

M. C. CLEMONS.
VENDING MACHINE.

APPLICATION FILED OCT. 23, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1

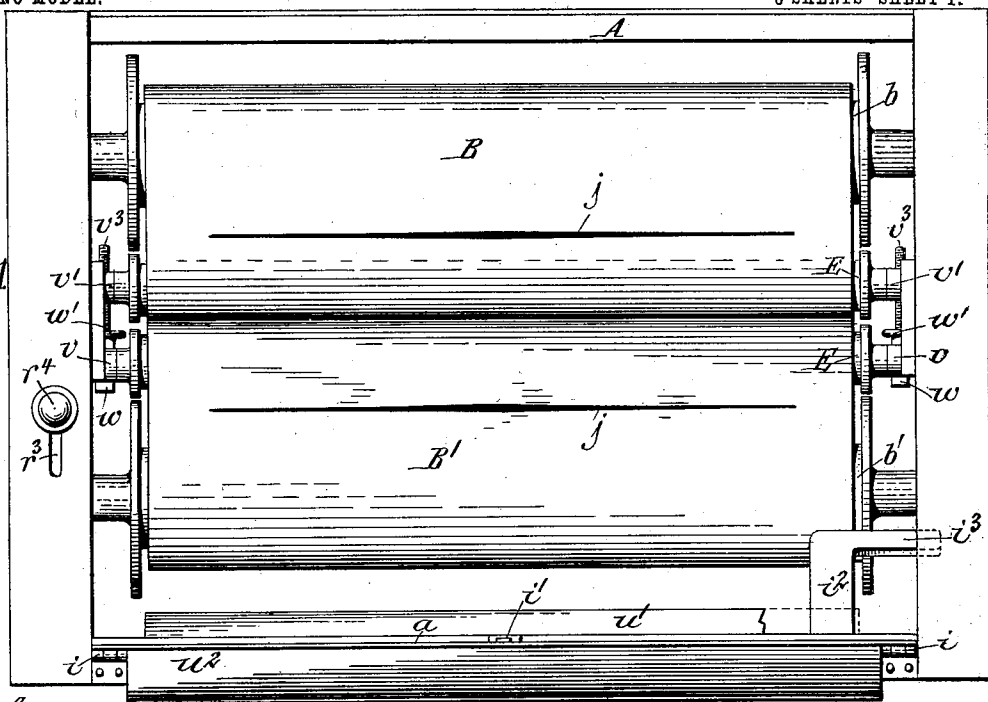
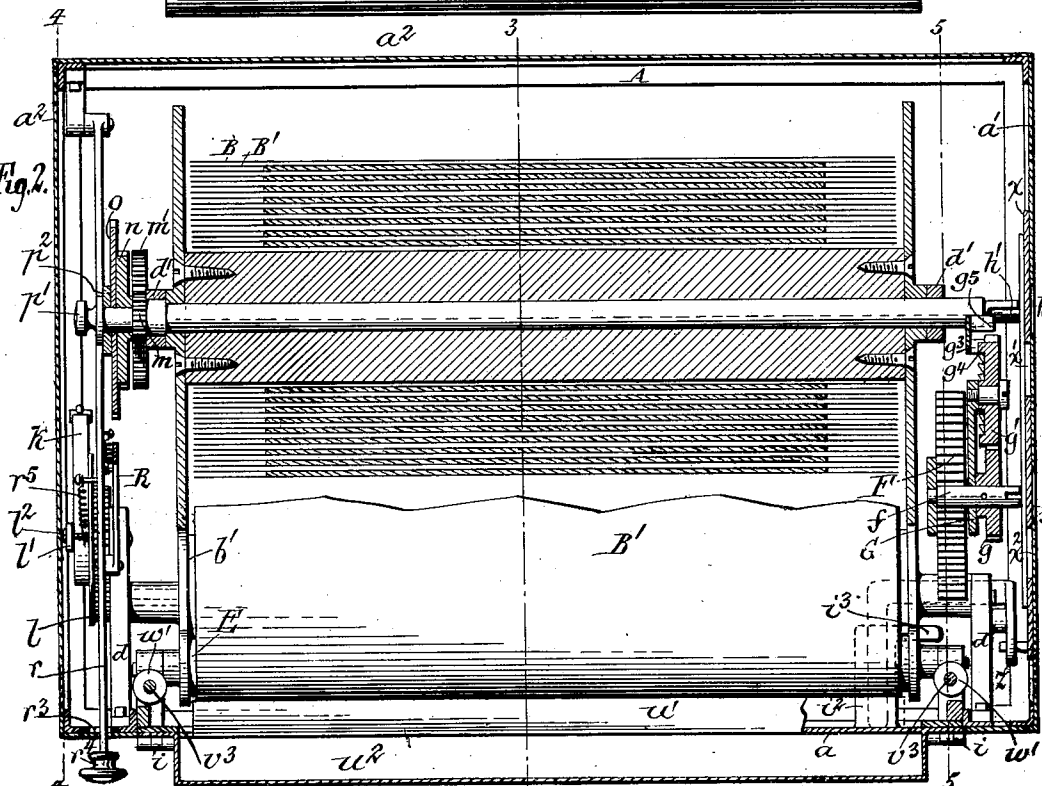


Fig. 2



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3 SHEETS—SHEET 2.

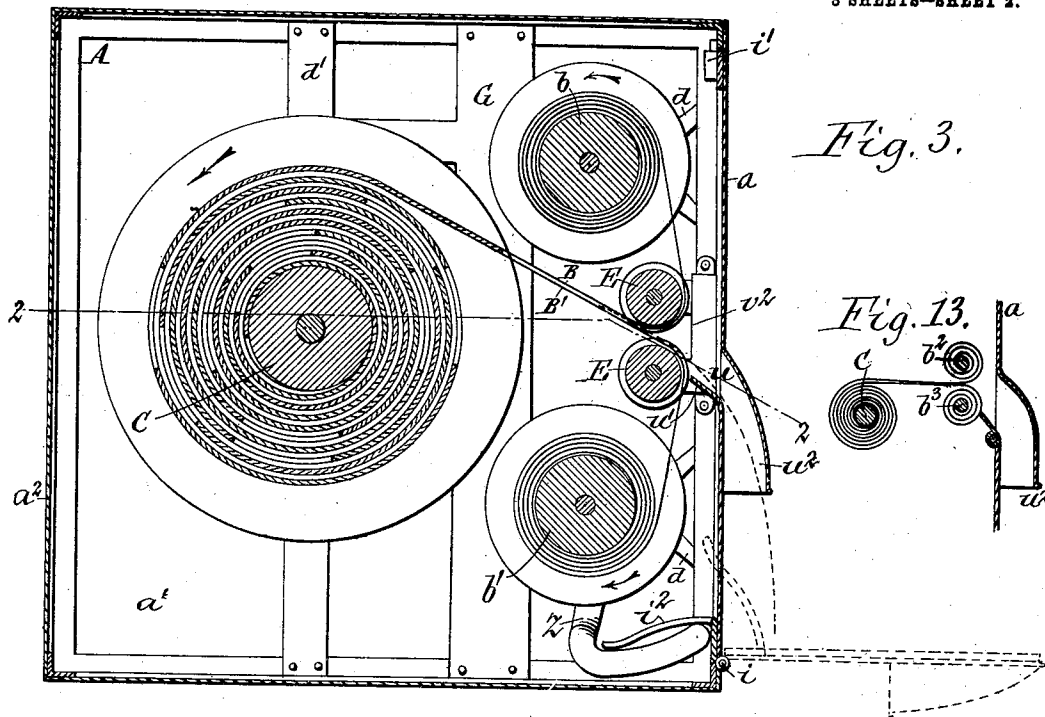


Fig. 3.

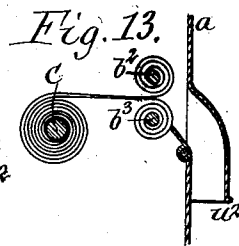


Fig. 13.

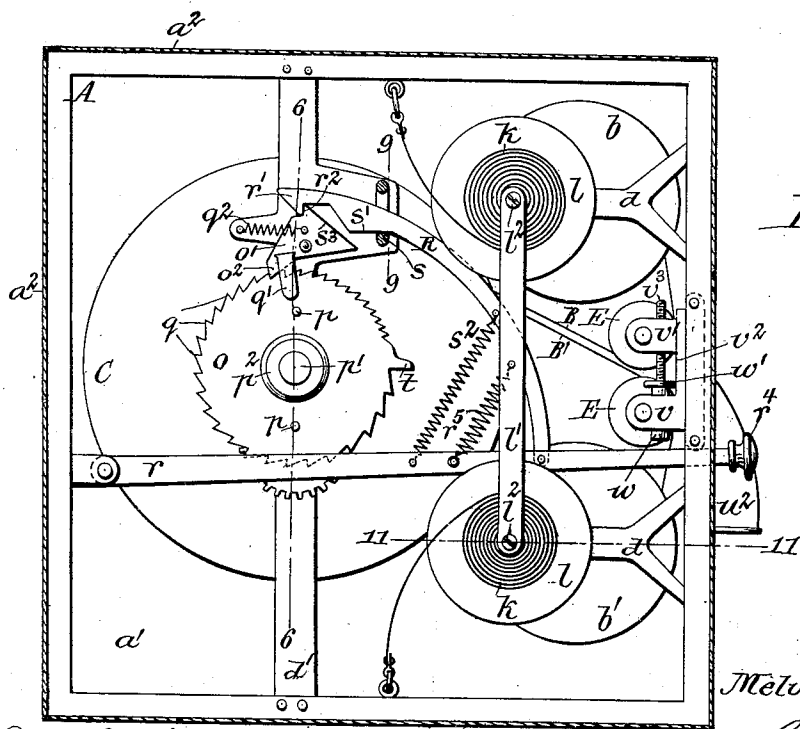


Fig. 4.

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3 SHEETS—SHEET 3.

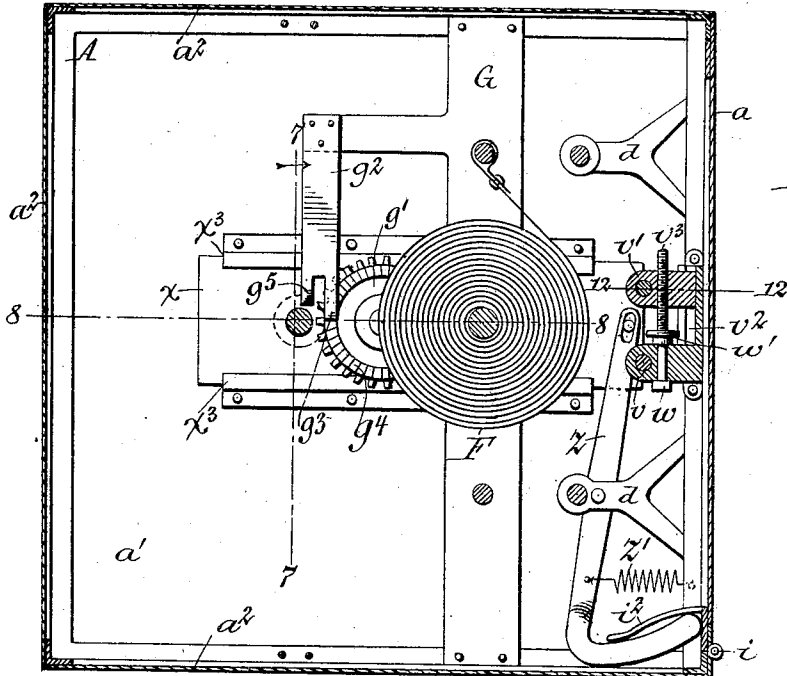


Fig. 5.

Fig. 6.

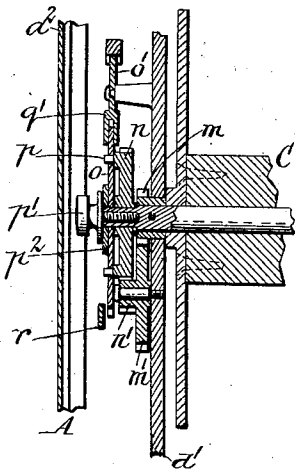


Fig. 7.

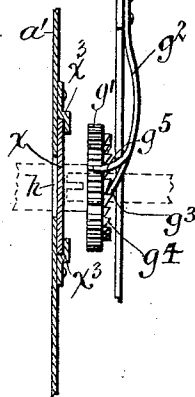


Fig. 8.

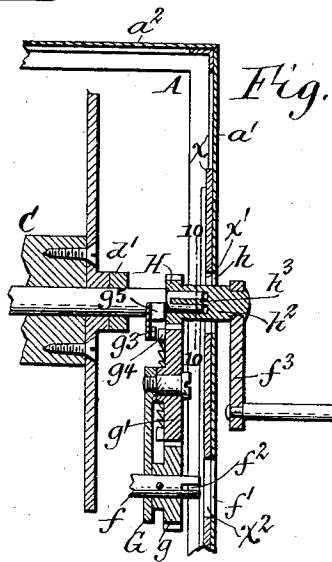


Fig. 9.

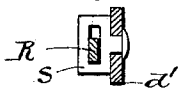


Fig. 10.



Fig. 11.

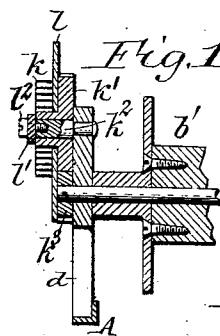


Fig. 12.



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UNITED STATES PATENT OFFICE.

MELVIN C. CLEMONS, OF DELEVAN, NEW YORK.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 732,337, dated June 30, 1903.

Application filed October 23, 1902. Serial No. 128,377. (No model.)

To all whom it may concern:

Be it known that I, MELVIN C. CLEMONS, a citizen of the United States, residing at Delevan, in the county of Cattaraugus and State of New York, have invented new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to a vending-machine which is more particularly designed for dispensing newspapers, magazines, and other articles having a flat or sheet-like form.

The object of this invention is the production of a machine of this character which can be easily loaded and which reliably discharges the articles one at a time upon operating a suitable controlling mechanism provided for that purpose.

The vending-machine consists, essentially, of two webs, aprons, or bands, between which the newspapers or similar articles are fed for loading the machine and from which these articles are discharged successively upon operating the controlling mechanism. Upon loading the machine these bands are unwound from individual take-up devices and wound, together with the newspapers between them, upon a magazine. During the discharge or delivery movement of the bands the same are unwound from the magazine and then wound up separately on the take-up devices, whereby the articles between them are discharged. Suitable driving mechanism is provided for moving the magazine and take-up devices backward and forward.

In the accompanying drawings, consisting of three sheets, Figure 1 is a front elevation of my improved vending-machine, showing the front panel of the inclosing casing lowered to permit of loading the machine with newspapers or similar articles. Fig. 2 is a horizontal section in line 2 2, Fig. 3. Figs. 3, 4, and 5 are vertical transverse sections in lines 3 3, 4 4, and 5 5, Fig. 2, respectively. Fig. 6 is a fragmentary vertical longitudinal section in line 6 6, Fig. 4. Fig. 7 is a similar section in line 7 7, Fig. 5. Fig. 8 is fragmentary horizontal section similar to Fig. 2, taken in line 8 8, Fig. 5, and showing the position of the parts upon loading the machine. Fig. 9 is a vertical section in line 9 9, Fig. 4. Fig. 10 is a cross-section in line 10 10, Fig. 8. Figs. 11 and 12 are fragmentary horizontal

sections in lines 11 11 and 12 12, Figs. 4 and 5, respectively. Fig. 13 is a fragmentary section showing a modified construction of my invention.

Similar letters of reference indicate corresponding parts throughout the several views.

The casing which incloses the mechanism of the vending-machine may be of any suitable construction. As shown in the drawings, this casing is of flat-sided form and consists of a frame A and panels $a a' a^2$, mounted on the frame.

B B' represent two carrying webs, aprons, or bands, which receive the newspapers between them for loading the machine and from which the newspapers are subsequently discharged for dispensing the same. These bands are secured individually at their front ends to two take-up drums or rollers $b b'$, while their rear ends are secured together to a main magazine drum or roller C. Upon turning the magazine-drum backwardly in the direction of the arrow, Fig. 3, both bands are wound together upon the same and unwound from the take-up rollers. Upon turning the take-up rollers forwardly in the direction of the arrows, Fig. 3, each of the bands is wound individually upon its particular roller and both bands are unwound from the magazine-drum.

The take-up rollers are arranged horizontally and lengthwise in the upper and lower part of the casing adjacent to the front panel a thereof, and each of these rollers is journaled at its ends in brackets d , secured to the inner side of the frame. The magazine-drum is arranged lengthwise and horizontally in the rear part of the casing midway of the upper and lower take-up rollers and journaled at its ends in upright bars or standards d' , secured to the main frame. That portion of each band between its take-up roller and the magazine-drum passes around a guide-roller E. The guide-rollers of both bands are arranged horizontally and parallel one above the other between the upper and lower take-up rollers and serve to guide the newspapers between the bands upon loading the machine and also to deliver the papers properly upon unloading the machine.

In order to facilitate loading of the machine, the magazine-drum is turned back-

wardly by a motor while the attendant is feeding the newspapers successively between the bands. This motor may be of any suitable form, but is preferably constructed as follows: F represents a coil-spring arranged between the panel a' and the adjacent end of the drum and secured at its inner end to a winding-shaft f , while the outer end thereof is secured to the adjacent stationary part of the frame. The winding-shaft is journaled in a suitable bracket G on the main frame, and its outer end is arranged opposite an opening f' in the panel a' and provided with a slit f^2 or formed otherwise for interlocking the same with a winding-crank f^3 , which is passed through said opening for the purpose of winding up the spring. The winding-shaft is provided with a gear-pinion g , which meshes with a gear-wheel g' , mounted on the rear part of the bracket G. The spring is prevented from unwinding upon detaching or removing the winding-crank by a spring detent or pawl g^2 , which is mounted at its upper end on the bracket G and provided at its lower free end with a tooth g^3 , which engages with a toothed or ratchet rim g^4 on the inner side of the gear-wheel g' .

H represents a coupling gear-pinion, whereby the gear-wheel g' is connected with or disconnected from the shaft of the magazine-drum. This coupling-pinion is introduced through an opening h in the adjacent panel a' of the casing, and while its hub is slipped upon the adjacent outer end of the magazine-shaft its toothed rim is engaged with the adjacent teeth of the motor gear-wheel g' . The coupling-pinion and the magazine-drum shaft are so constructed that these parts interlock when the coupling-pinion engages with the motor gear-wheel.

In order to permit of employing but a single device for winding the motor-spring F and connecting the coupling-pinion with the drum-shaft, the outer end of the latter is provided with a slit h' , similar to the winding-shaft, and the coupling-pinion and winding-crank are connected by a single hub h^2 , having an internal key tongue or web h^3 , which is capable of interlocking with the slit in either the winding-shaft or the magazine-drum shaft.

g^5 represents a shifting finger arranged on one side of the detent and standing normally in the path of the coupling-pinion when the machine is loaded and ready for use. Upon moving the coupling-pinion inwardly on the magazine-drum shaft this pinion engages with the finger g^5 and moves the same inwardly, together with the detent, thereby disengaging the latter from the motor gear-wheel g' , whereby the power which is stored up in the spring F is permitted to act upon the magazine-drum and turn the same backwardly for loading the machine. After the attendant has fed the desired number of newspapers upon the magazine-drum the coupling-pinion is withdrawn for disconnecting the drum-

shaft from its spring-motor and arresting the backward movement thereof. Upon withdrawing the coupling-pinion the detent, owing to its resilience, automatically reengages with the ratchet-rim of the motor gear-wheel g' and holds the same against forward movement, thereby preventing the motor-spring F from unwinding wholly and enabling the energy which is stored up in said spring to be used for turning the drum backwardly for loading the same the next time.

Preparatory to loading the machine the attendant removes the front panel a of the casing in order to afford access to the guide-rollers E for feeding the newspapers between the same. For this purpose the front panel is preferably pivoted at its lower end to the casing by hinges i and detachably connected at its upper end with the casing by a lock i' . Upon unlocking the front panel and swinging the same downwardly into a horizontal position, as shown by dotted lines in Fig. 3, this panel serves as a table or shelf for supporting the pile or stack of newspapers and permits the attendant to conveniently feed the same between the carrying-bands. The downward movement of the front panel may be arrested when the same reaches a horizontal position by a stop of any suitable construction. The means for this purpose (shown in the drawings) consists of an arm i^2 , secured to the inner side of the front panel and provided at its inner end with a laterally-projecting finger i^3 , (see Figs. 1 and 2,) which is adapted to engage with the adjacent inner side of the casing when the front panel reaches a horizontal position.

The opposing or operative sides of the carrying-bands are preferably provided at regular intervals with transverse lines or other marks j , which divide the faces of these bands into a plurality of article spaces, divisions, or sections, each of which receives a newspaper or other article upon loading the machine. The bands are slowly unwound from the take-up rollers, and as these bands pass around the guide-rollers E the attendant feeds the newspapers successively between the same, and the papers are wound upon the magazine-drum, together with the carrying-bands. After the desired number of newspapers have been feed into the machine and the magazine-drum has been uncoupled from its motor the attendant closes the front panel of the casing.

Each of the take-up rollers is connected with a motor, whereby each roller is turned forwardly, and its band is wound thereon in the same measure as it is unwound from the magazine-drum. A spring-motor is preferred for this purpose, which is constructed as follows: k represents a coil-spring which is secured at its outer end to a stationary part of the machine, while its inner end is secured to the hub of a gear-wheel k' . This gear-wheel is journaled on an arbor k^2 , arranged on one of the adjacent brackets d , and meshes with a

gear-pinion k^3 on the adjacent end of the respective take-up-roller journal. A separating-disk l is arranged between the motor-spring and the gear wheel and pinion $k' k^3$ to prevent the spring from interfering or becoming caught on the teeth thereof. The springs of the motors on both take-up rollers are prevented from becoming displaced outwardly by a bar l' , arranged on the outer sides of these springs and connected at its ends by screws l^2 or otherwise to the arbors of the motor gear-wheels k' . The coils of these take-up motors are so arranged that they are wound up or strained as the bands are unwound from these rollers and wound up on the magazine-drum. In order to automatically effect this winding up of the take-up-motor springs, the motor-spring F of the magazine-drum is made sufficiently heavy or strong so that when the same is wound up it will exert or develop sufficient power to not only wind the bands from the take-up rollers to the magazine-drum, but will also wind up the springs of both take-up motors. Upon disconnecting the magazine-drum from its motor the motors of the take-up rollers become operative and turn the same in the direction for winding the carrying-bands thereon, whereby these bands are unwound from the magazine-drum and the papers between the bands are delivered successively from between the same at the guide-rollers. By thus proportioning the strength of the springs of the magazine-drum motor and the take-up-roller motors it is unnecessary to wind up the springs of the take-up motors separately, thereby simplifying the construction of the machine and reducing the number of parts which require attention in operating the same.

A controlling mechanism is provided which prevents the magazine-drum from turning forward continuously and compels the same to move forward intermittently a predetermined distance for delivering one newspaper at a time. This controlling mechanism is constructed as follows: m represents a gear-pinion which is secured to one end of the magazine-drum shaft and meshes with a gear-wheel m' , journaled on the adjacent supporting-bar d' of the magazine. n represents a gear-wheel which is mounted loosely on the magazine-shaft on the outer side of the gear-pinion m and meshing with a pinion n' , connected with the intermediate gear-wheel m' . o represents an escapement-disk which cooperates with an escapement-pawl o' for determining the extent of each intermittent forward or delivery movement of the magazine-drum. This disk is detachably connected with the outer side of the gear-wheel n by two pins p , projecting laterally from the gear-wheel n through openings in the disk, a thumb-screw p' , entering the outer end of the drum-shaft, and a washer p^2 , interposed between the thumb-screw and the disk, as shown in Figs. 4 and 6. The escapement-pawl is pivoted on the adjacent supporting-bar d' above the disk

and is provided on its lower arm with a tooth o^2 , which is adapted to engage with one of an annular row of stop-teeth q on the periphery of the disk. The lower arm of the escapement-pawl is prevented from becoming displaced laterally with reference to the disk by means of a bifurcated lug q' , which straddles the upper part of the disk, as shown in Figs. 4 and 6. The escapement-pawl is yieldingly turned in the direction for engaging its tooth with the teeth of the disk by a spring q^2 , connecting the upper arm thereof with a stationary part of the machine.

R represents a trip-latch whereby the escapement-pawl is turned for disengaging the same from the disk and permitting the magazine-drum to move forwardly under the action of the take-up motors. This latch is preferably of curved form and extends from the upper arm of the escapement-pawl forwardly and downwardly and is pivoted at its lower end to a hand-operated lever r . The rear end of the latch is provided with a forwardly-facing hook r' , which engages normally with a rearwardly-facing shoulder r^2 on the upper arm of the escapement-pawl. The hand-lever is pivoted at its rear end to the frame of the machine, so that it can turn in a vertical plane, and its front end projects forwardly through a vertical slot r^3 in the casing and is provided outside of the case with a handle or knob r^4 . The hand-lever is normally held in an elevated position by a spring r^5 , which connects the same with a stationary part of the machine. The upper part of the latch is arranged in a guide loop or bearing s , which is preferably mounted on a stationary part of the machine in front of the escapement-pawl. The latch rests at the under side of its upper part upon the lower part of the guide loop or bearing and is provided on its under side with a cam-face s' , which extends rearwardly from the guide-loop. The latch is normally held in engagement with the shoulder of the escapement-pawl by means of a spring s^2 , which connects the same with the hand-lever. Upon depressing the hand-lever the upper part of the latch is moved forwardly, whereby the latter disengages the pawl from the disk and releases the magazine-drum. During the last portion of the downward movement of the hand-lever the upper part of the latch is raised sufficiently to disengage the same from the shoulder of the pawl by reason of its cam-face s' riding on the lower part of the guide-loop, and thereby lifting this end of the latch. The instant the pawl is liberated from the latch the same is turned in the reverse direction by its spring q^2 for moving the tooth on its lower arm into the path of the next following tooth on the escapement-disk, thereby arresting the disk when the same has moved from one tooth to another. Upon releasing the hand-lever the latter is raised by its spring and the latch is moved into its rearward position, during which movement of the latter the hook thereof rides up an incline s^3 on the upper arm

of the pawl and is automatically reengaged with the shoulder of the same. As the escapement-disk moves the distance from one tooth to the next following tooth the magazine-drum moves forward a greater distance, equal to one of the article-spaces on the carrying-bands, for discharging the foremost newspaper confined between the two bands. This differential in the extent of the movement of the disk and drum is obtained by means of the driving-gearing between the escapement-disk and the magazine-drum, which gearing causes the disk to turn only a fraction of the extent which the drum moves. As the bands and the papers between the same gradually unwind from the drum the diameter of the latter gradually is reduced, and it becomes necessary to increase the extent of the peripheral movement of the drum for unwinding the bands therefrom to the extent of one article-space. In order to permit of this gradual increase in the extent of each intermittent forward movement of the drum and compensate for the decrease in the diameter thereof, the distance between the teeth q on the disk gradually increases from the starting-point on the disk, which corresponds to the largest diameter of the drum, to the finishing-point of the disk, which corresponds to the smallest diameter of the drum. The escapement-disk is provided with a stop-lug t between its foremost and rearmost teeth, which lug is constructed to engage with the rear side of the pawl in all positions of the latter when the disk has made one rotation, thereby preventing the drum from unwinding further, this stop being so located that it engages with the catch at the time the bands have become wholly unwound from the drum. If it is desired to vary the extent which the bands are successively and intermittently unwound from the drum for delivering articles of varying length, the stop-disk is replaced by one having its teeth arranged closer together or farther apart. This is permissible by means of the detachable connection between the disk and its driving mechanism provided for this purpose.

In actual practice the depression of the hand-lever is controlled by a coin-operated releasing mechanism, which prevents the machine from being operated and delivering its contents unless a proper coin has been deposited in the machine.

As the paper issues forwardly from the carrying-bands at the guide-rollers E the same is projected through a horizontal slot or opening u in the front panel of the casing. The paper is directed into this slot from the bands by means of a guide lip or flange u' , which extends from the lower edge of the discharge-slot to the lower band and guide-roller, thereby preventing the newspapers from following this band downwardly below the discharge-slot and clogging the machine. A guard or hood u^2 projects downwardly from the upper edge of the discharge-slot a sufficient extent

to render the slot difficult of access and preventing tampering with the machine through the same. The relative movement of the parts is so timed that when the machine comes to rest after being operated the rear edge of the newspaper will still be gripped between the carrying-bands sufficiently firm to prevent the paper from falling upon the ground outside of the case, while its front end projects slightly beyond the lower edge of the hood within convenient reach of the purchaser, who completely removes the paper from the machine by a gentle pull upon the same.

As the thickness of newspapers varies, provision is made for adjusting the guide-rollers one with reference to the other in order to adapt them to the thickness of the particular paper which it is desired to dispense in this machine. As shown in the drawings, the lower guide-roller is journaled in fixed bearings v , mounted on the front part of the casing, while the upper guide-roller is journaled in movable bearings v' , which are vertically adjustable for moving the upper roller toward or from the lower roller. Each of the upper bearings is guided in a vertical way v^2 on the adjacent part of the casing, and this adjustment is effected by means of a vertical screw v^3 , journaled at its lower unthreaded end in the adjacent bearing of the lower roller, while its upper threaded end works in a corresponding opening in the movable roller-bearing. The adjusting-screw is preferably held against endwise movement in the lower bearing by a collar w and thumb-piece w' , secured to the same on opposite sides of the lower bearing. The thumb-pieces of both screws are accessible upon opening the front panel and can be readily turned for raising or lowering the upper guide-roller.

For the purpose of preventing tampering with the machine through the openings h f' in the casing opposite the magazine drum-shaft and winding-shaft of its motor a slide or shutter x is provided, having two openings x^1 x^2 , corresponding to the openings in the panel a' . This shutter is arranged to slide horizontally in guides x^3 between the inner side of the casing and the adjacent mechanism. When the machine is being loaded, this shutter is moved rearwardly, so that its openings register with those of the casing, as shown in Fig. 8, and permit of applying the coupling-pin and winding-crank to the shafts of the magazine-drum and its motor. When the machine is in condition for use, the shutter is moved forwardly until its openings are out of register with those in the casing and the latter are closed by the solid part of the slide, as represented in Fig. 2. This movement of the shutter is preferably effected automatically as the attendant opens the front panel of the casing for filling the machine and again closes the same after the machine is filled, thereby avoiding the possibility of leaving the shutter open. As shown in the drawings, this

is accomplished by means of an upright rock-lever *z*, pivoted on the adjacent bracket *d* and having its upper arm connected by a pin and slot with the front end of the shutter, while its lower elbow-shaped arm is constructed to be engaged by the stop-arm *z'* on the inner side of the front panel. Upon lowering the front panel preparatory to feeding newspapers into the machine the shutter-lever is turned by a spring *z'*, so that its lower arm moves outwardly and its upper arm moves inwardly, whereby the openings in the side of the casing opposite the drum and winding shafts are uncovered. In moving the front panel upwardly into its closed position the stop-arm *z'*, which has its under side shaped to form a cam, bears with this side against the lower arm of the shutter-lever and moves the same inwardly, whereby the shutter connected with the upper arm thereof is moved to the proper extent for closing the openings in the casing.

If desired, the guide-rollers *E* may be omitted, in which case the take-up rollers are arranged to rest one upon the other, as shown in Fig. 13. In this construction the bearings of either or both take-up rollers *b²* *b³* must be movable in order to permit the rollers to constantly bear against each other as the diameter thereof increases or decreases.

I claim as my invention—

1. In a vending-machine, the combination of a magazine-drum and means for operating the same, two take-up rollers, two carrying-bands adapted to receive the articles to be dispensed between them and each connected at one end to said drum and having its opposite end connected with one of said take-up rollers, whereby when the drum and rollers are turned in one direction both bands are wound on the drum while when the drum and rollers are turned in the opposite direction the outer ends of the bands are individually wound on the take-up rollers, and means for operating the take-up rollers; substantially as set forth.

2. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two opposing carrying-bands each of which is connected at one end to said drum and at its opposite end to one of said take-up rollers, guide-rollers which support the bands between the magazine-drum and take-up rollers, and means for operating the take-up rollers, substantially as set forth.

3. In a vending-machine, the combination of an inclosing casing provided with a discharge-opening, guide-rollers arranged in the casing on opposite sides of said opening, a magazine-drum arranged in rear of the guide-rollers, take-up rollers arranged above and below the guide-rollers, two carrying-bands each connected at opposite ends to said drum and one of said take-up rollers and passing around one of said guide-rollers, and means for operating the take-up rollers, substantially as set forth.

4. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, and a motor for winding the bands on the drum and unwinding the same from the take-up rollers, substantially as set forth.

5. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, a motor for winding the bands on the drum and unwinding the same from the take-up rollers, and a coupling device arranged between the motor and the drum, substantially as set forth.

6. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, a spring-motor for winding the bands on the drum and unwinding the same from the take-up rollers, a stop device for arresting the operation of said motor, and a coupling device between the motor and drum arranged to disengage said stop device from the motor when said members are coupled and to permit the reengagement of the stop device when the motor is uncoupled from the drum, substantially as set forth.

7. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, a spring-motor for winding the bands on the drum and unwinding the same from the take-up rollers, said motor comprising a coil-spring, a winding-shaft connected with the spring and a gear-wheel meshing with a pinion on the winding-shaft, a detachable coupling-pin constructed to mesh with the motor gear-wheel and interlock with the shaft of the drum when the coupling-pin is moved into its operative position, and a detent engaging with a ratchet-rim on the motor gear-wheel and arranged in the path of the coupling-pin, whereby upon moving the latter into its operative position the detent is disengaged from the motor gear-wheel and the latter is coupled with the drum, while upon moving the coupling-pin into an inoperative position the motor gear-wheel is uncoupled from the drum and the detent permitted to reengage the ratchet-rim on the motor gear-wheel, substantially as set forth.

8. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at its opposite ends to the drum and one of said rollers, a spring-motor adapted to receive a winding device and constructed to wind the bands on the drum and unwind the same from the take-up rollers, a coupling device for connecting the motor and drum, a casing inclosing said parts and provided opposite the motor and the drum with openings for the passage of said winding and coupling devices, and a shut-

ter for covering said openings, substantially as set forth.

9. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at its opposite ends to the drum and one of said rollers, a spring-motor adapted to receive a winding device constructed to wind the bands on the drum and unwind the same from the take-up rollers, a coupling device for connecting the motor and drum, a casing inclosing said parts and provided with a movable panel and with openings through which the winding and coupling devices are applied to said motor and drum, a shutter for covering said openings, and automatic mechanism for shifting said shutter upon opening or closing said panel, substantially as set forth.

10. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at its opposite ends to the drum and one of said rollers, a spring-motor adapted to receive a winding device and constructed to wind the bands on the drum and unwind the same from the take-up rollers, a coupling device for connecting the motor and drum, a casing inclosing said parts and provided with a movable panel and with openings through which the winding and coupling devices are applied to said motor and drum, a shutter for covering said openings, a rock-lever connected with the shutter and arranged to be engaged by said panel, and a spring whereby the lever is turned to open the shutter, substantially as set forth.

11. In a vending-machine, the combination of two guide-rollers, two take-up rollers, a magazine-drum, two carrying-bands arranged to receive the articles to be dispensed between them and each connected at its opposite ends to the drum and one of the take-up rollers while its intermediate portion passes around one of said guide-rollers, means for operating the take-up rollers, and an inclosing casing for said parts provided with a movable panel having a discharge-opening between said guide-rollers, substantially as set forth.

12. In a vending-machine, the combination of two guide-rollers, two take-up rollers, a magazine-drum, two carrying-bands arranged to receive the articles to be dispensed between them and each connected at its opposite ends to the drum and one of the take-up rollers while its intermediate portion passes around one of said guide-rollers, means for operating the take-up rollers, an inclosing casing for said parts provided with a movable panel having a discharge-opening between the guide-rollers, and a guide-flange extending from the lower edge of said opening to one of the guide-rollers, substantially as set forth.

13. In a vending-machine, the combination of two guide-rollers, two take-up rollers, a magazine-drum, two carrying-bands arranged to receive the articles to be dispensed between them and each connected at opposite ends to the drum and one of the take-up rollers while

its intermediate portion passes around one of said guide-rollers, means for operating the take-up rollers, an inclosing casing for said parts provided with a movable panel having a discharge-opening between the guide-rollers, and a guard-hood extending downwardly from the upper edge of said opening, substantially as set forth.

14. In a vending-machine, the combination of two guide-rollers arranged one above the other, two take-up rollers arranged above and below the guide-rollers, a magazine-drum arranged in rear of said guide-rollers, two carrying-bands arranged to receive the articles to be dispensed between them and each connected at opposite ends to the drum and one of the take-up rollers while its intermediate portion passes around one of said guide-rollers, means for operating the take-up rollers, and an inclosing casing for said parts having a front panel which is pivoted at its lower end to the casing and provided with a horizontal discharge-slot opposite the space between the guide-rollers, an inner guide-flange extending from the lower edge of said slot to the lower roller, and an outer guide-hood extending downwardly from the upper edge of said slot, substantially as set forth.

15. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, and motors for winding the bands on the rollers and unwinding the same from the drum, substantially as set forth.

16. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, and motors connected with the take-up rollers and arranged to be wound up by the unwinding of the bands from the take-up rollers whereby the bands are automatically wound upon the take-up rollers when the drum is released, substantially as set forth.

17. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of the rollers, a motor for winding the bands from the take-up rollers upon the drum, and motors for winding the bands from the drum upon the take-up rollers, substantially as set forth.

18. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with said drum and one of said rollers, a spring-motor detachably connected with the drum for winding the bands from the take-up rollers upon the drum, and spring-motors permanently connected with the take-up rollers for winding the bands from the drum upon the rollers, the motor connected with the drum being of greater power than those connected with the take-up rollers, substantially as set forth.

19. In a vending-machine, the combination

of a magazine-drum, two take-up rollers, two carrying-bands which receive the article to be dispensed between them and each connected at opposite ends to the drum and one of the take-up rollers, a spring-motor permanently connected with each take-up roller for winding the corresponding band from the drum upon its take-up roller, and a spring-motor detachably connected with the drum for winding both bands from the take-up rollers upon the drum, the motor connected with the drum being of greater power than the combined strength of the motors connected with the take-up rollers, substantially as set forth.

20. In a vending-machine, the combination of a magazine-drum, two take-up devices, two carrying-bands each connected at opposite ends with the drum and one of the take-up devices, means for operating the take-up devices, and controlling means for preventing the bands from moving more than a predetermined distance at a time from the drum toward the take-up devices, substantially as set forth.

21. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, motors for winding the bands from the drum upon the rollers, means for operating the take-up rollers, and a controlling device for preventing the band from moving more than a predetermined distance at a time from the drum toward the take-up rollers, substantially as set forth.

22. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, means for operating the take-up rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, an escapement-pawl engaging with said teeth, and means for releasing said pawl, substantially as set forth.

23. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of said rollers, means for operating the take-up rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, an escapement-pawl engaging said teeth, and a latch for disengaging the pawl from said teeth, substantially as set forth.

24. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of said rollers, means for operating the take-up rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, an escapement-pawl engaging said teeth, a reciprocating latch which is coupled with the pawl during the first part of its forward movement and disengages the latter

from said teeth, and means for disengaging the latch from the pawl during the last part of its forward movement, substantially as set forth.

25. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of said rollers, means for operating the take-up rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, a pivoted escapement-pawl engaging at one end with said teeth and provided at its opposite end with a shoulder, and a reciprocating latch provided with a hook engaging said shoulder and with a cam which rides over a support for disengaging the latch from the pawl, substantially as set forth.

26. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, a pivoted escapement-pawl engaging at one end with said teeth and provided at its opposite end with a shoulder and with an incline in front of said shoulder, and a reciprocating latch provided with a hook engaging said shoulder and with a cam which rides over a support for disengaging the latch from the pawl, substantially as set forth.

27. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, an escapement-disk turned by the drum and provided with an annular row of escapement-teeth, a pivoted escapement-pawl engaging at one end with said teeth and provided at its opposite end with a shoulder and an incline in the front of said shoulder, a reciprocating latch provided with a hook engaging said shoulder and with a cam which rides over a support for disengaging the latch from the pawl, and a hand-lever connected with said latch, substantially as set forth.

28. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, means for operating the take-up rollers, an escapement-disk provided with an annular row of teeth, a reducing driving-gearing interposed between said disk and drum, a pawl engaging with said teeth, and means for releasing the pawl, substantially as set forth.

29. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two carrying-bands each connected at opposite ends with the drum and one of the rollers, means for operating the take-up rollers, an escapement-disk provided with an annular row of teeth which are gradually spaced farther apart from the front end to the rear end of the row, a reducing driving-gearing interposed between said disk and drum, a pawl en-

gaging with said teeth, and means for releasing said pawl, substantially as set forth.

30. In a vending-machine, the combination of a magazine-drum, two take-up rollers, two
5 carrying-bands each connected at opposite ends with the drum and one of the rollers, means for operating the take-up rollers, an escapement-disk provided with an annular
10 row of teeth which are gradually spaced farther apart from the front end to the rear end of the row, a reducing driving-gearing interposed between said disk and drum, a pawl en-

gaging with said teeth, a stop which is arranged on the disk at the rear end of its row of teeth and which is adapted to engage the
15 pawl for limiting the forward movement of the disk, and means for releasing the pawl, substantially as set forth.

Witness my hand this 20th day of October, 1902.

MELVIN C. CLEMONS.

Witnesses:

JOHN HUNT,

E. L. WHITING.