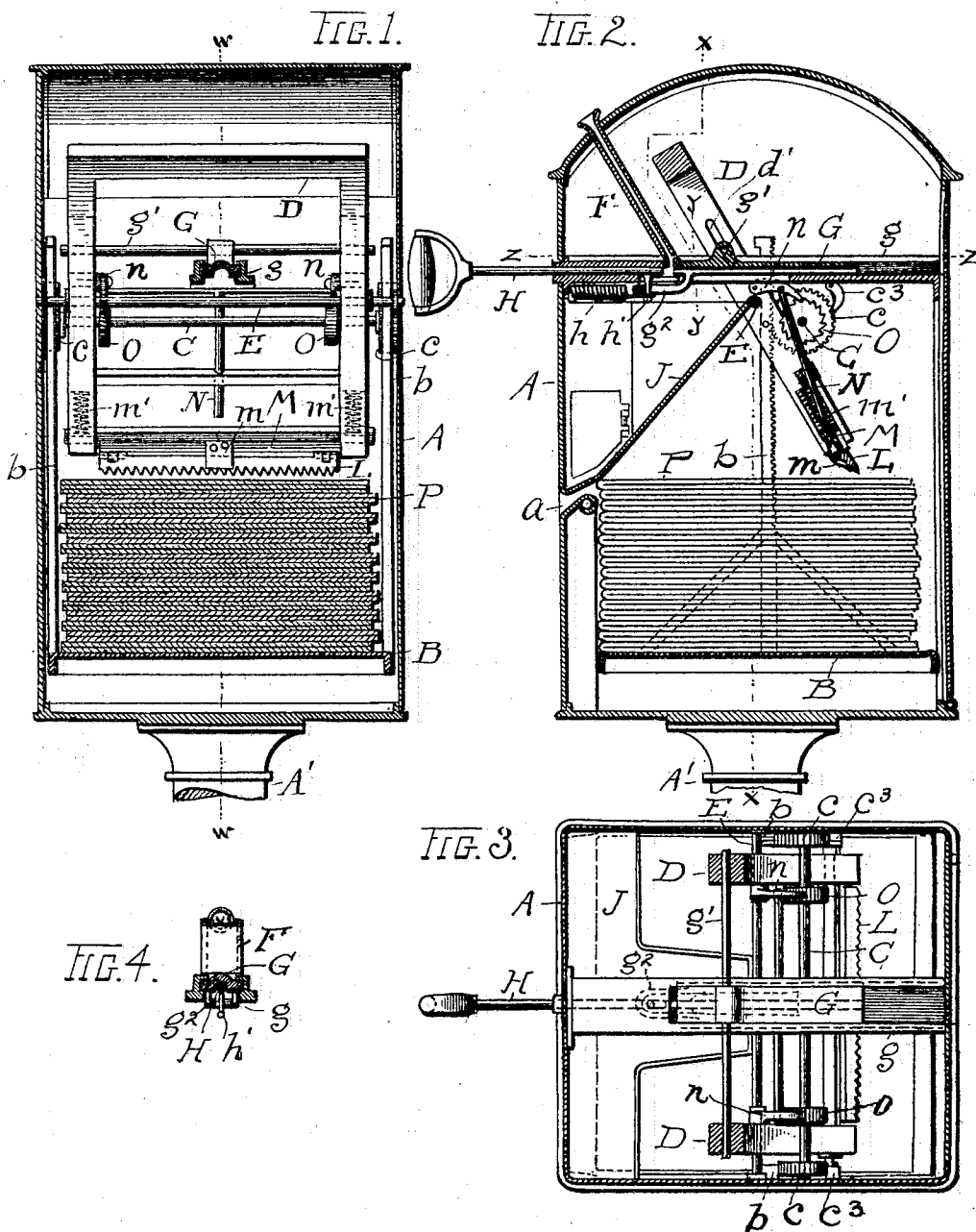


I. A. GREENWOOD.
PAPER VENDING MACHINE.
APPLICATION FILED JAN. 25, 1904.

NO MODEL.



WITNESSES:

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PAPER-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 766,441, dated August 2, 1904.

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To all whom it may concern:

Be it known that I, IVAN A. GREENWOOD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Paper-Vending Machines; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a paper-vending machine; and the invention consists in a machine of the coin-controlled type and which is adapted to deliver a newspaper of any size or thickness when a coin of the requisite denomination has been deposited in the machine and the mechanism has been actuated to withdraw a paper, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of the machine on a line corresponding to $x x$, Fig. 2; and Fig. 2 is a vertical central sectional elevation of the machine at right angles to Fig. 1 and on a line corresponding to $w w$, Fig. 1. Fig. 3 is a plan view of the machine on a line corresponding to $z z$, Fig. 2. Fig. 4 is a sectional elevation on line $y y$, Fig. 2.

As thus shown and constructed, the machine is adapted to deliver one newspaper at a time from a mechanically-sustained level in the machine, and the plan of the machine contemplates the raising of the platform or table which carries the papers at each operation a distance equal to the thickness of the paper or the depth of the space occupied thereby, so that as one paper is removed from the top of the pile the pile itself is raised to bring the upper paper to the original level and thereby within the reach of the mechanism which discharges the paper from the machine, as hereinafter described. Said discharging or delivering mechanism is actuated from without the machine by the hand of the person who has delivered the coin and who is to receive the paper, and he can operate the machine with one hand while he takes his paper with the other. This mechanism cannot, how-

ever, be operated without having first inserted or dropped the size and kind of coin which that particular machine may require to engage the operating mechanism and deliver a paper.

Of course there may be different sizes or values of coin used in different machines, or the same machine may be adapted in its coin-receiving parts to take a larger or a smaller denomination of coin, according to the city in which the paper is sold or the different values of papers and the like. Hitherto there has been failure in machines of this general character largely because they were inflexible or unaccommodating in their make-up for different thicknesses of papers. All newspaper publications are liable to vary more or less in thickness by reason of a greater number of pages or sheets one day than another, and a morning edition may be heavier than an evening edition, and a Sunday edition heavier than a week-day edition. A machine which cannot accommodate itself to these and kindred conditions varying the thickness of the paper can have no general or practical utility, and my present invention is designed to meet this need and to handle papers as they come, thick or thin, heavy or light, and for that matter may be mixed in the pile and be handled with equal facility. Now having these functions and adaptations of the machine in view the invention comprises a suitable inclosing casing A, of sheet metal preferably, having a side slot or opening a , through which the paper is delivered, and this opening is at the front of the machine, which, by preference, will stand on a fixed pedestal or support A' of some suitable kind.

B is a platform or table within the said casing adapted to support the papers, and the said table is raised and lowered by means of toothed rack-bars b , fixed rigidly at each side thereof and engaged by pinions c on shaft C to raise and lower the same. The said bars b are confined at their rear by cross-rod E, on which the frame D for delivering the papers is supported to swing back and forth over the pile of papers P and remove one at each movement through slot or opening a .

The frame D is only operated when a coin

has been deposited, as otherwise the means for operating it would simply make an idle stroke.

F is a coin-chute, and G is a bar adapted to slide within guideway *g* and have its inner end come normally up to the lower portion of chute F in such relation that the coin will rest edgewise transversely in front of bar G upon the bottom of guideway *g* and in position to be engaged by the push rod or bar H for operating the parts. Practically, then, as a coin is dropped it rests between the push-rod H and sliding bar G and becomes the medium by which alone bar G can be actuated; otherwise a thrust by rod H would be idle and unavailable, as it would pass beneath bar G. The frame D is mechanically connected with bar G by means of cross-rod *g'*, which engages in slots *d'* in said frame and which are adapted to accommodate its rocking movements on pivot-rod E. Thus it follows that when an inward thrust or push is given to actuating-rod H to release or deliver a paper the coin is gripped thereby against the end of sliding bar G, and frame D is rocked through engagement by rod *g'* and caused to swing to full delivering position. As this occurs bar G reaches the rearward limit of its movement, a paper is delivered, and all the parts are ready to return to normal relations.

It occurs that the coin itself gets released and is allowed to drop into its receptacle J below at this time, because the instant that push-rod H is liberated its retracting-spring *h* pulls it back to starting position and withdraws said rod from actuating relation to bar G. The coin then becomes free to drop, and bar G is at last drawn back also to starting place by spring *h* through engagement of stem or lug *h'* with a loop *g''* on the bottom and end of bar G. This operation also restores frame D to starting position, as in Fig. 2. Now in order to both cause frame D to engage and discharge a paper and to control such discharge as to size or thickness of papers I provide said frame with an accommodating mechanism whereby the platform or table B is caused to be raised with each actuation of frame D or not, according to size or thickness of the papers. To these ends said frame D carries a serrated or toothed plate L at its bottom for making direct engagement with the papers, and this plate or part is pivoted or hinged on an inner cross-bar M, slidable up and down in frame D, and a spring *m* of a light quality overlaps said hinges and presses plate L to engaging position after it has slid back over the pile of papers on its side, or approximately so, in order not to disturb the papers in its return movement.

Springs *m'* bear upon cross-piece M and tend to hold it down to working position. Associated with these springs are cross-pieces M and push-rod N, which control pawls *n*, pivoted on frame D and engaged with ratchet-

wheels O on shaft C. The lower end of rods N are held in position above cross-piece M to be engaged thereby, and this line of mechanism is such that normally pawls *n* rest in engagement with ratchet-wheels O and serve to rotate said wheels and through them the rack-actuating gears *c* and table B with each movement of frame D. Other pawls, *c''*, engage wheels *c*, so that if pawls *n* be lifted out of engagement these pawls *c''* will support the table at any attained elevation. This is desirable, because there are times when pawls *n* must be temporarily disengaged to accomplish the successful delivery of papers. Thus the machine is preferably constructed and regulated to deliver papers of the maximum thickness published, and table B is raised at each operation a sufficient distance to discharge single papers of such thickness; but there comes an edition considerably thinner—say one-half the thickness as before—and where two papers displace the single previous paper. This obviously requires a change in the upward feed of table B, and this change is automatically provided for through rod N and bar M by causing a disengagement of pawls *n* from ratchet-wheels O before a full sweep of frame D is obtained while discharging a paper.

At the next operation for the discharge of the next top paper table B is again raised, as before, until the top paper is brought to the highest plane possible, and it may or may not again cause the release of pawls *n* and ratchet-wheels O before the full sweep of frame D is finished.

Pawls *n* may be arranged to engage ratchets O only as frame D reaches the end of its movement.

What I claim is—

1. In a newspaper-vending machine, a receptacle having a side discharge-opening and a bottom to support a pile of papers below said opening, and means to deliver the top paper of the pile through said opening comprising a pivoted frame having a spring-pressed serrated plate at its bottom, said frame pivoted at substantially its middle portion and a device to actuate the same connected with said frame above its pivot, substantially as described.

2. In a newspaper-vending machine, a suitable paper-receptacle having a paper-discharge opening in its side, in combination with a swinging frame in said receptacle having a movable paper-engaging plate in its bottom in position to bear upon the top paper in a pile and carry the same through said discharge-opening, said frame having springs in its sides bearing on the said plate and holding it down to work, and mechanism to actuate said frame, substantially as described.

3. The machine substantially as described, comprising a swinging frame, a device to engage the papers slidably supported in said frame, a table to carry the papers and mech-

anism to raise said table, and means operatively connecting said paper-engaging device with said mechanism for operating the table, substantially as described.

5 4. In a newspaper-vending machine, a table to carry the papers and mechanism to raise said table, means to deliver the papers comprising a vertically-yielding paper-engaging member and mechanism operatively connect-
10 ing said member with the mechanism for raising said table, said connecting mechanism constructed to be automatically engaged and disengaged according to the thickness of the papers, substantially as described.

15 5. In a newspaper-vending machine, a suitable receptacle, a vertically-movable table in the lower portion thereof to carry the papers, a swinging device to discharge the papers and mechanism operatively connected with said
20 device having operative relation with said table, said mechanism comprising racks on the table and parts engaged therewith, and the said swinging device having a spring-pressed projection in its bottom to bear upon the pa-
25 pers, substantially as described.

6. In a newspaper-vending machine, a receptacle with a side discharge-opening for the papers, a vertically-movable table in said receptacle and mechanism to raise the same, comprising racks secured to said table, a
30 swinging device to discharge the papers and means between said device and said racks for automatically controlling the raising of said table according to the thickness of the papers
35 handled comprising gears engaging said racks and means to actuate said gears from said swinging device, substantially as described.

7. In a newspaper-vending machine, a table carrying the papers and means to raise the table, in combination with a swinging device
40 to deliver the papers from the machine and means actuated by said device to control the raising of the table according to the thickness of papers, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

IVAN A. GREENWOOD.

Witnesses:

R. B. MOSER,
C. A. SELL.