J. H. CARROLL.

STORE SELF-SERVICE SYSTEM.

APPLICATION FILED JULY 19, 1919.

1,347,936.

Patented July 27, 1920.

3 SHEETS—SHEET 1.

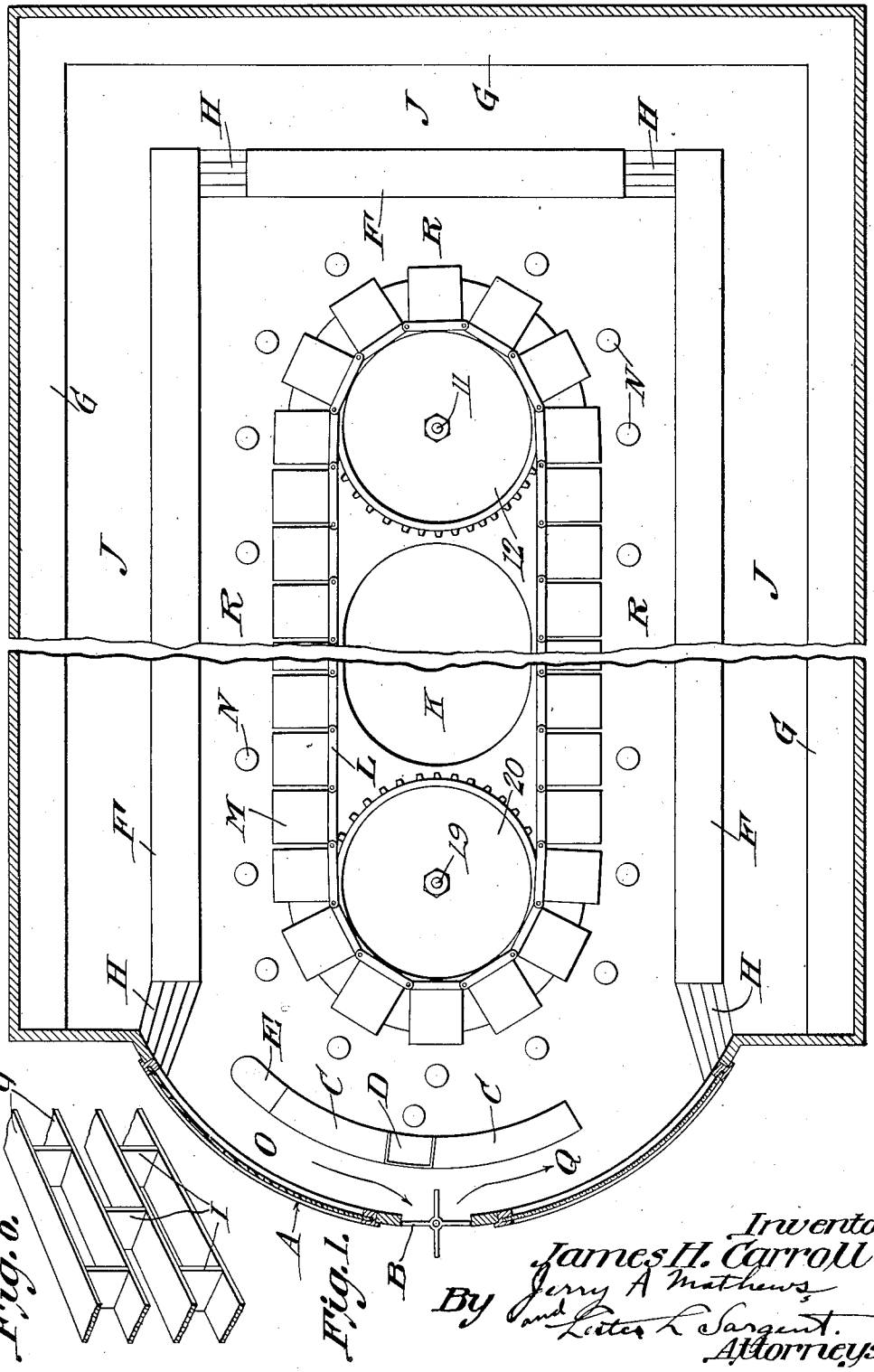


Fig. 1.

Fig. 6.

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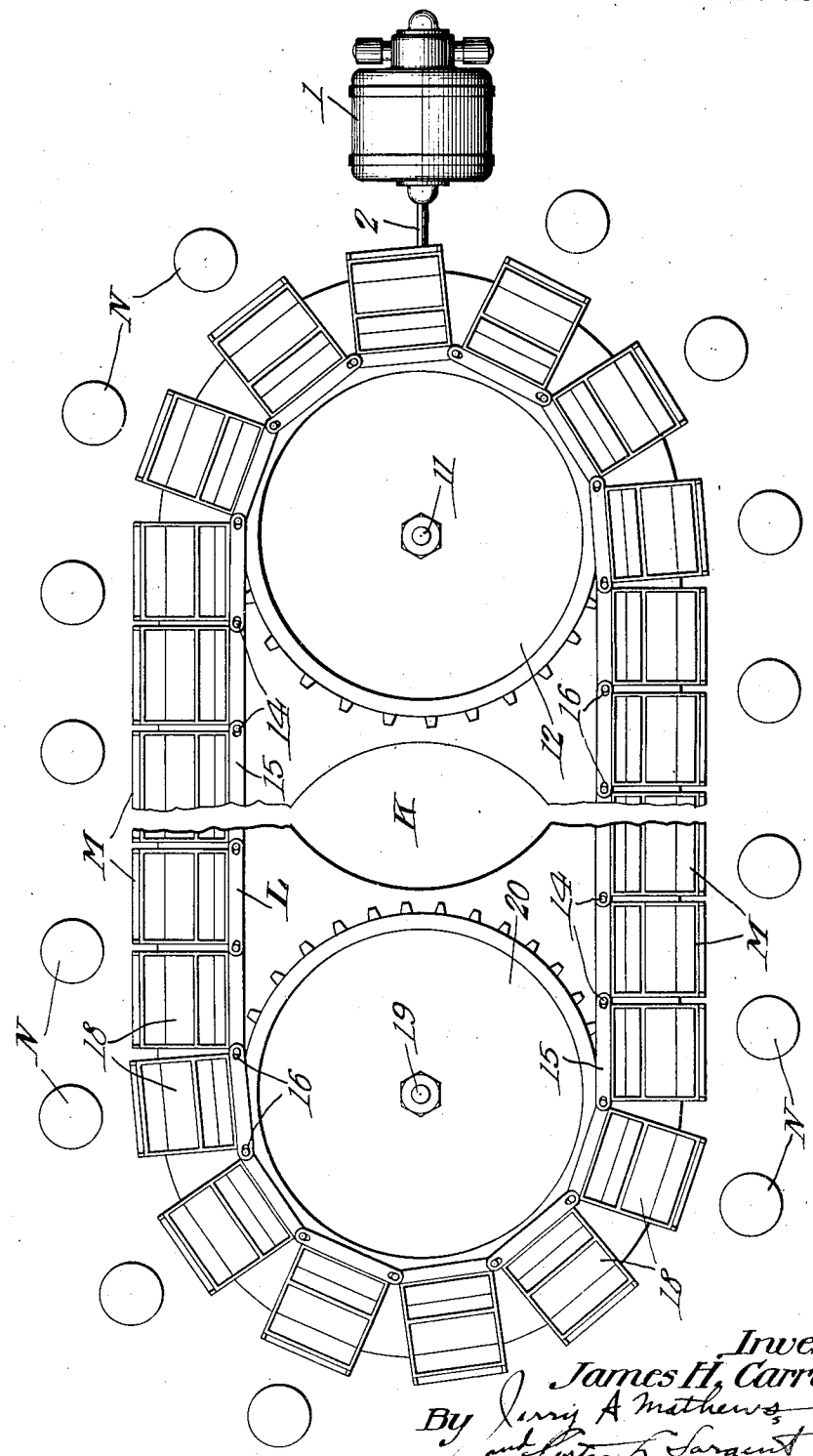
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3 SHEETS—SHEET 2.

Fig. 2.



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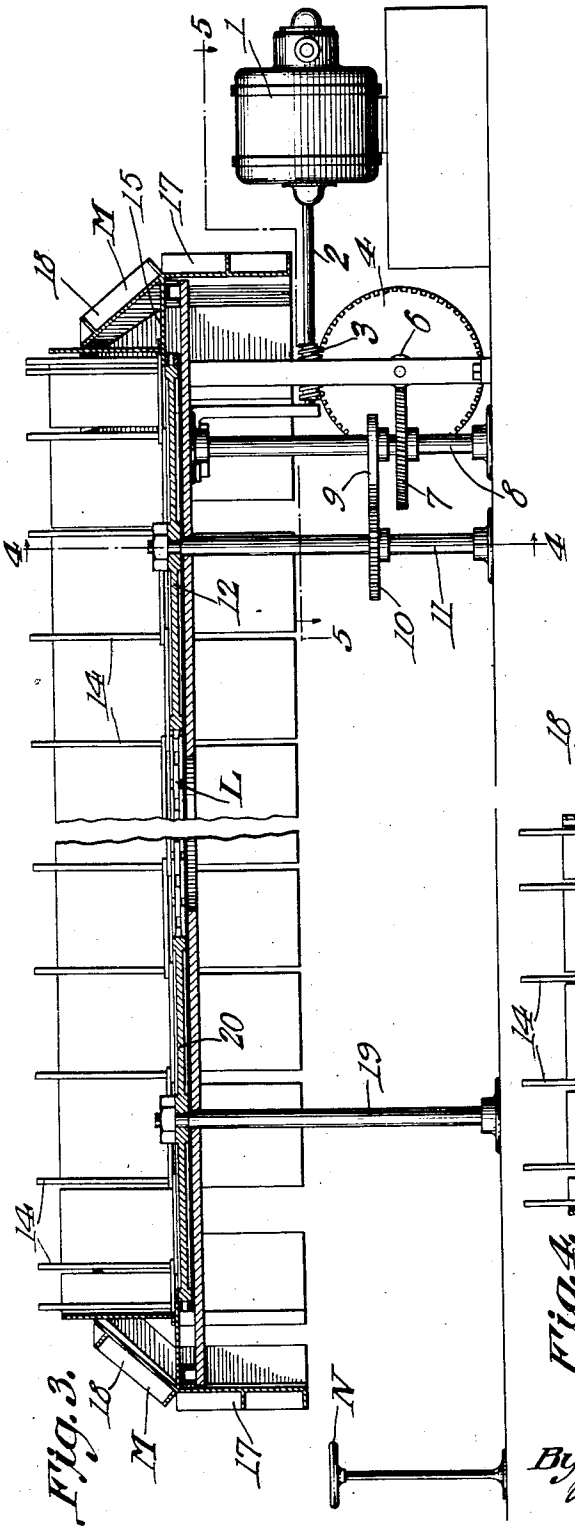


Fig. 3.

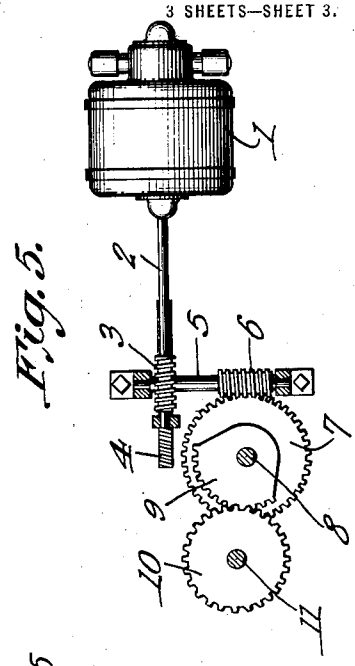


Fig. 5.

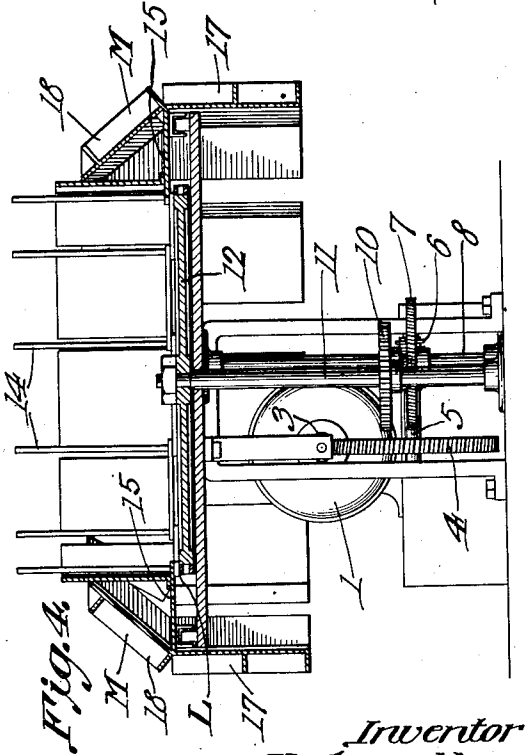


Fig. 4.

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UNITED STATES PATENT OFFICE.

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STORE SELF-SERVICE SYSTEM.

1,347,936. Specification of Letters Patent. Patented July 27, 1920.

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To all whom it may concern:

Be it known that I, JAMES H. CARROLL, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Store Self-Service System, of which the following is a specification.

The object of my invention is to provide improved store self-service system and novel apparatus for conducting same. It is further an object of my invention to provide a novel arrangement of counters and traveling display racks or bins in which merchandise may be advantageously displayed and the task of the customer in waiting on himself may be facilitated. It is further my object to provide such a system and arrangement of the store as will make it possible for a store carrying a large number of goods to be conducted by 3 persons.

In the accompanying drawings illustrating my invention—

Figure 1 is a diagrammatic plan view of my invention;

Fig. 2 is a top plan of my endless conveyer display racks;

Fig. 3 is a longitudinal section of same, partly in elevation;

Fig. 4 is a vertical cross section on line 4—4 of Fig. 3;

Fig. 5 is a detail horizontal sectional view on line 5—5 of Fig. 3; and

Fig. 6 is a detail elevational view of the shelves.

Like characters of reference designate like parts throughout the several views.

Referring to Fig. 1 of the drawings I provide a store A having at its entrance a turnstile B at which the customers enter and through which also they must depart. I provide a desk C near the entrance positioned so as to provide a narrow passage along which the customers must pass in single file and which extends between the bundle wrapper desk E and the cashier's desk D. I provide a desk D placed near the entrance and exit device or turnstile B and positioned so as to provide a narrow passage along which the customers must pass in single file when entering and leaving the store. I further provide a cashier's desk D and a bundle wrapper's desk E. Standard goods are displayed on stationary counters or series of shelves F, and, if the store is a large one, on the spaced rear counters or series of shelves G leading to which are passages H, through which the customer may pass at will to the aisles J. The shelves F are not so high but that the floor walker or supervisor may have a clear view to the aisles J to observe customers. At the center of the store is a space K, occupied by a floor walker or supervisor, whose function is to answer any question of customers and to give them any advice or assistance necessary although he is not a salesman in the ordinary sense of that term. I provide an endless conveyer L, suitably operated and which carries a series of display racks M which are moved along in front of customers, seated on stools N. The endless conveyer may be either continuously operated or intermittently operated so that the display racks will stop for a brief period of time before each customer and then be moved along to the customers next beyond automatically. The series of shelves F and G, may have their individual shelves arranged in consecutive staggered relation.

The customer enters the turnstile B; is given a check by the cashier at the cashier's stand D, picks up a basket and passes along passage Q through the store and wanders around through the aisles R and J at will selecting whatever goods may appeal to her, or takes a seat on one of the stools N and selects goods from the display racks M as they are successively moved along in front of her in their endless course. When the customer has completed her purchase she passes out through passage O, stopping at the bundle wrapper's desk E where her bundles are wrapped and where the prices of the various goods are punched on a check. The check and money in payment of any purchases made is turned in to the cashier at the cashier's desk D just before the customer leaves the store. The rear aisles J preferably have the floor built higher than the floor in the aisles R adjacent the endless conveyer. Display racks M are arranged in tiers, as illustrated in Fig. 2, and are removably adapted to the endless conveyer so as to facilitate the replacement or repair of any that may get out of order.

Referring to Figs. 3 to 5 I provide a suitable motor 1 having a driving shaft 2 and worm gear 3 which engages gear 4. Gear 4 drives a shaft 5 which carries a worm gear 6

which latter gear drives gear 7. Gear 7 is affixed to a rotatable vertical shaft 8 to which is affixed also a suitable segmental gear 9, such as shown in Fig. 5, and which intermittently engages and drives gear 10. Gear 10 is affixed to the vertical endless conveyer drive shaft 11, to the upper end of which is affixed a suitable conveyer driving gear 12 which drives the endless conveyer L. The chain conveyer L carries spaced posts 14 on which are removably mounted members 15 of the display shelves M, the post 14 extending through suitable openings 16 in shelf members 15, as shown in Fig. 4. The series of shelves M each have vertically disposed compartments 17 and an inclined compartment 18, which compartments carry merchandise or goods for which there is expected to be the greatest sale. I provide a post 19 carrying a gear 20 similar to member 12 loosely mounted on post 19 and engaging endless conveyer L as shown in Figs. 1 and 3. Conveyer L is preferably arranged in the form of an ellipse. While I prefer to intermittently operate the endless conveyer so that the display shelves will stop for a few moments before each customer, it is within the contemplation of my invention to operate the endless conveyer continuously instead of intermittently, when desired.

By providing the store system above described the usual expenses for service in waiting on customers is reduced to the minimum, as the customers in this store may conveniently and in fact must wait on themselves. At the same time the possibility of misappropriation of incoming receipts by sales persons is reduced to the minimum by the one cashier at the desk D; and the cashier in turn is always within view of the supervisor on the floor space or platform K. With a system of this sort it is also possible to sell the goods for less because of the reduced expenses in conducting the store. Further by providing the spaced series of stationary shelves F and J with the aisles J elevated above the aisles R an effective supervision of all the customers in the store by a single supervisor on the platform K of the store is made possible.

While I prefer to operate the endless conveyer carrying the traveling display racks, by means of an electric motor 1, it is within the contemplation of my invention to utilize any suitable source of power for this purpose.

What I claim is:

1. In a self-service store, the combination of an entrance and exit device for admitting customers in single file, a cashier's desk in proximity to said entrance, series of stationary shelves adapted to carry goods available to the selection of the customer, a supervisor's platform at the center of the store, an endless conveyer carrying display racks, said endless conveyer inclosing the supervisor's platform, stools arranged opposite the consecutive display racks carried by the endless conveyer, and means for operating the endless conveyer.

2. In a self-service store, the combination of an entrance and exit device for admitting customers in single file, a cashier's desk in proximity to said entrance, series of stationary shelves adapted to carry goods available to the selection of the customer, a second series of stationary shelves spaced behind the first series of shelves, elevated aisles extending in front of said second series of stationary shelves, a supervisor's platform at the center of the store, an endless conveyer carrying display racks, said endless conveyer inclosing the supervisor's platform, stools arranged opposite the consecutive display racks carried by the endless conveyer, and means for operating the endless conveyer.

3. In a self-service store, the combination of an entrance and exit device for admitting customers in single file, a cashier's desk in proximity to said entrance, series of stationary shelves adapted to carry goods available to the selection of the customer, a supervisor's platform at the center of the store, an endless conveyer carrying display racks, said endless conveyer inclosing the supervisor's platform, stools arranged opposite the consecutive display racks carried by the endless conveyer, a bundle wrapper's desk spaced a short distance from the entrance and exit device, and a counter extending between the bundle wrapper's desk and the cashier's desk, whereby the customers must pass out in single file past the bundle wrapper and the cashier.

4. In a self-service store, the combination of an entrance and exit device for admitting customers in single file, a cashier's desk in proximity to said entrance, series of stationary shelves adapted to carry goods available to the selection of the customer, a supervisor's platform at the center of the store, an endless conveyer carrying display racks, said endless conveyer inclosing the supervisor's platform, stools arranged opposite the consecutive display racks carried by the endless conveyer, a bundle wrapper's desk spaced a short distance from the entrance and exit device, and a counter extending between the bundle wrapper's desk and the cashier's desk, whereby the customers must pass out in single file past the bundle wrapper and the cashier.

5. In a self-service store, an endless chain conveyer supporting and carrying a multiplicity of display shelves, including upper inclined display racks and lower vertical

display racks, the endless conveyer being arranged in substantially elliptical form, and means for operating said conveyer.

6. In a self-service store an endless conveyer carrying a series of merchandise display racks, spaced gear members engaging and supporting said endless conveyer, one of said gear members being loosely mounted and the other being a driven member, worm gear operated means for driving the latter gear member, said means including an intermittent actuating gear, and a motor for continuously driving the aforesaid apparatus, whereby the endless conveyer will be intermittently operated so as to allow the display racks to rest stationary a few moments before waiting customers before being moved along in their endless course substantially as and for the purposes described.

JAMES H. CARROLL.