Sept. 6, 1932. J. A. HEBB 1,876,292

NEWSPAPER VENDING MACHINE

Filed Nov. 9, 1929 3 Sheets-Sheet 1

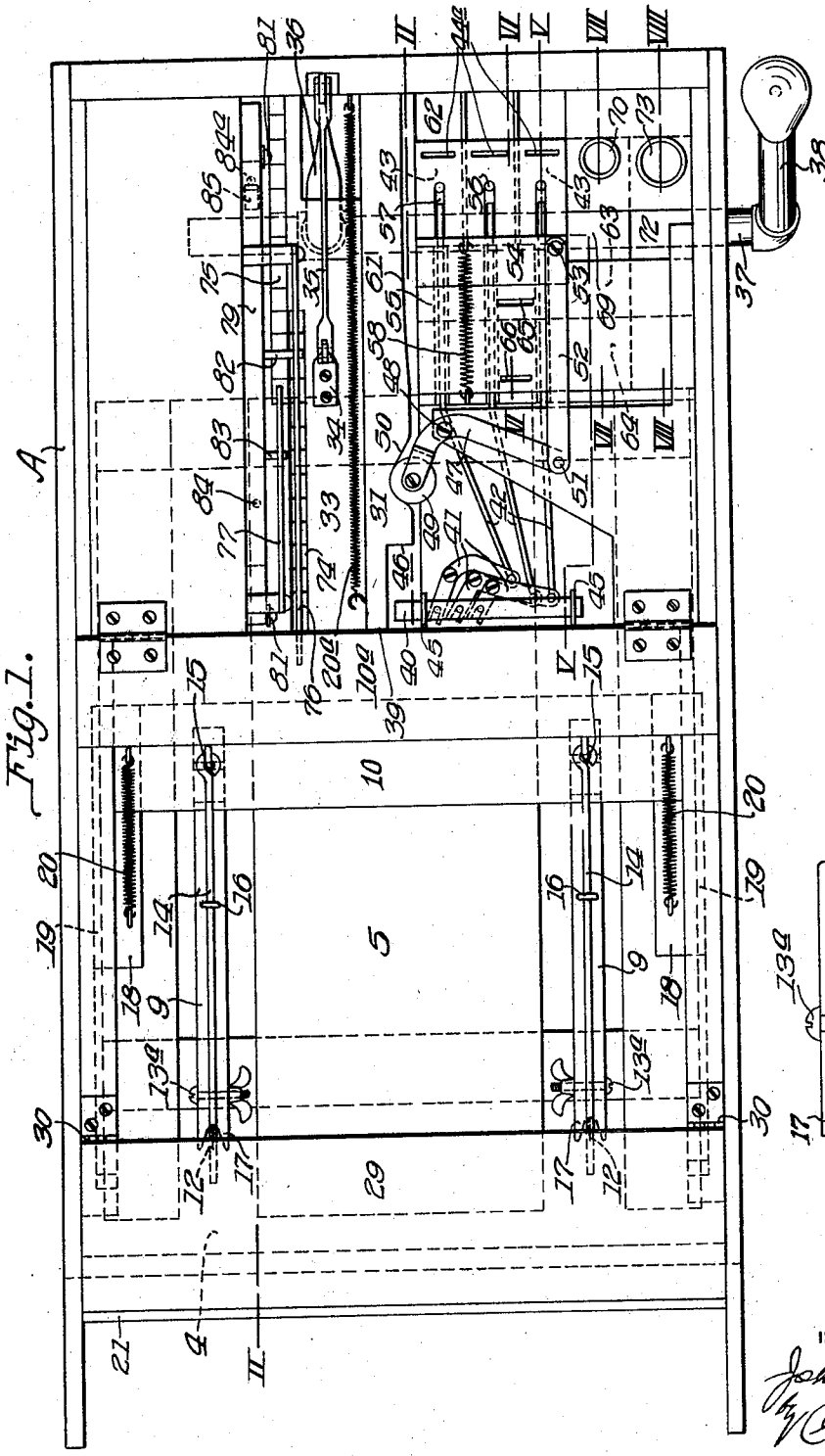


Fig. 1.

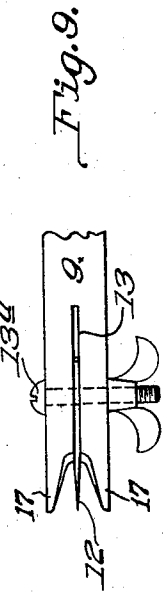


Fig. 9.

INVENTOR

John A. Hebb

By C. M. Clarke

Attorney

Sept. 6, 1932. J. A. HEBB 1,876,292

NEWSPAPER VENDING MACHINE

Filed Nov. 9, 1929 3 Sheets-Sheet 2

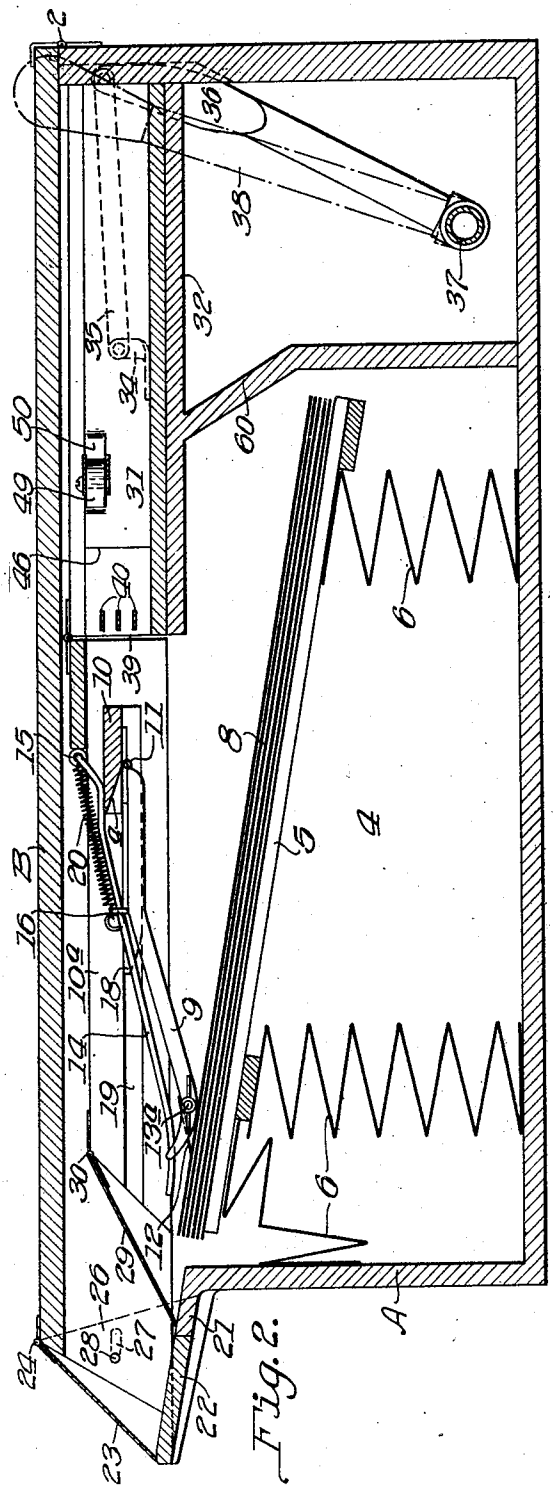


Fig. 2.

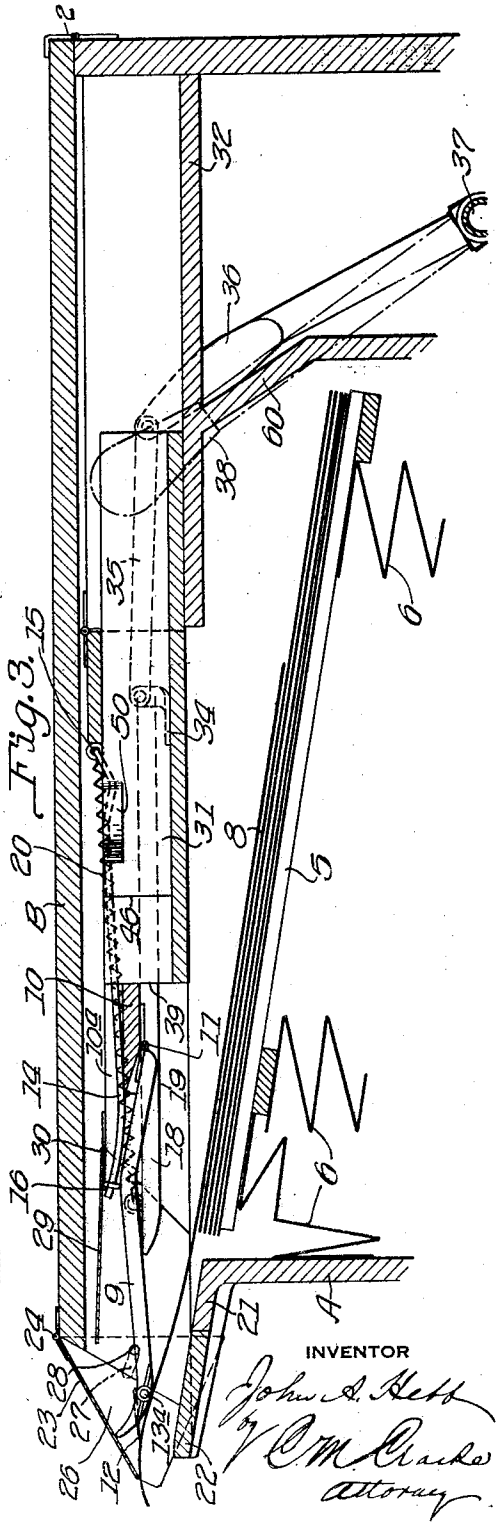


Fig. 3.

INVENTOR

John A. Hebb

by O. M. Clarke

Attorney

Sept. 6, 1932. J. A. HEBB 1,876,292

NEWSPAPER VENDING MACHINE

Filed Nov. 9, 1929 3 Sheets-Sheet 3

Fig.4.

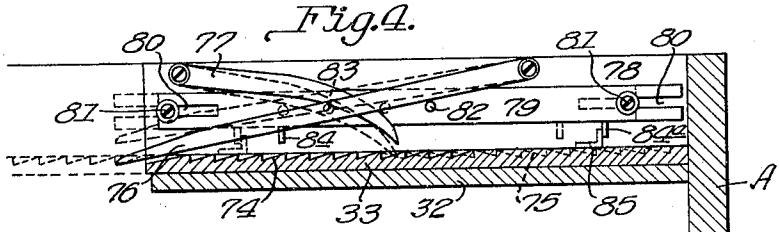


Fig.5.

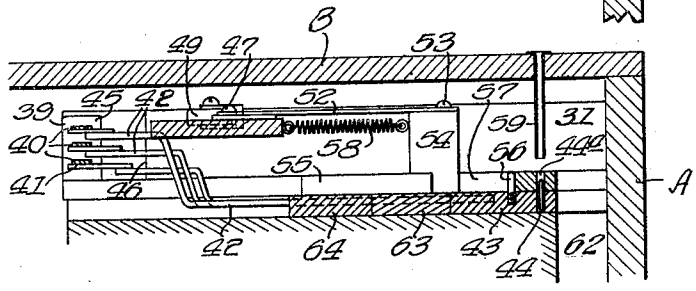


Fig.6.

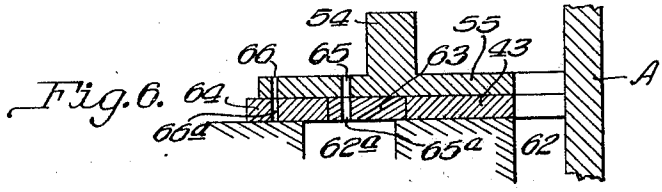


Fig.7.

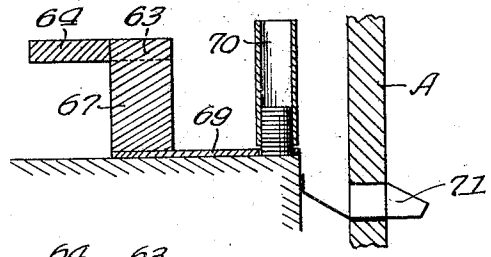
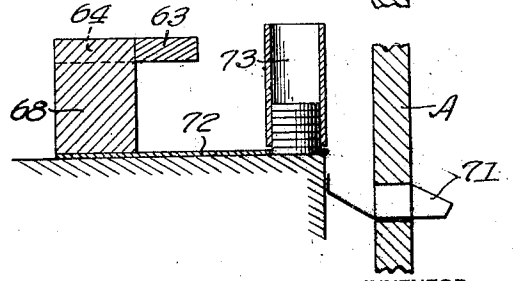


Fig.8.



INVENTOR

John A. Hebb

by C. M. Clarke

attorney

Patented Sept. 6, 1932 1,876,292

UNITED STATES PATENT OFFICE

JOHN A. HEBB, OF HOPWOOD, PENNSYLVANIA

NEWSPAPER VENDING MACHINE

Application filed November 9, 1929. Serial No. 405,877.

This invention consists of an improvement in vending machines of the coin controlled type particularly adapted for use in the vending of newspapers and the like. It has in view to provide a self-contained machine having a weather-proof protecting cover, capable of being opened for filling or charging with a supply group of units and having operative mechanism whereby one of said units may be projected outwardly of the machine for grasping and removal.

The operative mechanism of the machine comprises a resilient supporting platform for maintaining the uppermost unit in operative relation to the projecting mechanism, and means for actuating the projecting mechanism, for each operation, involving return elements.

My invention particularly resides in the construction of the projecting mechanism, including the discharging fingers and means associated therewith for raising said fingers to project a unit through a delivery opening for removal thereof, upon actuating the projecting mechanism.

An additional feature consists of protective devices operable by the actuation of the projecting means for preventing the improper extraction of a unit on either the delivery or return movement of said means.

Further objects and advantages will become apparent from the following description taken in connection with the accompanying drawings, wherein:

Fig. 1 is a top plan view of the machine with the cover removed, in normal position;

Fig. 2 is a longitudinal sectional view on the line II—II of Fig. 1;

Fig. 3 is a view similar to Fig. 2, showing the projecting or discharging mechanism advanced;

Fig. 4 is a sectional view on the line IV—IV of Fig. 1, particularly showing the protective devices;

Fig. 5 is a sectional view on the line V—V of Fig. 1, showing coin operated means for controlling the movement of the projecting mechanism;

Figs. 6, 7 and 8 are sectional views on the lines VI—VI, VII—VII and VIII—VIII of Fig. 1 respectively, and illustrate a coin changing mechanism associated with the projecting means; and

Fig. 9 is an enlarged view in elevation of the end of one of the discharging fingers.

The machine as a whole comprises a lower base portion A and a covering top B connected by a pair of hinges 2 at one end and provided with suitable locking elements (not shown).

The main body A is of box-like shape, generally rectangular in form, made of wood, metal, or other suitable material for complete protective enclosure of the interior. Casing A is provided at its lower front portion with a rectangular cavity 4 in which is mounted an inclined floor 5, resting upon a plurality of light resilient springs 6, whereby the inclined bottom 5 is capable of a considerable degree of vertical movement.

The floor or platform 5 is adapted to receive a plurality of folded newspapers 8 as shown in Fig. 2, said platform being depressed by the weight of the newspapers with sufficient pressure to maintain the uppermost unit in operative relation to the discharging fingers or arms 9.

Such fingers, as shown, project forwardly from the lower side of a main cross head 10, to which the fingers are pivoted, as by hinge connections 11. The cross head 10 is cut away as at *a* to permit upward movement of the fingers for the purpose of lifting the uppermost unit from the pack, and shifting it freely outward, as in Fig. 3.

Fingers 9 are provided with downwardly and forwardly projecting needles or pins 12, the sharpened points of which extend into the paper of the unit sufficiently far to engage its several leaves for outward propulsion of

the entire series of leaves forming the unit, when the fingers are advanced.

Said needles are adjustably secured in the ends of the fingers by means of longitudinal slots 13 and clamping screws 13*a*, the latter being provided with winged nuts to facilitate such adjustment.

The upward movement of the fingers is effected by means of guide rods 14, superimposed on the fingers and pivotally connected to the stationary frame 10*a* as at 15. Such rods are mounted in apertured guides 16 midway of the fingers, and have their end portions resting in the upwardly turned bifurcated ends 17 of the fingers. The upwardly turned ends 17 provide skids movable over the paper and the needles 12 are adjustable between and below them. The configuration of the rods 14 is such as to extend over the forward edge of the cross head 10, and then downwardly and forwardly in the manner described.

Said cross head is provided at its ends with forwardly extending slides 18, movable in longitudinal trackways 19 in the stationary frame 10*a*. Upon moving the cross head 10 forward, the upper surface thereof will engage the rods 14, and lift said rods and their fingers, to deliver a unit as in Fig. 3. Tension springs 20, secured to the slides 18 and the stationary frame 10*a* will effect a return of the cross head and its fingers after completion of the delivery.

A box-like body A and the cover B are provided with co-extensive delivery shelf portions 21 and 22 respectively, forming a forwardly extending shelf inclined at the general slope of the platform 5. A weather shield 23 hinged at 24 to the cover B, is adapted to normally close the delivery opening 25, and is provided with rearwardly extending ears 26 at the sides of said cover B, having arcuate slots 27 therein for limited outward movement of the shield on studs or pins 28 of the cover.

A protecting door 29 is hinged across the forward end of stationary frame 10*a*, as at 30, and normally rests against the upper face of the shelf portion 21 in an inclined position, as in Fig. 2.

The weather shield 23 and the door 29 are sufficiently light to be elevated, as in Fig. 3, by the advancing unit and the upturned terminals 17 of discharging fingers 9, and to close downwardly by gravity after retraction of the discharging fingers.

It is designed that the machine shall be operated by projecting mechanism capable of being released by a coin or coins, so as to regulate the vending of a unit only upon insertion of such coin or coins. While various devices of this character may be adapted to the mechanism, I have shown one form of coin controlled plunger which, in practice, has shown good results and which is well adapted to effect the desired functions and operation.

The forward propulsion of the cross head 10 and its flexibly connected shifting fingers 9 is effected by means of a forwardly and backwardly movable shifting head or block 31.

Such block is mounted for longitudinal movement on a rear shelf 32 and is provided with a laterally extending portion 33 at one side thereof. An apertured lug 34 is secured to the portion 33 for mounting one end of operating link 35. The other end of said link is connected to the upper end of lever member 36, rotatable with cross shaft 37. Such shaft extends outside of the box A at one side thereof and is provided with an operating handle lever 38, preferably integral therewith.

The forward end 39 of shifting block 31 is adapted to engage the rear edge of the cross head 10, and to project the same forwardly to the desired extent, to effect the discharge of a paper unit. Upon rotation of the handle 38 in a forward direction, the said motion is effected by means of shaft 37, lever 36 and operating link 35.

For the purpose of controlling the operation of the machine, I have provided an interference mechanism so designed and arranged as to prevent operation until released by the deposit of a coin or coins. While I have shown such mechanism operable for the vending of a newspaper selling at a price of three cents, it will be understood that the same may be altered by changing the number of parts to permit the vending of units at different prices.

Accordingly, I have provided three individual mechanisms, each operable by a penny, for such control. Each mechanism includes a stop member 40, a bell crank 41 having one arm engaging the stop member and the other arm connected with a rod 42, said rod having a coin slide 43 secured thereto provided with a coin slot 44 therethrough. The stop members 40 are arranged one above the other in suitable brackets 45 and the coin slides 43 are slidably arranged in parallelism, as shown. Said stops 40 are normally extended in the path of a vertical abutment 46 of the block or head 31.

For the purpose of releasing the stops 40 and withdrawing them from the path of the block 31, to permit operation, an oscillating bell crank 47 is provided, pivoted at 48, and having a roller 49 rotatable in a bifurcated end thereof, and adapted to engage a cam face 50 in the block. The other end of the crank 47 is connected at 51 to a link 52, secured at 53 to a vertically extending portion 54 of coin control plate 55, slidably positioned over the coin slides 43, and having complementary coin slots 44*a* therethrough. Coin slides 43 are provided with vertical pins

56 extending upwardly through slots 57 in the plate 55. A tension spring 58 maintains the plate 55 in its normal position and holds the roller 49 against its cam surface at all times.

Thus when no coins are inserted in the machine, rotation of the handle 38 will move the block 31 forwardly, until its abutment strikes the stops 40, preventing movement of the projecting means. By the action of the cam face 50 and roller 49, the crank 47 and link 52, the control plate 55 will be moved a slight amount, said plate moving in a direction opposite to that of the head 31, but imparting no motion to the coin slides 43.

However, when three pennies are inserted in suitable slots in the cover B, they will pass downwardly by guides 59 into the slots 44*a* and 44, as in Fig. 5, resting upon the shelf 32 and forming connecting links or pressure transmitting elements between the slides 43 and the control plate 55. Then upon actuating the mechanism just described, the motion of the plate 55 will be imparted to the slides 43, thereby withdrawing the stops 40 by means of rods 42, and bell cranks 41. The head 31 will then engage the cross head 10 and proceed to the end of its stroke, delivering a paper unit as in Fig. 3. The limit of such stroke is provided by lever 36 engaging inclined wall 60 of the box A. Cam face 50 recedes a slight amount, as at 61, to permit a slight retraction of the plate 55, thereby releasing the pennies in their slots and permitting them to fall by gravity into a suitable chute 62.

Toward the end of the return stroke, the stops 40 will be returned to their normal position by means of the slots 57, pins 56, slides 43, rods 42 and bell cranks 41.

For the purpose of vending a newspaper upon the deposit of a nickel or a dime, and returning change therefor, I have constructed coin changing means associated with the interference mechanism hereinbefore described. To this end, I provide a nickel slide 63 and a dime slide 64, parallel in the same plane as the slides 43 and extending across the ends thereof. The control plate 55 extends thereover and has a nickel slot 65 and a dime slot 66 therethrough, and is normally directly over complementary slots 65*a* and 66*a* in the slides 63 and 64 respectively.

Thus it will be seen, that when a nickel is inserted in the slots 65 and 65*a*, movement of the plate 55 will impart motion to the slide 63, which will in turn abut the ends of slides 43, and withdraw the stops 40. Similarly, upon the insertion of a dime in the slots 66 and 66*a* the movement of the pate 55 will be imparted to the slide 64, slide 63 and slides 43 to withdraw said stops. A suitable chute 62*a* is provided to receive the coins when released.

The slides 63 and 64 extend laterally and are provided with depending portions 67 and 68 respectively. To the depending portion 67 is secured a change plate 69, extending in the direction of motion of the slides, and below the open end of a penny reservoir or tube 70. The change plate 69 is slightly thinner than the thickness of two pennies, and has an opening therethrough of substantially the same diameter as a penny, normally positioned below said reservoir, as shown in Fig. 7. When the machine is operated by the insertion of a nickel, the plate 69 will move with the slide 63, and deliver two cents change to an outer receptacle 71, where it may be removed by the purchaser.

Depending portion 68 of the slide 64 is similarly provided with a change plate 72, having a thickness slightly less than that of a nickel, and extending underneath a nickel reservoir 73. An opening therethrough is adapted to shear off a nickel from the pile in the reservoir and deliver it, with the two cents from change plate 69 to the receptacle 71 when the machine is operated by means of a dime.

The operation of my invention will be readily understood and appreciated from the foregoing description. The platform 5 being loaded with a pile of folded newspapers, with their front free edges immediately below the discharging fingers, the uppermost unit will be in contact with said fingers. Upon depositing the necessary coins for releasing the stops 40, operation of handle 38 will advance the block 31 until the forward end 39 thereof engages the rear edge of the cross head 10. As the cross head advances, the pins or needles 12 of the fingers 9 will enter the uppermost unit and raise the same by the action of said cross head on the guide rods 14 and the fingers, until said unit is presented for withdrawal at the delivery opening 25, where it may be grasped by the operator.

Upon releasing the handle 38, the springs 20 will return the parts of the projecting mechanism to their normal position in readiness for another vending operation. An additional spring 20*a* facilitates a quick return of the block 31.

In order to prevent improper vending of a unit when the parts of the machine are in intermediate positions, portion 33 of the block 31 is provided with ratchets 74 and 75, adapted to be engaged by depending pawls 76 and 77 respectively. Said pawls are pivotally secured to a stationary member 78 of the box A, and extend in opposite directions to engage said ratchets. A shifting bar 79, having slotted ends 80 for mounting on suitable screws or pins 81 secured in the member 78, is provided with projecting pins 82 and 83 for operating the pawls 76 and 77 respectively. The bar 79 is further provided with spaced-apart depending pins 84 and 84*a* for actuating the bar by means of a trip member 85, secured to the block portion 33.

Upon forward movement of the block 31 and portion 33 thereof, the pawl 76 will engage the ratchet 74, preventing any backward movement of said block until the completion of the delivery stroke. As the block reaches the end of its stroke, the trip 85 will engage the pin 84 and slide the bar 79 in the direction of motion thereof, raising the pawl 76 from engagement with ratchet 74, by means of pin 82, and releasing the pawl 77 by means of pin 83, thereby permitting pawl 77 to fall and engage its ratchet 75, having teeth opposed to the teeth of ratchet 74, to prevent further forward motion of the projection means. (See Fig. 4.)

When the block 31 and portion 33 reach the end of the return stroke, trip 85 will slide the bar 79 to its original position by means of pin 84*a*, raising the pawl 77 and permitting the pawl 76 to fall into engagement with ratchet 74, as will be readily understood.

It will be seen that the entire machine is capable of being proportioned to suit the commercial needs for which it is designed. Various changes and modifications are contemplated providing they fall within the scope of the following claims.

What I claim is:

1. A newspaper vending machine provided with a case having a storage cavity and a delivery opening, an inclined supporting platform resiliently mounted in the storage cavity, means including an incision device and a cross head for moving a newspaper from the platform towards the delivery opening having a shifting block and means on the block for preventing its return movement before completion of the delivery stroke, a weather shield pivoted over the delivery opening and means on the moving means for elevating the weather shield.

2. A newspaper vending machine provided with a case having a storage cavity and a delivery opening, an inclined supporting platform resiliently mounted in the storage cavity, means for moving a newspaper from the platform towards the delivery opening including a shifting block and means on the block for preventing its return movement before completion of the delivery stroke, a cross head actuated by the shifting block having a pivoted finger provided with an incision device, a guide rod superimposed upon said finger for the purpose of varying the movement of said finger, and means for adjustably mounting the incision device in the finger.

3. A newspaper vending machine provided with a case having a storage cavity and a delivery opening, an inclined supporting platform resiliently mounted in the storage cavity, a movable cross head having a finger pivoted thereto, an incision device on said finger, and a lifting guide rod pivotally mounted over and engaging the finger and above the cross head for elevation by forward movement of the cross head.

4. A newspaper vending machine provided with a case having a storage cavity and a delivery opening, an inclined supporting platform resiliently mounted in the storage cavity, a stationary frame, a cross head slidably mounted in a trackway of said frame, a finger pivoted to the cross head, an incision device on said finger, a guide rod pivotally mounted on the stationary frame and extending longitudinally of the finger, apertured means on the finger for receiving the rod, a shifting block for engaging the cross head, and lever means for actuating the shifting block.

5. In a newspaper vending machine, a lower casing provided with a storage cavity and a delivery shelf portion, an upper casing providing a co-extensive delivery shelf portion and a delivery opening, an inclined platform having supporting springs, a horizontal trackway above the platform, a cross head on the trackway, fingers pivoted on the cross head having incision pins, guide rods positioned over the cross head and operatively connected with the fingers for raising the fingers as they advance, and a slidable shifting block adapted to engage the cross head.

6. In a newspaper vending machine, a lower casing provided with a storage cavity and a delivery shelf portion, an upper casing providing a co-extensive delivery shelf portion and a delivery opening, an inclined platform having supporting springs, a horizontal trackway above the platform, a cross head on the trackway, fingers pivoted on the cross-head having incision pins, guide rods positioned over the cross head and operatively connected with the fingers for raising the fingers as they advance, retraction springs for the cross head, and a slidable shifting block adapted to engage the cross head.

7. In a newspaper vending machine, a casing having a storage cavity, means for resiliently mounting a group of units therein, a cross head slidable above said units and having delivery fingers pivoted thereto, incision pins on the fingers, guide rods over the fingers and cross head having link connection with the fingers for raising them by a forward underneath movement of the cross head to project a unit from said group upwardly and outwardly and means for actuating the cross head.

8. In a newspaper vending machine, projecting mechanism for delivering a newspaper including a shifting block, oppositely disposed ratchets on the block, pivotally mounted pawls over said ratchets and extending in opposite directions, and slidable means provided with spaced-apart pins for raising and lowering said pawls with relation to the ratchets actuated by said block.

9. In a newspaper vending machine, projecting mechanism for delivering a newspaper including a shifting block, oppositely disposed ratchets on the block, pivotally mounted pawls over said ratchets and extending in opposite directions, a slide bar, trip means on the block for actuating the slide bar, and spaced-apart pins on said bar for alternately raising and lowering the pawls with relation to the ratchets upon a movement of the block.

In testimony whereof I hereunto affix my signature.

JOHN A. HEBB.