J. C. STEINER.

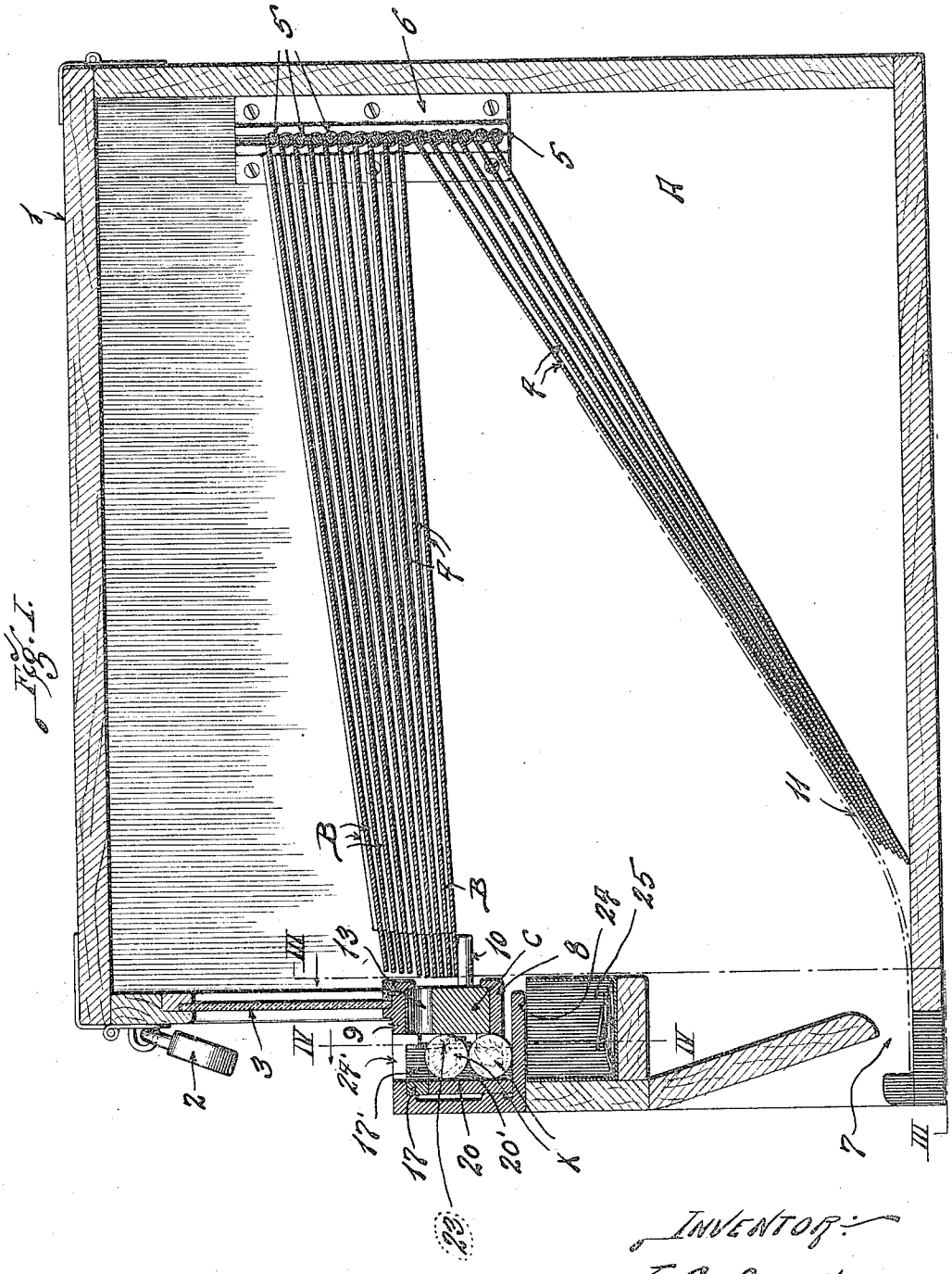
VENDING MACHINE.

APPLICATION FILED OCT. 26, 1916.

1,256,071.

Patented Feb. 12, 1918.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

Fig. II.

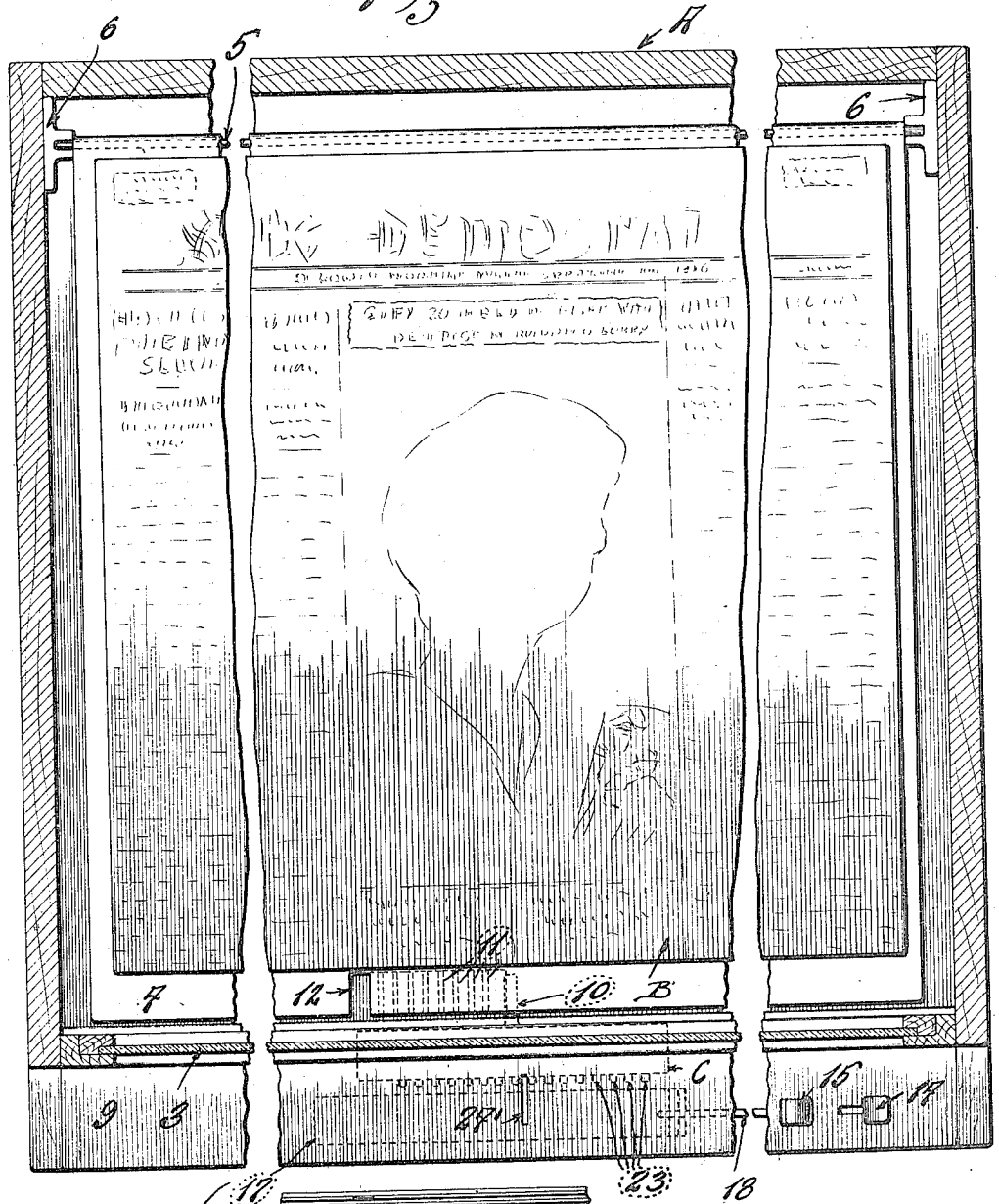
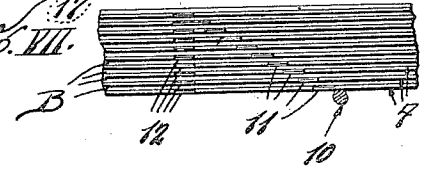


Fig. VII.



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4 SHEETS—SHEET 3.

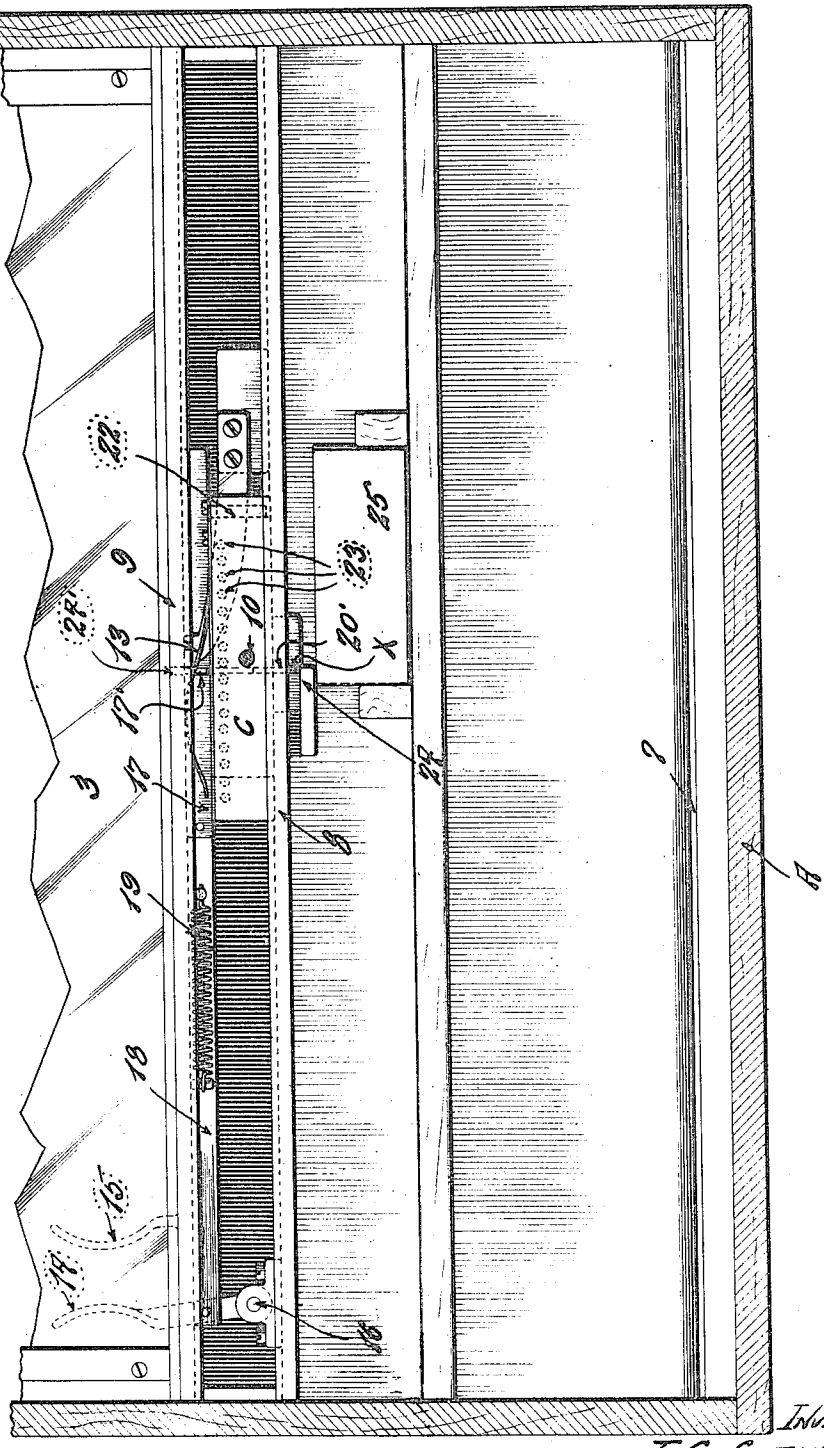


Fig. III.

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4 SHEETS—SHEET 4.

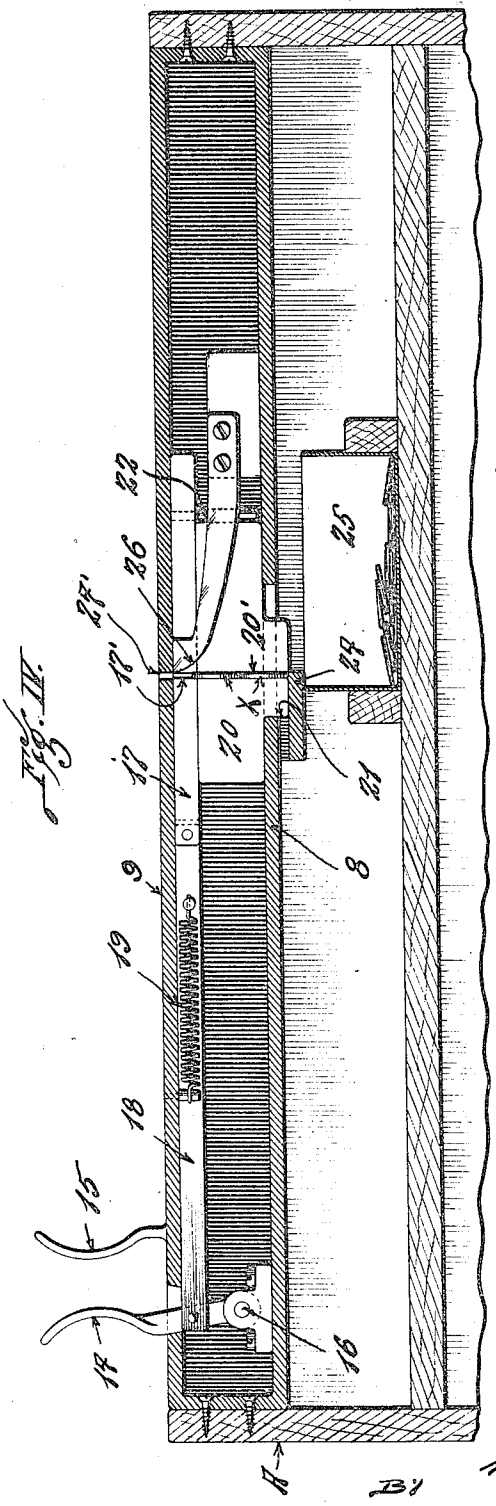


Fig. III.

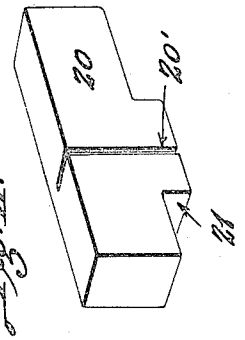


Fig. V.

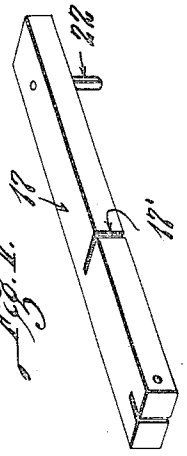


Fig. IV.

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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

1,256,071. Specification of Letters Patent. Patented Feb. 12, 1918.

Application filed October 26, 1916. Serial No. 127,804.

To all whom it may concern:

Be it known that I, JOSEPH C. STEINER, a citizen of the United States of America, a resident of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Vending-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in vending machines, one of the objects being to produce a simple, inexpensive and absolutely positive means for holding and delivering the articles to be vended. Another object is to provide a simple and accurate coin controlled operating device.

With the foregoing and other objects in view the invention comprises the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention; however, it is to be understood that the invention comprehends changes, variations and modifications which come within the scope of the claims hereunto appended.

The new machine is particularly adapted for use in vending newspapers, magazines, postal cards, books and other publications. The different issues of newspapers and magazines vary in thickness, and the action of the article holding and delivering means is not in any way impaired by such variations. In the preferred form of the invention, the article holder is in the form of a book provided with a series of separating leaves adapted to lie between the articles. The separating leaves are movable independently of each other and they drop by gravity to deliver the articles. A coin controlled retaining device is adapted to hold all of the separating leaves in their elevated positions, and this coin controlled device may be actuated to release the separating leaves consecutively, thereby allowing said leaves to drop and deliver the articles one at a time.

Figure I is a vertical section illustrating a vending machine constructed in accordance with the invention.

Fig. II is a horizontal section taken through the upper portion of the machine.

Fig. III is a vertical section taken approximately on line III—III, Fig. I.

Fig. IV is a vertical section taken approximately on line IV—IV, Fig. I.

Fig. V is a perspective view of the manually operated drive member for actuating the coin controlled mechanism.

Fig. VI is a perspective view of the coin holding member which lies below the drive member.

Fig. VII (Sheet 2) is a fragmentary front elevation of the separating leaves, showing the traveling retaining pin which moves step by step to release the leaves consecutively.

A designates a housing provided with a hinged top wall or closure 1 (Fig. I) adapted to be held in its closed position by means of a lock 2. 3 designates a transparent panel in the front wall of the housing.

The article holder (Figs. I and II) is a book-like device comprising a series of separating leaves 4, each of which is provided with a horizontal pivot pin 5 at its rear edge. Supporting members 6, secured to the oppositely disposed side walls of the housing, are provided with vertical slots for the reception of the pivot pins 5 which extend from the side edges of the leaves 4. The newspapers B or other articles, are supported by the leaves 4, all of said leaves, excepting the lowermost leaf, being arranged between two of the articles B. Each leaf 4 is adapted to drop by gravity about the axis of its horizontal pivot 5, from an elevated position (Fig. I) for the purpose of delivering an article B to the discharge opening 7 at the lower portion of the machine. When the leaves drop to their delivery positions, they are inclined to constitute delivery chutes for directing the articles toward the discharge opening 7, as indicated by the dotted lines in Fig. I.

The means for supporting the leaves 4 in their elevated positions includes a traveling retaining member C slidably mounted between guides 8 and 9 and provided with a pin 10 adapted to engage the separating leaves 4. The traveling member C is advanced step by step, in a horizontal plane, to release the leaves 4 consecutively as will be presently described. Each leaf 4 has a notch 11 in its front edge (Figs. II and VII, Sheet 2,) and an abutment face adapted to rest upon the pin 10 which extends from the traveling member C. The notches 11 are formed in different vertical planes, (Fig. VII) and the pin 10, in moving one step,

travels from the plane of one notch 11 to the plane of the notch 11 in the next adjacent leaf 4. This releases one of the leaves 4 from the pin 10, allowing the leaf to drop by gravity to its inclined delivery position. It will be noted that the lowest leaf 4 shown in Fig. VII has an abutment face which engages the pin 10, each of the higher leaves being provided with a similar abutment face which lies immediately above the notch 11 in the next lower leaf. Obviously, the stepped notches 11 and the abutment faces adjacent thereto, allow the leaves 4 to drop consecutively in response to the step by step movements of the pin 10.

The leaves are arranged one above the other, and each leaf has a notch 12 (Figs. II and VII) adapted to receive the traveling pin 10. When the traveling device reaches the end of its path of movement, the pin 10 is in alinement with all of the notches 12, and all of the leaves may then be lifted by hand to their elevated positions. Thereafter, the traveling device is restored, by hand, to its starting position wherein it will retain all of the leaves 4 in their elevated positions. The newspapers, or other articles, may then be inserted into the book-like article holder.

It will be understood at this time that the action of releasing and delivering the articles is not in any way affected by variations in the dimensions of the articles to be vended, and that it is not necessary to use accurate feeding devices in delivering the articles to the discharge opening.

A friction spring 13 (Figs. I and III) carried by the traveling member C, engages the guide 9 to serve as a detent for retaining said traveling member in the various positions to which it is shifted by the driving device.

The coin controlled means for advancing the traveling member C, step by step, comprises a movable operating arm 14 (Figs. II, III and IV), located adjacent to a stationary arm 15. The operating arm is pivotally supported at 16 and connected to a reciprocatory drive member 17 by means of a link 18. 19 designates a restoring spring tending to retain the elements 14, 17 and 18 in the positions shown in Fig. IV. A reciprocatory coin holding member 20, located directly below the drive member 17, is provided with a coin receiving recess 20′ which registers with a coin receiving recess 17′ in the drive member 17. The coin holding member 20 is provided with an abutment face 21 (Figs. IV and VI) which engages a stationary part of the machine when said member 20 occupies its normal or starting position. A pin 22, extending downwardly from the drive member 17 (Figs. IV and V) engages one end of the coin holding member 20. The traveling member C is provided with a row of pins 23 arranged to form a series of coin receiving recesses adapted to register successively with the recesses 17′ and 20′.

The coin controlled device I have shown is adapted to receive two coins at the same time. If only one coin is inserted into the machine, the mechanism cannot be operated by the reciprocatory drive member 17. The coins are inserted through a slot 24′ formed in a stationary part of the machine. The first coin X to be inserted is stopped by an abutment 24 which lies immediately below the coin receiving recesses 17′ and 20′. This coin merely lies in the coin holding member, 20 and does not serve as means for transmitting movement to any of the devices. The second coin X (Fig. IV) is stopped by the first coin and it lies partly within the coin receiving recess 20′, partly within the recess 17′, and partly within one of the recesses formed by the pins 23 on the traveling member C. The upper coin is thus interlocked with the drive member 17, coin holding member 20 and traveling member C. The drive member 17 may then be actuated to advance the traveling member one step, movement being transmitted from said drive member, through the upper coin X, and to the traveling member. At the beginning of this movement the coin holder 20 moves to the right from the position shown in Fig. IV, thus allowing the lower coin X to drop by gravity into a coin receptacle 25. The upper coin X is frictionally engaged with the members 17, 20 and C, and it is necessary to eject this upper coin from the coin receiving recesses at the end of the operative stroke of the drive member 17. A stationary ejector cam 26 (Fig. IV) is, therefore, located in the path of the upper coin X. When the upper coin strikes this cam, said coin is forced downwardly, released from the drive member 17, and permitted to drop into the coin receptacle 25. When the drive member 17 is restored by the spring 19, the pin 22 (Fig. IV) which extends downwardly from said drive member, engages one end of the member 20 and pushes it back to the starting position, shown in Fig. IV. The traveling member C does not move backwardly in response to the return stroke of drive member 17. The upper coin is released from the drive member after the latter has completed its forward or operative stroke, and since this coin constitutes the means for transmitting power from the drive member to the traveling member C, it will be apparent that the traveling member will move in only one direction, the return stroke of the drive member being ineffective in so far as the traveling member C is concerned. The coin receiving recesses formed by the pins 23 on the traveling member, register successively

with the other coin receiving recesses so that the traveling member may be advanced step by step in response to the operative strokes of the drive member 17.

It will be observed by referring to Fig. IV that the drive member 17 may be reciprocated independently of the coin holding member 20, unless the two coins X are located in the coin receiving recess. Since the drive member 17 frictionally engages the member 20, the latter tends to move with the drive member when only one coin is arranged in the device. In this event, if the member 20 was permitted to move a slight distance with the drive member, the single coin would drop from the abutment 24 to the coin receptacle 25 without performing any desirable function. The cam 26 is, therefore, a spring, and it frictionally engages the member 20, so as to yieldingly hold said member in the starting position shown in Fig. IV.

I claim:—

1. In a vending machine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for reciprocating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said driver to provide for the transmission of power from said drive member, through the coin and to said traveler, and a coin ejector arranged to release the coin upon the completion of the operative stroke of said drive member, thereby allowing the drive member to return to its starting position without returning the traveler.

2. In a vending machine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for reciprocating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said driver to provide for the transmission of power from said drive member, through the coin and to said traveler, a coin ejector arranged to release the coin upon the completion of the operative stroke of said drive member, thereby allowing the drive member to return to its starting position without returning the traveler, and a yieldable retaining device for retaining said traveler in the positions to which it is shifted by said drive member.

3. In a vending machine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for reciprocating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said driver to provide for the transmission of power from said drive member, through the coin and to said traveler, a coin ejector arranged to release the coin upon the completion of the operative stroke of said drive member, thereby allowing the drive member to return to its starting position without returning the traveler, and a friction spring carried by said traveler to retain the latter in the positions to which it is shifted by said drive member.

4. In a vending mechine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for reciprocating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said drive member, a reciprocatory coin holder having a coin receiving recess which registers with the first mentioned recess, said drive member being movable independently of said traveler and the reciprocatory coin holder, and an abutment adapted to retain coins in said recesses to provide for the transmission of power from said drive member to said traveler and reciprocatory coin holder.

5. In a vending machine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for reciprocating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said drive member, a reciprocatory coin holder having a coin receiving recess which registers with the first mentioned recess, said drive member being movable independently of said traveler and the reciprocatory coin holder, and an abutment adapted to retain coins in said recesses to provide for the transmission of power from said drive member to said traveler and reciprocatory coin holder, said coin receiving recesses being adapted to receive a plurality of superposed coins, said abutment constituting a stop for the lowermost coin, and said drive member being arranged to receive the uppermost coin.

6. In a vending machine, a coin controlled article delivering device comprising a traveler movable step by step to release the articles, a drive member provided with a coin receiving recess at a point adjacent to said traveler, operating means for recipro-

cating said drive member, said traveler being provided with a row of coin receiving recesses adapted to register successively with the coin receiving recess in said drive member, a reciprocatory coin holder having a coin receiving recess which registers with the first mentioned recess, a friction device tending to prevent said reciprocatory coin holder from moving with said drive member, said drive member being movable independently of said traveler and the reciprocatory coin holder and an abutment adapted to retain coins in said recesses to provide for the transmission of power from said drive member to said traveler and reciprocatory coin holder.

7. In a vending machine, an article holder comprising a series of pivotally supported separating members arranged to lie between the articles to be vended, each of said separating members being movable downwardly by gravity, about the axis of its pivot, to permit the removal of one of said articles from the machine, a traveling retaining device constituting a support for all of said separating members, each of said separating members being provided with an abutment face adapted to rest upon said traveling retaining device, the different abutment faces being located in different vertical planes and also in different horizontal planes, and coin-controlled means for advancing said traveling retaining device step by step, from the plane of one of said abutment faces to the plane of the abutment face on the adjacent separating member, thereby releasing the separating members consecutively.

8. In a vending machine, an article holder comprising a series of pivoted separating members arranged to lie between and support the articles to be vended, each of said separating members being movable downwardly by gravity, about the axis of its pivot, to permit the removal of one of the articles from the machine, a traveling retaining device provided with a supporting member common to all of said separating members, said supporting member being arranged to constitute a support for said pivoted separating members, each of said separating members having an abutment face adapted to rest upon said supporting member, the different abutment faces being located in different vertical planes and also in different horizontal planes, and coin controlled means for advancing said traveling retaining device step by step, so as to carry said supporting member from one of said abutment faces to the vertical plane of the next adjacent abutment face, thereby releasing said supporting member from one of said separating members and permitting the next higher separating member to rest upon said supporting member.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."