No. 725,317. PATENTED APR. 14, 1903.

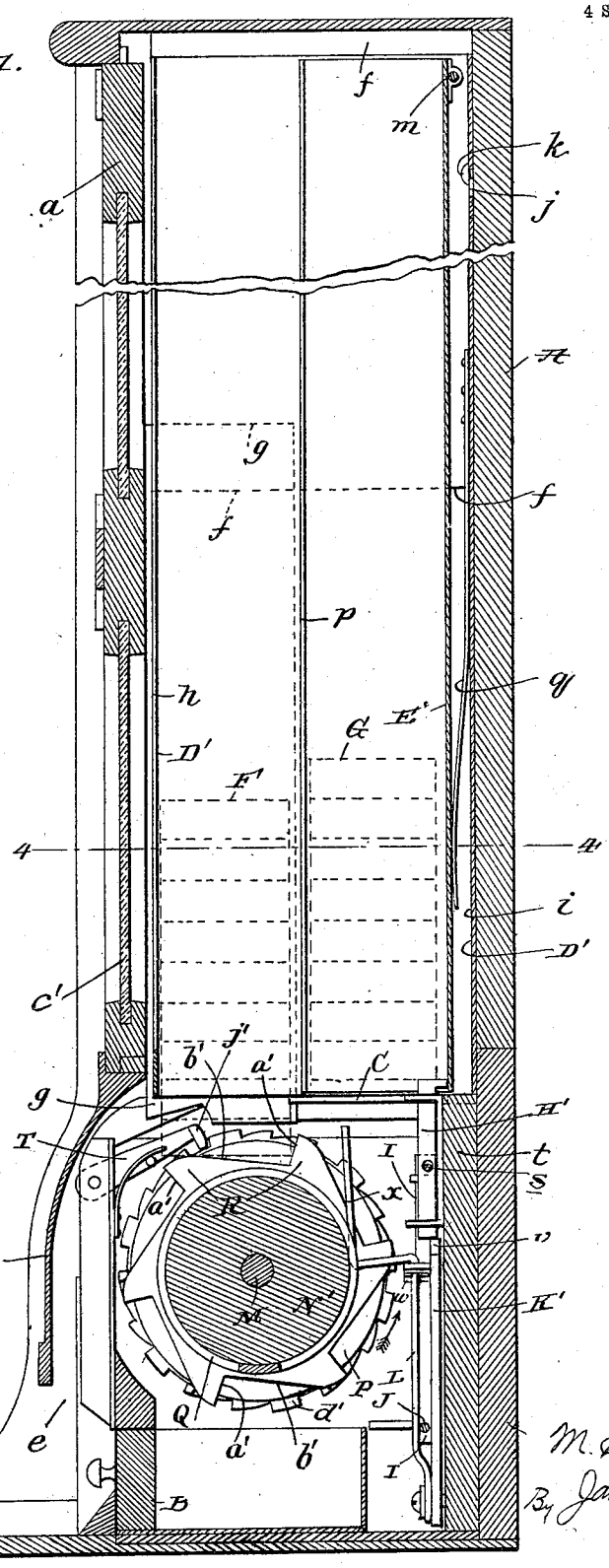
M. S. CODY.

VENDING APPARATUS.

APPLICATION FILED APR. 9, 1902.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.



Witnesses
H. H. Raeder
N. C. Healy

Inventor
M. S. Cody
By James J. Healy
Attorney

No. 725,317. PATENTED APR. 14, 1903.

M. S. CODY.

VENDING APPARATUS.

APPLICATION FILED APR. 9, 1902.

NO MODEL. 4 SHEETS—SHEET 2.

Fig. 3.

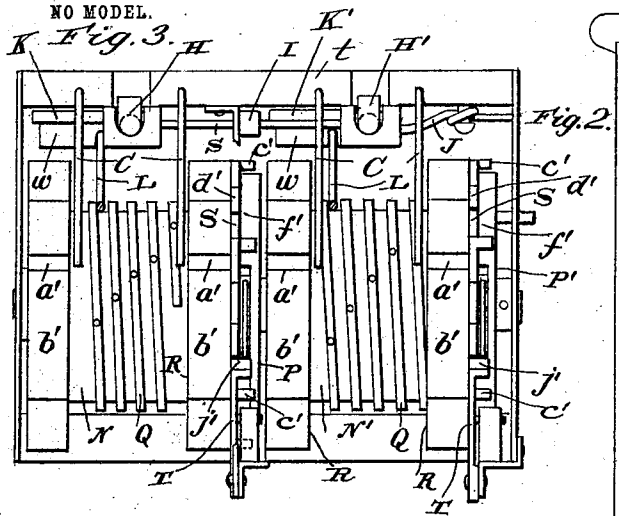


Fig. 2.

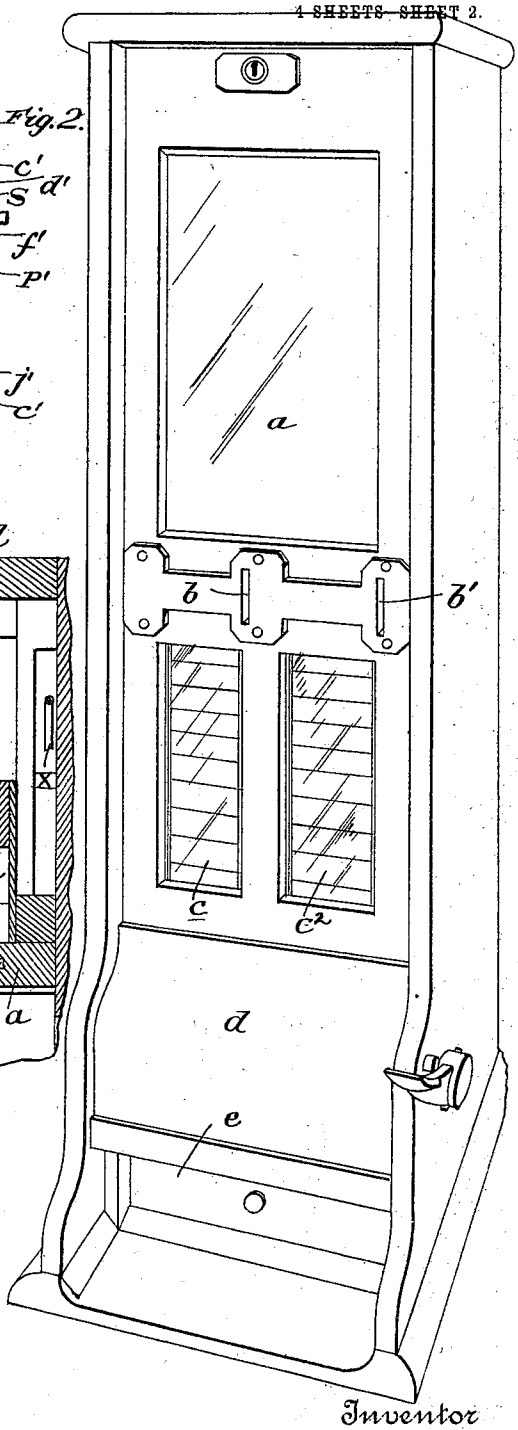
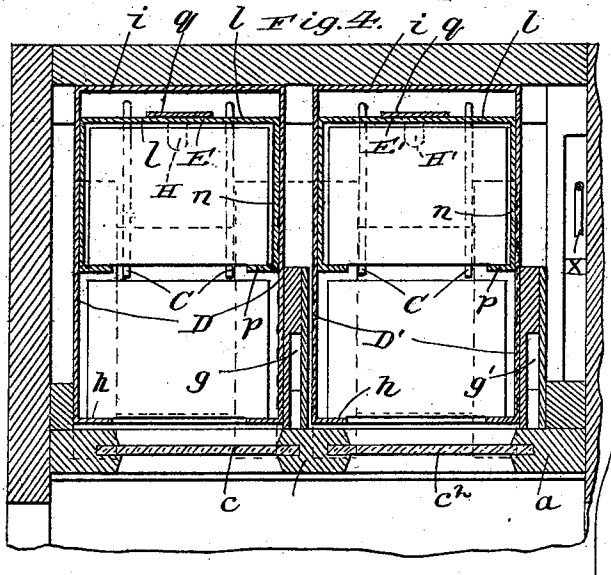


Fig. 4.



Witnesses

H. C. Sauder

N. C. Healy

Inventor

M. S. Cody

By James J. Hughes Attorney.

No. 725,317. PATENTED APR. 14, 1903.

M. S. CODY.

VENDING APPARATUS.

APPLICATION FILED APR. 9, 1902.

NO MODEL. 4 SHEETS—SHEET 3.

Fig. 5

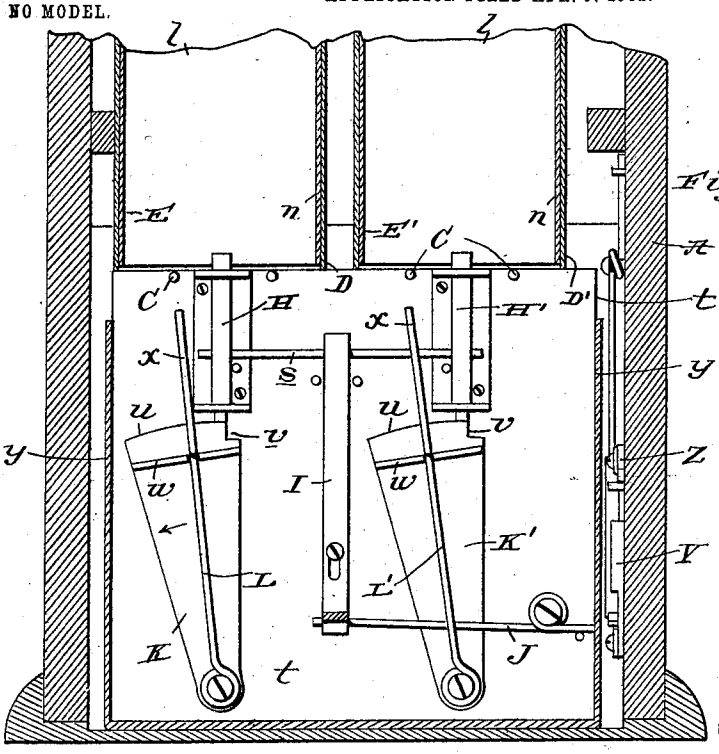


Fig. 7.

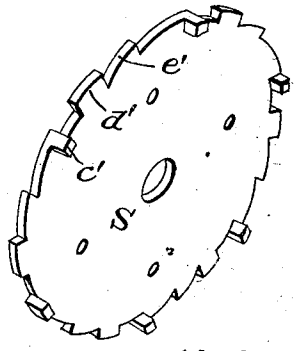


Fig. 6.

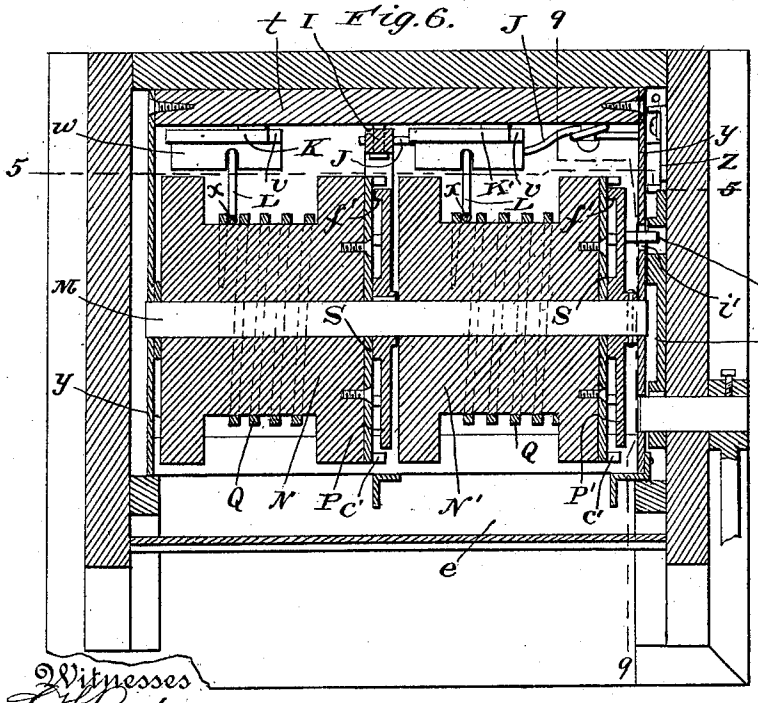
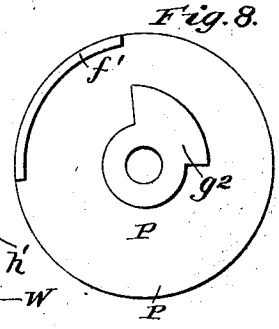


Fig. 8.



Witnesses

C. F. Pauder

N. C. Healy

Inventor

M. S. Cody

By James J. Healy

Attorney

No. 725,317. PATENTED APR. 14, 1903.

M. S. CODY.

VENDING APPARATUS.

APPLICATION FILED APR. 9, 1902.

NO MODEL. 4 SHEETS—SHEET 4.

Fig. 9.

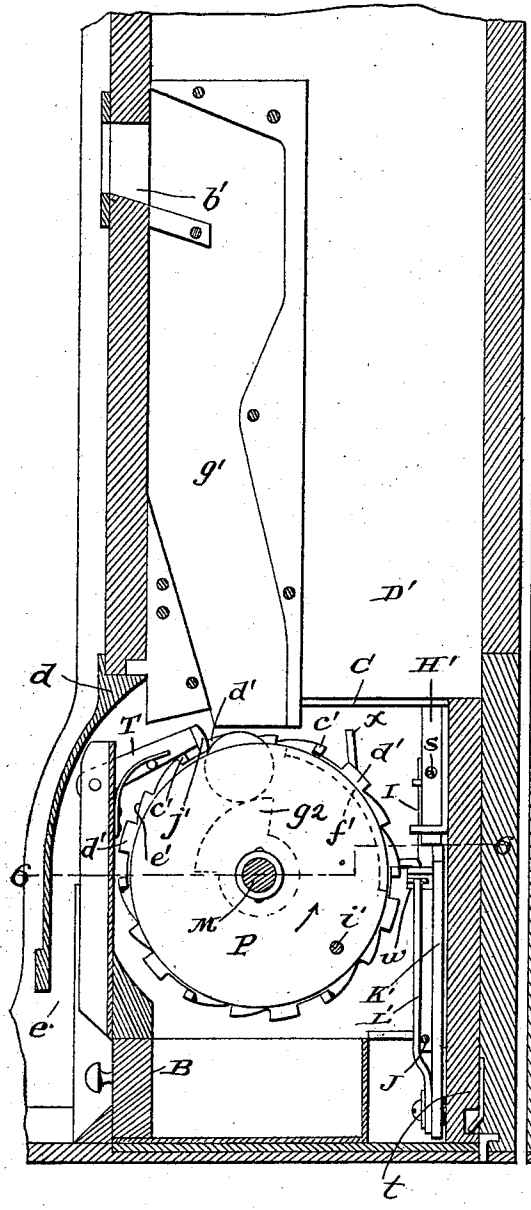
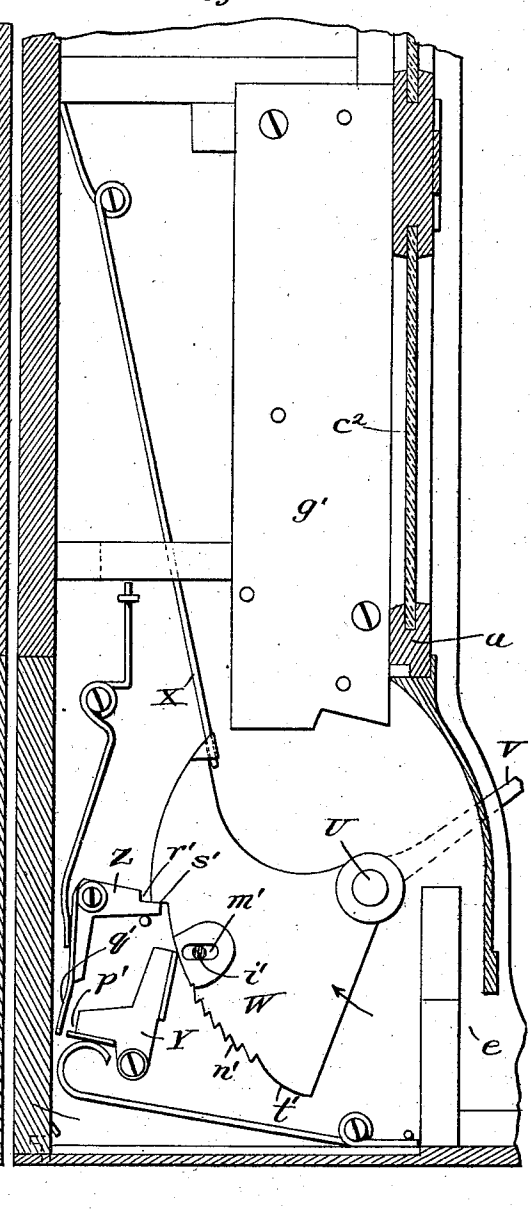


Fig. 10.



Witnesses

E. L. Reeder

N. C. Healy

Inventor

M. S. Cody.

By James J. Sheehy Attorney

UNITED STATES PATENT OFFICE.

MILES S. CODY, OF WASHINGTON, DISTRICT OF COLUMBIA.

VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 725,317, dated April 14, 1903.

Application filed April 9, 1902. Serial No. 102,068. (No model.)

To all whom it may concern:

Be it known that I, MILES S. CODY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Coin-Controlled Vending Apparatus, of which the following is a specification.

My invention relates to coin-controlled vending apparatus; and it has for its general object to provide a coin-controlled apparatus designed more especially for vending boxes of matches, boxes of medicine, and similar articles, and one which while simple and compact in construction is highly efficient and reliable in operation and possessed of large capacity.

With the foregoing in mind the invention will be fully understood from the following description and claims when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a vertical section of my improved apparatus; Fig. 2, a perspective view of the same; Fig. 3, a detail plan view of a portion of the mechanism as it appears when removed from the case; Fig. 4, a horizontal section taken in the plane indicated by the broken line 4 4 of Fig. 1; Fig. 5, a detail section taken in the plane indicated by the broken line 5 5 of Fig. 6 looking in the direction indicated by arrow; Fig. 6, a horizontal section taken in the plane indicated by the broken line 6 6 of Fig. 9; Fig. 7, a perspective view of the metallic end plate of one of the discharge-drums removed; Fig. 8, a similar view of one of the rotary disks removed; Fig. 9, a vertical section taken in the plane indicated by the broken line 9 9 of Fig. 6 with the inner plate of the right-hand coin-chute removed, and Fig. 10 a vertical section taken in a plane at the inner side of and adjacent to the right-hand side wall of the case.

Similar letters of reference designate corresponding parts in all of the several views of the drawings, referring to which—

A is the case of the apparatus, which in the preferred embodiment of the invention comprises a removable front wall *a*, having coin-slots *b b'* and glass panels *c c²*, and a fixed front wall *d*, preferably of metal, and is provided below said wall *d* with an opening *e* for the passage of the boxes of matches or other articles to be vended. Inside of the case, between the front and back walls thereof, are a central vertical partition *f*, Fig. 1, which extends from a point adjacent to the top of the case downwardly, a coin-chute *g*, Fig. 4, connected to the lower portion of said partition and the wall *d* and registered with the slot *b*, and a coin-chute *g'*, connected to the inner side of the right-hand side wall of the case and the wall *d* and registered with the slot *b'*.

B is a money-drawer disposed in the lower portion of the case and designed in practice to be secured by a suitable lock. (Not shown.)

C C, Figs. 3 and 4, are horizontal rods arranged in pairs at opposite sides of the vertical plane of and below the partition *f*; D D, vertical guides, of sheet metal or other suitable material, arranged at one side of the partition *f*; E, a holder for match-boxes or other articles to be vended disposed between the guides D; D' D', vertical guides, of sheet metal or other suitable material, disposed at the opposite side of the partition *f* with reference to the guides D, and E' a holder for articles to be vended arranged between the guides D'. The guides D and D' are similar in construction, as are also the holders E and E', and therefore a detailed description of the guides D and the holder E and their appurtenances will suffice to impart an understanding of all. The said guides D extend from a point adjacent to the supports or rods C to the upper end of the case, and they are preferably provided at their forward edges with inwardly-directed flanges *h*, while their rear edges are preferably connected by a back wall *i*, in which is a keyhole-slot *j*, Fig. 1, to receive a screw *k*, which serves to hold the guides to the case and in proper position within the same. The guides are designed to retain in position a front column of boxes or other articles (indicated by F) and are also designed to guide the holder E, in which is arranged a supplemental column of articles G, which supplemental column is designed to take the place of the front column when all of the articles of the latter have been discharged from between the guides, as will be presently described. The holder E, which is preferably of sheet metal, comprises a back wall *l*, hinged at *m* between the guides D, side walls *n*, and inwardly-directed flanges *p*

at the forward edges of the latter. It is designed when the front column of articles to be vended is discharged from between the guides D to be pressed forward by a spring *q*, which is connected to its back wall and bears against the back wall *i* of the guides. In addition to pressing the holder E forwardly between the guides D the spring *q* serves to retain the holder in such position.

It will be readily observed from the foregoing that the guides D and holder E are adapted to hold two columns of articles to be vended, as are also the guides D′ and holder E′; also, that when the front column of articles between one pair of guides is discharged the back column in the holder between said guides will be automatically carried into proper position for the discharge of its articles.

H H′, Figs. 1, 3, and 5, are vertically-movable latches arranged to engage the lower ends of the back walls of the holders E E′, respectively, and prevent forward movement of the same; I, a vertically-movable bar having a T-head *s*, which extends through apertures in the latches; J, a spring engaging the bar I and having a tendency to move said bar, and consequently the latches, downward; K K′, levers fulcrumed at their lower ends on a wall *t* within the case and having rounded upper ends *u*, arranged to engage the lower ends of the latches and hold the same against downward movement, and also having recessed corners *v*, adapted to permit downward movement of the latches when they are coincident with the same; L L′, levers fulcrumed at the same points as the levers K K′ and disposed in notched flanges *w* of said levers K K′ and having upwardly-extending arms *x*, disposed in front of the latches; M, a shaft journaled in standards *y*, connected to the wall *t*; N N′, drums loosely mounted on the shaft M and disposed below the guides D D′, respectively, and P P′ disks fixed on the shaft M and arranged adjacent to the ends of the drums N N′, respectively. The drums N N′ are similar in construction, as are also the disks P P′, and therefore a detailed description of the drum N and disk P and the operation of the same in conjunction with the levers K and L and the latch H will suffice to impart an understanding of all. The drum N is provided at its middle with a worm-screw Q, the threads of which are designed to be engaged by the arms *x* of the lever L and have for their purpose when the drum is rotated in the direction indicated by arrow in Fig. 1 to move the lever L, and consequently the lever K, in the direction indicated by arrow in Fig. 5, and thereby carry the recess *v* of the latter lever below the latch H and permit said latch to move downwardly under the action of spring J. The bar I has a limited lateral movement, and hence the latch H may be depressed through the medium of the same without affecting the latch H′. Said drum N is provided on its periphery with six (more or less) pairs of projections R, the projections of each pair being arranged in alinement at opposite sides of the worm-screw Q and having forward sides *a′*, disposed radially with respect to the drum, and outer flat sides *b′*, the latter to support the lowermost box or other article of the front column between the guides D. At one end, as best shown in Fig. 7, the drum N is provided with six (more or less) equidistant lateral lugs *c′*, six (more or less) peripheral lugs *d′*, arranged in rear of the lugs *c′* with reference to the direction in which the drum is rotated to discharge articles, and six (more or less) ratchet-teeth *e′*, disposed in rear of the lugs *d′*. Said lugs *c′* and *d′* and ratchet-teeth *e′* are preferably provided on a metallic plate S, fixedly connected to the drum by screws or other means and, like the drum, free to turn loosely on the shaft M. The disk P is fixed on the said shaft at the side of the plate S and is provided on its side adjacent to said plate with a lateral circular projection *f′*, arranged adjacent to its periphery, and also with a cam-shaped coin-support g^2. When the disks P P′ rest in their normal position, with a lateral stud *h′* on the latter disk at the lower end of a circular slot *i′* in the right-hand standard *y*, and a coin of predetermined denomination is dropped through the slot *b* and chute *g*, it will be seen that said coin will assume a position on the support g^2 of disk P and between the forward end of the projection *f′* of the disk and the toe *j′* of a pivoted and spring-backed dog T, Fig. 1, which serves by engaging one of the lugs *d′* to prevent forward movement of the drum until a coin is deposited. When the disks P P′ and shaft M are turned in the direction indicated after the deposit of the coin, as stated, the coin will first operate to raise the dog out of engagement with the forward end of the lug *d′* and then by acting against one of the lugs *c′* of the drum will turn the drum sufficiently far to effect the discharge of one article therefrom. Incident to the described forward movement of the drum the dog T will ride over the ratchet-tooth *e′* in rear of the lug *d′* mentioned to prevent casual retrograde movement of the drum until it has been moved forward to the extent desired and then will assume a position in front of the lug *d′* in rear of said tooth *e′* to lock the drum against forward movement until after another coin is deposited. When the disk P is reversed or returned to its normal position, the coin will drop from between the particular lug *c′* mentioned and the support g^2 into the drawer B. The cam shape of the support g^2 precludes pinching of the coin between the support g^2 and lug *c′* incident to the described reverse movement of the disk and enables the coin to freely drop out of engagement with the drum and disk at the time mentioned. The circular projection *f′* of the disk serves, in addition to releasing and turning the drum through the medium of the coin, to close the lower end of the chute *g* and pre-

vent another coin from dropping therefrom until the drum and disk are in their normal positions and are adapted to receive a coin between them.

U, Fig. 10, is a shaft journaled in the right-hand side wall of the case and having a handle V at its outer end and a plate W at its inner end. The said plate is provided with a slot m', which receives the stud i' on the disk P', and hence it will be seen that when the shaft U is turned in the direction indicated by arrow through the medium of the handle V the disks P P' and shaft M will be turned in a similar direction. A spring X, connected to the plate W and case A, serves when the handle V is released to return the plate, and consequently the disks P P' and shaft M, to their normal positions.

Y is a pivoted spring-pressed dog normally arranged to engage ratchet-teeth n' on the plate W and having a rabbet p' at its free end, and Z is a pivoted spring-pressed lever which has a spring-tongue q', designed to enter the rabbet p' of dog Y, and a reduced end r', arranged to engage a shoulder s' of the plate. When the plate W is swung in the direction indicated by arrow in Fig. 10, the inner end of the dog Y will engage the teeth n' of the plate, and thereby prevent retrograde movement of the shaft M and disks P P' until one of the drums has been turned to a sufficient extent to discharge an article therefrom. When the plate W has been turned to the extent stated, a cam portion t' of the plate will raise the inner end of dog Y, and thereby depress the other end thereof sufficiently to enable the spring-tongue q' of lever Z to enter the rabbet or recess p'. With this done the dog is held out of engagement with the teeth of the plate until the plate is returned to the normal position shown in Fig. 10, when the shoulder s' of the plate strikes the lever Z, and thereby disengages said lever from the dog and restores the dog to its normal position shown.

With four columns of articles to be vended in the case A the lowermost articles of the front columns rest on the sides b' of pairs of projections R of the drums N N', while the lowermost articles of the back columns rest on the supports C.

The operation is the same when a coin is dropped in the slot b and the handle V is depressed as when a coin is dropped in the slot b' and the handle is depressed, and therefore a description of the general operation when a coin is deposited in the former slot will suffice for all purposes. When a coin is placed in slot b and drops through chute g to a position between the drum N and disk P and the handle V is depressed, the shaft M, disks P and P' will be turned, and with them the drum N, as before described. When the said drum is turned, the sides a' of the projections R in rear of those on which the lowermost article of the forward left-hand column rests will force said article forwardly and cause it to fall from the drum, and the next uppermost article will then drop upon the sides b' of the first-mentioned projections R and remain thereon until the apparatus is again actuated. When the apparatus is filled, there are, by preference, twenty-four superposed boxes of matches or other articles to be vended in each of the front columns and a similar number of superposed articles in each of the supplemental or rear columns. The drums N N' are each provided, as stated, with six pairs of projections R, and hence it will be seen that four complete revolutions of the drum N are necessary to discharge all of the articles comprised in the front columns between the guides D, and a corresponding number of revolutions of the drum N' are necessary to discharge all of the articles comprised in the front column between the guides D'. The thread of the worm-screw of drum N is so arranged that when said drum has made four complete revolutions the levers L K will have been moved laterally a sufficient distance to carry the recess v at the upper end of lever K into alinement with the latch H, when the spring J will operate to draw said latch downwardly, and thereby release the holder E. When the holder is released, the spring q operates to push its lower end forwardly into a position in advance of the supports C, so as to enable the lowermost article in the holder to drop upon the projections R of the drum N below it. Subsequent to the forward movement of the holder E and the dropping of its lowermost article on the projections R of drum N the operation of the apparatus is the same as that before described.

While I prefer to have the columns of articles to be vended of such height that four revolutions of a drum are necessary to discharge all of the articles of a column, I desire it understood that the parts may be so arranged and turned that the first or forward column of each pair of columns will be exhausted and the supplemental or rear column released and moved forwardly at the completion of four (more or less) revolutions of the discharge-drum complementary to said column.

After the apparatus is depleted of articles to be vended it is obvious that it may be readily refilled and the mechanism expeditiously reset to operate in the manner before described.

While the drum N and disk P are similar in construction to the drum N' and disk P', said drum N and disk P operate independently of the other drum and disk. From this it follows that the articles placed between the guides D' and in the holder E' may be different from the articles placed between the guides D and in the holder E, also that by slight changes in the size of parts the rotation of the drum N' may be controlled by a coin of greater or less value than that which controls the rotation of the drum N.

In practice when the supply of articles to

be vended is to be replenished the front wall of the case A is preferably taken out and the boxes formed by the guides D D′ in conjunction with their back walls *i* are removed. After being filled with boxes of matches or other articles to be vended the boxes formed by the guides and their back walls are replaced and secured in the case, as is also the front wall *a*.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for the purpose described, the combination of a rotary article-delivery drum, a holder for articles to be vended hinged at its upper end, a vertically-movable latch arranged to engage the lower end of said holder and prevent forward movement of the same, a worm-screw fixed with respect to the article-delivery drum, a spring arranged to press the latch downwardly, a lever mounted to swing in a vertical plane and having a rounded upper end arranged to engage the lower end of the latch, and a recess adapted to permit downward movement of the latch when coincident with the same, and a lever movable with the first-mentioned lever and arranged in engagement with the worm-screw.

2. In an apparatus for the purpose described, the combination of rotary, article-delivery drums provided with worm-screws, holders for articles to be vended hinged at their upper ends, springs arranged to press the lower portions of said holders forwardly, vertically-movable latches arranged to hold the lower ends of the holders against forward movement, a vertically-movable bar having a T-head engaging said latches, a spring arranged to press said bar downwardly, levers fulcrumed to swing in a vertical plane and having rounded upper ends arranged to engage the lower ends of the latches, and also having recessed corners adapted to permit downward movement of the latches when coincident with the same, and levers connected and movable with the first-mentioned levers, and arranged in engagement with the worm-screws of the article-delivery drums.

3. In an apparatus for the purpose described, the combination of a case, an article-delivery drum, vertical guides disposed above the drum and adapted to receive between their forward portions a column of articles to be vended, a support disposed below the rear portions of the vertical guides, a vertical back wall *i* connecting the said guides, and detachably connected to the back wall of the case; said vertical guides and back wall *i* being adapted to be together removed from the case, a holder for a supplemental column of articles, connected at its upper end in a hinged manner to the guides and open at its lower end; said holder comprising a back wall and side walls provided at their forward edges with inwardly-directed flanges, and being movable fore and aft between the guides, and being also removable with the guides and the back wall *i* from the case, a spring connected to the back wall *i* and arranged to exert forward pressure against the holder, a latch arranged to engage the holder and retain the lower end thereof in a position over the support, and means controlled by the article-delivery drum for effecting the disengagement of the latch from the holder.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MILES S. CODY.

Witnesses:
CHARLES H. RAEDER,
GRAFTON L. MCGILL.