G. E. McKENNEY.

DISPENSING CABINET.

APPLICATION FILED AUG. 5, 1918.

1,355,488. **Patented Oct. 12, 1920.**

2 SHEETS—SHEET 1.

Fig. 1.

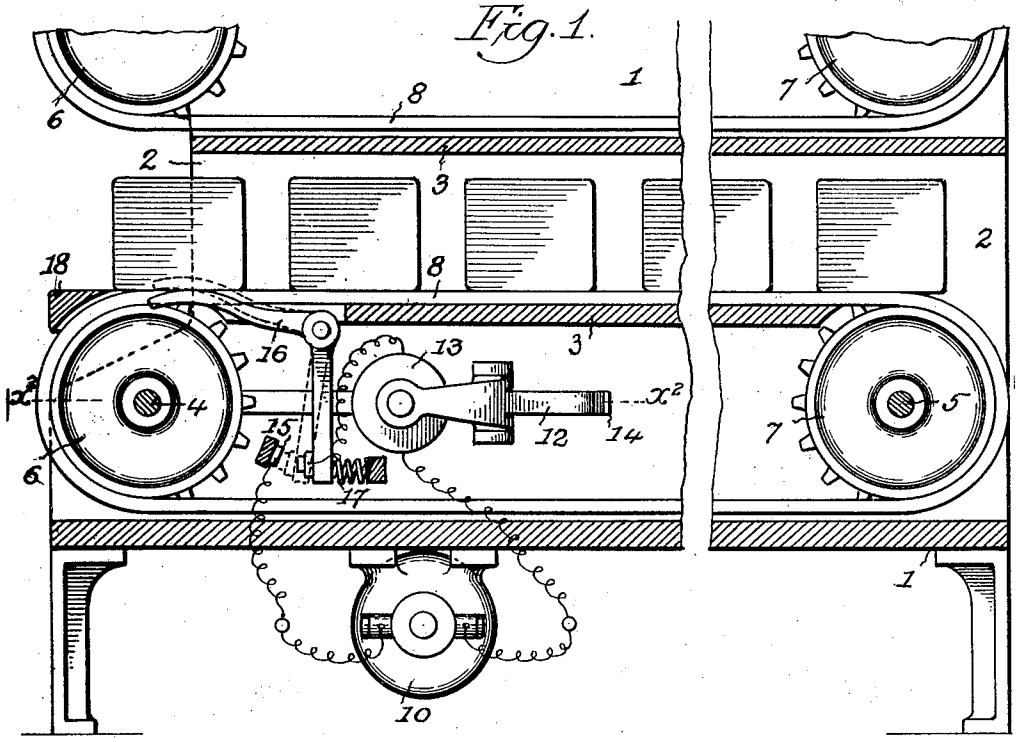
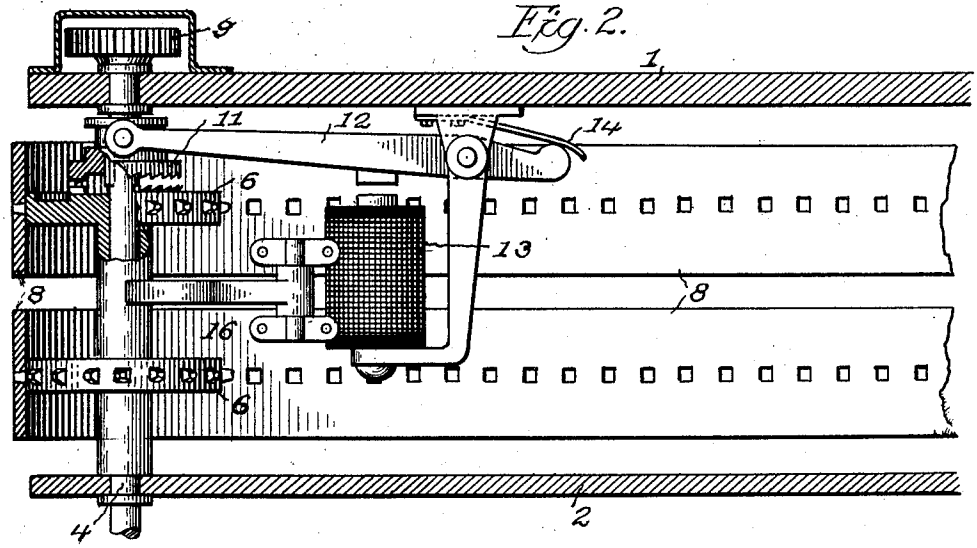


Fig. 2.



Witness:
John Enders

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2 SHEETS—SHEET 2.

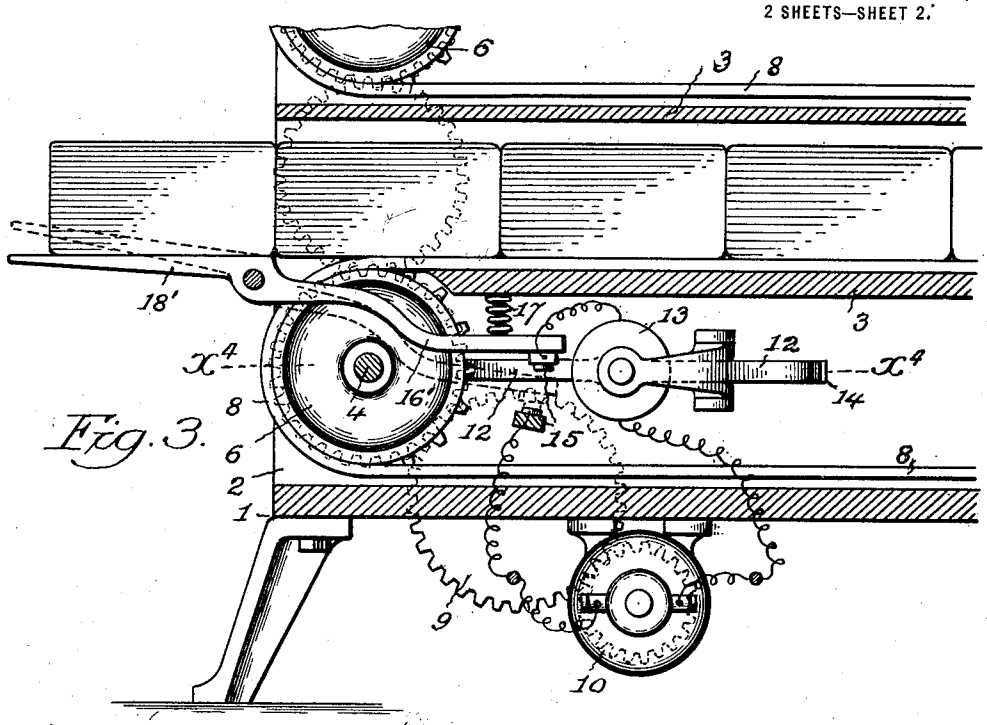
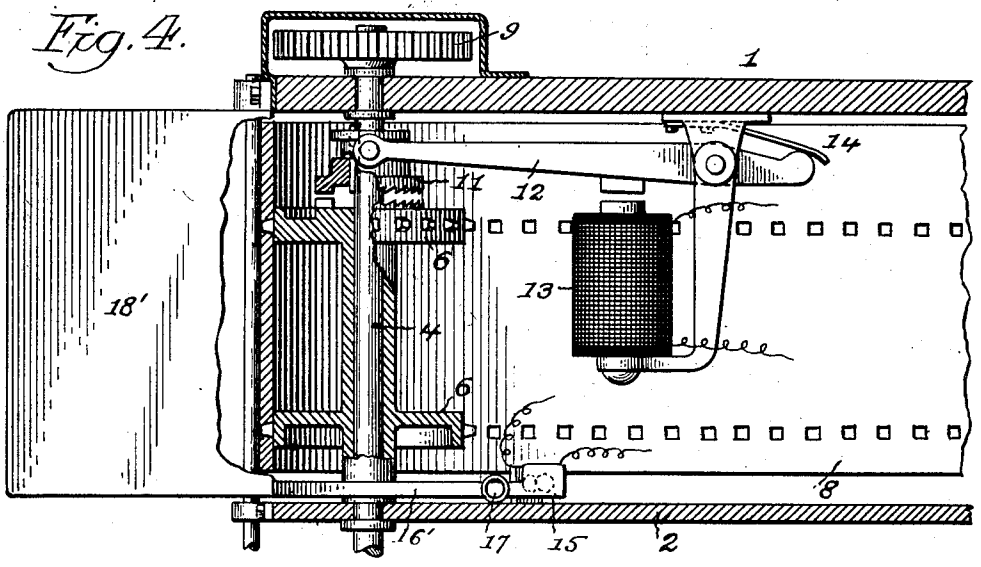


Fig. 3.

Fig. 4.



Witness:
John Enders

Inventor:
Gervis E. McKenney,
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UNITED STATES PATENT OFFICE.

GERVIS E. McKENNEY, OF CHICAGO, ILLINOIS.

DISPENSING-CABINET.

1,355,488. Specification of Letters Patent. Patented Oct. 12, 1920.

Application filed August 5, 1918. Serial No. 248,255.

To all whom it may concern:

Be it known that I, GERVIS E. McKENNEY, a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Dispensing-Cabinets, of which the following is a specification.

This invention relates to that class of automatically operating dispensing cabinets in which with the removal of an outermost article or package the same is automatically replaced by a next adjacent article or package, and the present improvement has for its object:—

To provide a simple and efficient structural formation and combination of parts and mechanisms, whereby the packages or articles to be vended are serially moved into an exposed position, and in an upright manner for easy observation and selection, and with which the replacement of a selected package or article is automatically effected in a simple and effective manner, all as will hereinafter more fully appear. In the accompanying drawings:

Figure 1, is a detail longitudinal section illustrating the preferred form of the invention.

Fig. 2, is a detail horizontal section of the same on line x^2 x^2, Fig. 1.

Fig. 3, is a detail longitudinal section of a modified form of the invention.

Fig. 4, is a detail horizontal section on line x^4—x^4, Fig. 3.

Like reference numerals indicate like parts in the several views.

Referring to the drawings, 1 designates the main inclosing shell or casing of the cabinet, divided by vertical and horizontal partitions 2 and 3 to provide tiers of horizontally extending cells adapted to contain individual rows of the articles or packages to be vended.

4 and 5 designate two series of shafts arranged near the respective front and rear ends of the main shell or casing 1, with each pair of said shafts 4 and 5 individual to a horizontal row of the above mentioned containing cells, and to such end the said series of shafts 4, 5 will extend the entire length of the main shell or casing 1.

6 and 7 designate pluralities of sprocket drums mounted on each pair of shafts 4, 5 above described, with each pair of front and rear sprocket drums individual to a containing cell aforesaid and adapted to support and drive an endless belt or carrier 8 that forms a movable floor for the said containing cell. In the present structure one or the other of the two series of shafts 4, 5 will have driven connection with a power source, and in the drawings the front series of shafts 4 are shown as so driven by means and arrangements as follows:

9 designates a train of gear wheels operatively connecting the series of shafts 4 together to rotate in a common direction under the influence of an electric or like motor 10, the power shaft of which has operative connection with the train of gears 9 in any usual and suitable manner.

A material part of the present improvement comprises means individual to each endless belt or carrier 8, whereby the presence of an article or package at the extreme forward end of said belt or carrier will automatically cause an interruption of the travel of the same, and with a removal of said article or package will effect an operation of said belt or carrier to bring another article or package to the above described extreme forward end of the belt or carrier 8 and an automatic re-stoppage of the same. In the attainment of the above mentioned functions and operations an electrically controlled mechanism is preferably employed, with a detail construction and arrangement of parts as follows:—

The plurality of sprocket drums 6 of each shaft 4 are mounted loosely thereon to permit independent rotation of the shaft, and said sprocket drums are selectively engaged with said shaft by a series of clutches of any usual construction and each clutch preferably comprising a detail structure as follows:

11 designates a movable clutch collar having a sliding connection with the shaft 4 by an interengaging key and groove formation of the parts, and having a ratchet rim adapted for engagement with a corresponding ratchet rim on the sprocket drum 6, as shown more particularly in Fig. 3.

12 designates a yoke lever adapted for operative engagement at one end with the clutch collar 11, and carrying near its other end the armature of an operating electromagnet 13, the circuit of which is controlled in the manner hereinafter described in detail.

14 designates a spring associated with the clutch operating lever 12 and exerting a yielding stress upon the same to normally

hold the clutch collar 11 away from its engagement with the sprocket wheel 4 aforesaid.

15 designates a circuit closer arranged in the circuit of the electro-magnet 13 above described and having a movable contact member 16 individual to an endless belt or carrier 8, with its free end extending above a forward portion of said belt or carrier and adapted to be operatively engaged by a package or article carried upon said belt or carrier 8.

17 designates a spring having a yielding tendency to push the movable contact member 16 out of contact with the fixed member of the circuit closer 15 aforesaid.

In the arrangement above described, and with an article or package upon the endless belt 8 immediately adjacent to its front end, the free end of the movable contact member 16 will be depressed to break contact with the fixed member of the circuit closer 15 and cause an interruption in the local operating circuit of the electro-magnet 13 and permit the spring 14 to release the clutch engagement of the movable clutch collar 11 and sprocket drum 4 and effect a stoppage of said endless belt 8. With the removal of said article or package from said extreme forward portion of the endless belt 8, the movable contact member 16 is moved by the spring 17 into contact with the fixed member of the circuit closer 15 to close the local operating circuit of the electro-magnet 13 to effect a clutching engagement of the aforesaid clutch collar 11 and sprocket drum 4 for a further movement of the endless belt or carrier 8.

18 designates a fixed shelf or ledge arranged adjacent to the forward end of each endless belt or carrier 8 and adapted to receive and provide partial support to the articles or packages when the same are carried too far forward by the endless belt 8 in its intermittent operation.

The modification illustrated in Figs. 3 and 4 involves a detail structure as follows:

18′ designates a series of approximately horizontal shelves or ledges arranged in line with the forward end of the endless belt or carrier 8 and pivoted to the main shell or casing 1 so as to be capable of limited upward swinging movement from a horizontal plane in the operation of the mechanism. In such modified structure the movable contact member of the circuit closer 15 heretofore described is arranged as an extension or arm 16′ of the hinged shelf 18′ so as to have movement in unison therewith, and so that with the presence of an article or package on the shelf 18′ the said arm 16′ constituting the movable member of a circuit closer 15 is in a position out of contact with the fixed member of said circuit closer, to effect an interruption of the local operating circuit of an electro-magnet 13 and consequent interruption of the travel or movement of the endless belt 8 as heretofore described. In like manner, with the removal of said package or article from the shelf 18′ the said arm 16′ moves to a position in contact with the fixed member of the circuit closer, to close the local operating circuit of the electro-magnet 13, to cause operative engagement of the driving means of the endless belt or carrier 8 with the power source of the apparatus and a consequent further travel of said endless belt or carrier.

With the exhaustion of the supply of articles or packages in a particular cell of the cabinet, the operator will wedge or lock the movable contact member 16 in its open condition by a wedge or other convenient device, until said cell has been replenished.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a dispensing cabinet, a holding cell, a movable belt forming the floor of said cell, means for operating said belt, and controlling means for said belt operating means located at the forward end of the belt in the path of the article carried thereon and adapted to be actuated thereby and render the belt operating mechanism inoperative while said article is at the forward end of said belt, substantially as set forth.

2. In a dispensing cabinet, a holding cell, a movable belt forming the floor of said cell, a shelf arranged at the forward end of said belt, means for operating said belt, and controlling means for said belt operating means located at the forward end of the belt in the path of the article carried thereon and adapted to be actuated thereby and render the belt operating mechanism inoperative while said article is at the forward end of said belt, substantially as set forth.

3. In a dispensing cabinet, a holding cell, a horizontally arranged movable belt forming the floor of said cell, means for operating said belt, and controlling means for said belt operating means located at the forward end of the belt in the path of the article carried thereon and adapted to be actuated thereby and render the belt operating mechanism inoperative while said article is at the forward end of said belt, substantially as set forth.

4. In a dispensing cabinet, a holding cell, a horizontally arranged movable belt forming the floor of said cell, a shelf arranged at the forward end of said belt, means for operattng said belt, and controlling means for said belt operating means located at the forward end of the belt in the path of the article carried thereon and adapted to be actuated thereby and render the belt operating mechanism inoperative while said article is

at the forward end of said belt, substantially as set forth.

5. In a dispensing cabinet, a holding cell, an endless belt forming the floor of said cell, sprocket drums carrying said belt, an operating shaft having clutch connection with one of said sprocket drums, and means operative from the forward end of said belt for automatically operating the clutch connection aforesaid, substantially as set forth.

6. In a dispensing cabinet, a holding cell, an endless belt forming the floor of said cell, a shelf arranged at the forward end of said belt, sprocket drums carrying said belt, an operating shaft having clutch connection with one of said sprocket drums, and means operative from the forward end of said belt for automatically operating the clutch connection aforesaid, substantially as set forth.

7. In a dispensing cabinet, a holding cell, an endless belt forming the floor of said cell, sprocket drums carrying said belt, an operating shaft having clutch connection with one of said sprocket drums, an electro-magnet having operative engagement with said clutch connection, and a circuit closer arranged in the circuit of said electro-magnet and having a movable contact member operative from a point at the forward end of said belt, substantially as set forth.

8. In a dispensing cabinet, a holding cell, an endless belt forming the floor of said cell, a shelf arranged at the forward end of said belt, sprocket drums carrying said belt, an operating shaft having clutch connection with one of said sprocket drums, an electro-magnet having operative engagement with said clutch connection, and a circuit closer arranged in the circuit of said electro-magnet and having a movable contact member operative from a point at the forward end of said belt, substantially as set forth.

9. In a dispensing cabinet, a series of holding cells, a series of movable belts forming individual floors for said cells, individual means for operating said belts, an operating shaft common to a plurality of the individual operating means, and individual controlling means for said belt operating means located at the forward end of each belt and in the path of an article carried thereon, substantially as set forth.

10. In a dispensing cabinet, a series of holding cells, a series of movable belts forming individual floors for said cells, a series of individual shelves arranged at the forward ends of said belts, individual means for operating said belts, an operating shaft common to a plurality of the individual operating means, and individual controlling means for said belt operating means located at the forward end of each belt and in the path of an article carried thereon, substantially as set forth.

11. In a dispensing cabinet, a series of holding cells, a series of endless belts forming individual floors for said cells, pairs of sprocket drums individual to each endless belt, an operating shaft common to a plurality of sprocket drums and having a plurality of clutch connections individual to said plurality of sprocket drums, and a plurality of individual controlling means for said clutch connections located at the forward ends of the endless belts and in the path of the articles carried thereon, substantially as set forth.

12. In a dispensing cabinet, a series of holding cells, a series of endless belts forming individual floors for said cells, a series of individual shelves arranged at the forward ends of said belts, pairs of sprocket drums individual to each endless belt, an operating shaft common to a plurality of sprocket drums and having a plurality of clutch connections individual to said plurality of sprocket drums, and a plurality of individual controlling means for said clutch connections located at the forward ends of the endless belts and in the path of the articles carried thereon, substantially as set forth.

13. In a dispensing cabinet, a series of holding cells, a series of endless belts forming individual floors for said cells, pairs of sprocket drums individual to each endless belt, an operating shaft common to a plurality of sprocket drums and having a plurality of clutch connections individual to said plurality of sprocket drums, a series of electro-magnets having operative engagement with said clutch connections, and a series of circuit closers arranged in the local operating circuits of said electro-magnets and having movable contact members operative from points at the forward ends of said endless belts, substantially as set forth.

14. In a dispensing cabinet, a series of holding cells, a series of endless belts forming individual floors for said cells, a series of individual shelves arranged at the forward ends of said belts, pairs of sprocket drums individual to each endless belt, an operating shaft common to a plurality of sprocket drums and having a plurality of clutch connections individual to said plurality of sprocket drums, a series of electro-magnets having operative engagement with said clutch connections, and a series of circuit closers arranged in the local operating circuits of said electro-magnets and having movable contact members operative from points at the forward ends of said endless belts, substantially as set forth.

Signed at Chicago, Illinois, this 3rd day of August, 1918.

GERVIS E. McKENNEY.