No. 852,088.

PATENTED APR. 30, 1907.

R. WEITLICH.

VENDING MACHINE.

APPLICATION FILED SEPT. 18, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

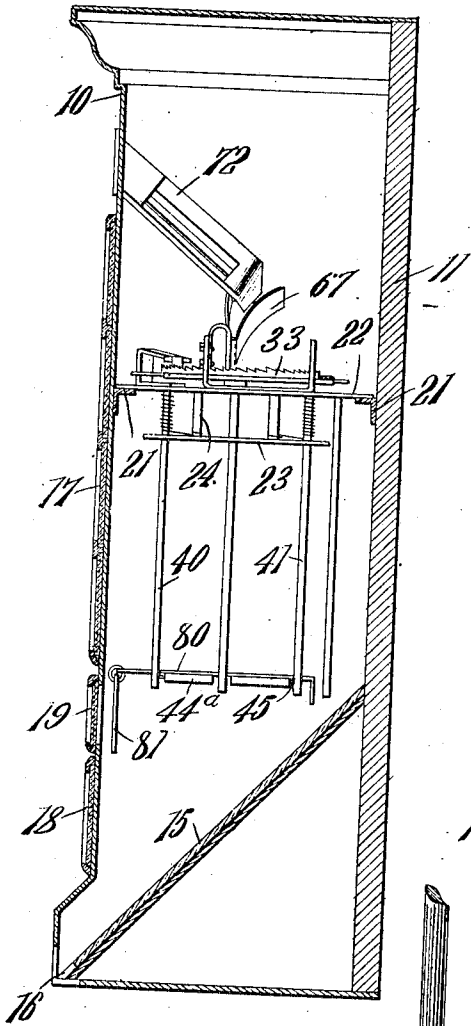
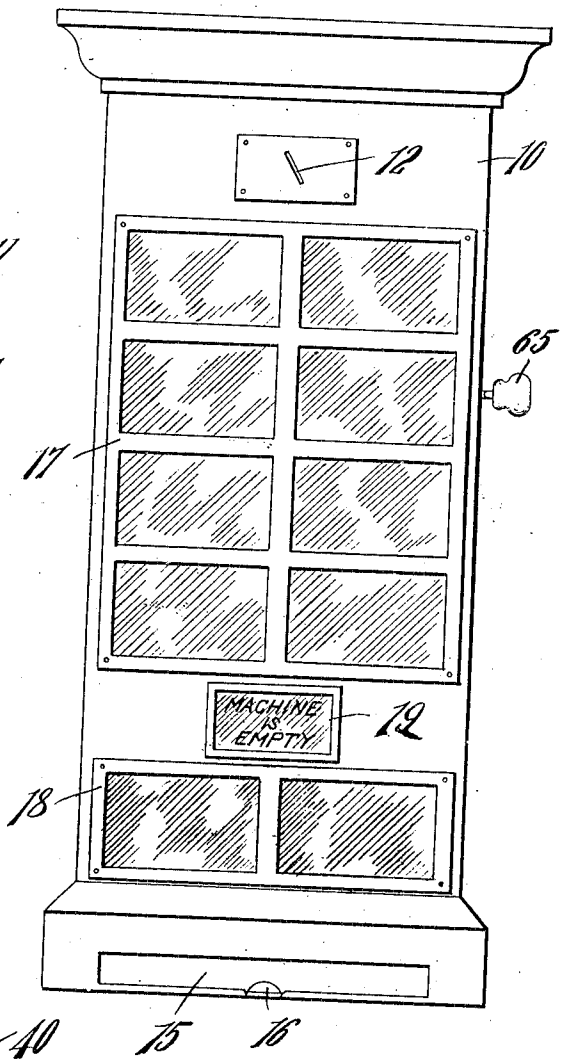


Fig. 2.



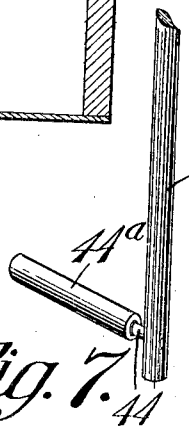


Fig. 7.

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3 SHEETS—SHEET 2.

Fig. 3.

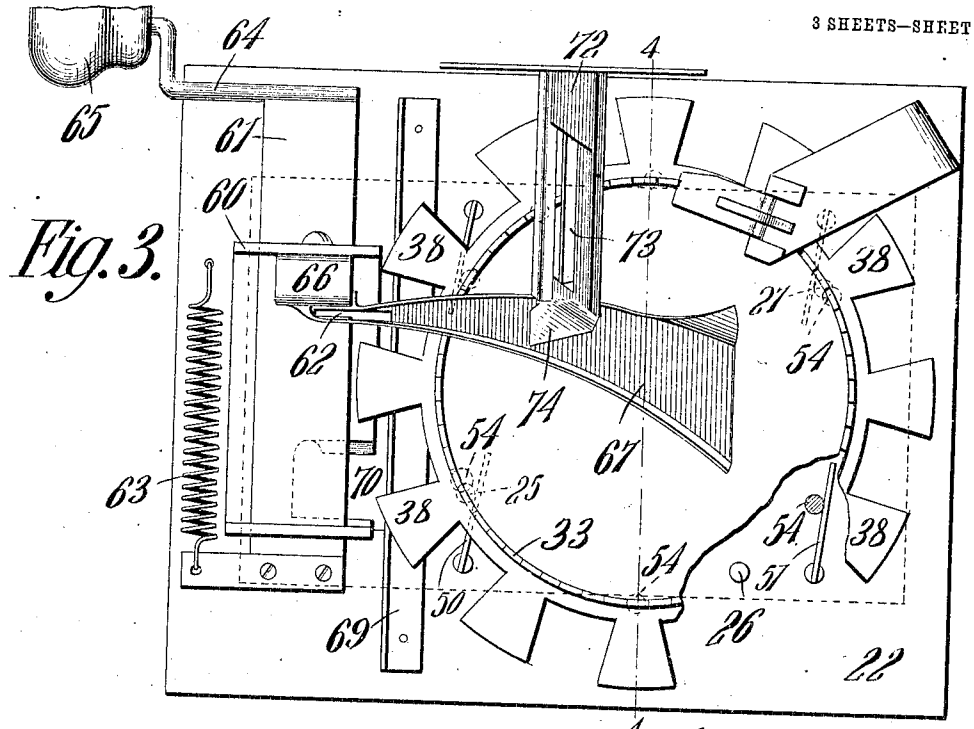
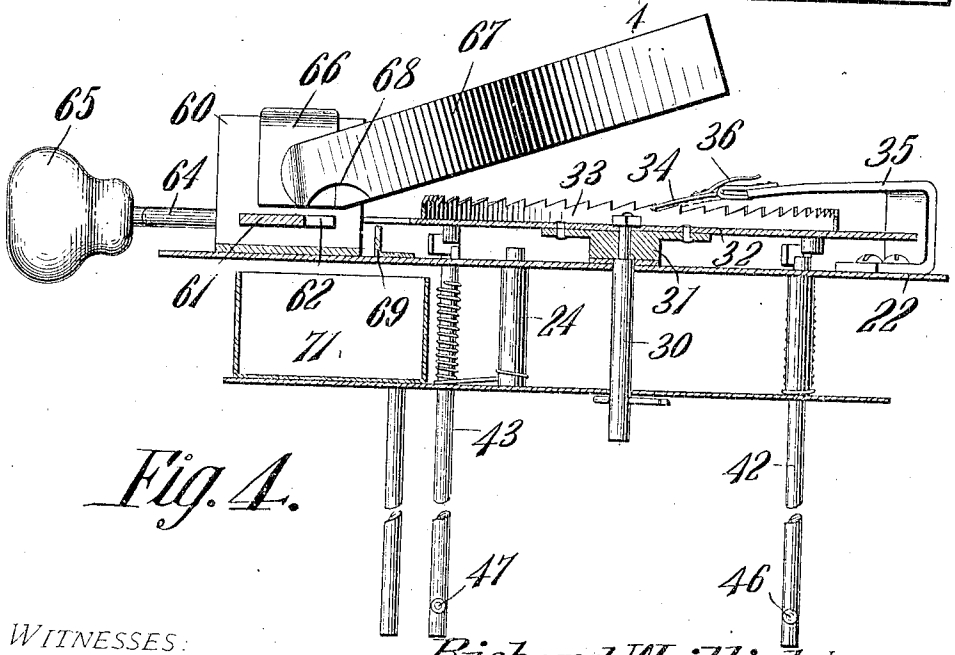


Fig. 4.



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3 SHEETS—SHEET 3.

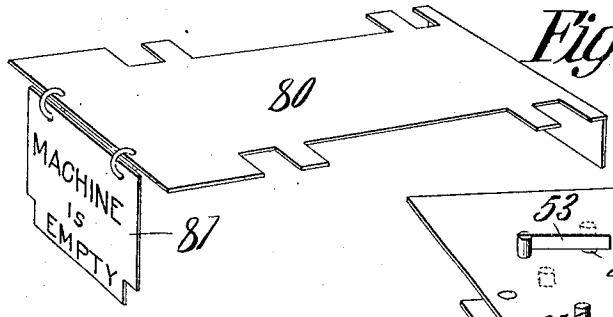

Fig. 8.

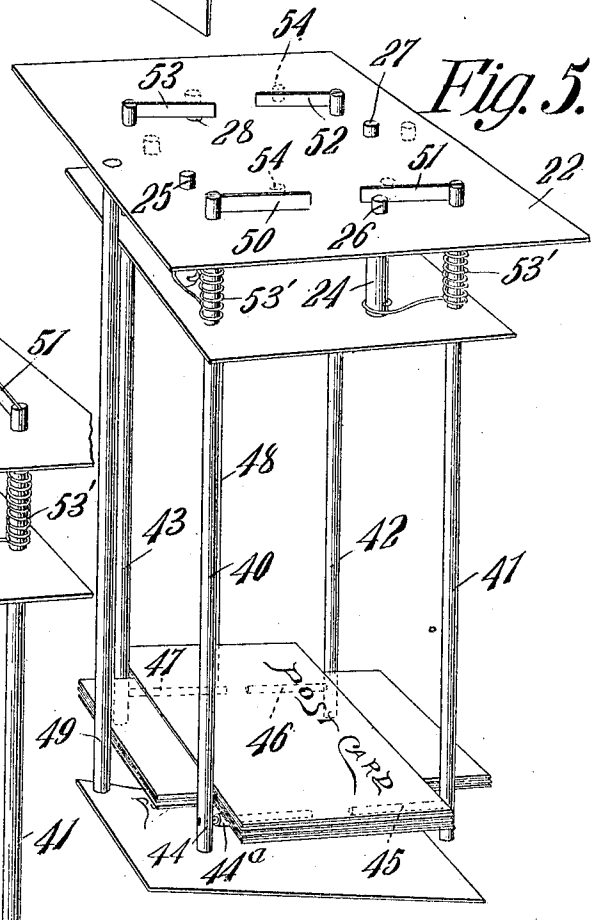

Fig. 5.

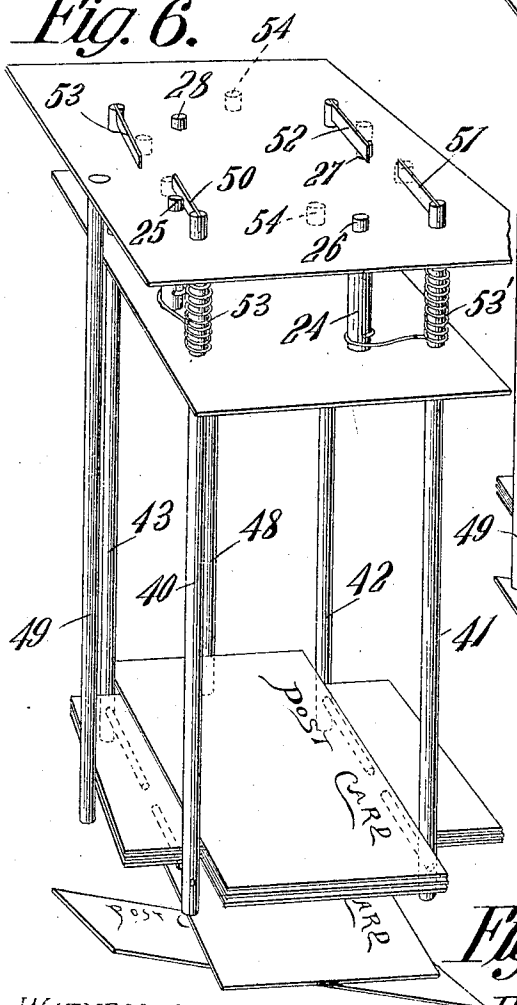

Fig. 6.

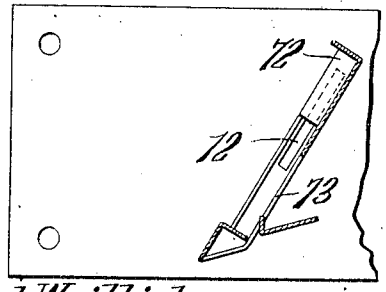

Fig. 9.

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UNITED STATES PATENT OFFICE.

RICHARD WEITLICH, OF STURGEON BAY, WISCONSIN.

VENDING-MACHINE.

No. 852,088. Specification of Letters Patent. Patented April 30, 1907.

Application filed September 18, 1906. Serial No. 335,092.

To all whom it may concern:

Be it known that I, RICHARD WEITLICH, a citizen of the United States, residing at Sturgeon Bay, in the county of Door and State of Wisconsin, have invented a new and useful Vending-Machine, of which the following is a specification.

This invention relates to coin or check controlled vending machines, and has for its principal object to provide an improved delivery apparatus whereby the delivery of one or a predetermined number of articles at each operation will be positively controlled.

A further object of the invention is to provide a delivery mechanism adapted to control the discharge of postal cards, envelops, or packages, and in which the delivery operation is controlled by the arrangement of such articles within the casing or reservoir.

A further object of the invention is to provide a delivery apparatus in which the articles to be vended are arranged criss cross fashion within the magazine, the column of articles being supported by a plurality of fingers which move from engagement with the lowermost article to allow the latter to fall by gravity into position to receive the article next to the bottom of the column.

A still further object of the invention is to provide a novel form of actuating means for controlling the operation of the delivery fingers.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a transverse sectional view of a vending machine constructed in accordance with the invention. Fig. 2 is a front elevation of the casing. Fig. 3 is a plan view of the upper portion of the delivery mechanism, parts being broken away in order to more clearly illustrate the construction. Fig. 4 is a vertical section of the same on the line 4—4 of Fig. 3. Fig. 5 is a detail perspective view of the principal parts of the magazine and delivery devices showing the delivery mechanism in position for the discharge of the lowermost article. Fig. 6 is a similar view showing the parts adjusted to position for the delivery of the next lowermost article. Fig. 7 is a detail perspective view of one of the delivery fingers and its carrying rod. Fig. 8 is a detail perspective view of the sign for indicating when the machine is empty. Fig. 9 is a detail cross sectional view of the coin chute.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the apparatus are arranged within a suitable casing 10 which may be formed of sheet metal or other material the casing being preferably provided with a heavy wooden back plate 11 by which it may be secured to a fixed wall or other support, and the parts of the casing being firmly bolted together. Near the top of the casing is a coin slot 12 and near the bottom is a delivery slide 15 that is arranged under the delivery mechanism and preferably is formed of a sheet of glass having a backing of sheet metal or other suitable material. The central portion of the lower edge of the delivery chute or slide is provided with a finger notch 16 for convenience in extracting the cards or other articles vended.

Attached to the front and both sides of the machine are metallic frames 17—18 in which samples of the contents may be placed, especially where postal cards or like articles are being vended. When the machine is employed for the vending of boxes of candy or other relatively large articles these display frames may be entirely omitted.

Near the lower portion of the casing is an opening 19 preferably covered by a transparent panel, and at this opening is displayed a suitable sign when the machine is empty.

The working parts of the machine are preferably supported on angle bars 21 that are secured to the front and rear walls of the casing, these bars serving to receive the upper plate 22 by which all of the operating parts are carried. Below the plate 22 and disposed parallel therewith is a smaller plate 23, and these two plates are rigidly connected together by four posts 24 which are equidistantly spaced, the upper ends of the posts being somewhat reduced in diameter where they extend through the upper plate 22, these reduced end portions forming stops 25, 26, 27 and 28 which serve to limit movement of the

delivery fingers in the manner hereinafter described.

The two plates 22 and 23 are provided with bearing openings arranged at a point centrally of the four stops, said opening serving for the reception of a short vertically disposed shaft 30 on the upper end of which is secured the hub member 31 of a disk 32. This disk is provided with a crown ratchet wheel 33, the teeth of which are engaged by a pawl 34 that is pivoted to one end of a supporting bracket 35 carried by the plate 22 said pawl serving to prevent any rearward movement of the disk. In order to prevent accidental disengagement of the pawl with the ratchet teeth, said pawl carries a small spring 36, the free end of which is arranged to engage with the upper face of the bracket 35 in case of excess movement of the pawl. At the periphery of the disk are arranged a number of teeth 38, twelve of which are shown in the present instance, and these are arranged to be engaged in the manner hereinafter described through an inserted coin or check, so that at each operation the disk will receive a rotative movement to the extent of thirty degrees, and this movement will be sufficient to effect the discharge of a single article from the magazine.

The upper and lower plates 22 and 23 are provided with four equi-distantly spaced sets of openings for the passage of delivery finger carrying rods 40, 41, 42 and 43 at the lower ends of which are delivery fingers 44, 45, 46 and 47, respectively. These rods and fingers serve in connection with a pair of vertically disposed stationary rods 48 and 49 to form a magazine or reservoir in which the articles to be vended are placed. The members 48 and 49, however, are merely guards, and in some instances may be omitted. The articles to be vended, such as postal cards, envelops, or small packages, are placed criss cross fashion in the magazine, as shown in Figs. 5 and 6, and the fingers 44, 45, 46 and 47 are arranged to move alternately between the two positions shown in Figs. 5 and 6, so as to release the successively lowermost articles, the fingers passing into engagement with or into position to receive the next lowermost article before the full delivery movement of the lowermost article can be effected.

The upper end of each of the finger carrying rods extends some distance above the plate 22, and these rods carry tappet arms 50, 51, 52 and 53, respectively. Between the plates 22 and 23 the rods are surrounded by coiled springs 53′, one end of the spring being secured to the rod, and the other end to the adjacent post 24, and the function of these springs is to turn the rods until the tappet arms engage against the several stops, the tappet arm 50 being movable against the stop 25, the tappet arm 51 being movable against the stop 26 the tappet arm 52 against the stop 27, and the tappet arm 53 against the stop 28. As shown in Fig. 5 the tappet arms 51 and 53 are engaging the stops 26 and 28, respectively, while the tappet arms 50 and 52 are being held out of engagement with their respective stops by cam pins 54, these being indicated in dotted lines. In Fig. 6 the tappet arms 50 and 52 are shown in engagement with their stops 25 and 27, respectively, while the tappet arms 51 and 53 are being held out of engagement with their stops by the cam pins.

The disk 32 carries six equi distantly spaced cam pins, and these are so arranged that two of them will be in engagement with two of the tappet arms, and will hold the latter away from their stops. As the disk receives movement to the extent of one-twelfth of a revolution, or through an arc of thirty degrees, the pins 54 in engagement with the tappets 51 and 53 of Fig. 3 will move from engagement with said tappets and the latter will be turned by their springs 53′ into position against the stops 26 and 28, while the pins 54 of Fig. 3 which are about to engage the tappet arms 50 and 52 will move said tappet arm through an arc of ninety degrees and will turn the finger carrying rods until the fingers 44 and 46 move from the position shown in Fig. 6 to the position shown in Fig. 5. As all four fingers have thus been moved through an arc of ninety degrees, the lowermost article will be allowed to fall from the magazine, and the parts will remain in this position until another movement of the disk 32 at which time the arms 50 and 52 will be released and allowed to move into engagement with their stops, while arms 51 and 53 will be moved again to the positions shown in Figs. 3 and 6. This apparatus, therefore, constitutes a magazine and delivery mechanism in which all of the parts are movable.

Near one edge of the plate 22 is secured a U-shaped bracket 60, and the vertical arms of this bracket are provided with guiding slots for the reception of a coin or check moving slide 61 that is provided with a coin receiving notch 62. This slide is normally held in retracted position by a spring 63, and at its forward end is provided with a stem 64 that extends out through a slot in the casing and carries an operating handle 65.

To one of the arms of the bracket 60 is secured a small bracket 66, to which is attached a coin chute 67, at the lower end of which is an opening 68 through which the coin drops into the notch 62 of the slide 61, the coin being held within the notch by a small angle bar 69 that is secured to the upper plate 22 in parallel relation with the slide 61. When the coin falls to position within the notch 62, a portion of its surface projects into position to engage one of the teeth 38 of the disk 32, so that when the coinslide is forced inward by the prospective purchaser, the coin will be

carried against the tooth, and the disk will be rotated to the desired extent. When the pressure is relieved, the coin drops through an opening 70 into a suitable coin receptacle 71.

The inserted coins travel down a chute or guide 72 that is inclined both in the direction of its length and transversely of its length, and at one side of the chute is an opening 73 through which inserted coins or slugs of less diameter than those designed to operate the machine may fall by gravity. The end of the guide is bent, as indicated at 74, to direct the coins into the chute 67.

In order to notify the prospective purchaser when the machine is empty, provision is made for displaying an "empty" sign at the opening 19. This comprises a plate 80 having slots for the reception of the finger carrying rods, and to the forward end of this plate is loosely pivoted a sign 81 which normally is folded under the plate 80 and rests directly on top of the articles, so that when the last article is discharged, the sign will be free to swing outward to displaying position. This sign preferably bears the words "Machine is empty" or words of like significance.

In order to permit the more ready operation of the discharging fingers, the latter are preferably provided with anti-friction rollers 44^a.

I claim:—

1. In apparatus of the class described, a plurality of approximately vertical rods forming guides at the reëntering angles of a column of articles arranged criss cross fashion, supporting and delivery fingers at the lower portions of the rods, and means for rocking the rods.

2. In apparatus of the class described, a plurality of approximately vertical rods forming guides at the reëntering angles of a column of articles arranged criss cross fashion, auxiliary bars forming end guides for the column, article supporting and delivery fingers arranged at the lower ends of the rods, and means for rocking said rods.

3. In apparatus of the class described, a plurality of vertically disposed rods, article supporting fingers at the lower portions of the rods, tappet arms at the upper portions of said rods, a step by step revoluble member, and cams carried thereby and adapted to engage the tappet arms.

4. In apparatus of the class described, a plurality of rods, delivery fingers at one end of the rods, tappet arms at the opposite end of the rods, springs tending to maintain the rods in one position, stops for limiting the movement of the tappet arms under the influence of the springs, tappet arm engaging cams, and a cam carrier arranged to receive step by step revoluble movement.

5. In apparatus of the class described, a plurality of article guiding rods, delivery fingers at one end of the rod, tappet arms at the opposite ends of the rod, stops for limiting movement of the tappet arms, springs engaging the rods and tending to force the tappet arms against the stops, a plurality of tappet arm engaging cams, a revoluble disk carrying said cams, means for imparting a step by step movement to the disk, and means for preventing reverse movement of said disk.

6. In apparatus of the class described, a plurality of column guiding rods, article delivery fingers at one end of the rods, tappet arms at the opposite ends of said rods, stops for limiting movement of the tappet arms, springs for engaging the rods and tending to move the tappet arms against the stops, a revoluble disk, a plurality of cams carried thereby and adapted to engage the tappet arms, a crown ratchet on the disk, a lock pawl engaging said ratchet, and means for imparting a step by step rotative movement to the disk.

7. In apparatus of the class described, a pair of parallel spaced plates, connecting posts between said plates, the upper ends of the posts projecting through the uppermost plate and forming stops, a plurality of rods mounted for oscillatory movement on said plates, article delivery fingers at the lower ends of said rods, tappet arms at the upper ends of said rods, springs encircling the rods and tending to move the tappet arms against the stops, a shaft journaled centrally of the plate, a disk carried by the shaft, a plurality of cams carried by the disk and arranged to engage said tappet arms, and means for effecting a step by step rotative movement of the disk.

8. In apparatus of the class described, a plurality of guiding rods, article delivery fingers at one end of the rod, tappet arms at the opposite ends of said rods, stops for limiting movement of the tappet arms, springs for engaging the rods and tending to move the tappet arms against the stops, a revoluble disk, a plurality of cams carried thereby and adapted to engage the tappet arms, a crown ratchet on the disk, a lock pawl engaging said ratchet, a spring for preventing excessive movement of the pawl, and means for imparting a step by step rotative movement to the disk.

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

RICHARD WEITLICH.

Witnesses:
ADOLPH W. MILLER,
GEORGE A. DRAEB.