

Dec. 12, 1933.

E. W. NIEDERSTADT

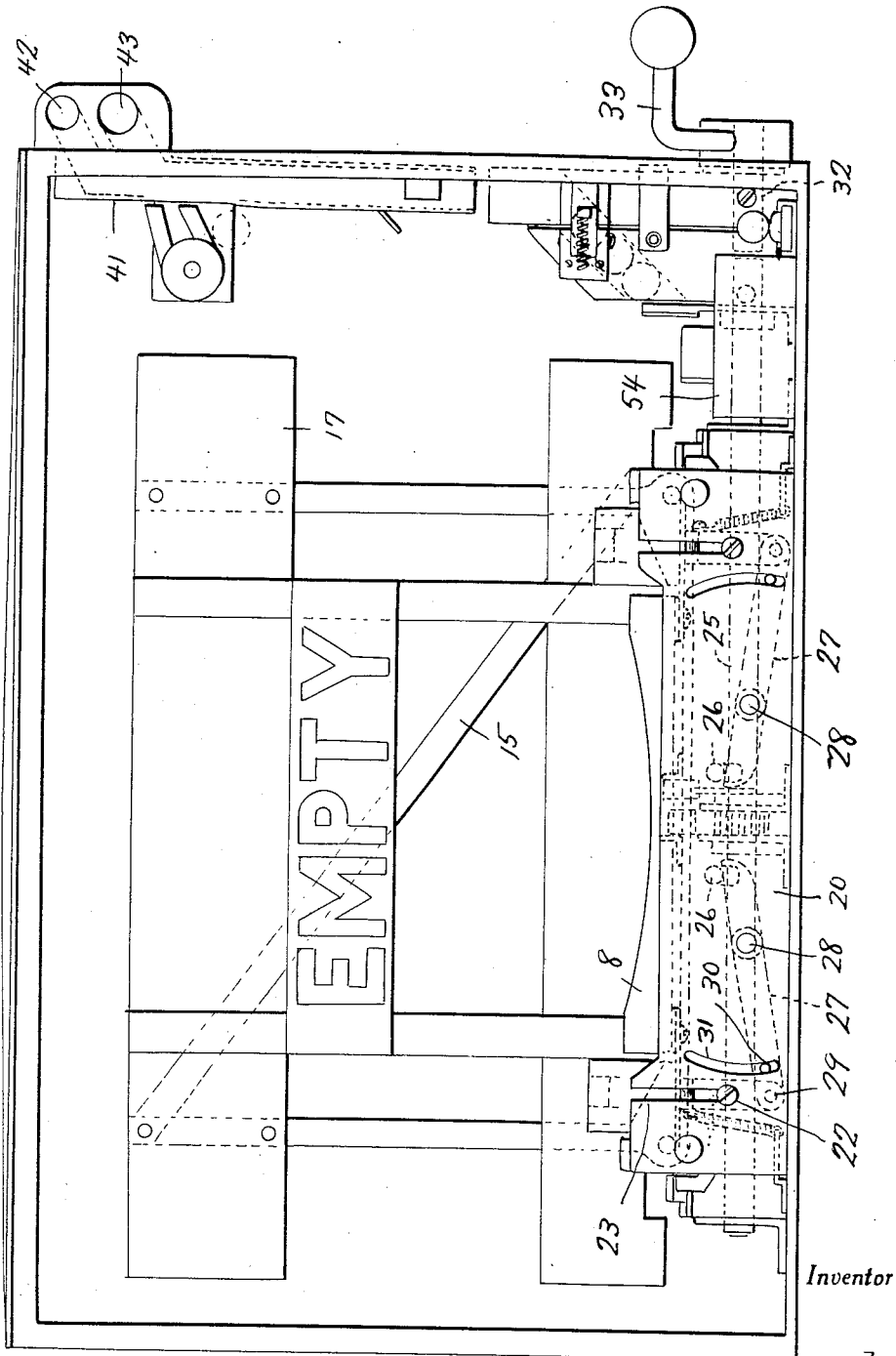
1,938,753

VENDING MACHINE FOR NEWSPAPERS

Filed Jan. 18, 1932

6 Sheets-Sheet 1

Fig. 1.



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6 Sheets-Sheet 2

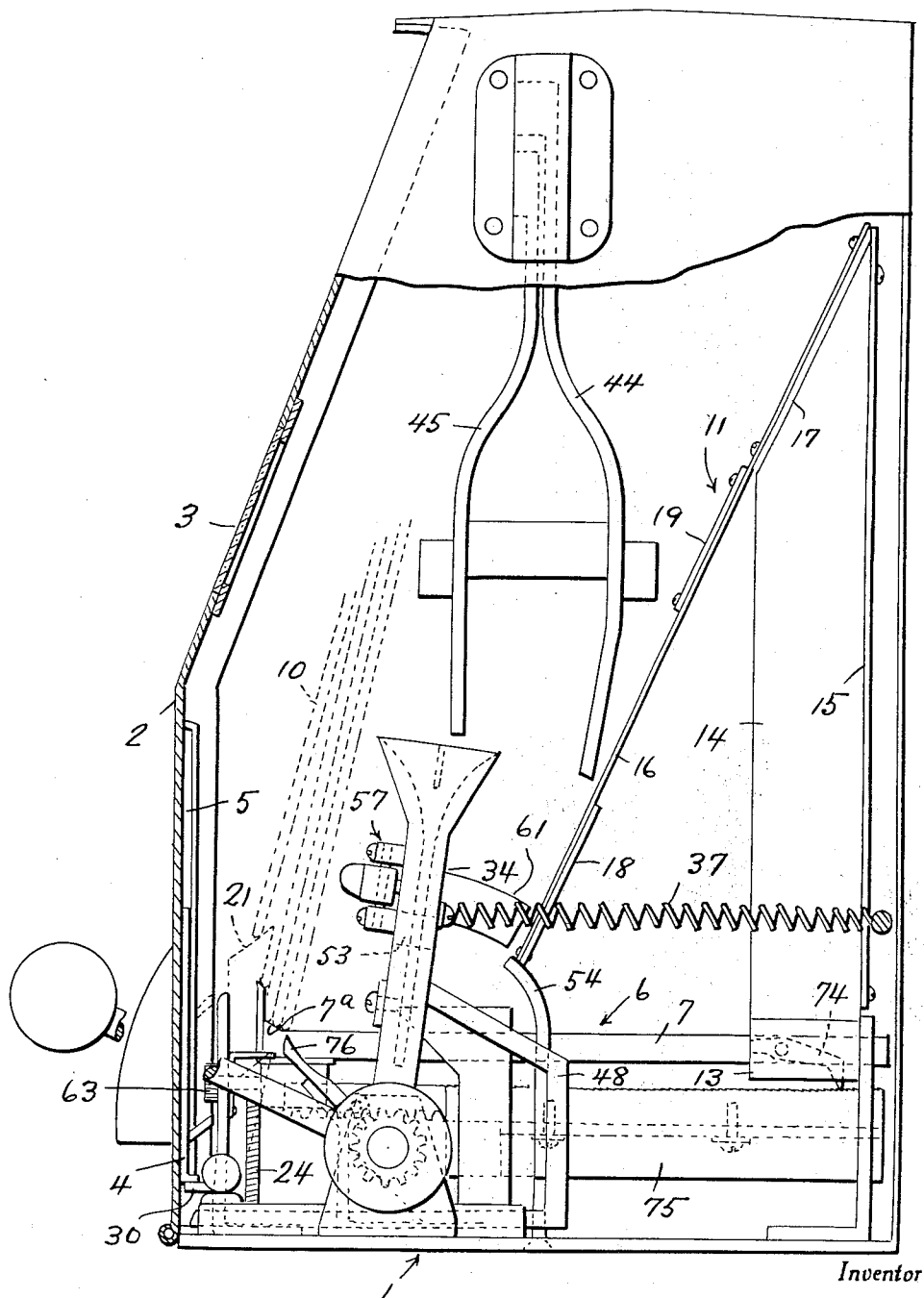


Fig. 2.

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6 Sheets-Sheet 3

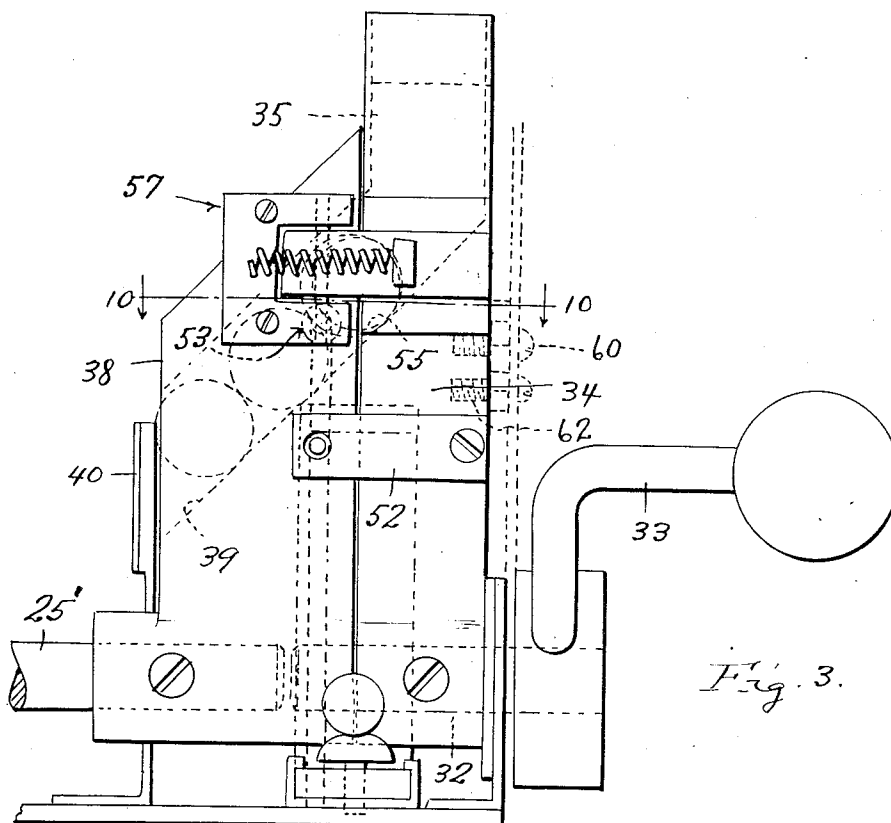


Fig. 3.

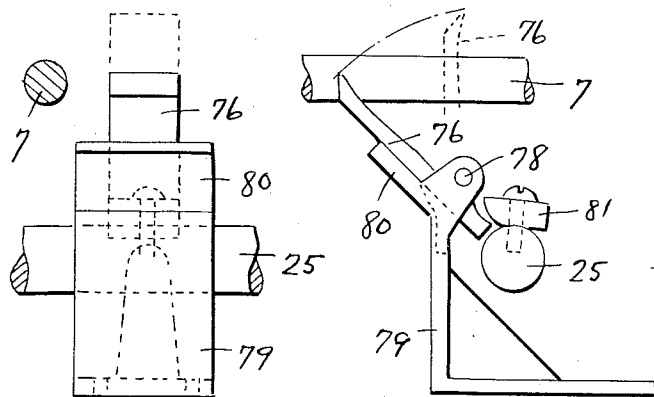


Fig. 11

Fig. 12.

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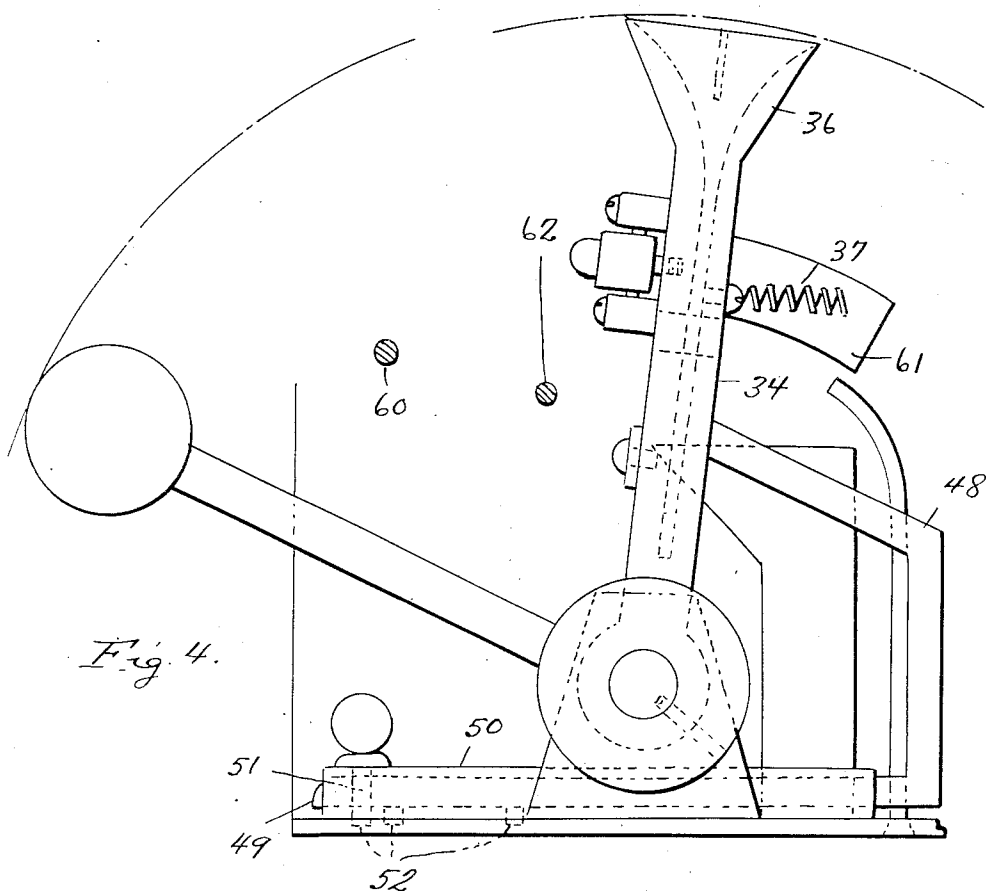
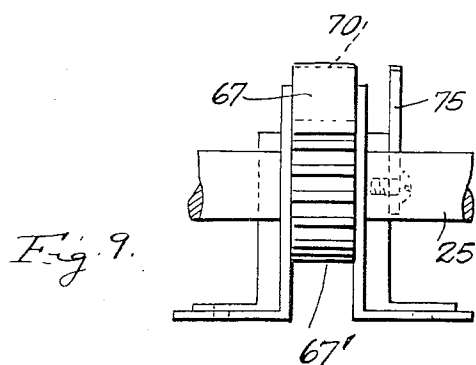
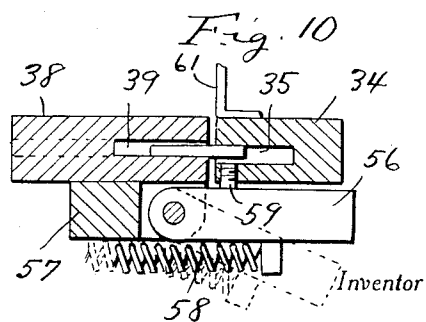
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VENDING MACHINE FOR NEWSPAPERS

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Fig. 5.

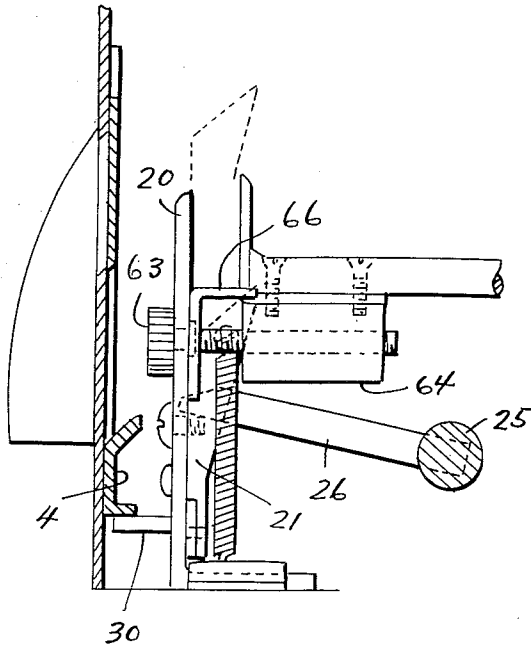
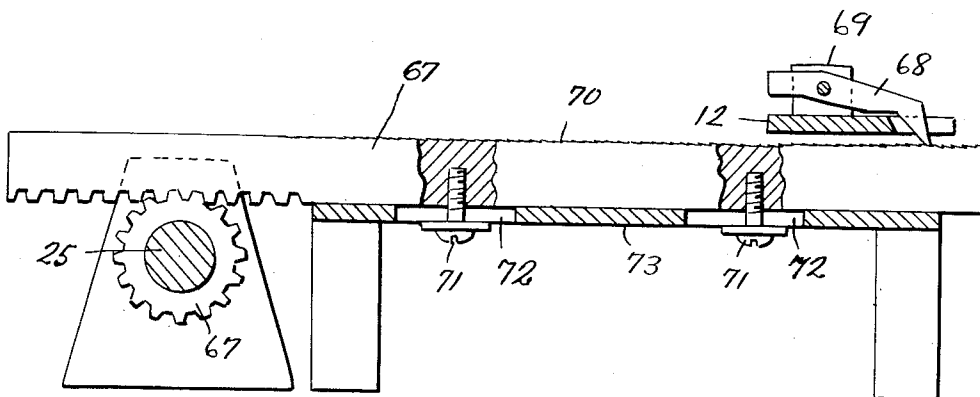


Fig. 8.

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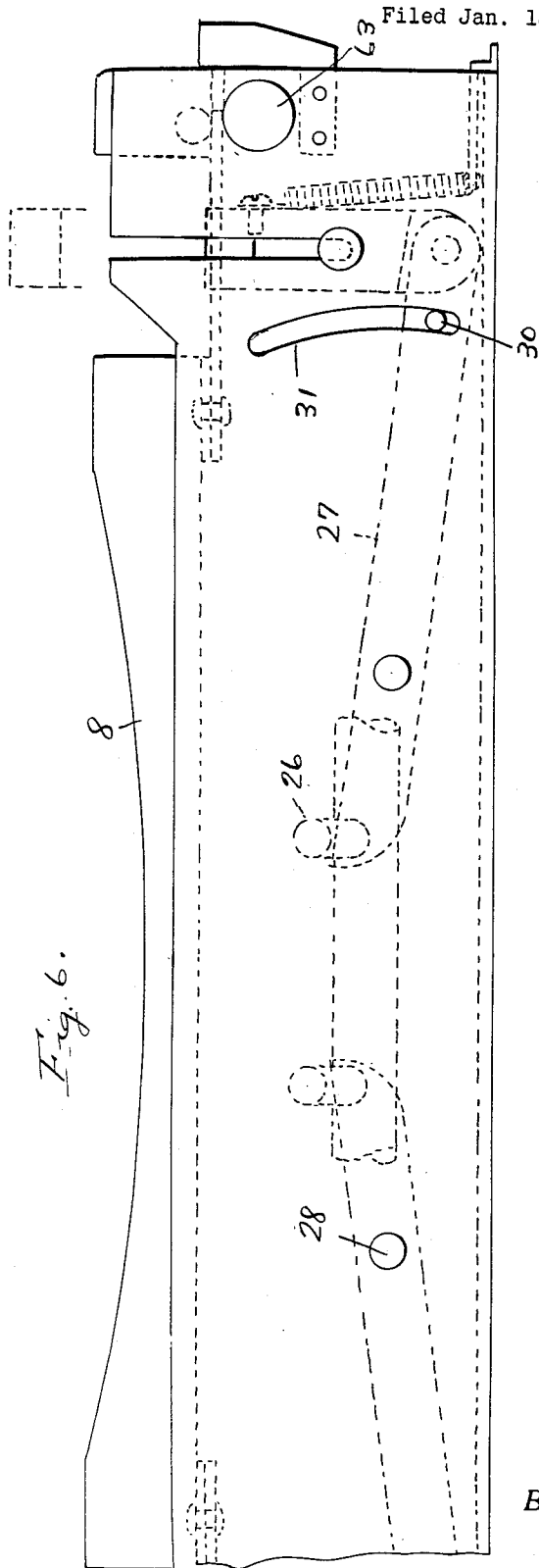
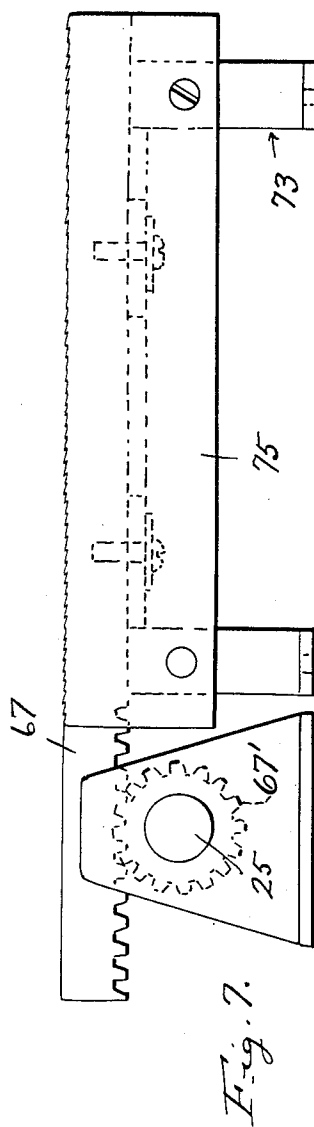
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VENDING MACHINE FOR NEWSPAPERS

Filed Jan. 18, 1932

6 Sheets-Sheet 6



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UNITED STATES PATENT OFFICE

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VENDING MACHINE FOR NEWSPAPERS

Elmer W. Niederstadt, Milwaukee, Wis.

Application January 18, 1932. Serial No. 587,401

7 Claims. (Cl. 312—57)

This invention relates broadly to vending machines and more particularly the invention is concerned with vending machines for periodicals and especially newspapers.

5 In accordance with the present invention, a machine of the character above suggested is provided which accommodates periodicals or newspapers of various thicknesses, and which is capable of vending newspapers, the price of which vary, as for example the machine is preferably used for vending daily newspapers the prevailing price of which is three cents, and with but little adjustment, the machine may be used for vending Sunday newspapers, the price of which at present is ten cents.

15 The invention together with its many objects and advantages will be best understood from a study of the following description, taken in connection with the accompanying drawings wherein:

20 Figure 1 is a front elevational view of the machine, the front lid or wall being in a raised position.

25 Figure 2 is a side elevational view of the machine, the front wall or lid being in a lowered or closed position and certain parts of the machine being broken away as shown in section.

30 Figure 3 is a fragmentary elevational view illustrating the use of the invention for vending newspapers of varying prices.

Figure 4 is a fragmentary elevational view showing the coin receiving chute connected with a control shaft in one of its normal positions.

35 Figure 5 is a fragmentary sectional elevational view showing the two different positions of an ejector member.

Figure 6 is a fragmentary elevational view more clearly disclosing the means for actuating the ejectors.

40 Figure 7 is a side elevational view of the rack and pinion mechanism forming part of an adjusting device to be hereinafter more fully referred to.

45 Figure 8 is a fragmentary elevational view of the rack mechanism showing the pawl means for transmitting movement of the rack bar to the paper carriage.

50 Figure 9 is a front elevational view of the carriage adjusting and actuating mechanism.

Figure 10 is a transverse sectional view taken substantially on the line 10—10 of Figure 3.

55 Figure 11 is a fragmentary sectional elevational view showing in front elevation a presser device.

Figure 12 is a side elevational view of the structure shown in Figure 11.

With reference more in detail to the drawings, it will be seen that the device comprises a suitable casing 1 preferably open at its front side, and for said open side there is provided a hinge door 2 provided adjacent its upper portion with a window 3 and provided adjacent its lower portion with an opening through which a vended paper may be withdrawn. For this latter opening there is provided a slide door 4 operating in vertical guides 5.

In the casing 1 there is mounted a paper support or carriage designated generally by the reference character 6. This carriage includes a pair of opposed suitably mounted horizontally slidable bars 7 connected at their forward ends by a transverse stop bar 8. The forward ends of bars 7 are provided with lugs 7a which serve to prevent the next adjacent paper from sliding down and under the forwardmost paper resting on the inclined faces of the lugs 7a so that only the forwardmost paper will, at its lower edge, be engaged by an ejector device to be hereinafter more fully described.

The papers 10 are normally supported in an inclined manner, and urged toward the forward end of the carriage 6 through the medium of a spring device indicated generally by the reference character 11.

The said spring device 11 comprises a horizontal bar 12 shiftable relative to the carriage 6, and provided at its end with sleeves 13 having sliding engagement with the bars 7. Standards 14 rise from the bar 12 and are braced by bars 15. The upper inclined ends of the standards 14 are connected by a bar 17 and spring arms 16 have their upper ends welded or otherwise secured to the bar 17 to extend downwardly therefrom as clearly suggested in Figure 1. The spring arms 16 at their lower ends are connected by a bar 18, and adjacent their fixed ends support therebetween a plate 19 having on the front face thereof such indicia as may be readily viewed through the window 3 and which will apprise the prospective purchaser that the device is empty of newspapers. (See Figures 1 and 2.)

It is apparent that the papers resting on the carriage 7 will have the rearwardmost one thereof bearing against the arms 16, and the arms will urge the papers forwardly and serve to support the papers at a slight angle to the perpendicular.

Means is provided in advance of the carriage 8 for displacing the forwardmost paper 10 in a manner to permit the displaced paper to move

to a position whereby access may be had to the paper through the opening 4. This displacing means includes a vertical plate 20 between which and the forward end of the carriage 6 are located two or more relatively spaced ejectors 21. The ejectors 21 are mounted for vertical shifting movement and each ejector is provided with a headed pin 22 operating in a vertical slot 23 provided in the plate 20. The ejectors 21 are normally urged downwardly through the medium of springs 24. Each of the ejectors 21 has its upper surface beveled, to facilitate engaging the lower edge of the forwardmost paper 10, and initiating movement of the ejected paper toward the opening controlled by the door 4.

For raising the ejector members 21, there is provided a rockably mounted shaft 25 provided with pins 26 arranged to engage the proximate ends of links 27 rotatable on pivots 28 provided on plate 20, the links being pivotally connected to the lower end of the ejectors 21 as at 29.

Each link 27 is also provided with a lateral pin 30 operating in an arcuate slot 31 provided therefor in the plate 20 to guide the movement of the links 27 when the latter rotate about their pivots.

Suitably journaled adjacent one end wall of the casing, and alined with the shaft 25 is a relatively short shaft 32 one end of which projects outwardly of the casing and on said end the shaft is equipped with a manipulating handle 33.

Fixed on the shaft 32 for rotation therewith is a coin receiving member 34 provided with a coin receiving slot 35, and provided at its upper end with a funnel shaped receiving mouth 36 for said slot. The slot 35 at one side thereof is open for the full length thereof, and the bottom of the slot is inclined as clearly suggested in Figure 3. A suitably anchored spring 37 is connected with the member 34 and normally urges the shaft 32 to rotate in a clockwise direction.

On the end of the shaft 25 adjacent to the shaft 32 there is provided a relatively shorter coin receiving member 38 that is provided with an inclined coin receiving slot 39 adapted to register with the lower portion of the slot 35. Arranged laterally of the shaft 25 is a standard 40 provided at its upper end to form a stop that is tapered and merges into a pointed end normally arranged adjacent the lower end of the slot 39 to engage with the foremost coin as suggested in Figure 3 for holding the coin in the slot 39.

Suitably mounted in the casing 1 is a coin receiving chute 41 having an upper portion extending through a proximate wall of the casing and at its outer end provided with openings 42, 43, the former adapted to accommodate a smaller coin such as a dime, and the opening 43 to accommodate a larger coin such as a penny. The coin chute 41 further includes a branch 44 leading inwardly from the opening 42, and a second branch 45 leading inwardly and downwardly from the opening 43.

To limit movement of the member 34 under action of spring 37, to aline the member 34 with the chute branch 44, or branch 45 as desired, there is provided an angular stop arm 48 the free end of which is adapted to engage the member 34 as shown in Figures 2 and 4. As more clearly shown in Figure 4, the arm 48 rises from one end of a horizontal rod 49 slidable in a horizontal guide 50, and equipped with a pin 51 arranged to engage a selected one of several

sockets or recesses 52 provided in the bottom of the guides.

The member 34 is provided with a bar 52 rigidly secured to one side thereof and having a free end arranged to laterally engage an adjacent side of the member 38 to cause said member to move with the member 34 under action of spring 37.

Assuming now that the papers 10 are daily papers, the cost of which is three cents. The parts are then normally in the position shown in Figure 2, the stop arm 48 having been adjusted so that the member 34 is alined with the chute branch 45. The three pennies are inserted one after another in the opening 43 and rolled down the branch 45 and into the mouth 36, the first two pennies passing into the slot 39 and the third penny having a portion thereof extending into the slot 39, and a remaining portion thereof remaining in the lower portion of the slot 35 thus connecting the members 34 and 38. Handle 33 is then forced downwardly rocking the shaft 32 in a counter clockwise direction, and this movement of the shaft is transmitted to the shaft 25 whereupon pins 26 engage the links 27 rotating the latter about their pivots and forcing the ejector members 21 upwardly to engage the lower edge of the foremost paper 10, the ejector members 21 thus assuming the position suggested by dotted lines in Figure 2. It will thus be seen that the foremost paper will be displaced, and will then slide over the top of the ejectors toward the opening controlled by the door 4.

From a study of Figure 2 it will be noted that the pins 30 are of sufficient length so as to engage the lower edge of the door 4, so that upon upward movement of the ejectors 21, the door 4 will be slid upwardly for opening the aperture controlled thereby with the result that subsequent to the return of the members 21 to their normal position, the lower edge of the ejected paper may be grasped by the vendee and removed from the casing.

The operation just described is substantially the same when papers of a higher cost or value, as for example when the papers costing ten cents are to be vended. The only difference is, that the arm 48 is first adjusted so as to permit the member 34 under action of spring 37 to swing toward the right in Figure 2 a sufficient distance to enable the member 34 to aline with the branch 44. The member 34 swinging in this direction, will of course move the member 38 therewith, and the member 38 is provided with an opening 53 through which extends the curved upper end of a rod 54 arranged in the path of movement of the member 38. The inner end of the member 54 will then extend into the slot 39 adjacent the upper end thereof, and the smaller coin that is the dime suggested in Figure 3 will engage therewith whereby to form a connection between the members 34 and 38 for transmitting movement of the shaft 32 to the shaft 25.

It will of course be noted, that when vending the daily papers, that is the papers costing three cents and the members 34, 38 are rotated in a counter clockwise direction, the member 38 will be moved away from the member 40 so that the coin 55 that is, the pennies will be free to pass through the slot 39 and drop into a suitable coin receptacle 54. Similarly, when the members 34 and 38 are moved in a counter clockwise direction upon the dispensing of a paper of a greater cost, the movement of the member 38 will cause

a withdrawal of the curved end of the member 54 from the opening 53 whereupon the coin 66 will then be free to pass downwardly through the slot 39 and into the coin box.

5 To release the coin, I provide an abutment pin 60 arranged in the path of the member 34 and adapted to engage the dog 56 swinging the same about its pivot toward member 34 so as to align the slots 35 and 39 thereby freeing the coin so
10 that the latter may move down the slot 39 and into the receptacle. A second abutment pin 62 is provided in the end wall of the casing and terminating inwardly of the corresponding end of pin 60; and arranged in the path of member
15 34 to engage therewith in the event the member 34 should be rotating in anti-clockwise direction, and relative to member 38 as might be the case, when attempting to eject a paper with inserting the proper coin or the proper number of coins.
20 An arm 61 is provided on member 34 and against which dog 56 engages and is thus prevented from getting behind member 34.

For adjusting the carriage 6 relative to the ejectors 21 as will be required by the varying
25 thicknesses of periodicals or newspapers, I provide adjusting screws 63 suitably mounted on the plate 20 and these adjusting screws have threaded engagement with lugs 64 provided on the forward ends of the carriage bars 7. To accurately
30 obtain an adjustment of the carriage, I provide on the plate 20 angular gauge bars 66.

To adjust the spring device 11 with respect to the carriage, I provide a suitably mounted horizontally slidable rack bar 67 having engagement
35 with a pinion 67' fixed to the shaft 25, so that upon rotation of the shaft 25 in a counter clockwise direction, as is done upon the displacement of each paper 10, the spring will be shifted relative to the carriage a sufficient amount to exert
40 the necessary pressure on the remaining papers. The movement of the rack bar 67 is transmitted to the spring device through the medium of a dog 68 pivotally mounted on a lug 69 rising from the cross bar 12 and having its free end arranged
45 to engage teeth 70 provided on the upper edge of the rack bar 67. (See Figure 8). As also shown in said figure, sliding movement of the rack bar 67 is limited through the medium of bolts 71 engaged therewith and operating in slots
50 72 provided on the supporting means 73.

Manifestly upon return of the shafts to their original position that is rotation of the shaft in a clockwise direction, the rack bar 67 will be moved in a corresponding direction. The cross
55 bar 12 is however retained against movement in reverse direction, and is held in the desired adjustment, through the medium of a second dog 74 engaging teeth provided on the upper edge of a fixed bar 75 mounted adjacent to and parallel
60 with the rack bar 67.

Subsequent to the ejecting and displacing of each successive paper, pivotally mounted fingers 76 engage the third paper for pressing the papers rearwardly against the action of the spring device 11 so that the next paper to be delivered
65 will seat properly to insure engagement of such paper with the ejectors 21. The fingers 76 are arranged on relatively opposite sides of the carriage 6 adjacent the forward end thereof and each fingers 76 as shown in Figures 11 and 12 is
70 pivotally mounted as at 78 between a pair of ears provided adjacent the upper portion of a standard 79. The upper portion of the standard is bifurcated, and is disposed slightly offset as at
75 80 and the upper portion of the offset end 80

provides a stop for limiting swinging movement of the finger 76 in a counter clockwise direction. For simultaneously rocking the fingers 76 to move the latter to the dotted line position shown in
80 Figure 12, shaft 25 is equipped with cam blocks 81 arranged to engage the lower end of the fingers 76 upon rotation of the shaft 25 in a counter clockwise direction, as is occasioned for effecting a displacement and subsequent discharge or delivery of the paper to be vended.
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Even though I have herein shown and described the preferred embodiment of the invention, it is to be understood that the same is susceptible of changes, modifications and improvements coming within the scope of the appended claims.
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Having thus described my invention, what I claim as new is:

1. A vending machine for newspapers and the like comprising in combination a spring support normally urging the papers in a position to be vended, and comprising a shiftably mounted bar, standards rising from said bar, and spring arms supported between said standards and extending downwardly and forwardly therefrom.
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2. A machine of the class described comprising a casing having a discharge opening in the front wall thereof, a carriage in the casing adapted for supporting articles, supporting means for the carriage including means for adjusting the latter relative to said discharge opening; resilient means tending to urge articles to be vended toward the front end of the carriage and mounted on the carriage for adjustment relative to the latter, ejector fingers mounted for vertical reciprocation at the front end of the carriage to engage beneath the forwardmost article to cause articles to be removed from the carriage and discharged through the opening in the front wall of the casing, presser fingers pivotally mounted adjacent the front end of the carriage engaging each article in succession and acting thereon in opposition to the aforementioned resilient means to hold the articles in substantially upright position, and operating mechanism for the ejector and presser fingers.
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3. A machine of the type described comprising a casing having a discharge opening in the front wall thereof, a carriage in the casing adapted for supporting articles, resilient means mounted on the casing for movement relative thereto and tending to urge the articles to be vended toward the front end of the carriage, ejector fingers mounted for vertical reciprocation at the front end of the carriage engaged beneath the forwardmost article to cause the article to be removed from the carriage and discharged through the opening in the front wall of the casing, presser fingers pivotally mounted adjacent the front end of the carriage engaging each article in succession and acting thereon in conjunction with the aforementioned resilient means to hold the articles in substantially upright position, and operating mechanism for reciprocating the ejector fingers, rotating the presser fingers, and advancing the aforementioned resilient means toward the front end of the carriage in synchronism.
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4. A machine of the type described comprising a casing having a discharge opening in the front wall thereof, resilient means in the casing tending to urge articles to be vended toward the front end of the casing to be removed therefrom through the discharge opening, presser fingers pivotally mounted adjacent the front wall of the casing engaging each article in succession and
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acting thereon in opposition to the aforementioned resilient means to hold the articles in substantially upright position, and operating means for rotating the presser fingers coincidently with the advancement of the aforementioned resilient means toward the said front wall of the casing.

5 5. In a vending machine, a casing for articles to be vended, resilient means mounted for adjustment in the casing to urge such articles toward the front of said casing, means for advancing said resilient means toward the front of the casing, and including means for releasably securing the resilient means in adjusted position, ejector elements mounted adjacent the front wall of the casing and adapted to be actuated to engage the forwardmost article and position such article in a manner to permit the latter to be drawn from the casing, and presser fingers adapted to be forced toward said articles and to engage the nearest one of the articles for cooperation with the aforementioned resilient means to hold the articles in substantially upright position for engagement with said ejector means, and means for operating said resilient means, ejector means and presser fingers.

6. A newspaper vending machine comprising in combination a casing provided with a discharge opening in a wall thereof, inclined resilient means in the casing adapted to support the

newspapers, ejector means mounted in the casing adjacent the discharge opening and adapted to be raised and lowered to engage beneath each newspaper in succession to cause the newspaper to be discharged through said opening, presser fingers mounted adjacent the ejector fingers and adapted to be moved into engagement with each newspaper in succession and cooperating with the said inclined resilient means for holding the newspapers in position to be engaged by the ejector fingers, a shaft journaled in the casing, operating means for the shaft, and mechanisms respectively connecting said shaft with the ejector fingers and the presser fingers for operating the ejector and presser fingers.

7. A newspaper vending machine comprising in combination resilient presser follower means for exerting pressure against the paper pack and pivotally mounted presser fingers in advance of the follower for exerting pressure against the paper pack at the lower ends of the papers and thereby cooperate with the follower for sustaining the papers of the pack in a substantially vertical position; a rotatable shaft, and means on the shaft engageable with the fingers to rotate the latter in a direction to engage the paper pack.

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