No. 845,984. PATENTED MAR. 5, 1907.

L. O. T. THOMPSON.

AUTOMATIC SELLING AND DELIVERING APPARATUS.

APPLICATION FILED SEPT. 4, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

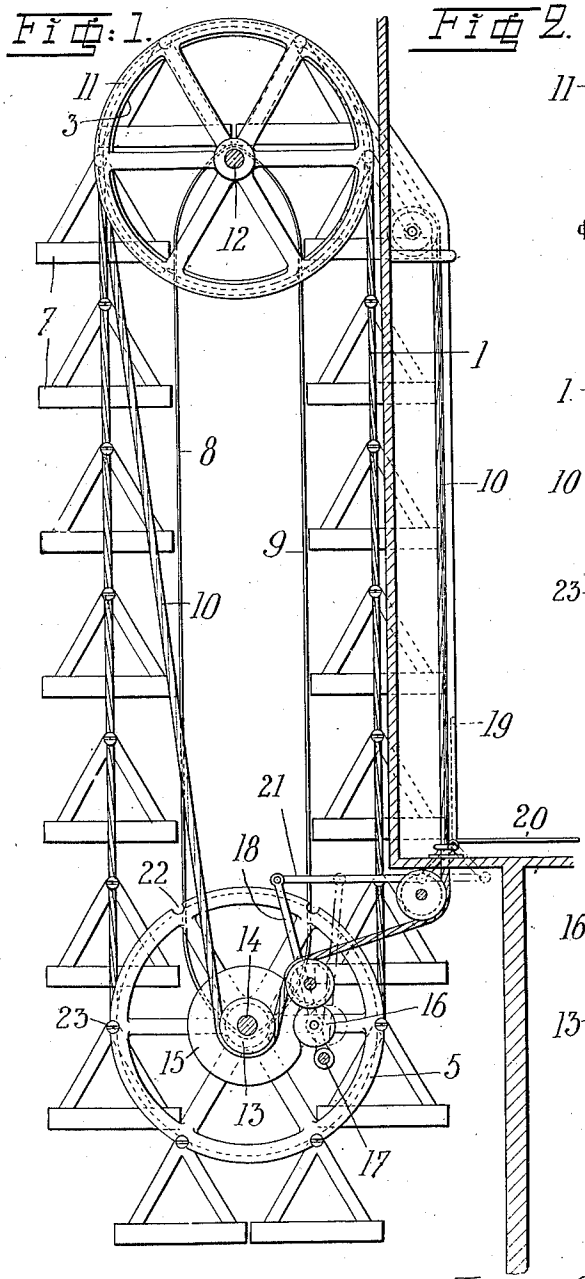
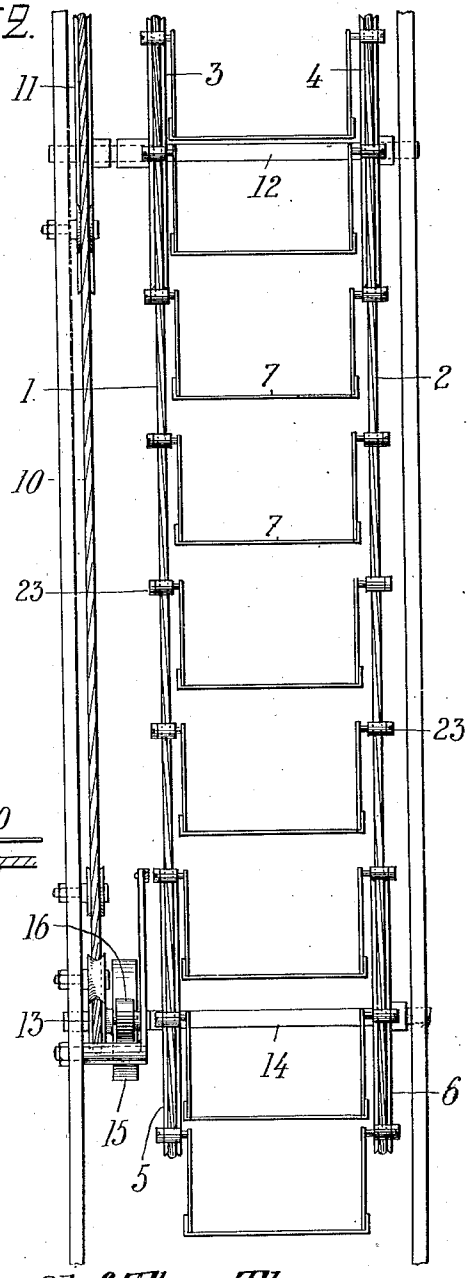


Fig. 2.



Lars Olof Thyr Thompson,
INVENTOR.

WITNESSES:
E. F. Stewart
Jno. E. Parker

By Crow & Co
ATTORNEYS

No. 845,984. PATENTED MAR. 5, 1907.

L. O. T. THOMPSON.

AUTOMATIC SELLING AND DELIVERING APPARATUS.

APPLICATION FILED SEPT. 4, 1906.

2 SHEETS—SHEET 2.

Fig. 4.

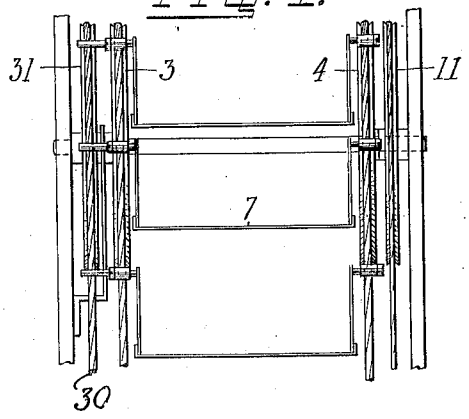


Fig. 5.

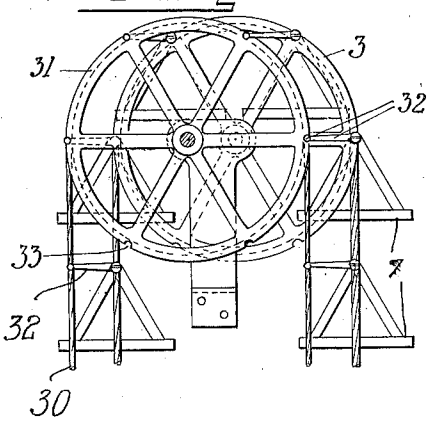
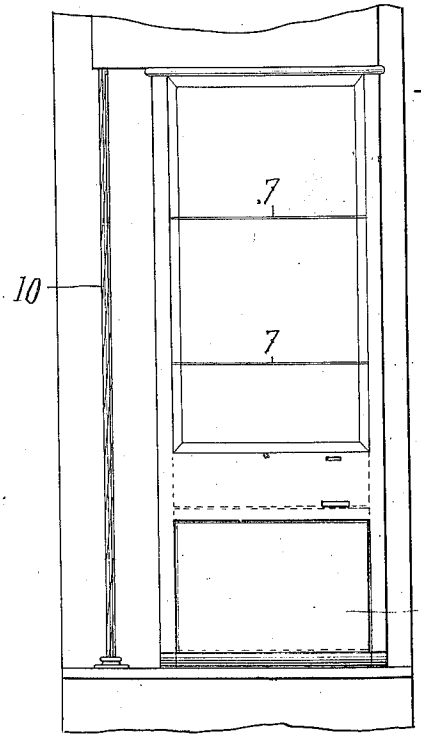


Fig. 3.



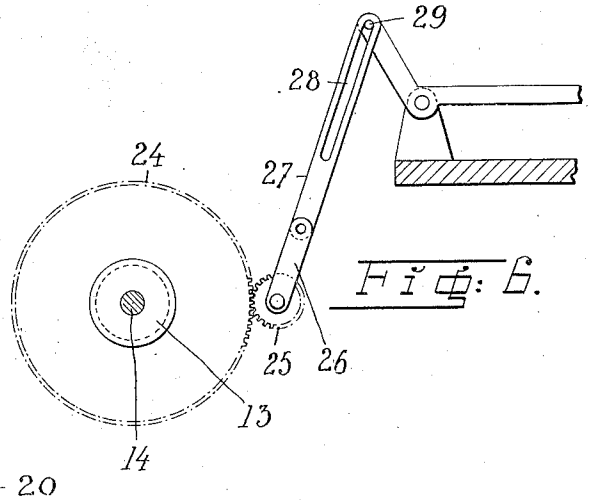


Fig. 6.

Lars Olof Thyr Thompson,
INVENTOR.

WITNESSES:
E. G. Stewart
Jno. E. Parker

By A. A. Howard & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LARS OLOF THYR THOMPSON, OF STOCKHOLM, SWEDEN, ASSIGNOR TO CARL PEHR JOSEF JOHNSSON, OF STOCKHOLM, SWEDEN.

AUTOMATIC SELLING AND DELIVERING APPARATUS.

No. 845,984. Specification of Letters Patent. Patented March 5, 1907.

Application filed September 4, 1906. Serial No. 333,191.

To all whom it may concern:

Be it known that I, LARS OLOF THYR THOMPSON, a citizen of the Kingdom of Sweden, residing at Stockholm, Sweden, have invented a new and useful Improvement in Automatic Selling and Delivering Apparatus, of which the following is a specification.

The present invention relates to an automatic apparatus for selling and delivering sandwiches or other articles which can be retailed piece by piece under the control of a coin mechanism, the said apparatus having such a construction that it makes it possible for the buyer to choose any one he likes of the goods inclosed in the apparatus. Apparatus of this kind are already known, which consist of a large flat basin provided with a door controlled by a coin mechanism and a rotating body arranged in the basin, the said body containing compartments in which the goods which are to be retailed are placed. Although in some respects these apparatus are convenient, they possess, however, a number of inconveniences, as they occupy a large space and are also difficult to fill with the intended goods.

It is these inconveniences which it is intended to remedy by the present invention, which invention principally consists in: that the compartments or the like which carry the goods are arranged so that said compartments can move freely in or nearly in a vertical plane under a cover or behind a wall, which is provided with a door controlled by a coin mechanism, which door normally closes an opening through which the goods can be taken out. The invention is illustrated by the accompanying drawings, which show one form of construction of said invention.

Figure 1 shows a side view of the principal parts of the apparatus, partly in section. Fig. 2 shows a front view of the same with the front wall removed. Fig. 3 shows a view of the exterior of the apparatus seen from the front. Figs. 4 and 5 show, respectively, in front and side elevation a detail of the apparatus. Fig. 6 shows a modified detail.

As is seen by the drawings, the apparatus possesses, according to the form of construction shown, an endless carrier formed of cords 1 2, chains, or the like, which run over wheels, rollers, or the like 3 4 5 6 and support compartments or shelves 7, which are pivotally mounted on the said cords or chains and are intended to contain the goods and which by their weight or by suitably guides are made to take up such a position that their bottoms always lie horizontal and which by suitable bearings—*e. g.*, guide-plates 8 9—can be prevented from swinging when they are moved.

The carrier which is formed by the cords 1 2 and the compartments or shelves 7 for containing the goods can, as is shown in the drawings, be arranged close behind a vertical wall which to a greater of lesser extent consists of glass or some other transparent material, so that a larger or smaller part of the compartments, with the goods contained therein, become visible from the outside. There can be suitably arranged in this conjunction a row of apparatus along the same wall as the case is with those apparatus now in use, which by means of inserted coins can be released step by step for the purpose of delivering the goods in the order that the compartments sink. Instead of arranging the compartments behind a vertical wall the apparatus can also be arranged so as to be more or less separated from each other by mounting the carriers under covers, which stand more or less free on a counter or like, which said covers can entirely or partly consist of glass or some other suitable transparent material which covers the upper part of the carrier, while the lower part can go down to any desired depth below the counter, the said depth depending upon the number of compartments it is desired to have in each apparatus. As can easily be seen, the plan space necessary for these apparatus is very inconsiderable in comparison with that needed for the hitherto-used apparatus with a horizontal freely-rotating body for the support of the goods, while at the same time the number of compartments can be made as great as is found desirable in each special case, and the placing of the goods into the compartments also takes place in an easy and convenient manner without the necessity of the attendant's appearing, as the carrier, with the compartments, can always be made freely accessible from within behind the wall or counter on which the apparatus is arranged.

In the form of construction shown there is arranged for the purpose of rotating the carrier a draw-line or the like 10, a part of which goes outside the front wall of the apparatus, as is shown in Fig. 3, and which at its top passes

over a wheel 11, which is mounted on the same shaft 12 as the wheels 3 4, over which the cords 1 2 run at the top. The said wheel 11 is of the same diameter as the wheels 3 and 4 last named, so that the compartments when the line 10 is pulled are moved at the same speed as that at which the line is pulled in the one or the other direction. At the bottom the line 10 runs over a smaller wheel 13, loosely mounted on the shaft 14 of the wheels 5 6 and of a circumference equal to the distance between two compartments which are adjacent to each other. The wheel 13 is firmly attached to a cam-plate 15. This cam-plate has a notch which lies just opposite a roller 16 (which is carried by a lever 18, journaled at 17) when the carrier has been so moved that a compartment lies directly in front of an opening 19, arranged in the front wall of the apparatus, the said opening giving admission into the said compartment after a door 20, which closes said opening, has been removed by the action of a coin mechanism controlling said door. This door 20 is connected, by means of a link 21, with the upper end of the lever 18, so that after being released the door can fall again only when the notch in the cam-plate 15 lies just opposite the roller 16—*i. e.*, that a compartment lies just opposite the opening 19, which is closed by the door 20. On the other hand, the door 20 will be immediately closed as soon as the carrier is moved, as the cam-plate 15 then presses back the roller 16, so that the arm 18 and the link 21 are carried back to the position shown by dotted lines in Fig. 1. The circumference of the wheel 13 is in the present instance equal to the distance between two adjacent compartments or shelves; but the circumference of such wheel may be increased to any desired extent and the cam-plate 15, which is attached to the wheel 13, can be provided with a corresponding number of notches.

In order that the safe working of the apparatus shall not be hindered by the slipping of the draw-line on its wheel, the cam-plate which closes the door can be made as large as the wheels 5 6, and it can be made fast to the said wheels and on its periphery there can be made notches at distances from each other equal to the distances between compartments adjacent to each other, and in this case the wheel 13 can be made of any desired size. In order to prevent the cords 1 2 from slipping on their wheels 3 4 5 6, there are in the periphery of the last-named wheels arranged notches 22 for the reception of the pins or shafts 23, carrying the compartments. The cam-plate 15 can be replaced by a cog-wheel 24, firmly attached to the shaft 14, and the roller 16 be replaced by a smaller cog-wheel 25, journaled in stationary bearings, which said cog-wheel 25 engages in the first cog-wheel 24. (See Fig. 6.) The ratio of gearing between the cog-wheels 24 25 is six to one—*i. e.*, that when the larger cog-wheel 24 makes one-sixth of a revolution while the compartments 7 move the length of one compartment the smaller cog-wheel 25 makes a complete revolution. On the last-named cog-wheel is secured an arm 26, which by means of the link 27 is connected to a fast arm on the pivoted door. The link 27 is provided with a slot 28 for the pin 29, which connects the arm on the door with the said link. In Fig. 6 the door is shown in open position. When the compartments are moved a compartment length in the one or the other direction, the cog-wheel 25 makes, as said above, a complete revolution, during which the link is carried first downward and then upward to the original position and in doing so carries down the arm on the door, so that the door becomes closed when the pin 29 lies in the lower end of the groove 28. It is clear that in this position of the parts the door can be opened completely by the coin mechanism. Many modifications of this arrangement can of course be made, as the employment, for example, of a slidable door instead of one pivoted.

The coin mechanism can be of any desired construction and has therefore not been shown in the drawings. In the drawings the door has been shown as hinged; but it can, of course, be slidable, too, if such should be preferred, as both these types are at present well known.

In order to prevent the compartments by the draw-line 10 being carelessly pulled from striking against the bearings and the walls and in the highest and lowest positions against each other, whereby the apparatus could be put out of order or be destroyed, the arrangement shown in Figs. 4 and 5 is used. According to this arrangement there is a supplementary endless cord, chain, or the like 30, which runs over an upper and a bottom wheel 31, of which wheels only the upper one is shown. These wheels 31 are mounted eccentrically and in different planes to the wheels 3 4 5 6. On the axles of rotation of the compartments 7 are secured projections 32 in the form of cranks, which projections at their outer ends are firmly attached to the cord 30. For these ends of the projections 32 there are notches 33 in the wheels 31, corresponding to the notches in the wheels 3 4 5 6, which notches 33 prevent slipping. It is clear that in this arrange ment the compartments 7 cannot swing in their bearings, but that their bottoms always immovably retain their horizontal positions, even when the compartments pass the wheels mentioned.

I claim—

1. In apparatus of the class described, a casing having an opening, a door for closing

said opening, an endless carrier having compartments or shelves movable into alinement with the opening, and a door-controlling means operable by movement of the carrier and arranged to transmit opening movement of the door only when a compartment or shelf is opposite the opening and to close the door and hold it in the closed position when a compartment or shelf is not opposite the opening.

2. In apparatus of the class described, a casing having an opening, an endless carrier including flexible members and compartments or shelves supported thereby, guiding-wheels for said flexible members, a shaft carrying said guiding-wheel, an auxiliary wheel carried by the shaft, and a flexible operating member extending around said auxiliary wheel and partly outside the casing to permit manual operation of the endless carrier.

3. In apparatus of the class described, a casing having an opening, a door for closing the opening, a pair of shafts mounted within the casing, guiding-wheels on said shaft, endless flexible members extending around the guiding-wheels, compartments or shelves hung from said flexible members, and a door-controlling member carried by one of the shafts and bearing a fixed relation with the compartments or shelves, whereby opening movement of the door is prevented save when one of the compartments or shelves is opposite the opening.

4. In apparatus of the class described, a casing having an opening, a door for closing the opening, a pair of shafts arranged within the casing, grooved guiding-wheels carried by the shafts, endless flexible members extending around said guiding-wheels, compartments or shelves hung on the flexible members, auxiliary wheels on said shafts, and an operating-band extending around the auxiliary wheels and partly outside the casing to permit manual operation of the device.

5. In apparatus of the class described, the combination with a casing having an opening, of a door for closing said opening, a pair of shafts arranged within the casing, guiding-wheels on said shafts, endless flexible members extending around said guiding-wheel, compartments or shelves hung on the flexible members, a pair of auxiliary wheels carried by the shafts, one of said wheels having a circumference bearing a fixed relation to the distance between the adjacent compartments or shelves, an endless band surrounding the auxiliary wheels and extending partly outside the casing, a door-controlling disk secured to one of the shafts and having a notched periphery, a pivoted lever operatively connected to the door, and a roller carried by said lever and arranged to enter the notch of the disk.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LARS OLOF THYR THOMPSON.

Witnesses:
F. ANDERSSON,
J. F. A. RUTBACK.