Feb. 19, 1935. M. EPSTEIN 1,991,736

VENDING MACHINE

Filed March 8, 1934 3 Sheets-Sheet 1

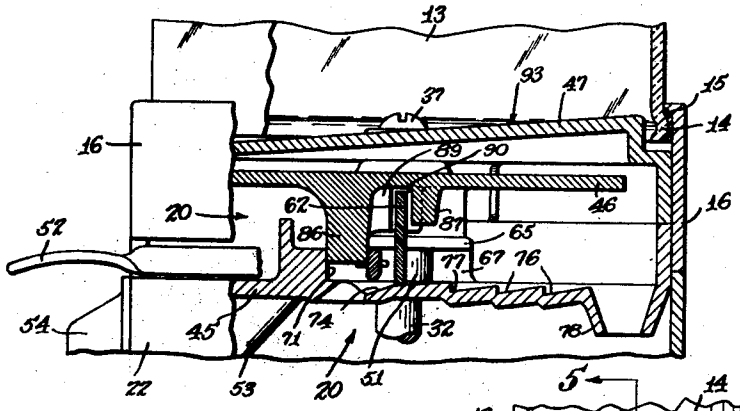


Fig. 3.

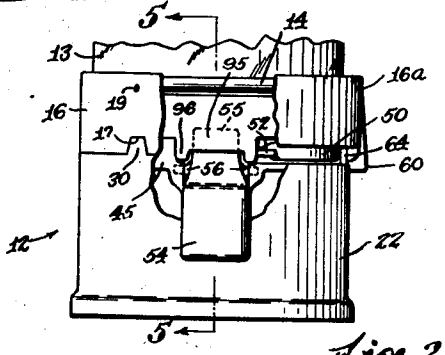
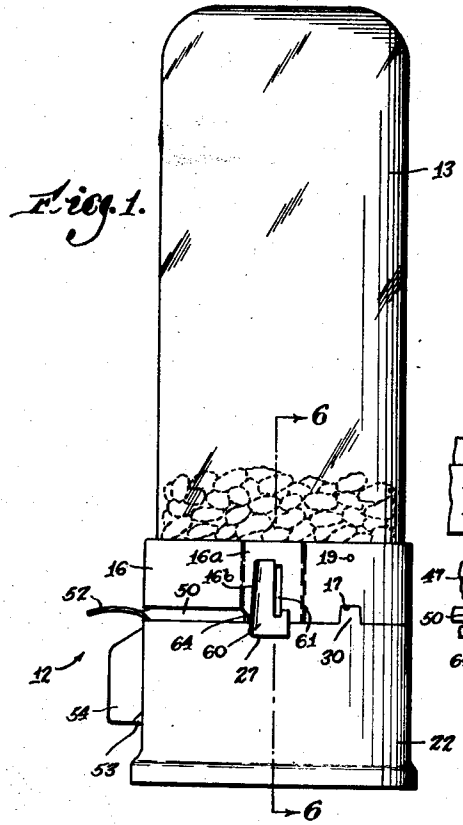


Fig. 2.

Fig. 1.



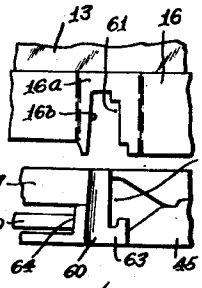


Fig. 10.

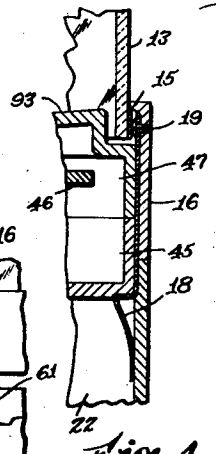


Fig. 4.

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Fig. 5.

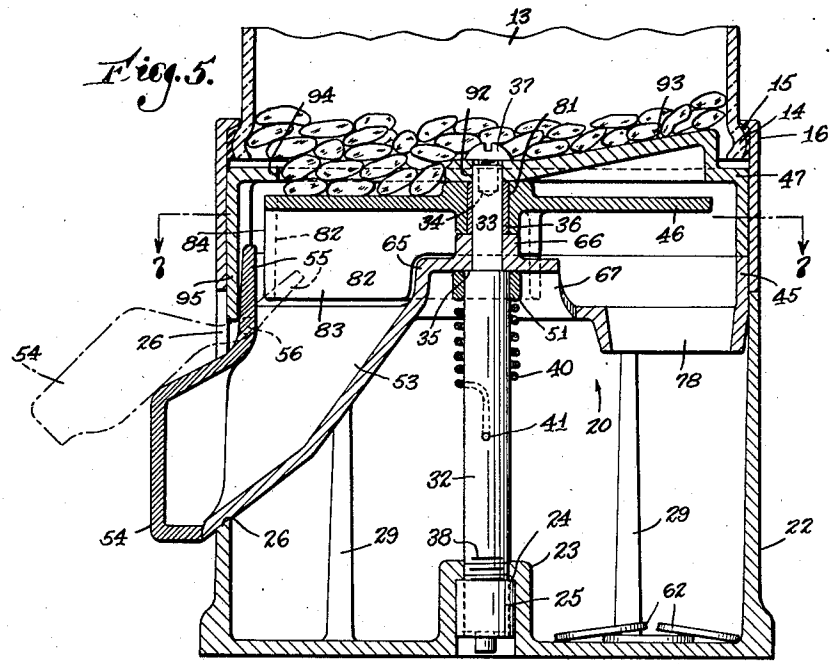
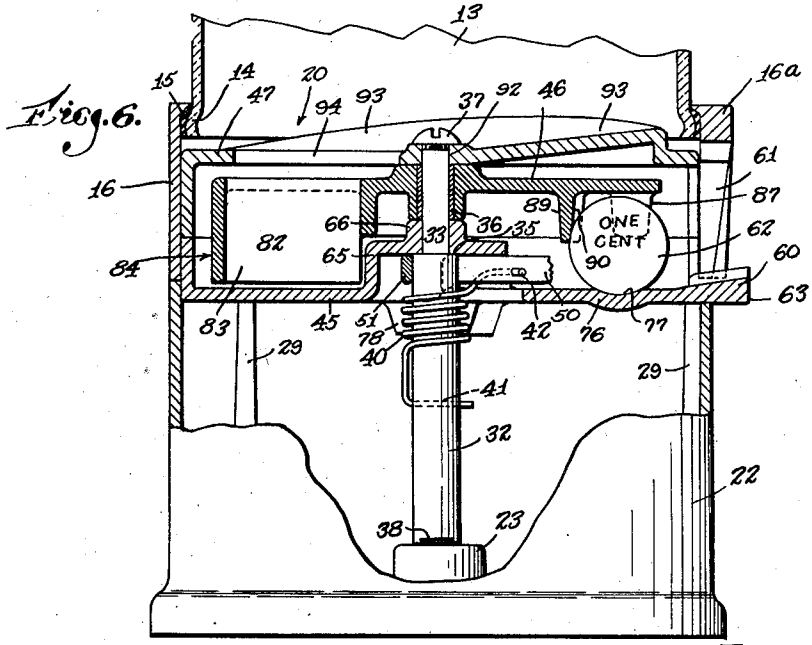


Fig. 6.



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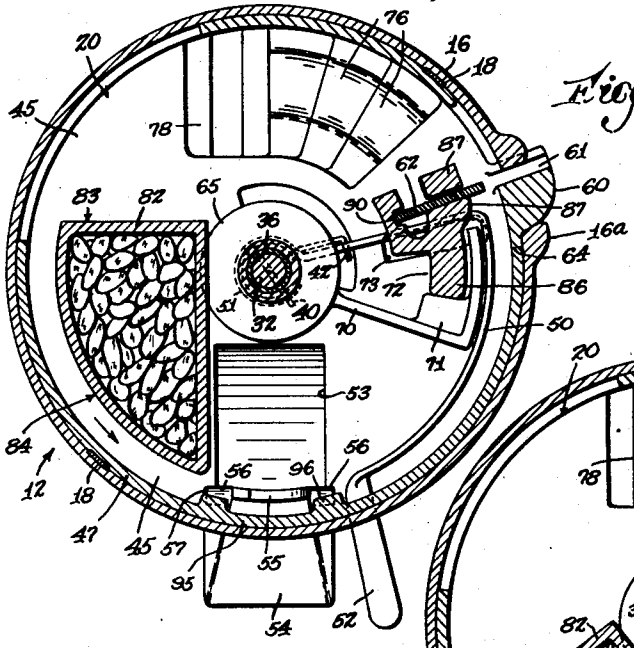


Fig. 7.

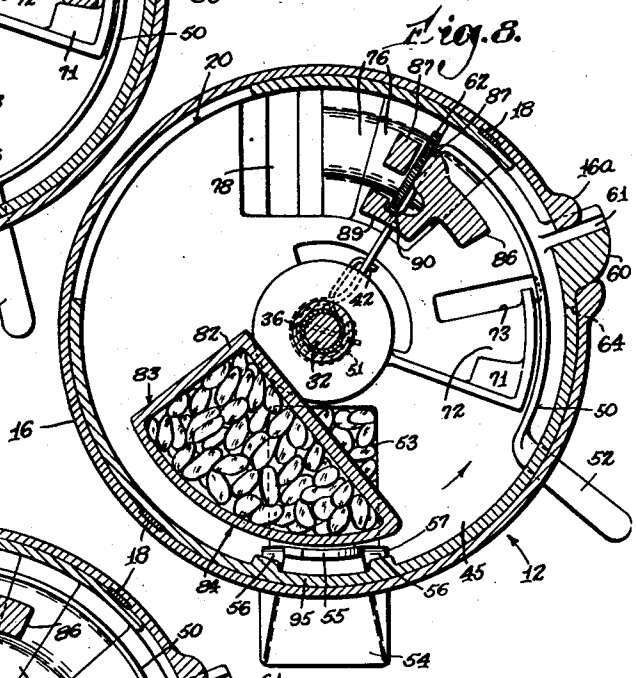


Fig. 8.

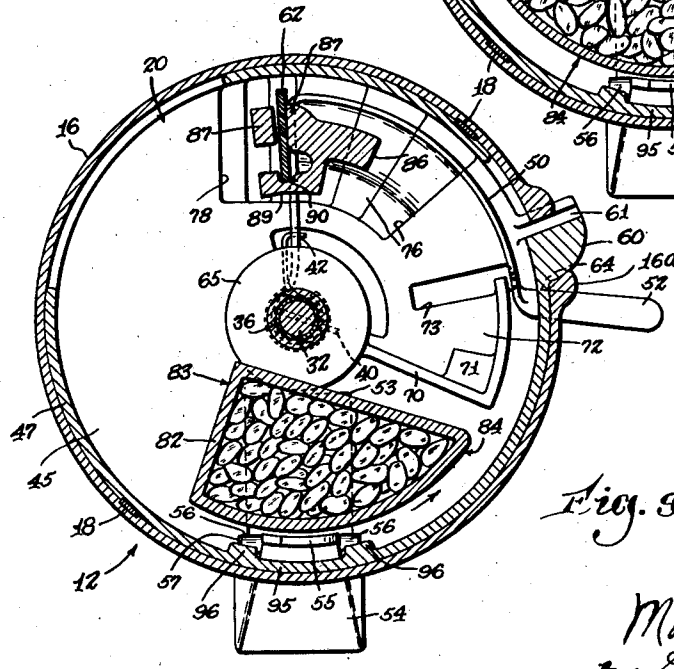


Fig. 9.

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UNITED STATES PATENT OFFICE

1,991,736

VENDING MACHINE

Morris Epstein, Boston, Mass.

Application March 8, 1934, Serial No. 714,674

7 Claims. (Cl. 194—85)

This invention relates to a vending machine, and more particularly to one which will deliver goods when operated with a coin.

One object of my invention is to provide a device in the operation of which a coin is indispensable.

Another object is to make the construction such that the actuating movement must be completed and the parts return to normal position before any goods can be secured from the machine by the person inserting the coin.

Still another object is to provide such a simple construction and arrangement of parts that the machine can be quickly assembled by a layman, already to be operated, can be refilled and the coins removed in quick order, and the cost of production of which is relatively small.

The foregoing and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and arrangement of parts such as is disclosed by the drawings. The nature of the invention is such as to render it susceptible to various changes and modifications, and, therefore, I am not to be limited to the construction disclosed by the drawings; but am entitled to all such changes therefrom as fall within the scope of my claims.

In the drawings:

Figure 1 is a side elevation of my machine, looking towards the coin slot.

Figure 2 is another side elevation, partly broken away, showing how the feed gate is movably held in position.

Figure 3 is a section illustrating part of the coin operating device with the coin inserted, already for actuation.

Figure 4 is a detail section showing how the supply container is fastened to the coin operating device.

Figure 5 is a section taken on the line 5—5 of Figure 2, illustrating details of my coin operating device, and coin receptacle, the supply container being shown broken away.

Figure 6 is a section taken on the line 6—6 of Figure 1, illustrating other details of my coin operating device, showing the coin receptacle, partly in section, the supply container being shown broken away.

Figure 7 is a plan section taken on line 7—7 of Figure 5, illustrating the coin operating mechanism in normal position, with a coin inserted, already to be operated.

Figure 8 is a section the same as Figure 7, illustrating the coin operating mechanism while being actuated, the operation not having been completed.

Figure 9 is a section the same as Figure 7, illustrating the coin operating mechanism at the completion of the movement, which releases the goods; to be supplied, into the delivery trough.

Figure 10 is a fragmentary view illustrating how the coin slot is formed between the coin operating device and the skirt on the supply container, by mere assembly of the parts.

As illustrated my vending machine has an outside casing or housing 12, extending from the top to the bottom, which houses the supply of peanuts or other goods as well as the coins, and also the coin operating device. A supply container 13 is usually made of glass or some other transparent material, and, as shown, has a flange 14 at the bottom around which is an insulating strip 15 and an outside skirt 16 which extends below the bottom of said supply container 13. An offset portion 16*a* is formed in said skirt 16, having an opening 16*b*, one side of which forms a coin slot 61, later described. There are recesses 17 in said skirt 16, and spring fastening members 18 are attached to said skirt by screws 19, which members 18 extend inside and bear against the walls of coin receptacle 22, later described, when the machine is assembled.

A coin operating device 20 is separable from the other parts, and is positioned between said supply container 13 and a coin receptacle 22, into which the coins pass when the machine is operated. Said coin receptacle 22 has a boss 23 extending from the bottom in which a shoulder 24 is formed against which a nut 25 abuts when the machine is assembled. It has an opening 26 in the side for the feed trough 53 of the coin operating device, later described, and a recess 27 in which part of the slot projecting member 60, later described, extends. Within said receptacle 22 ribs 29 are formed in the side thereof, on the top of which the coin operating device 20 rests when the machine is assembled. A pair of upstanding members 30, integral with said receptacle 22, extend above the top and fit into the recesses 17 made in the skirt 16, which prevent rotation of said coin receptacle 22 when the parts are assembled.

A post 32 connects the coin receptacle 22 with the coin operating device 20. Said post 32 has a reduced top portion 33 in which a hole 34 is tapped, said reduced top portion forming a shoulder 35 where it ends. A bushing 36 loosely fits over said reduced top portion 33, and a screw 37 goes into said tapped hole 34 to hold the top

casting 47, later described, of said coin operating device 20. At the lower end of said post 32 is a screw threaded portion 38 on which the nut 25 screws to unite said coin operating device 20 with said coin receptacle 22, said nut 25 abutting against the shoulder 24 of said coin receptacle. There is a tension spring 40 around said post 32, one end being inserted in a hole in the post, as at 41, and the other end being secured as at 42 to a portion of the actuating lever 50, later described.

The coin operating device 20 consists of three main parts, namely, a bottom or base casting 45 which seats on the shoulder 35 of the post 32, a middle casting 46 which serves as a carrier of the goods which are vended, which is mounted on and freely rotatable on said bushing 36, and a top or feeder casting 47, which is fixed to said post 32 by the screw 37. An actuating lever 50 extends into said coin operating device 20, and is rotatably attached as at 51 to said post 32, one end of said tension spring 40 being inserted into said lever 50, whereby the tension of said spring 40 serves to hold said lever in its normal position shown in Figure 7 of the drawings, and returns it automatically to that position after said lever has been actuated to delivery position. Said lever 50 has an integral handle 52 by which it is actuated.

Said bottom 45 has a trough or chute 53 into which the peanuts or other goods pass before being delivered to the purchaser, the cubic capacity of this chute determining the quantity of peanuts to be delivered at one time. A feed gate 54 closes said chute 53, and the peanuts fall out into the hands of a customer after lifting said gate. The gate cannot be lifted, however, to get the peanuts, while the actuating lever 50 is being moved; but can be lifted as soon as said lever 50 returns to normal position. This locking of said gate 54 prevents draining of the whole supply of peanuts at one time. Said gate 54 has a tongue 55 at its top end which extends above the trough, and when said carrier or middle casting 46 is actuated it is moved behind said tongue 55 thereby preventing any lifting of the gate during actuation of the carrier 46. Said gate 54 has lugs 56 on each side which pivotally fit into recesses 57 made in said bottom 45 on each side of said chute 53. Integral with said bottom 45 and projecting outwardly is a slot member or casting 60 which defines part of the coin slot 61, in which the coin 62 is inserted to operate my machine. That part of said skirt 16 to the right of said slot member 60 forms a guide for said coin 62 and defines the right side of said slot 61, as illustrated in Figure 1 of the drawings. The mere assembly of said skirt 16 with said coin operating device 20, forms this slot 61, this being illustrated in Figure 10 of the drawings, showing the two in position to be assembled. The slot member 60 extends into said opening 16b with its top abutting against the portion of said skirt 16 above said opening 16b when assembled, as illustrated in Figure 1 of the drawings. It will be noticed that the lower portion of said slot member 60 is wider, there being an extension 63 which defines the bottom of said slot 61. At the left of said slot member 60 and integral with said bottom 45 a stop member 64 is formed which limits the movement of said actuating lever 50, when said lever handle 52 comes into contact with it. The top casting 47 rests on the top of this stop member 64.

Said bottom 45 has a ring-like raised center portion 65 which has a boss 66 formed at the top on which said carrier 46 rests. In the side of said raised center portion 65 a portion is cut out as at 67, into which cut-out portion said lever 50 extends and in which it moves. Extending from said raised center portion 65 is a hooked arm 70, which has a stop piece 71 formed at the corner of the hook in said arm 70, which stop piece is integral with said bottom 45. Between said stop piece 71 and said lever 50 is a space 72 large enough to receive an actuating lug 86 on said carrier, later described. It will be seen that said lever 50 partly bounds said space 72 so that when said lever is moved said lug 86 is not confined in said space 72 any longer; but is free to move also.

An escape slot 73 is made in said bottom 45 below said space 72, through which slugs or any coins which happen to be lying on the bottom 45 may pass out into the coin receptacle 22 to thereby keep said coin operating device 20 clear. As will be seen in Figure 3 of the drawings the surface of said bottom 45 is inclined downwardly as at 74 just before said escape slot 73 to enable any slugs or coins lying on said bottom 45 to slide out through said escape slot. Beyond said lever 50 and opposite said cut-out portion 67 teeth 76 are formed in said bottom 45 which are grooved or dipped as at 77, which teeth will prevent any backward movement of said coin 62. Beyond said teeth 76 a coin passage 78 is formed in said bottom 45 through which the coin 62 drops into said coin receptacle 22. This coin passage 78 is located at the end of the movement of said lever 50, so that when the lever 50 strikes against said stop member 64, the coin is in a position to drop through said coin passage 78.

Said carrier or middle casting 46 has a hole 81 in the center through which said bushing 36 loosely extends, and it also has an opening or pocket 82 running clear through said casting 46 into which the peanuts pass. Said pocket 82 is always full so long as there is a supply of peanuts in said container 13, and when said carrier 46 is rotated to delivery position said pocket 82 registers with said chute or trough 53 as illustrated in Figure 9 of the drawings, and the peanuts pass into said trough. Said pocket 82 is defined by downwardly extending walls 83, which include an outside wall 84 which is arc shaped, and which, when said carrier 46 is rotated, is moved directly back of said tongue 55 of said gate 54 as shown in Figures 8 and 9 of the drawings, in which position it prevents opening of said gate 54 as any attempt to lift it causes said tongue 55 to contact with said wall 84, thereby preventing the downward movement necessary for said gate 54 to rise and open. This prevents any delivery of peanuts to the customer until the actuating lever 50 returns to normal position, whereupon the peanuts in said trough 53 drop out when said gate 54 is lifted. Integral with said carrier 46 and extending downwardly is a stop member 86 which projects into said space 72 thereby abutting against said stop piece 71 when in normal position. At one side of said stop member 86 and spaced apart are side lugs 87 which form the sides for said coin slot 61, to the rear of which lugs 87 is a back wall 89, which constitutes the dead end of said coin slot 61, there being a small portion cut-out as at 90 into which the coin 62 enters when it is inserted into my machine. The coin 62 when inserted in the slot 61 rests on the bottom 45, and should it be too small or otherwise unsuitable it will fall flat and slide down the inclined

surface 74 out through the escape slot 73 into the coin receptacle 22. If it is the correct size it remains upright with the actuating lever 50 at one side of it, and is between the two side lugs 87 which are part of said carrier 46, so that when the lever 50 is moved it pushes the coin 62 along with it, and pressure of the coin 62 against one of the side lugs 87 forces the carrier 46 to rotate to delivery position. The starting position is illustrated in Figure 7 of the drawings, while a midway position is shown in Figure 8, and completion of the movement in Figure 9 showing the coin ready to fall into the coin passage 78 on its way to the coin receptacle 22, with the pocket of peanuts 82 in register with the trough 53 into which they drop. In this position, however, the gate 54 cannot be lifted because the outside wall 84 of said pocket 82 will not permit said gate to be lifted. As soon as the lever handle 52 is released, however, the tension of the spring 40 automatically returns said lever 50 to normal position, and the gate 54 may be lifted whereby the peanuts fall out of the trough 53 into the hands of a customer.

The top or feeder casting 47 has a hole 92 in the center through which the screw 37 passes into the post 32 to thereby hold said feeder 47 in place. The top surface of said feeder 47 inclines downwardly from the outside as at 93 towards the delivery opening 94 so that the peanuts will automatically slide towards and into said opening 94. Said feeder 47 has a downwardly extending portion 95 which is just above the trough 53, and which has lugs 96 on each side extending beyond it toward the recesses 57 to thereby form the upper part of the bearings in which the lugs 56 on the gate 54 movably fit or rotate.

To supply my machine with goods or peanuts, and assemble it, the supply container 13 is filled with peanuts, the outside skirt 16 being in position around the bottom of said container. The coin operating device 20 is inserted into said skirt 16 with a portion extending below it, the slot casting 60 being inserted into the opening 16b in said skirt, so that the mere fitting together of these parts forms the coin slot 61. The spring fastening members 18 catch against the bottom of said coin operating device 20 as illustrated in Figure 4 of the drawings. The parts assembled are placed in the coin receptacle 22 with the spring fastening members 18 inside the receptacle, with the trough 53 extending into the opening 26 in the coin receptacle. The nut 25 is screwed onto the post 32 at the bottom and my machine is assembled, ready to be operated.

Upon insertion of a coin 62 in the coin slot 61 and actuation of the lever 50 by moving the handle 52, the carrier 46 is moved to the right and the peanuts in the pocket 82 formed in said carrier, are moved to a point just above the trough 53 into which they immediately pass, and as soon as the lever 50 returns to normal position the gate 54 may be lifted and the peanuts drop out of the trough into the hands of the customer. The details of operation of the coin operating device have previously been explained.

To remove the coins from the coin receptacle 22 the nut 25 is unscrewed and the receptacle withdrawn, and likewise the coin operating device 20 is withdrawn from the skirt 16 in order to fill the supply container 13 again.

What I claim is:

1. A vending machine comprising a supply and delivery means embodying a carrier adapted to carry goods, a trough into which said goods are adapted to pass from said carrier, a gate for said trough embodying a portion projecting above said trough, said gate projecting portion being so positioned with respect to a portion of said carrier that actuation of said carrier brings it adjacent said projecting portion and thereby prevents said gate from being opened until said carrier returns to normal position.

2. A vending machine comprising in combination a supply receptacle, a coin operating device having a slot adapted to receive a coin, and adapted to be actuated by said coin, an actuating lever, and a coin receptacle, said device embodying a bottom, a carrier having a delivery opening therein adapted to receive goods from said supply receptacle, and a top having an opening larger than said delivery opening adapted to receive goods from said supply receptacle, a trough having an opening to receive goods from said carrier, means to control the delivery of goods from said trough, said openings in said carrier, top and said trough being so positioned that they are in alinement with each other when said carrier is moved to delivery position, said carrier and said lever being so positioned with respect to each other and to said slot that actuation of said lever when a coin is in said slot moves said carrier, whereby said opening in said carrier may be moved to delivery position.

3. A vending machine comprising in combination, a supply receptacle, a coin operating device having a slot adapted to receive a coin, and adapted to be actuated by said coin, an actuating lever, and a coin receptacle, said device embodying a carrier having a delivery opening therein adapted to receive goods from said supply receptacle, a trough into which said goods are adapted to pass when said carrier is actuated to delivery position, a gate for said trough embodying a portion projecting into said device, said gate projecting portion being so positioned with respect to a portion of said carrier that actuation of said carrier brings it adjacent said projecting portion to thereby prevent said gate from being opened until said carrier returns to normal position, said carrier and said lever being so positioned with respect to each other and to said slot that actuation of said lever when a coin is in said slot moves said carrier, whereby said opening in said carrier may be moved to delivery position.

4. A vending machine comprising in combination, a supply receptacle, a coin operating device having a slot adapted to receive a coin, and adapted to be actuated by said coin, an actuating lever, and a coin receptacle, said device embodying a carrier having walls spaced apart defining a delivery opening therein adapted to receive goods from said supply receptacle, a trough into which said goods are adapted to pass when said carrier is actuated to delivery position, a gate for said trough embodying a tongue, said gate being so positioned with respect to one of said walls that actuation of said carrier moves said wall adjacent said tongue to thereby prevent said gate from being opened until said carrier returns to normal position, said carrier and said lever being so positioned with respect to each other and to said slot that actuation of said lever when a coin is in said slot moves said carrier, whereby said opening in said carrier may be moved to delivery position.

5. A vending machine comprising in combination a supply receptacle, a coin operating device having a slot adapted to receive a coin, and

adapted to be actuated by said coin, an actuating lever, and a coin receptacle, a post connecting said device and said coin receptacle, said lever being rotatably attached to said post, said device embodying a bottom having a raised portion in the center, through which said post extends, said raised portion having a cut out portion in the side through which said actuating lever extends and in which it moves when actuated, a carrier mounted on said post and resting on said raised portion having a delivery opening therein adapted to receive goods from said supply receptacle, and a top mounted on said post having an opening in register with said delivery opening adapted to receive goods from said supply receptacle, said carrier and said lever being so positioned with respect to each other and to said slot that actuation of said lever when a coin is in said slot moves said carrier, whereby said opening in said carrier may be moved to delivery position.

6. A vending machine comprising in combination a supply receptacle, a coin operating device having a slot adapted to receive a coin, and adapted to be actuated by said coin, an actuating lever extending into said device, and a coin receptacle, said device embodying a bottom having an arm extending from the center towards the outside edge and then having a bend therein extending towards said slot, said lever extending from the outside edge towards said center at a point adjacent the end of said bend whereby said arm and said lever enclose a space in said bottom, a carrier having a delivery opening therein adapted to receive goods from said supply receptacle, said carrier embodying a stop member which extends into said space and abuts against said lever when in normal position whereby said carrier cannot be moved until said lever is moved, said carrier and said lever being so positioned with respect to each other and to said slot that actuation of said lever when a coin is in said slot moves said carrier, whereby said opening in said carrier may be moved to delivery position.

7. A vending machine comprising in combination a supply receptacle, a skirt outside of said receptacle having an opening therein, a coin operating device having a slot adapted to receive a coin, and adapted to be actuated by said coin, an actuating lever, and a coin receptacle, said device embodying a projecting slot member which extends into said opening in said skirt, said slot member and said opening being so formed that when assembled a space is left between one side of said opening and one side of said slot member whereby a coin slot is formed.

MORRIS EPSTEIN.