

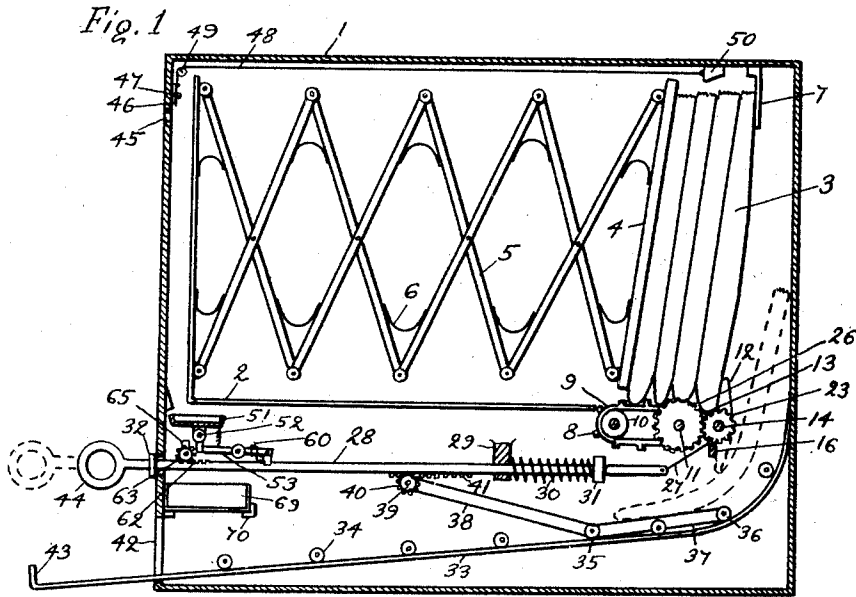
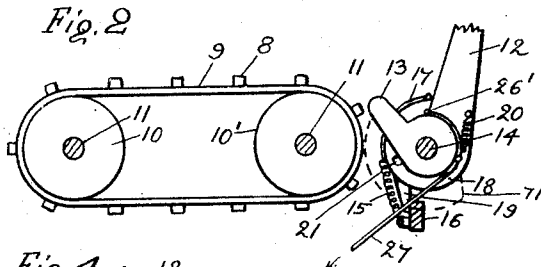
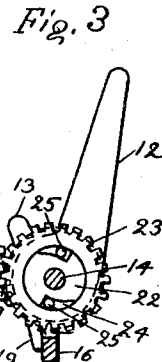
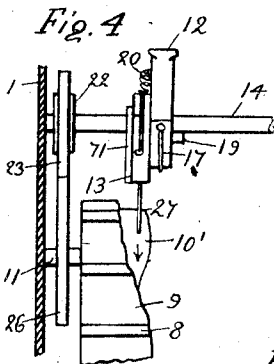
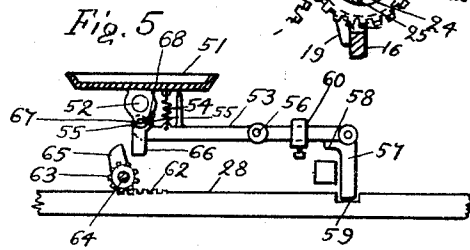
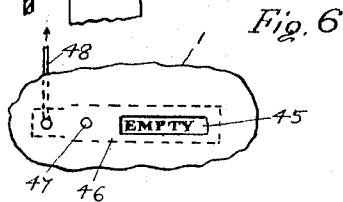
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AUTOMATIC NEWSPAPER VENDING MACHINE

Filed March 24, 1927



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UNITED STATES PATENT OFFICE.

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AUTOMATIC NEWSPAPER-VENDING MACHINE.

Application filed March 24, 1927. Serial No. 177,944.

My invention relates to automatic newspaper vending machines and has a particular reference to machines in which one newspaper at a time is released for delivery, this release being controlled by a coin.

The object of my invention is to provide a machine adapted to contain a number of newspapers which can be automatically released, one at a time, when a suitable coin or a number of coins of a predetermined aggregate weight are dropped in a slot.

With this arrangement my machine can be adjusted for coins of different denomination or number according to market prices of the newspapers.

My invention is more fully described in the accompanying specification and drawing in which—

Fig. 1 is a sectional elevation of my machine, Fig. 2 is a detailed view of a delivering mechanism, Fig. 3 is a partial view of same, Fig. 4 is a partial plan view of same, Fig. 5 is an elevation of a coin operating mechanism, and Fig. 6 is a partial view of the mechanism for closing coin slot when the machine is empty.

My machine comprises a housing 1 with a chamber 2 for newspapers 3. The housing and the chamber are open from the side and the housing is provided with a side cover (which is shown removed in Fig. 1). The newspapers are pressed towards the rear of the housing by means of a compression plate 4 attached to lazy tongues 5 with springs 6. The papers rest against a short plate 7 at the top of the housing. The lower edges of the papers slide over the bottom plate of the chamber 2. At the rear end they are separated by blocks or ribs 8 on an endless belt 9, preferably made of an elastic material such as rubber. The belt 9 is placed on pulleys 10 rotating on shafts 11. The ribs 8 are spaced in accordance with the thickness of the newspapers, so that only one newspaper fits in the space between two consecutive ribs.

The last newspaper rests in a space between a retaining arm 12 and a clamping lug 13. These members are rotatively mounted on a shaft 14. The arm 12 is kept in the operating position by means of a spring 15 attached with one end to a bar 16 and with the other end to a hub 18 of the arm 12 by means of a flexible wire or chain 17. The hub 18 is provided with a lug 19

resting against the bar 16 and retaining the arm 12 in its operating position.

The lug 13 rotates independently on the shaft 14 and is connected with the hub 18 by means of a spring 20. A pin 21 retains the lug 13 in an operating position.

The hub 18 has an extension 22 on which a pinion 23 is rotatively mounted. The extension wheel 22 has slots 24 for rollers 25 forming a one way clutch. When the hub and the arm 12 rotate to the right (Fig. 3) then the rollers become wedged in the slots 24 causing rotation of the pinion. With the return movement of the arm the rollers are pushed in the enlarged ends of the slots 24 thereby releasing the wheel 22 from the engagement with the pinion 23.

The pinion 23 is in mesh with a gear 26 attached to the pulley 10'. The lug 13 has a hook 26' for a flexible cable 27 the other end of which is attached to an operating bar 28 which slides in a bearing 29. A spring 30 is placed on the bar 28 between the bearing 29 and a collar 31 and tends to push the bar to the right. A collar 32 retains the bar 28 in the extreme right or inoperating position.

An inclined chute 33 is provided for the newspapers with rollers 34. Rollers 35 and 36 are connected together with an endless belt 37. The roller 35 is also connected by an endless belt 38 with a pulley 39 connected with a pinion 40 which is in mesh with a rack 41 on the operating bar 28.

The chute 33 extends outside of the housing 1 through a window 42 and has an up-turned edge 43 to retain the delivered newspapers.

The bar 28 is provided with a handle 44 which may be made in the form of an eye or hook for the operator's finger.

A slot 45 for the coins is provided in the front wall of the housing 1. This slot may be covered from inside with a swinging plate 46 mounted on a pin 47 and connected with a wire 48. A pulley 49 supports this wire at the corner. The other end of the wire is connected with a sliding block 50 adapted to be operated by the upper edge of the pressing plate 4, when the last newspaper has been delivered.

The coin from the slot 45 drops on a plate or cup 51 which is rotatively mounted on a pin 52 supported on one end of a rocker arm 53. A spring 54 tends to keep

the cup in an operating position in which it is retained by a lug 55 on the arm 53. The arm is rotatively mounted on a shaft 56. Its other end is pivotally connected with a lug 57. This lug can freely swing to the right but is prevented from moving to the left by a projection 58 resting against the arm 53. The lug 55 hangs vertically engaging with its lower end a notch 59 in the bar 28. A heavy sliding bushing 60 is placed on the rocker arm 53 in order to provide the necessary weight to keep the cup 51 up. By adjusting the weight and the position of the bushing the whole device may be made to tilt to the left when the required weight in coins is deposited on the cup 51.

In its operating position the lug 57 prevents the bar 28 from being pulled to the left, the lug 57 resting against a stationary bar 61.

The bar 28 is further provided with a rack 62 engaging a pinion 63. This pinion is rotatively mounted on a shaft 64 and has a cam or lug 65. This lug is adapted to engage a block 66 pivotally attached to the cup with a pivot 67. This block has an extension 68 resting against the hinge portion of the cup, so that when the block is pressed to the right it tilts the cup to the left, and when it is pressed to the left it rotates freely without engaging the cup. A sliding box 69 is placed under the cup 51 for coins. This box is supported on rails 70 and can be removed from the side of the housing when the side cover is removed.

The operation of my machine is as follows:

The coin from the slot 45 drops on the cup 51 causing the arm 53 to swing to the left releasing the bar 28. The latter is then pulled out inserting finger in the eye 44. The rack 62 will turn the pinion 64 causing the lug 65 to strike the block 66. This block through its lug 68 will press on the cup 51 tilting it to the left and spilling the coin into the box 69. Upon removal of the finger from the eye 44 the bar under action of the spring 30 returns to its inoperating position, until the lug 57 drops in the slot 59, locking the bar 28.

The pinion 63 will rotate during return movement of the bar and the cam 65 will strike the other side of the block 66, swinging same away from the cup 51. Upon completion of this movement the cam and the block will return to their original positions as shown in Fig. 5.

When the bar 28 is pulled out its rear end pulls the wire 27 causing rotation of the lug 13 until it clamps the lower edge of one newspaper against the arm 12. From this moment the arm 12 will also rotate pulling the paper away from under the plate 7. This rotation continues for about 150 or 180 degrees when the arm 12 takes position in-

dicated with dotted line in Fig. 12. Due to the sharp bending action the paper will escape from under the clamp 13, falling on the rollers in the trough 33, as shown with dotted lines in Fig. 1.

These rollers (35 and 36) are rotated by the belts 37 and 38 from the pinion 40 which rotates while the bar 28 is being pulled out. The rotating rollers will cause further movement of the paper until it reaches the end of the chute 33 against the stop 43.

The arm 12, turning to the right, will also rotate the pinion 23 and the gear 26. The gear ratio is such that when the arm 12 makes full swing, the gear 26 turns the wheel 10' for an angle sufficient to move the belt 10 for a distance equal to the spacing between the ribs 8. This action will cause the whole pile of papers to advance for a distance equal to the space between the ribs or a thickness of one paper. A retaining segment 71, Fig. 4 (also shown with dotted lines in Fig. 2) prevents the last paper from sliding off the belt 9, until the arm and the lug 13 return in their original position, when the last paper will slide in the space between the arm 12 and the lug 13.

Every time when the coin (or several coins, according to the adjustment of the weight of the arm 53) is dropped in the slot, one paper is released and may be removed by pulling the arm 28. No paper can be removed when there is no coin in the cup 51.

With the removal of the last paper the plate 4 will press on the sliding block 50, pulling the string 48 and turning the swinging plate 46 until it covers the slot, preventing the possibility of depositing any more coins. The plate 46 has a suitable sign, such as the word "Empty" which shows through the slot when the latter is closed.

Important advantage of my machine is that it is entirely automatic and positive in its action, can be adjusted to operate with any denomination or amount of coins, and can be left without any attention until the stock of papers in it is exhausted.

I claim as my invention:

1. In an automatic newspaper vending machine, the combination with a housing of a means to hold a plurality of folded papers in said housing, means to manually clamp the lower edge of the last paper and to manually rotate said clamping means thereby releasing said last paper from said holding means, means to move the rest of the papers for a distance of one paper during said rotative movement, means to prevent the release of the next to the last paper, a plurality of rollers adapted to conduct the released paper to the outside of said housing, and means to rotate said rollers.

2. In an automatic newspaper vending machine, the combination with a housing of a means to hold a plurality of folded papers in

said housing, an endless belt, pulleys supporting said belt, ribs on the outside of said belt, said belt being mounted in said housing under said papers, said ribs being spaced so
5 as to separate individual papers, means to clamp the last paper, means to manually rotate said clamping means thereby removing the last paper from said holding means, an

operating connection between said manual rotating means and said belt, and means to 10 deliver said paper to the outside of said housing.

Signed at New York in the county of New York and State of New York this 21st day of March A. D. 1927.

EUGENE VINOGRADOV.