Oct. 21, 1952 G. P. BOOTH ET AL 2,614,675

COIN HANDLING MEANS FOR COIN CONTROLLED VENDING MACHINES

Original Filed July 12, 1947 2 SHEETS—SHEET 1

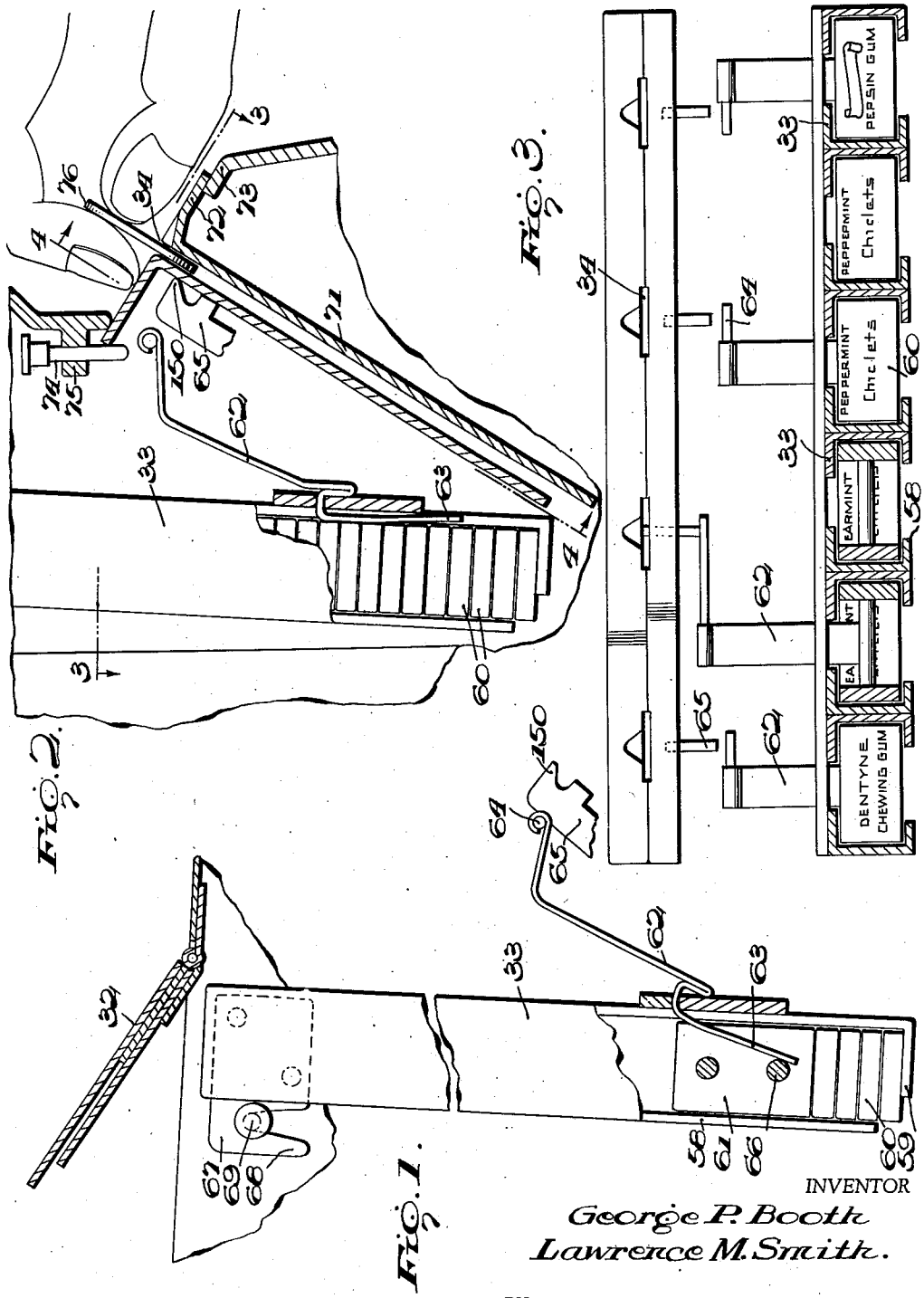


Fig. 3.

Fig. 2.

Fig. 1.

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Fig. 4.

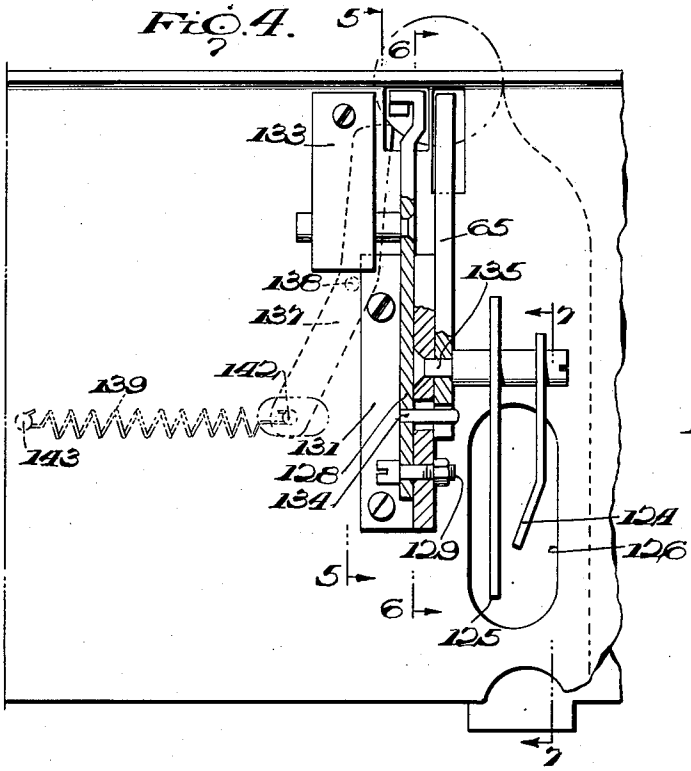
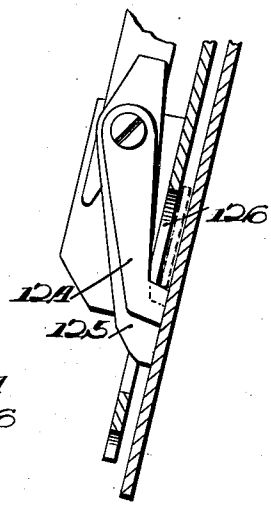


Fig. 7.



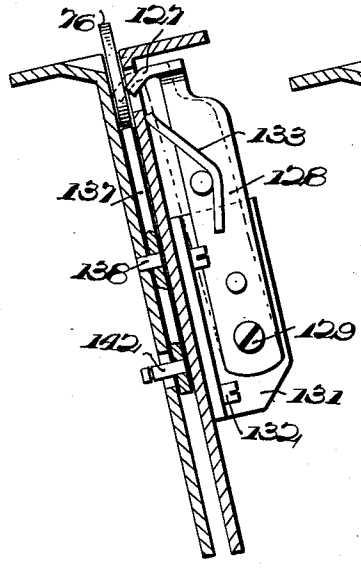


Fig. 5.

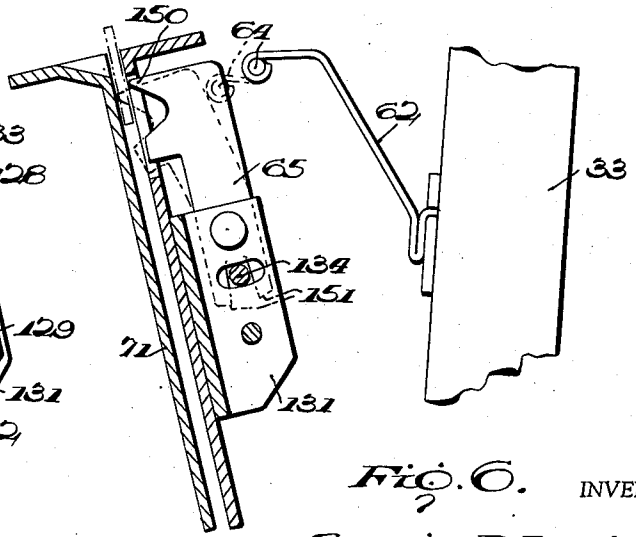


Fig. 6.

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COIN HANDLING MEANS FOR COIN CONTROLLED VENDING MACHINES

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Original application July 12, 1947, Serial No. 760,678, now Patent No. 2,571,668, dated October 16, 1951. Divided and this application August 3, 1951, Serial No. 240,092

2 Claims. (Cl. 194—97)

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This invention relates to a coin handling mechanism usable in a coin operated vending machine. One of the important features of the present invention is directed to a coin handling mechanism capable of detecting and preventing the complete insertion of an apertured article into the coin chute of a vending machine. By our invention the proper articles, namely, coins, are received in the coin chute and allowed to pass therethrough while apertured articles such as metal washers and the like are detected and stopped prior to complete insertion into the coin chute. The coin handling mechanism is arranged in a manner such that the metal washer which is arrested in the coin chute before being completely inserted may be easily withdrawn so as to clear quickly the coin chute for further use. By this arrangement the coin handling mechanism of our invention prevents the clogging of the machine as well as providing a highly effective means of preventing the operation of the machine by articles other than coins.

The coin handling mechanism of our invention is also arranged to close the inlet of the coin chute when the supply of packages being dispensed has been exhausted. Since the inlet of the coin chute is closed by the coin handling mechanism, a person attempting to operate the vending machine need not wait for the coin to be returned, as is the case in the prior art machines, but may immediately select another coin chute and proceed with the vending operation.

Another advantageous feature of the present invention is the provision of a coin handling mechanism which includes a device for forcing the coin through the coin chute immediately after insertion thereby insuring positive delivery of the coin to the vending machine operating mechanism.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawings, in which

Fig. 1 is a fragmentary and cross-sectional view of one of the gum containers and showing the same suspended from the top of the casing part of the vending machine;

Fig. 2 is a cross-sectional view in elevation showing the coin chute and gum container;

Fig. 3 is a fragmentary cross-sectional view taken generally on line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view of the coin receiving mechanism taken generally on line 4—4 of Fig. 2;

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Fig. 5 is a cross-sectional view of the coin receiving mechanism taken generally on line 5—5 of Fig. 4;

Fig. 6 is another cross-sectional view of the coin receiving mechanism taken generally on line 6—6 of Fig. 4; and

Fig. 7 is still another cross-sectional view of the coin receiving mechanism but taken generally on line 7—7 of Fig. 4.

Referring now to Figs. 1, 2 and 3, it will be seen that the gum container 33 is formed of a channel piece with front flanges 58 and an inwardly bent portion 59 for supporting a stack of gum packages 60. A weight 61 keeps the packages in tight stack engagement with one another within the container. The gum packages are loaded from the upper end of the container after first removing the weight 61. Thereafter the weight will feed the gum packages downwardly to the inwardly bent supporting portion 59. On the container there is mounted a spring means including a spring strip 62 and an extension 63 adapted to be extended along the sides of the gum packages as shown in Fig. 2 to keep a rod 64 mounted on the upper end of the spring strip 62 out of engagement with a feeler member 65 adapted to be dropped into the coin slot to prevent further insertion of coins therein when the gum supply in the container has been exhausted. When there are but a few gum packages left and the weight 61 has been dropped to a point to permit the extension 63 to swing free of the gum packages and into engagement with a bottom rod 66 of the weight, the spring strip 62 will be free to inject the feeler member 65 into the coin chute.

On the upper end of the gum container there are secured at the opposite sides thereof hang brackets 67 with hook portions 68 adapted to be extended over a transversely extending rod or shaft 69 extending between the sides of the front casing part of the vending machine and on which the containers are supported.

The coin slot 34 is provided in the end of a coin chute 71, Fig. 2, which has a top flange 72 adapted to rest on the lower edge 73 on the front part of the vending machine and to be retained thereagainst by a fastener 74 extending through a projection 75 of the front part.

Referring now particularly to Figs. 4 to 7, there is shown a device for retaining the coin within the coin chute so that a coin is always retained therein for effecting the next operation of the gum machine. The arrangement serves also to prevent the insertion of more than one coin at

a time into the gum machine. Every time that a coin is placed in the coin chute, a previously arrested coin will be released automatically to be used in effecting the gum ejecting operation. Accordingly only one coin can be fed at a time to the operating mechanism of a vending machine.

Associated with the coin chute 71 at a low location are members 124 and 125 which may be extended through a slot 126 into the coin chute to prevent the passage of the coin downwardly through the coin chute. This coin is retained in the coin chute until another coin is placed into the slot at the top thereof. When the other coin is placed in the slot it is pressed downwardly upon a lip 127 whereby to cause as illustrated in Fig. 5, the outward movement of a control arm 128 pivoted on a fastening screw 129 on a bracket 131 secured by screws 132 to the coin chute. This outward movement will be against the action of a leaf spring 133. As this outward movement is effected, the control arm 128 through an operating pin 134 will cause the feeler member 65 to be pivoted a slight amount with its pin 135 on which the upper ends of the arms 124 and 125 in the slot 126 are fixed. Automatically, the coin which is already retained by the members 124 and 125 will be released and thereby allowed to drop into the operating mechanism of a vending machine.

As seen in Fig. 1, the feeler member 65 is positioned at an angle from the vertical so that its own weight will tend to pivot the cam point 150 into the coin chute 71. Sufficient clearance is provided between the legs 151 of the feeler member 65 and the operating pin 134 to allow movement of the cam point 150 into the coin chute 71 without further movement of the control arm 128, as seen in Figs. 4–6. If a coin 76 is inserted in the coin chute, the control arm 128 will be pivoted outwardly and upwardly and the feeler member 65 will be pivoted inwardly and downwardly. Due to the play between the feeler member 65 and the operating pin 134, the cam point 150 on feeler member 65 is free to move further into the coin chute and ride on the surface of the coin. However, upon the insertion of a metal ring, such as a washer, the cam point 150 will move into the hole of the metal ring and prevent complete insertion thereof by abutting the edge of the hole with its flat upper edge. The lower edge of the cam point 150 is curved to facilitate removal of the metal ring to clear the coin chute for future use.

Within the slot or chute opening there is extended a pivot arm 137, pivoted at 138 and normally retained into a position within the upper end of the chute by a tension spring 139 connected to the lower end of the arm 137 and upon a projection 142 thereon and an anchor point 143 on the coin chute. As the coin engages the upper rounded end of the pivot arm 137, it will cause the arm to pivot and the spring 139 to be extended sufficiently to permit the easy passage of the coin downwardly through the coin chute. When the upper curved surface of the coin 76 is moved into contact with the pivot arm 137, the tensioned spring causes the pivot arm to exert a force on the coin thereby accelerating the rate of movement of the coin through the coin chute 71 and insuring positive delivery of the coin.

The present application is a division of our prior application Serial No. 760,678, filed July 12, 1947, now Patent No. 2,571,668, issued October 16, 1951.

While various changes may be made in the detailed construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

We claim:

1. In a vending machine, a coin handling mechanism comprising a coin chute inclined away from the vertical, a control arm pivotally mounted at its lower end and having a lip at its upper end which normally depends into the upper end of the coin chute, said lip being pivoted upwardly out of the coin chute upon the insertion of an article into the coin chute, a feeler member pivoted intermediate its ends and having a cam point on its upper end and a pair of spaced legs on its lower end, an operating pin connected to said control arm and extending between said legs for pivoting said cam point downwardly into the upper end of the coin chute for engagement with an inserted article when said lip is pivoted out of the coin chute by the inserted article, said legs being spaced apart sufficiently to provide clearance between the legs and the operating pin to allow further downward movement of the cam point into the coin chute independently of movement by the operating pin to permit said cam point to drop into the hole of an inserted apertured article, said cam point having a flat upper edge which upon said further downward movement engages the edge of the hole in the apertured article to retain said article at the upper end of the coin chute, and said cam point having a curved lower surface for allowing removal of said apertured article from said coin chute.

2. In a vending machine as defined in claim 1 and including a pivot arm pivotally mounted on said coin chute, said pivot arm having an upper end normally disposed within said coin chute which is engaged by the lower curved edge of an inserted coin and moved out of the coin chute thereby, and spring means biasing the upper end of said pivot arm into said coin chute for forcing said coin through said coin chute when the upper end of said pivot arm is engaged by the upper curved surface of the coin.

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