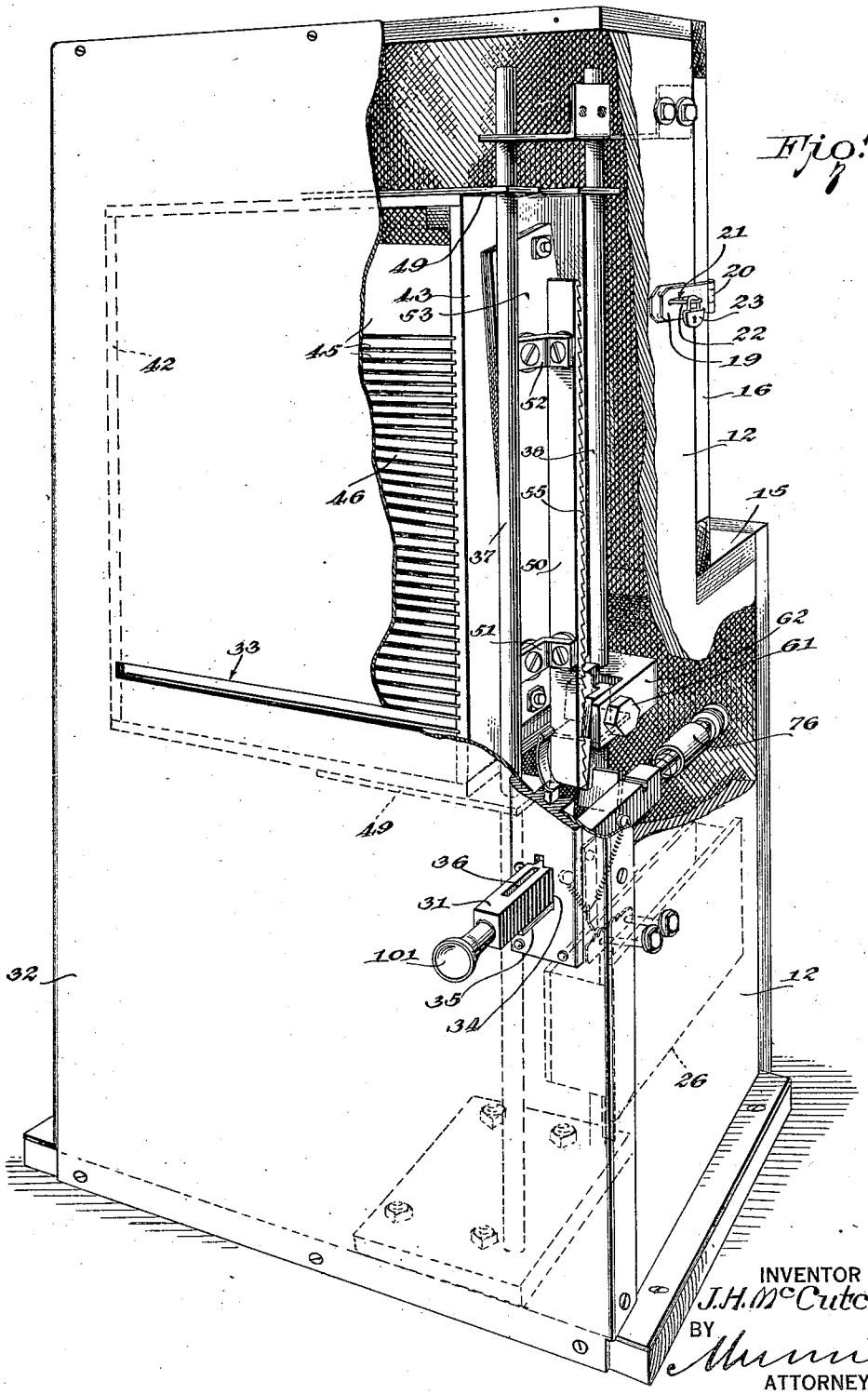
Jan. 8, 1929. 1,698,644

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VENDING MACHINE FOR STATIONERY

Filed July 26, 1927 4 Sheets-Sheet 1



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VENDING MACHINE FOR STATIONERY

Filed July 26, 1927 4 Sheets-Sheet 2

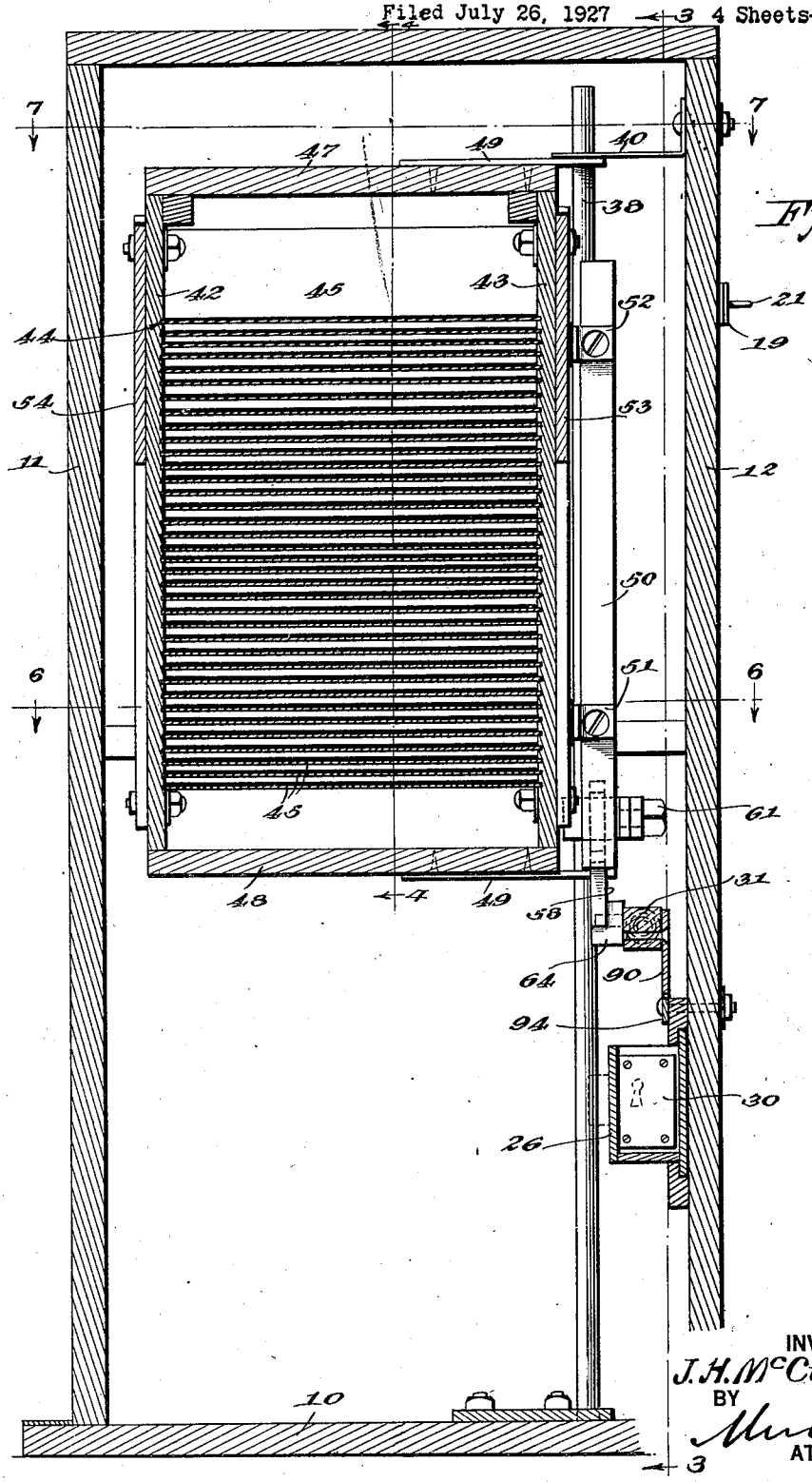


Fig. 2.

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Fig. 3.

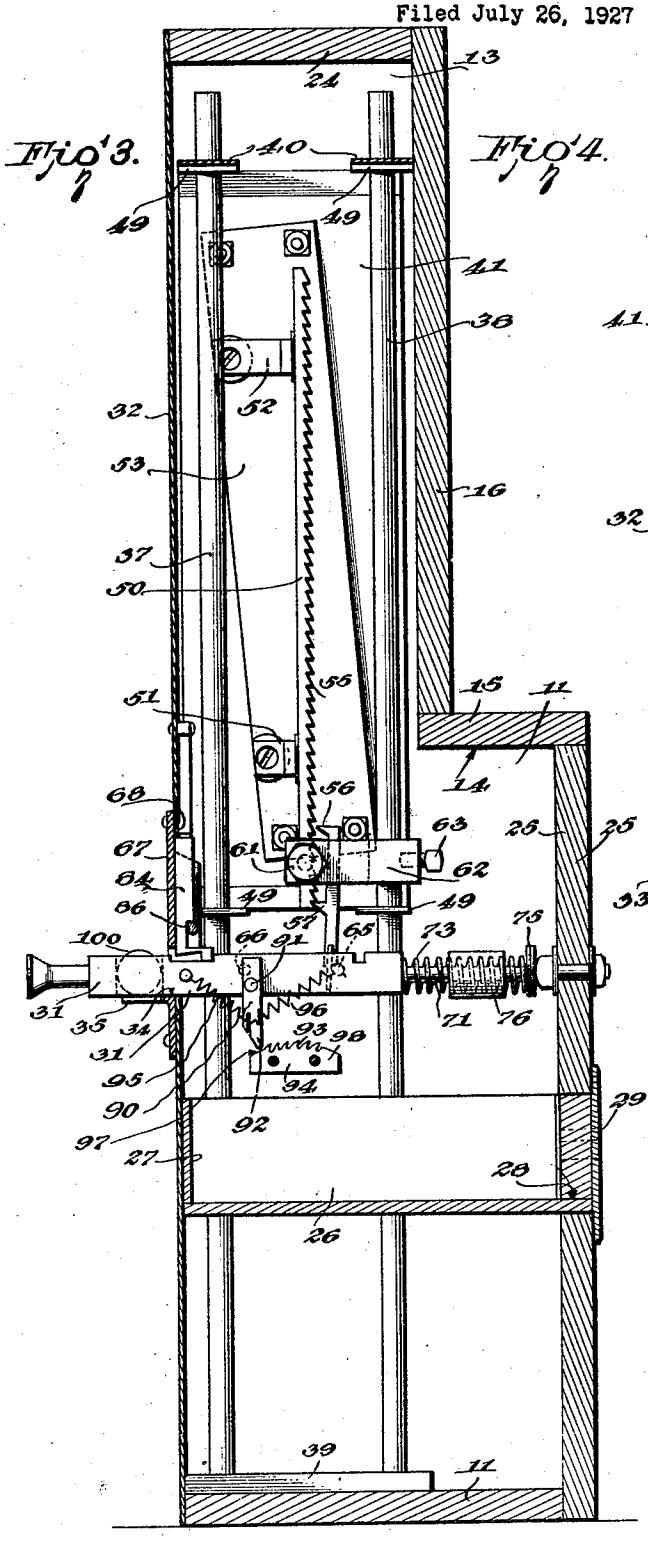


Fig. 4.

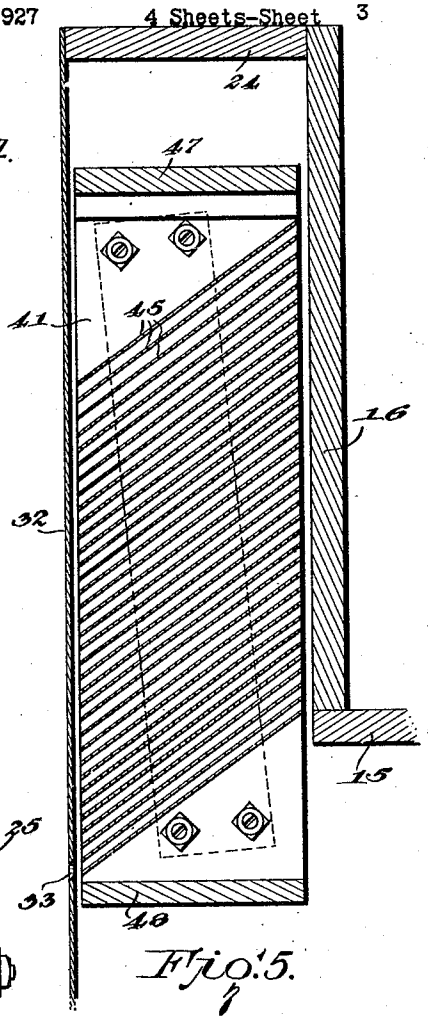
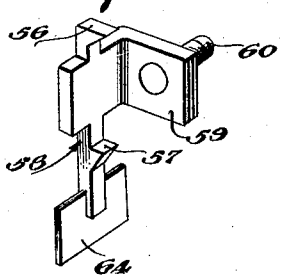


Fig. 5.



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Fig. 6.

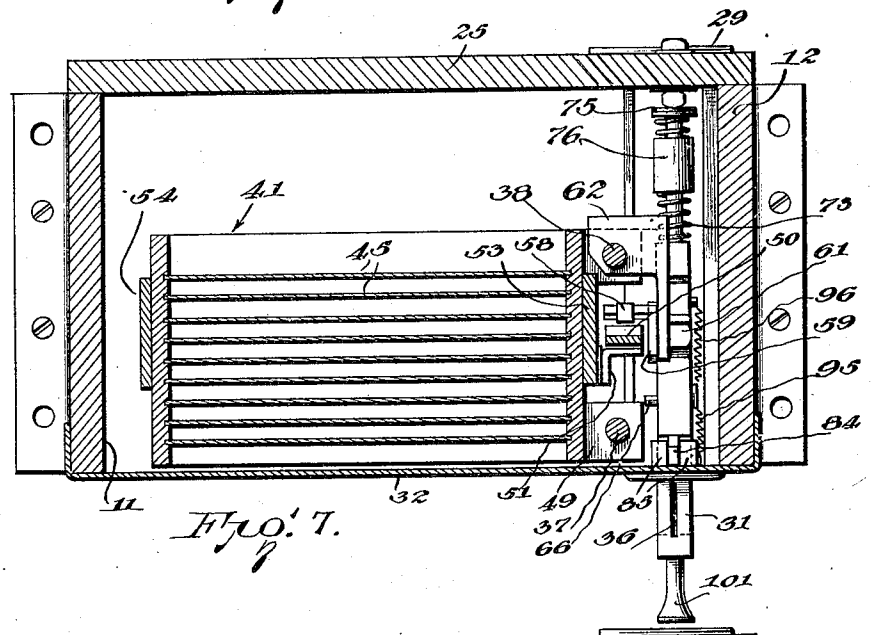


Fig. 7.

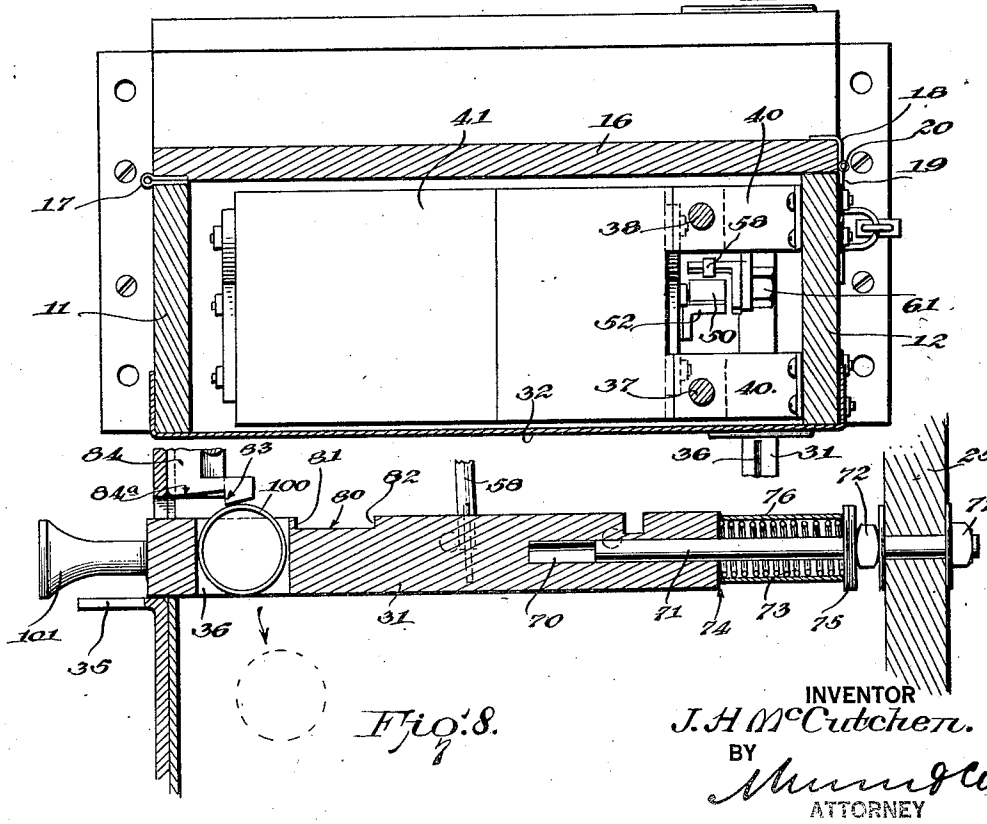


Fig. 8.

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UNITED STATES PATENT OFFICE.

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VENDING MACHINE FOR STATIONERY.

Application filed July 26, 1927. Serial No. 208,584.

This invention relates to a vending machine for stationery.

An object of the invention is the provision of a device for vending a stamped envelope and a sheet of paper upon the insertion of a coin of a predetermined size in which a movable storage container is progressively lowered so that each open end of the compartment in the container is disposed adjacent the opening in the housing to permit the envelope and paper to be discharged by gravity.

Another object of the invention is the provision of a device for vending sheets of paper and an envelope simultaneously, and in which a plunger rod is adapted to be manually operated for releasing the container for downward vertical movement so that the open ends of the plurality of compartments in which the envelopes and paper are stored will successively register with an opening in the housing in closing the container, said container being lowered by incremental pairs of steps for the discharge of each group of articles from a compartment, such pair of step by step movement being accomplished to an inward and return stroke of the actuating plunger.

A still further object of the invention is the provision of a dispensing device for vending sheets of writing paper simultaneously with a stamped envelope, and in which a plunger is employed to actuate a releasing means for a slidably mounted container, means being employed for preventing the return stroke of the plunger before said plunger has been moved to its full inward stroke in order to insure the full working stroke of the vending device and a complete actuation of the instrumentalities included in the vending device for dispensing the articles therefrom.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

Figure 1 is a view in perspective with parts broken away of my vending device constructed in accordance with the provisions of my invention;

Figure 2 is a vertical section of the device shown in Figure 1;

Figure 3 is a transverse vertical section taken along the line 3—3 of Figure 2;

Figure 4 is a fragmentary vertical section taken along the line 4—4 of Figure 2;

Figure 5 is a view in perspective of the double acting pawl for controlling the lowering of the storage chamber of the dispensing device;

Figure 6 is a horizontal section taken along the line 6—6 of Figure 2;

Figure 7 is a horizontal section taken along the line 7—7 of Figure 2; and

Figure 8 is a fragmentary vertical section of the plunger disclosed at the end of its complete inward working stroke.

Referring more particularly to the drawings, 10 designates a base member to which is secured side walls 11 and 12. Each of the side walls are cut away at their upper ends to provide a reduced section 13 and a shoulder 14, a plate or member 15 is secured in any approved manner to the shoulder 14, and a door 16 is hinged at 17 to the side walls 11. Means is provided on the other end of the door and the other side wall 12 for locking the door against unauthorized relations and includes a pair of straps 18 and 19 hingedly connected together at 20, the strap 18 secured to the door 16 and the strap 19 provided with a slot 21 to receive a staple 22, the staple secured to the side wall 12 and is adapted to receive a padlock 23 which will prevent actuation of the member 19 when the lock is in position. The upper edge of the door 16 is adapted to abut the rear edge of a top member 24, while the lower edge is adapted to lie in snug contact with the upper face of the member 15. A rear wall 25 is secured to the rear edge of the side walls and base member 11 and to the member 15. All of the elements just described comprise the housing of the vending machine.

A till or receptacle 26 is located in the lower end of the housing and secured in any approved manner to the rear wall 25 and the side wall 12. The forward end 27 is closed, while the rear end is open as shown at 28 and adapted to be closed by a door 29. This door is provided with a Yale lock 30 or a lock of any suitable construction for preventing unauthorized manipulation of the door. The till is located directly below the slidably mounted plunger 31.

The front of the housing is closed by a metal plate 32 which has a dispensing slot 33 intermediate its ends, an opening 34 through which the plunger 31 is reciprocated, and a laterally projecting shelf 35 upon which the plunger rests, and which provides an additional function of supporting a coin which is located in a slot 36 in the outer end of the plunger 31. The front wall 32 is secured in any approved manner to the side walls of the base member 11 and the top 24.

A pair of guide rods 37 and 38 have their lower ends secured to a plate 39 which is secured to the base member 11. The upper ends of each of the rods is received by a bracket 40, said bracket being bolted to the side walls 12. A container generally designated by the numeral 41 has a pair of side walls 42 and 43 provided with grooves 44 inclined at an angle to the horizontal to receive plates 45. The space between the said plates forms a compartment to receive an envelope and letter paper which is adapted to be discharged through the opening 33 in the front wall 32 when the front or open end 46 of each compartment is alined with the slot 33. A top wall 47 and a bottom wall 48 are secured to the opposite edges of the side walls 42 and 43. Pairs of strap arms 49 are secured to the outer faces of the top and bottom walls of the container 41 and are perforated to receive the rods 37 and 38.

A rack 50 is secured by means of brackets 51 and 52 and a plate 53 is secured to the side wall 43, and as shown in Figure 2 a metal plate 54 is also secured to the side wall 42. These plates are inclined at an angle to the vertical as shown in Figures 1 and 3. The rack 50 has teeth 55 inclining downwardly and adapted to be in engagement with either one of a pair of pawls 56 or 57. An oscillating member shown more particularly in Figure 5 and indicated generally by the numeral 58 has pawls 56 and 57 in vertical alinement. An arm 59 extends laterally from the oscillating member 58 and is provided with a rigidly mounted pintle 60 which is threaded to receive a nut 61 at one side of the bracket arm 62. A pintle 60 is received within a passage in the bracket 62 whereby the oscillating member 58 is rockably mounted on said bracket. The bracket has an arm having a passage to receive the rod 38 and a set screw 63 secures the bracket to the rod 38 and maintains the same in a predetermined horizontal position. The oscillating member 58 is provided with a bar 64 adapted to be engaged by a pair of lugs 65 or 66 causing rocking of the member 58 and alternate engagement and disengagement of the dogs 56 and 57 with the teeth 55 of the rack 50.

A plunger 31 is slidably mounted in a passage 34 in a plate 67 which is secured across an opening 68 formed in the front wall 32. This plate is secured in any approved manner to the front wall, but it will be appreciated that where the wall is made sufficiently thick that the necessity of applying the reinforcing plate 57 will be obviated. The plunger has an axial passage 70 at the rear end thereof to receive a guide rod 71 secured by means of nuts 72 to the rear wall 25 of the housing. A coil spring 73 embraces the rod 71 and is adapted to have one end in engagement with the inner end 74 of the plunger 31, while the other end of the spring is in engagement with a pair of washers 75 mounted on the rod 71 and in engagement with the nut 72 located within the housing. A sleeve 76 embraces the spring 73 and is adapted to abut at one end the washer 75 and at its other end the inner end 74 of the plunger 31 when the said plunger has been moved to its complete inward stroke. The length of the sleeve is such that the complete inward stroke may be had of the plunger while aiding in maintaining the spring 73 in proper position on the guide rod 71. The plunger has a cut away portion 80 forming a shoulder 81 at one end and a shoulder 82 at the other end of the cut away portion. The shoulder 81 is adapted to engage a keeper 83 having an arm 84 slidably mounted in guides 85 secured to the plate 67. A pin 86 carried by the guide is adapted to limit the movement of the arm 84 in the opposite directions of its vertical movement.

A pawl 90 is pivotally mounted at 91 on the plunger 31 and has a toe 92 adapted to engage the rear angular inclined teeth 93 formed on the upper edge of the rack 94, which is secured to the side wall 12 of the housing. A pair of springs 95 and 96 are secured to the pawl intermediate its ends and to the plunger 31 for maintaining the pawl 90 in a vertical position. It will be noted that the toe of the pawl is located below the upper edge of the teeth 93 and that the rack has a bevelled edge 97 at the forward end, and also a bevelled or inclined edge 98 at the inner or rear end for the purpose which will be presently explained.

The operation of my device is as follows:—

It will be noted that since the teeth 55 of the rack 50 extend downwardly the rack may be moved upwardly and likewise the container 41 elevated, so that the member 58 will be idly rocked and the pawls 56 and 57 will not have any effect upon the upward movement. It will be appreciated that one of the pawls will always be in engagement with the tooth of the rack to hold the container at some horizontal predetermined level when the hands of the operator have been removed therefrom.

Since the device is adapted to dispense stamped envelopes and either one or more sheets of writing paper which have been folded and placed in the envelope, these stamped and filled envelopes are placed upon

the plates 45, and or in other words they are filled in the various compartments formed by said plates. Due to the angle of inclination of each of the plates the envelopes will tend to move downwardly by gravity and have their lower edges in engagement with the inner face of the front wall 32 of the housing, and the vending device is now in condition for dispensing the envelopes. In order to obtain an envelope from the vending machine, it is necessary to place a coin 100 in the slot 36 of the plunger 31 and such coin will rest upon the shelf 35 and be retained in the slot. The handle 101 of the plunger is manually grasped and forced inwardly causing the coin 100 to engage the lower edge 84^a of the arm 84 and force the arm 84 and catch 83 out of engagement with the shoulder 81 of the plunger 31, thereby releasing the plunger for continued inward movement. As soon as the coin passes beyond the inner face of the front wall 32 it will fall into the till or receptacle 26.

The pawl 90 which is hinged on the plunger 31 will lie over the inclined surface 97 of the rack 94 and be tilted at an angle to the vertical and be engaged between the teeth 93 of the rack. Since the toe 92 of the pawl is inclined toward the front wall 32 it will act as a stop to prevent the plunger 31 from being forced outwardly by the spring 73 if such plunger should accidentally be released by the operator. This pawl also prevents the return of the plunger 31 by said spring before the plunger has been moved to its full stroke within the casing. Such full stroke is not completed until the pin 66 engages the member 64 forcing the same rearwardly and oscillating the member 58. Oscillation of said member forces the dog 56 out of engagement with the teeth of the rack 50 whereby the weight of the container 41 will cause said container to drop a short distance. Since the dog 56, however, is moved into engagement with the rack 50 it will engage the tooth which is located adjacent said dog and hold the container against further downward movement.

When the plunger is moved inwardly and sufficiently for the toe 92 of the dog 90 to slide over the inclined edge 98 of the rack 94, said dog will drop below the inner end of the rack so that when the plunger is released the spring 73 will return the plunger on its back stroke and cause the pin 65 to engage the member 64 to reversely rock the oscillating member 58. This releases the dog 56 with the tooth and rack 50 and forces the dog 56 into engagement with the tooth of the rack which is adjacent said dog. It will be noted that in this operation the member 58 is oscillated in one direction when the plunger is manually moved inwardly and oscillated in the opposite direction when the plunger is returned to its inoperative position by a spring 73. When the rack 50 is released the container 41 drops a short distance, but not sufficiently to place an open end of one of the compartments of the container in alinement with the opening 33 of the front wall. When the plunger is returned by the spring 73 and the casing is released it will fall again to a short distance and replace the discharge opening of a compartment in a container directly in line with the slot 33 whereby the article to be dispensed will fall by gravity to said discharge slot. During the return stroke of the plunger 31 the toe 92 will lie over the teeth 93 of the rack 94 until it arrives at the position shown in Figure 3, where the springs 75 and 76 will retain the said dog in vertical position.

The operation described above will be continued upon each insertion of the coin in the slot 36 and when the plunger has been manually forced inwardly to its full stroke whence it will be returned by the spring 73 after fully locating the discharge opening of each compartment to the container upon the slot 37 whence the article will fall by gravity to said slot.

I claim:—

1. A vending machine comprising a housing having a discharge slot, a container in the housing having a plurality of compartments for selectively storing articles to be discharged by gravity through said slot, each compartment being provided with a discharge opening adapted to be alined with the discharge slot in the housing, a rack secured to the container, a lever pivotally mounted in the housing and having spaced dogs adapted to alternately engage the teeth of the rock and provided for incremental lowering of the container, a plunger slidably mounted in the housing and for manual operation inwardly of the housing, a spring for moving the plunger in the opposite direction, said plunger being provided with spaced lugs upon opposite sides of the lever, and adapted to engage the lever and move the same in opposite directions for rocking said lever and causing alternate engagement of the dog with the teeth of the rack.

2. A vending machine comprising a housing having a discharge slot, a contained in the housing having a plurality of compartments for selectively storing articles to be discharged by gravity through said slot, each compartment being provided with a discharge opening adapted to be alined with the discharge slot in the housing, a rack secured to the container, a lever pivotally mounted in the housing and having spaced dogs adapted to alternately engage the teeth of the rack and provided for incremental lowering of the container, a plunger slidably mounted in the housing and for manual operation inwardly of the housing, a spring for moving the plunger in the opposite direction, said plung-

er being provided with spaced lugs upon opposite sides of the lever, and adapted to engage the lever and move the same in opposite directions for rocking said lever and causing alternate engagement of the dog with the teeth of the rack, and means for preventing the spring from returning the plunger when manually released before the plunger has been moved to its full inward stroke.

3. A vending machine comprising a housing having a discharge slot, a container in the housing having a plurality of compartments for selectively storing articles to be discharged by gravity through said slot, each compartment being provided with a discharge opening adapted to be alined with the discharge slot in the housing, a rack secured to the container, a lever pivotally mounted to the housing provided with a pair of spaced dogs adapted to alternately engage the teeth of the rack to provide for a step by step lowering of the container in the housing, a plunger slidably mounted in the housing, spaced pins on the plunger, the free end of the lever being located between the pins and engageable by the pins for causing rocking of the lever in opposite directions, spring means for moving the lever to an inoperative position.

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