J. A. STROMBERG.

PACKAGE SELLING SYSTEM.

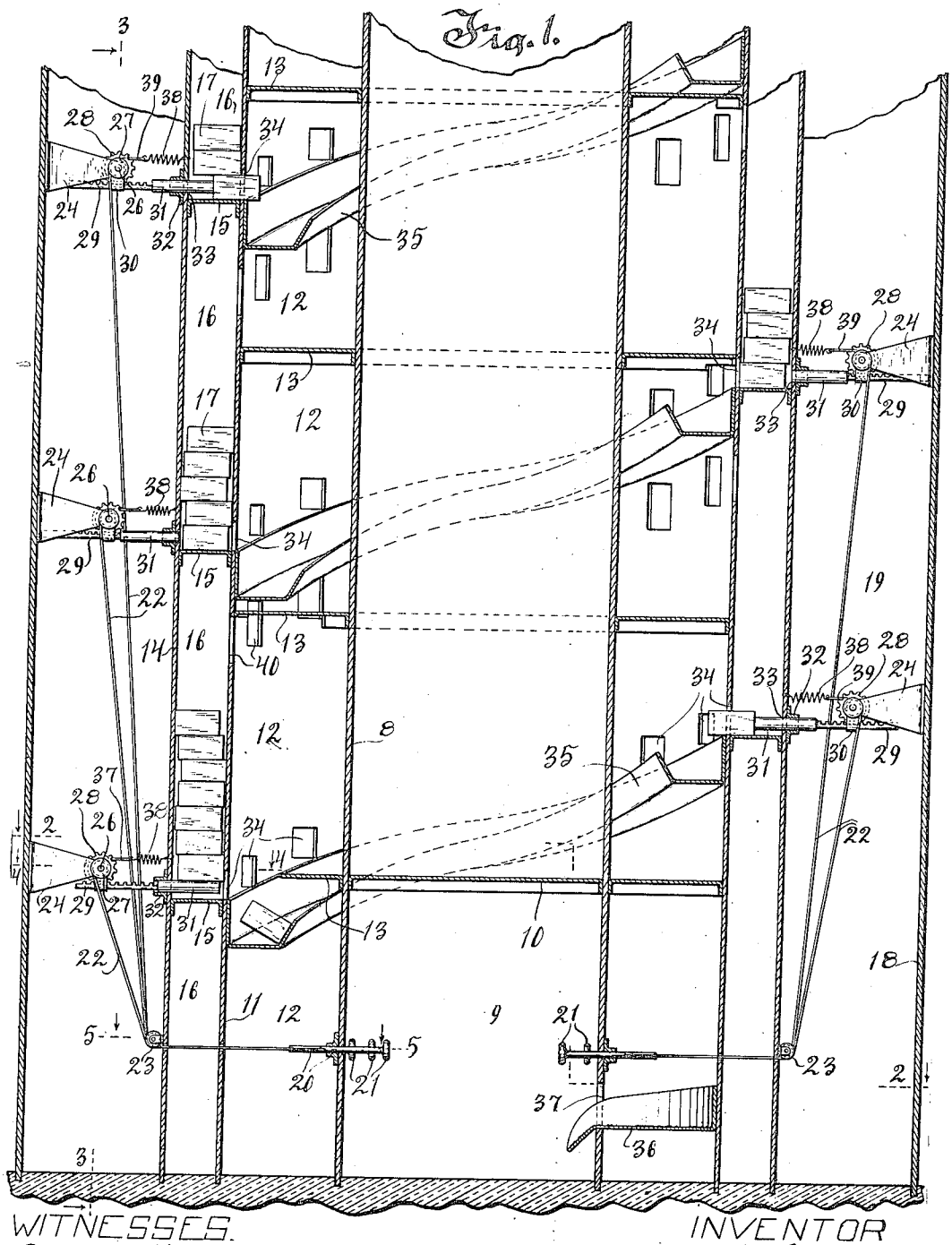
APPLICATION FILED MAR. 11, 1915.

1,211,641.

Patented Jan. 9, 1917.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES.

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3 SHEETS—SHEET 2.

Fig. 2.

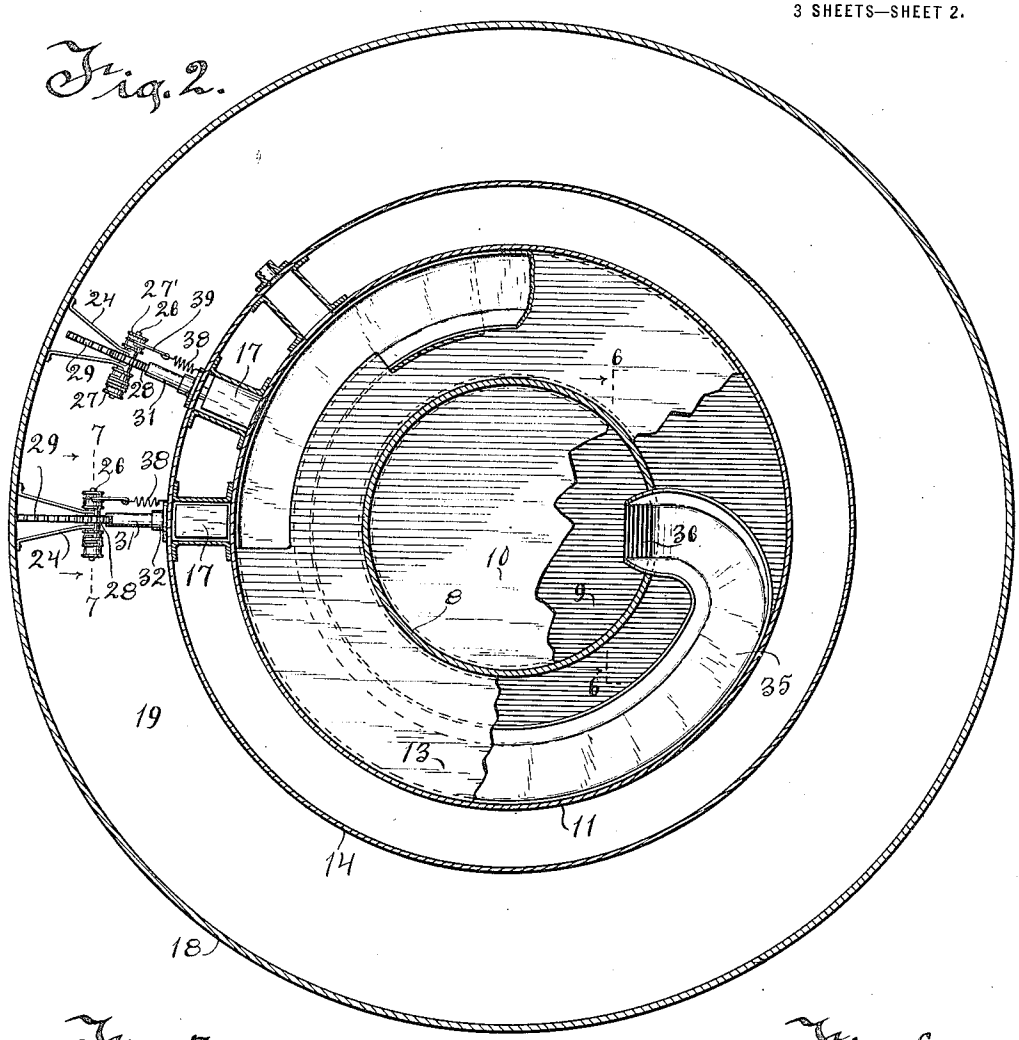


Fig. 7.

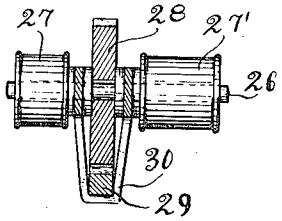
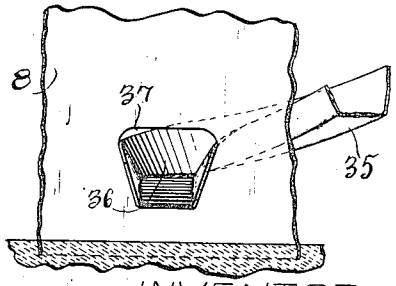


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 3.

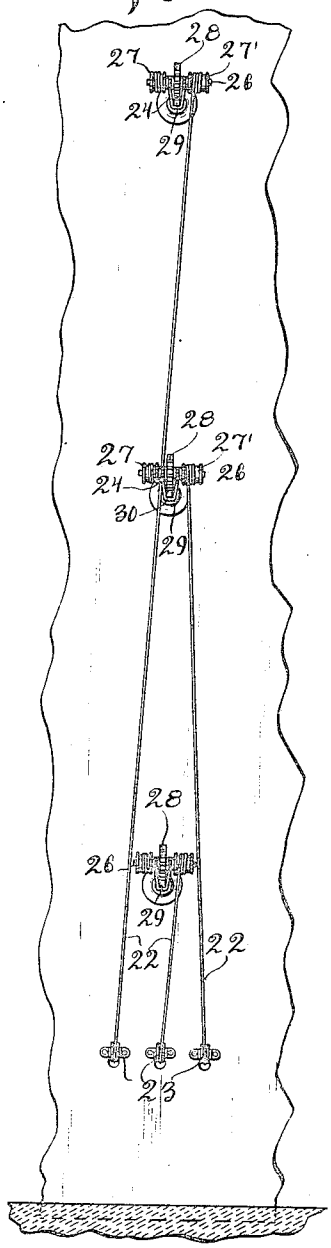


Fig. 4.

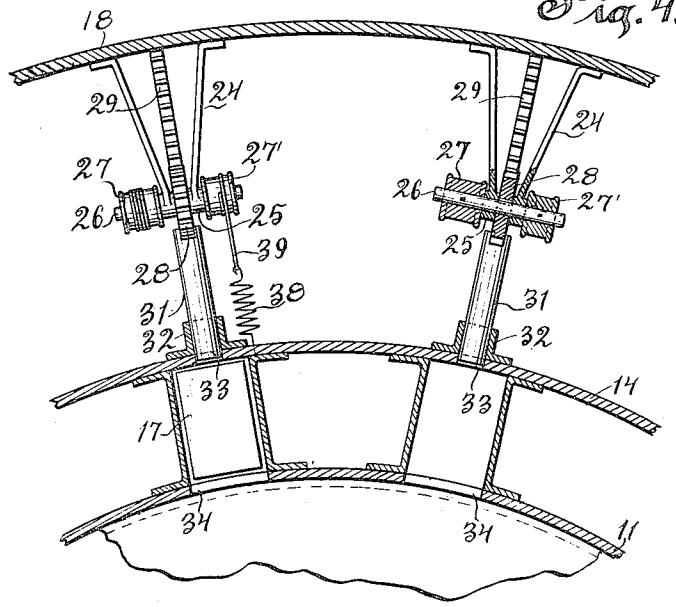
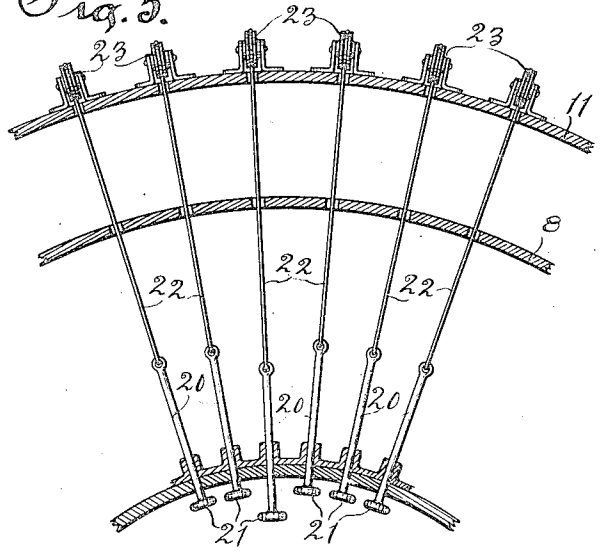


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN A. STROMBERG, OF ESCANABA, MICHIGAN.

PACKAGE-SELLING SYSTEM.

1,211,641. Specification of Letters Patent. Patented Jan. 9, 1917.

Application filed March 11, 1915. Serial No. 13,660.

To all whom it may concern:

Be it known that I, JOHN A. STROMBERG, a citizen of the United States, and resident of Escanaba, in the county of Delta, and State of Michigan, have invented new and useful Improvements in Package-Selling Systems, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in package selling systems.

Long and tedious work is necessarily involved in doing up and filling orders by grocers, and other merchants, of packaged goods, and particularly the filling of orders by grocers of such goods as dried fruit, canned goods, cereals, extracts, etc.

It is the primary object of my invention to provide a system whereby the work in doing up orders is rendered quicker and less expensive than the methods now in vogue, and the labor in connection therewith reduced to the minimum, the improved system making it possible to accomplish with one man, the work which has heretofore necessarily involved the labor of at least ten men, if not more.

In carrying out the system it is the intention to erect a special structure constituting an addition to the building where a grocery or other store is operated, and this addition or extra structure is fitted with the machinery for effecting the quick filling of orders.

With the above primary object, and other incidental objects, in view, the invention consists of the devices and parts, or the equivalents thereof, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a fragment of the extra or additional structure equipped with the improvements; Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1 looking in the direction of the arrow; Fig. 3 is a vertical sectional view on the plane indicated by the line 3—3 of Fig. 1 looking in the direction of the arrow; Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 1, looking in the direction of the arrow, and showing on an enlarged scale a fragment of the package ejecting mechanism, one of the coiled retrieving springs 38 of one of the package ejecting mechanisms being omitted; Fig. 5 is a horizontal section on the line 5—5 of Fig. 1 looking in the direction of the arrow, and showing particularly a number of pull rods or keys and their connections for operating the package ejecting mechanism; Fig. 6 is a section on the plane indicated by the dotted lines 6—6 of Fig. 2, looking in the direction of the arrow; and Fig. 7 is a section on the line 7—7 of Fig. 2.

The structure in connection with which the mechanism is employed is provided with a central portion formed by a wall 8 extending centrically and vertically of the structure, and preferably of cylindrical form in cross section. The lower part of this central portion is in the form of a room or compartment 9, being provided with a ceiling 10. This room or compartment provides a convenient space for an operator, and from this room or compartment the operator has ready access to the operating pull rods or keys, and also access to the packages which are delivered into said compartment.

Surrounding the wall 8 of the building is another wall 11, spaced a desired distance from the wall 8, and being also preferably of cylindrical form in cross section. The space between the two walls 8 and 11 is divided into a series of sections or circular compartments 12 by means of floors 13. In the drawings I have shown a plurality of these sections or compartments 12 arranged vertically one above the other. It will of course be understood that the number of these sections or compartments will depend upon the height of the building.

Surrounding the wall 11, and spaced a suitable distance therefrom, is another wall 14, also preferably of cylindrical form in cross section. The space between this wall 14 and the wall 11 is sub-divided, by a series of horizontal partitions 15, into separate pockets or spaces 16 for containing the packages 17. These pockets, however, could be formed in any other desirable manner, the only essential being that pockets be provided for containing the packages.

Surrounding the wall 14 is an outer inclosing wall 18, also preferably of cylindrical form, and the space 19 between this wall 18 and wall 14 is utilized for the accommodation of the package ejecting mechanism.

The package ejecting mechanism is operated by pull rods or keys 20. The number of pull rods or keys employed is of course dependent upon the number or different va-

rieties of goods which are kept in stock by the merchant. Practice has demonstrated that in an up to date grocery the number of different varieties of goods will necessitate the employment of approximately 1,700 pull rods or keys. These pull rods or keys pass through the wall 8, being suitably spaced apart, and arranged circularly around and through said wall. The inner ends of these rods are provided with heads or enlargements 21, and on each head or enlargement is designated the particular goods which a particular pull rod refers to. The ends of the pull rods which extend into the lowermost of the compartments 12 have connected thereto ropes or cables 22. Each one of these ropes or cables extends through openings provided therefor in the walls 11 and 14, and beneath a pulley 23 carried in a bearing extending from the outer side of wall 14.

Extending inwardly from the inner side of the outer wall 18 are converging arms 24 which at their inner converged ends carry bearings 25—25 (see particularly Fig. 4). Each of said bearings 25—25 has journaled therein a shaft 26. The opposite ends of each of these shafts which extend beyond the bearings have fixedly mounted thereon drums 27—27′. Each rope or cable connected to a pull rod or key 20 after passing beneath the pulley 23 is extended upwardly and wound several turns around drum 27 and connected to said drum. Each shaft 26 has also mounted fast thereon, and centrally thereof, between the bearings 25—25 a pinion 28. Beneath each pinion, and having its teeth engaged by each pinion, is a rack bar 29 slidable in a suitable bearing 30. Connected to the inner end of each rack bar so as to be caused to be moved longitudinally by each rack bar, is an ejecting plunger 31. The inner end of each plunger is guided by a short guide tube 32. The wall 14 has a number of openings 33 in line with the bores of the short guide tubes 32, said openings permitting of the plungers being forced through the wall 14, and into the lower portion of each pocket 16, so as to engage the lowermost package in each compartment 16. Wall 11 is also provided with a number of openings 34 which are in line with openings 33, and permitting the package engaged by each plunger to be forced into the spaces 12, and finally into the chute 35 which circles around in said spaces. The chute, as clearly shown in the drawings, preferably spirally winds or trends around the wall 8 in the spaces 12 confined between said wall and the wall 11, and the lower end of said chute terminates in a discharge spout 36, the mouth of which extends through an opening 37 in the wall 8, and is consequently adapted to discharge in the lower room or compartment 9. Any other desirable form of conveyer, however, may be substituted.

Any desirable means may be employed for retrieving each plunger after it has been forced inwardly. In the drawings I have shown a preferred means which is operated by the rotation of drum 27′. This preferred means for each ejecting mechanism consists of a coiled spring 38 having its inner end attached to the wall 14, and its outer end attached to a cord 39. The outer end of this cord is wound several turns around drum 27′ and secured thereto. The winding of this cord 39, however, is in a reverse direction to the winding of cord 22.

The system contemplates the provision of a convenient means, such as an elevator for carrying a person from the lower compartment 12 to the successive upper compartments 12, whereby a person on reaching a compartment can place within a pocket a tier of packages which any given package pocket 16 is to hold. The person is enabled to fill a pocket with the packages by passing the said packages through an opening 40 formed in the wall 11 at a point near the top of the compartment.

The operation of the mechanism will now be described. It will be seen that the lowermost package of any particular tier rests upon the floor or horizontal partition 15. Normally, the position of each plunger is outward, as shown for instance, by the position of the plungers in Fig. 4. If, now, the pull rod 20 for any particular package pocket is pulled outwardly, or, in other words, inwardly into the room 9, the rope or cable 22 is unwound from its drum 27, and at the same time the cord 39 which is attached to spring 38 is wound upon its drum 27′, and the coiled spring 38 is expanded. The unwinding of rope or cable 22 from drum 27 causes a rotation of shaft 26 outward or toward the left, and this necessarily causes a rotation of pinion 28 in the same direction, and a movement of rack bar 29 and its attached plunger 31 in the opposite direction, or inwardly. The plunger in moving inwardly passes through opening 33 and acts against the lowermost package 17, forcing said package through opening 34 and into chute 35. In Fig. 1 of the drawings, a package is shown as just having been ejected into the chute from the lowermost package containing pocket. The package after being thus pushed into the chute slides down through the chute by gravity and finally out of the spout 36 into room 9, from which point the package can be turned over for delivery to the customer. After a package has thus been forced into the chute, the pull on the pull rod is discontinued, and immediately upon the cessation of the pull the coiled spring 38 which has been in an expanded condition starts to contract, and this contraction causes an unwinding of cord 39 from drum 27′, and a

winding of rope or cable 22 upon drum 27, and in consequence shaft 26 is rotated toward the right, which of course causes pinion 28 to be rotated in the same direction, and the rotation of the pinion toward the right causes a movement of the rack bar toward the left, or outwardly, and consequently the parts are restored to their normal position ready for a repetition of the operation.

From the foregoing description it will be seen that I provide a most simple system whereby one man can accomplish the labor which heretofore has necessarily been accomplished by a number of men, and this labor may be performed with the greatest accuracy and with but the necessity of the expenditure of a minimum of time.

What I claim is:

1. A package selling apparatus, comprising a vertical stationary tubular structure, a series of package holding pockets supported on the wall of said structure and arranged successively around the same to provide a plurality of tiers of pockets, ejecting mechanism adjacent each of said pockets, operating mechanism for each ejecting mechanism operable from a common point on the interior of said structure, and a continuous conveyer encircling said structure within its outer walls and positioned to receive packages of goods from each of said pockets and deliver the same to a single discharge point.

2. A package selling apparatus, comprising a vertical stationary tubular structure, a series of package holding pockets supported on the wall of said structure and arranged successively and spirally around the same to provide a plurality of tiers of pockets, ejecting mechanism adjacent each of said pockets, operating mechanism for each ejecting mechanism operable from a common point on the interior of said structure, and a continuous conveyer encircling said structure within its outer walls and positioned to receive packages of goods from each of said pockets and deliver the same to a single discharge point.

3. A package selling apparatus, comprising a vertical stationary tubular structure having horizontal partitions to form a plurality of superposed compartments, a series of package holding pockets supported on the wall of said structure and arranged successively and spirally around the same to provide a plurality of tiers of pockets, ejecting mechanism adjacent each of said pockets, operating mechanism for each ejecting mechanism operable from the interior of the lower compartment, and a continuous conveyer encircling said structure within its outer walls and positioned to receive packages of goods from each of said pockets and deliver the same to a single discharge point.

4. A package selling apparatus, comprising a plurality of concentrically disposed stationary vertical walls, a series of package holding pockets having discharge openings and supported between said walls, an ejecting mechanism adjacent each of said pockets, operating mechanism for each of said ejecting mechanisms and operable from a common point, and a continuous conveyer encircling said walls and positioned to receive packages of goods from each of said pockets and deliver the same to a single discharge point.

5. In a package selling system, the combination of a conveyer for delivering packages or parcels of goods to a point of delivery, a pocket for containing superimposed packages or parcels of goods, a plunger arranged in line to act upon the lowermost package or parcel of goods of the pile, a rack bar secured to and extending from the plunger, a rotatable shaft, a pinion mounted fast upon the shaft and engaging the rack bar, a drum mounted fast on the shaft, a pull rod under the control of an operator, a rope or cable connected to the pull rod and also wound about and connected to the drum, and means for retrieving the plunger and pull rod, after a package has been forced into the conveyer.

6. In a package selling system, the combination of a conveyer for delivering packages or parcels of goods to a point of delivery, a pocket for containing superimposed packages or parcels of goods, a plunger arranged in line to act upon the lowermost package or parcel of goods of the pile, a rack bar secured to and extending from the plunger, a rotatable shaft, a pinion mounted fast upon the shaft and engaging the rack bar, drums mounted fast upon opposite ends of the shaft, a pull rod under control of an operator, a rope or cable connected to the pull rod, and also wound about and connected to one of the drums, and a coiled spring connected at one end to a fixed part and having its opposite end connected to a cord, said cord wound about and connected to the other drum, the winding, however, being in an opposite direction to the winding of the rope or cable.

7. In a package selling system, the combination of a vertical central wall or casing, the lower portion thereof formed into a room or apartment, a wall surrounding the central wall and spaced a distance therefrom, the space between the two walls being sub-divided into a series of floors arranged one above the other, a conveyer circling around and through the floors or apartments, and adapted to have its discharge end pass through the central wall and enter the lower room or apartment of said end wall, another surrounding wall spaced a desired distance from the next inner wall, the space between said walls being sub-divided into a series of package containing pockets arranged one

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above the other, a series of plungers each arranged in line to act upon the lowermost package or parcel of goods of the pile contained within a pocket, a rack bar secured to and extending from each plunger, a series of rotatable shafts each having a pinion mounted fast thereon, and engaging the rack bar adjacent thereto, a drum mounted fast upon each shaft, a series of pull rods under the control of an operator, ropes or cables connected to the pull rods, and wound about and connected to the drums, and means for retrieving the plungers and pull rods, after a package has been forced into the conveyer.

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

JOHN A. STROMBERG.

Witnesses:

C. D. McEWEN,

EMMA G. MOREAU.