrier with the upper part of the basket shown locked to the carrier. Fig. 7 is a top plan view of the basket plate which is adapted to be locked to the carrier and released therefrom. Fig. 8 is a perspective view of the lock on the carrier which engages the basket and locks same to the carrier. Fig. 9 is a side view of the stirrup forming part of the elevating mechanism. Fig. 10 is an end view of same. Fig. 11 is an end view looking at the plate which is to be locked to or unlocked from the carrier. Fig. 12 is a side elevation with part of the frame of the carrier removed showing yielding brake mechanism for stopping the carrier at the cashier's elevated station. Fig. 13 is a detail view of one end of said braking mechanism and showing its position on the friction brake rod. Fig. 14 is a top plan view of the propelling mechanism at the salesman's station. Fig. 15 is a detail view of the track wire and part of the propelling mechanism. Fig. 16 is a perspective view of part of the propelling mechanism at the salesman's station.

Like letters of reference refer to like parts throughout the several views.

A and B are the usual vertical standards rigidly attached to the ceiling in any desired manner. Located on the lower end of the standard A is a suitable casting A′ through the lower end of which is adapted to slide the rod A^2 on the forward end of which is the catch A^4 supported by the standard A^5 adapted to roll upon the arm A^6 held in its position by the brace A^7 connected to the bracket A^9 on the arm A^6 at one end and at the opposite end to the bracket A^8 adjustably secured to the standard A. The catch A^4 is kept in its forward position by the spring A^3 which is adapted to yield under the impact of the carrier entering the salesman's station. The propelling cord B^6 has one end C′ connected to the bar C^6 of the pulley frame C^3 (Figs. 2 and 16) and extending upwardly passes over the pulley C^2 on the casting A′ and down around the pulley B^{10} in the pulley frame C^3 and up and around the pulley B^9 in the casting A′ and then forward in contact with the spool A^{11} of the bracket A^{10} and continuing passes around the spool pulley B^4 in the bracket B^2 when it is connected to the knob A^{13} of the chain B^7, which chain at its opposite end has another knob A^{12} to which a continuation of the propelling cord B^6 is attached and passes around the spool B^5 (Fig. 14) and then rearwardly in contact with the spool A^{14} in the bracket A^{10}, and continuing rearwardly passes over the pulley B^{81} around the pulley B^{11} in the frame C^3 and up and around the pulley C^7 and down having its end C^8 connected to the bar C^6 of the pulley frame C^3. To the pulley frame C^3 is connected the cord C^4 having the usual operating handle C^5. The chain B^7 has a ring B^8 located on the track wire C which ring is adapted to hold the chain B^7 in proper position to receive the incoming car-

rier and thereby be carried back to be in position for the next propulsion of the carrier. The knobs A^{12} and A^{13} prevent the chain from being pulled around the spools B^4 or B^5; further said chain is of great utility in that it is of much greater life than cord which was formerly used at the point of contact with the incoming carrier.

The mechanism for raising and lowering the basket consists of the stirrup G having two side arms G′ and the cross base G^4 in which is cut a suitable groove G^3 for a purpose hereinafter described. The upper ends G^5 of the side arms G′ are hollow so as to receive the lower knotted ends of a suitable cord G^6 which extends upwardly around the pulleys G^7 G^8 in the pulley frame G^{13} and continuing upwardly passes over the pulleys G^9 and G^{10} in the pulley frame G^{11} carried by the arm G^{12} which forms a part of the bracket A^8. This cord G^6 continues downwardly and is connected to a suitable counterweight G^{15} to which is connected a suitable operating cord G^{16}. This counterweight G^{15} when a carrier has been despatched to the opposite end brings the stirrup up into the position shown in Fig. 2 in which position the springs G^{17} hold said stirrup sufficiently below the track wire C so that the stirrup will pass between the two bails and allow the carrier to engage the catch A^4. The carrier (Fig. 6) consists of suitable frame E^2 in which are mounted the wheels E E′ on the standards E^3 and E^4 respectively and having on one end a pivoted catch E^5 having a roll E^6 which is adapted to engage the catch A^4 at the salesman's station and normally hold it in engagement with said catch A^4. This catch is of the usual construction common in store service systems and needs no further description except to say that when the handle C^5 of the propelling mechanism is pulled downward, the chain B^7 pulls the catch E^5 upwardly into the position shown in dotted lines Fig. 6 thus removing the roll E^6 from the latch A^4 and allowing the despatch of the carrier with the basket. This catch E^5 is normally held in the position shown in full lines Fig. 6 so as to engage the catch A^4 upon its entrance into the salesman's station and is held in the full line position by a spring (shown in dotted lines) around the shaft *e* in a well known manner in store service systems.

Within the frame of the carrier is located a suitable lock H Fig. 4 mounted on the fixed shaft H^2, and around said shaft is wound the wire H′, the lower end of which extends downwardly and bears against the outside of the carrier frame (Fig. 4) while the upper end extends upwardly and over the pin H^7 (Fig. 8) thus acting to hold the lock H under spring tension in the position shown in Fig. 4. Within the lock H is mounted the finger H^4 on the fixed shaft H^5 and around said shaft is a spring H^6, one end of which passes under the pin H^7 and the other end is suitably secured in the upper end of the finger H^4 and in the position shown in Fig. 4 holds the finger H^4 against the under side of the carrier frame.

The basket F is provided with bails F′ which are secured to the plate F^{12} (Fig. 7) and said plate is provided with notches F^2 F^3 to receive the side arms G′ of the stirrup G when the carrier is at the salesman's station, and also with the notches F^4 with which are adapted to engage the guides G^2 on the side arms G′ of said stirrup, so that the plate F^{12} will be properly located upon the stirrup G in raising and lowering. On the pin F^6 supported in the brackets F^5 F^7 are located a center roll F^9 and end rolls F^{10} F^{11}, and with the center roll F^9 the recess H^{10} engages when the basket is locked to the carrier, and the rolls F^{10} F^{11} reduce the friction as the basket is moved up and into position for engagement with the carrier.

Now when a carrier enters the salesman's station, the arms G′ of the stirrup G enter the notches F^2 F^3 and to detach the basket and lower the same, the operator takes hold of a suitable handle on the elevating and lowering cord G^{16} and pulling down on same will raise the stirrup so that the finger H^4 will enter the groove G^3 of the cross piece G^4 of said stirrup and a continued pull will cause said finger to raise the upper end of the lock H so that it will pass up and away from the roller F^9 when the basket will rest on the stirrup and can be lowered and the lock H returns to the position shown in Fig. 4. Now when the next parcel is to be sent, the salesman taking hold of a suitable handle on the elevating cord G^{16} will raise the basket which is on the stirrup with the guides G^2 in the notches F^4 and raising same until the roller F^9 strikes the lower side of the lock H, a continued pull will raise the lock against the tension of the spring H′ until it is sufficiently raised so that the roller F^9 upon a continued pull, will pass into the groove seat H^{10} between the points H^8 and H^9 and be held firmly to the carrier for despatch; upon the return of the carrier after being sent to the other end of the line, the operation takes place as previously described.

When a carrier is at the end of the line with the basket detached, it is necessary to have some device to prevent an accidental despatch of the carrier without its basket, and in order to accomplish this result there is provided a carrier-retaining device *k′* pivoted on the carrier frame at k^4 and having the lower end k^2 and the upper end k^3. When the basket is locked to the carrier as shown in Fig. 6, the end H^{11} of the lock H tilts downward the end k^2 and raises the end k^3 into the position shown in Fig. 6, so that the catch E^5 can be operated to raise the roll E^6 from the catch A^4 to despatch the carrier. When

however, the basket has been detached from the carrier, the weighted end k^3 drops downwardly until it engages the notch k in the latch E^5 so that the chain B^7 pulling on the catch E^5 cannot raise the same, as the end k^3 locks the catch E^5 against movement and consequently the roll E^6 remains in engagement with the catch A^4.

At the cashier's elevated station, the propelling mechanism is of ordinary construction and will be briefly described. On the lower end of the standard B is supported the cross pipe D^4 to which is clamped the casting D^3 and to said casting near the lower end is pivotally secured at D^9 the bracket D^{10} which is adapted to support the rod D^5 extending outwardly and secured to the bracket D^6 which is supported and carried by the arm D^7 suitably secured to the pulley casing D^8 on the casing D^3. At D^{10} is pivotally secured the arm D^2 to the forward end of which is secured the wedge-shaped brake rod D′ through which the wire way C passes and is suitably secured to the bracket B. The propelling cords K^6 pass around the pulleys K^7 and are connected by the chain B^7 which is adapted to engage the carrier and propel the same when returning to the salesman's station. These cords are connected at K^{10} and form one cord K^{11} which extends over the pulley K^5 in the pulley casing D^8 down and around the pulley K^3 and up and over the pulley K^2 terminating in the handle K′. The pulley K^3 is mounted in a suitable frame and when the handle K′ is pulled downwardly the springs K^8 on the opposite rods K^9 are compressed and after a carrier has been despatched, these springs move the pulley K^3 and its frame downwardly and raise the handle K into a position up out of the way leaving the parts in the position shown at the left hand of Fig. 1.

The felt pads A^{10} and D prevent wear on the carrier wheels and counteract the strain occasioned by locking and unlocking the basket at the salesman's station thereby relieving the wire of this additional work and avoiding the bending of the wire in both directions; it is well known that wire will last much longer if always bent in the same direction.

At the cashier's station, the stop for the carrier is an elongated wedge D′ over which the wheels pass, and the under side of the wedge engages the brake shoe E^9 pivoted at E^8 having the roll E^{12} on its end, and the friction applied by the brake shoe may be increased or diminished by adjusting the spring E^{10} by the screw E^{11}. In the opposite end of the carrier there is an arm E^{13} pivoted at E^{14} and carrying on its arm the roll E^{15}. In giving the carrier at the salesman's station a strong impulse to propel it, there is a tendency in the rear end of the carrier to lift itself, and this roll is provided to prevent the carrier from lifting beyond the line of the wire, so that the wire comes in contact with the roll which is simply used as an idler.

The spools A^{11}, A^{14}, B^4, B^5, allow the propelling cord to follow any depression in the wire, thus maintaining a direct forward motion to the propelling cord under varying loads. It will be understood that the spools must be set or adjusted to a point where the propelling cord will pay off at their upper ends with the empty basket and as the load may be increased, the wires sagging as the result of said increased weight, the propelling cord will follow and pay off at a point on the spools in strict accordance with the amount of weight in the basket until the limit of the weight has been reached, which it is assumed would be the maximum weight. The arrangement of the propelling cord gives the action of a bow spring giving the propelling cord about twenty-four times the velocity of the hand during the last inch, this high speed of the cord beginning with three to one due to the block and pulley mechanism; the hand as above stated with a velocity ratio of twenty-four to one would give the carrier a gentle but rapid impulse in the direction of its travel.

I do not limit myself to the arrangement and construction shown as the same may be varied without departing from the spirit of my invention.

Having thus described the nature of my invention and set forth a construction embodying the same, what I claim as new and desire to secure by Letters Patent of the United States is

1. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of an arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said locking plate into contact with said locking arm, and a releasing finger located on said arm and adapted to lie in the path of movement of the stirrup when the parts are in a locked position and out of said path when the parts are in unlocked position whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier.

2. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of an arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said locking plate into contact with said locking arm, and a spring-controlled releasing finger located on said arm and adapted to lie in the path of movement of tne stirrup when the parts are in a

locked position and out of said path when the parts are in unlocked position whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier.

3. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of a spring controlled arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said plate into contact with said locking arm, and a releasing finger located on said arm and adapted to lie in the path of movement of the stirrup when the parts are in a locked position and out of said path when the parts are in unlocked position whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier.

4. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of a spring-controlled arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said locking plate into contact with said locking arm, and a spring-controlled releasing finger located on said arm and adapted to lie in the path of movement of the stirrup when the parts are in a locked position and out of said path when the parts are in unlocked position whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier.

5. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of an arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said locking plate into contact with said locking arm, a releasing finger located on said arm and adapted to lie in the path of movement of the stirrup when the parts are in a locked position and out of said path when the parts are in unlocked position, whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier, and means for preventing the despatch of the carrier until the basket is locked thereto, and adapted to be operated to allow the despatch of the carrier upon the locking of the receptacle to the carrier.

6. In a store service apparatus, a carrier, a detachable receptacle provided with a suspending locking plate, locking mechanism consisting of an arm adapted to be engaged by said suspending plate and to hold said receptacle in locking engagement with the carrier, a stirrup for raising and lowering said receptacle to bring said locking plate into contact with said locking arm, a releasing finger located on said arm and adapted to lie in the path of movement of the stirrup when the parts are in a locked position and out of said path when the parts are in unlocked position, whereby the movement of the stirrup may serve to release the receptacle or to lock the same to the carrier, and means for preventing the despatch of the carrier until the basket is locked thereto and adapted to be operated by said locking arm to allow the despatch of the carrier upon the locking of the receptacle to the carrier.

7. In a store service apparatus, a way, a carrier adapted to travel on said way, a propelling cord, a chain secured to said propelling cord and with which the carrier engages, and a ring free on said way and secured to said chain and adapted to slide upon said way.

8. In a store service apparatus, a way, a carrier adapted to travel on said way, a propelling cord, and spools with which said propelling cord engages and adapted to allow a vertical movement thereon.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 24th day of December, A. D. 1904.

CHARLES W. McCORMICK.

Witnesses:

T. J. ROBINSON,

JULIUS STEINER.