

June 1, 1965

M. W. CHAPMAN

3,186,588

COIN OPERATED DISPENSER HAVING A MESSAGE MEANS

Filed Feb. 27, 1963

5 Sheets-Sheet 1

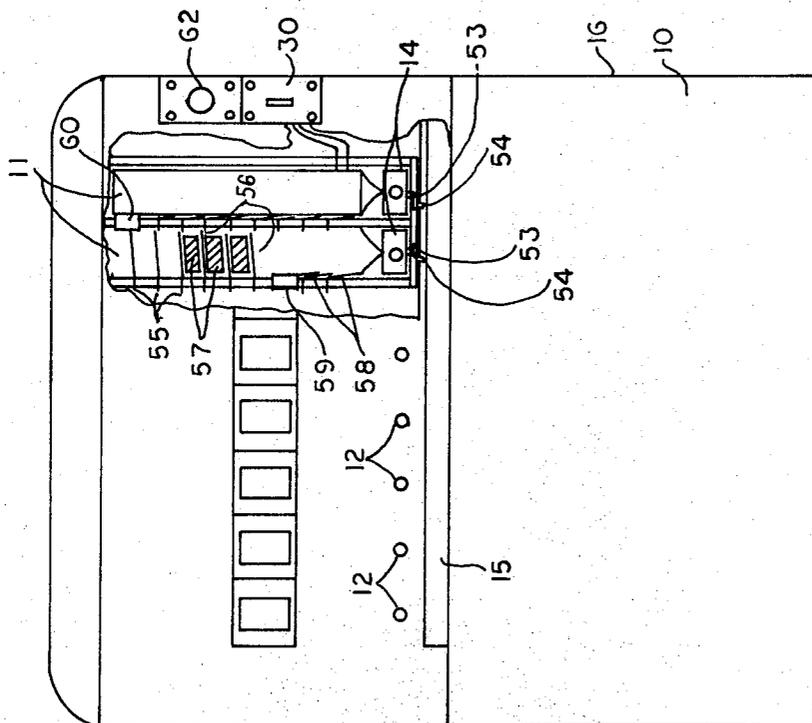


FIG. 1

INVENTOR.
MARVIN W. CHAPMAN
BY *James D. Wolfe*
ATTORNEY

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M. W. CHAPMAN

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5 Sheets-Sheet 2

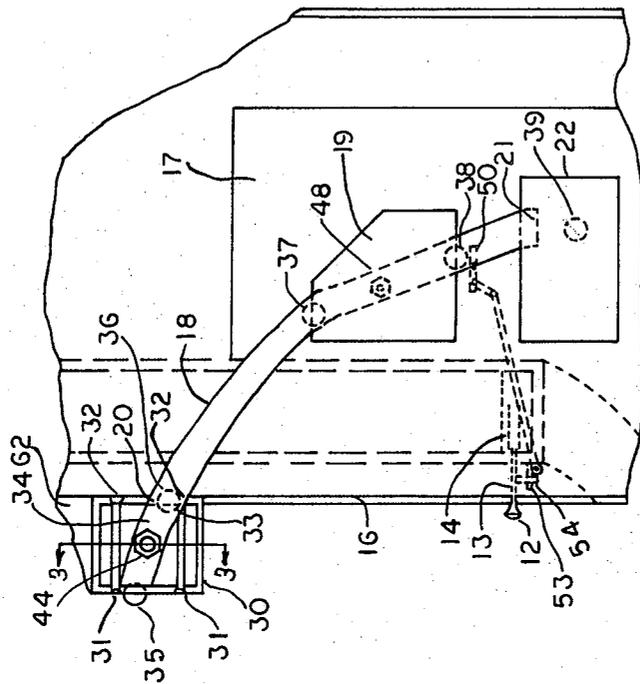


FIG. 2

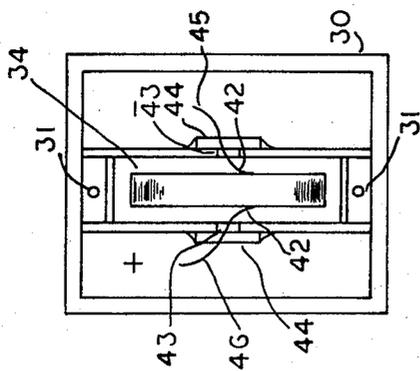


FIG. 3

INVENTOR.
MARVIN W. CHAPMAN
BY *James D. Wolfe*
ATTORNEY

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M. W. CHAPMAN

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5 Sheets-Sheet 3

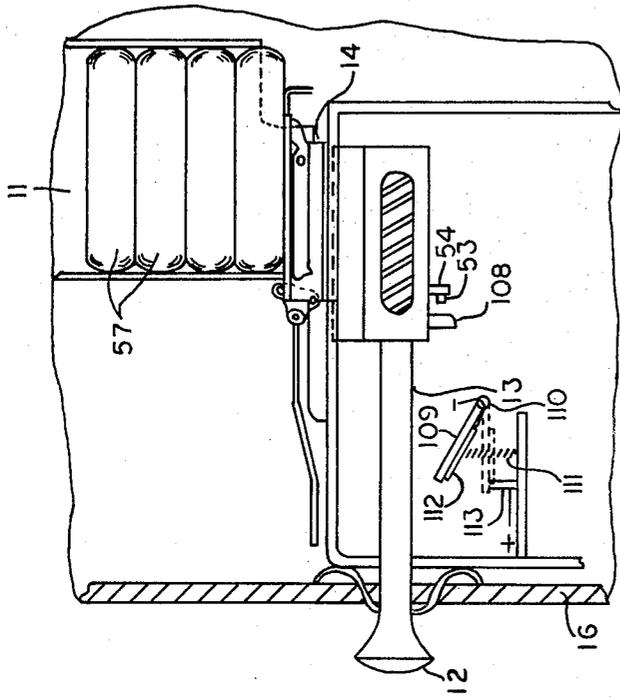


FIG. 4

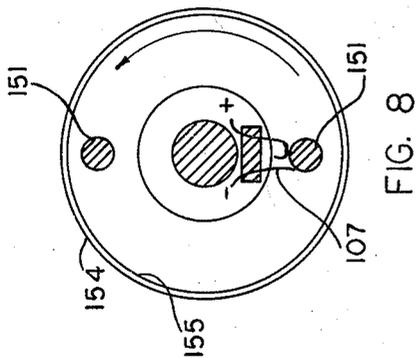


FIG. 8

INVENTOR.
MARVIN W. CHAPMAN
BY *James D. Wolfe*
ATTORNEY

June 1, 1965

M. W. CHAPMAN

3,186,588

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5 Sheets-Sheet 4

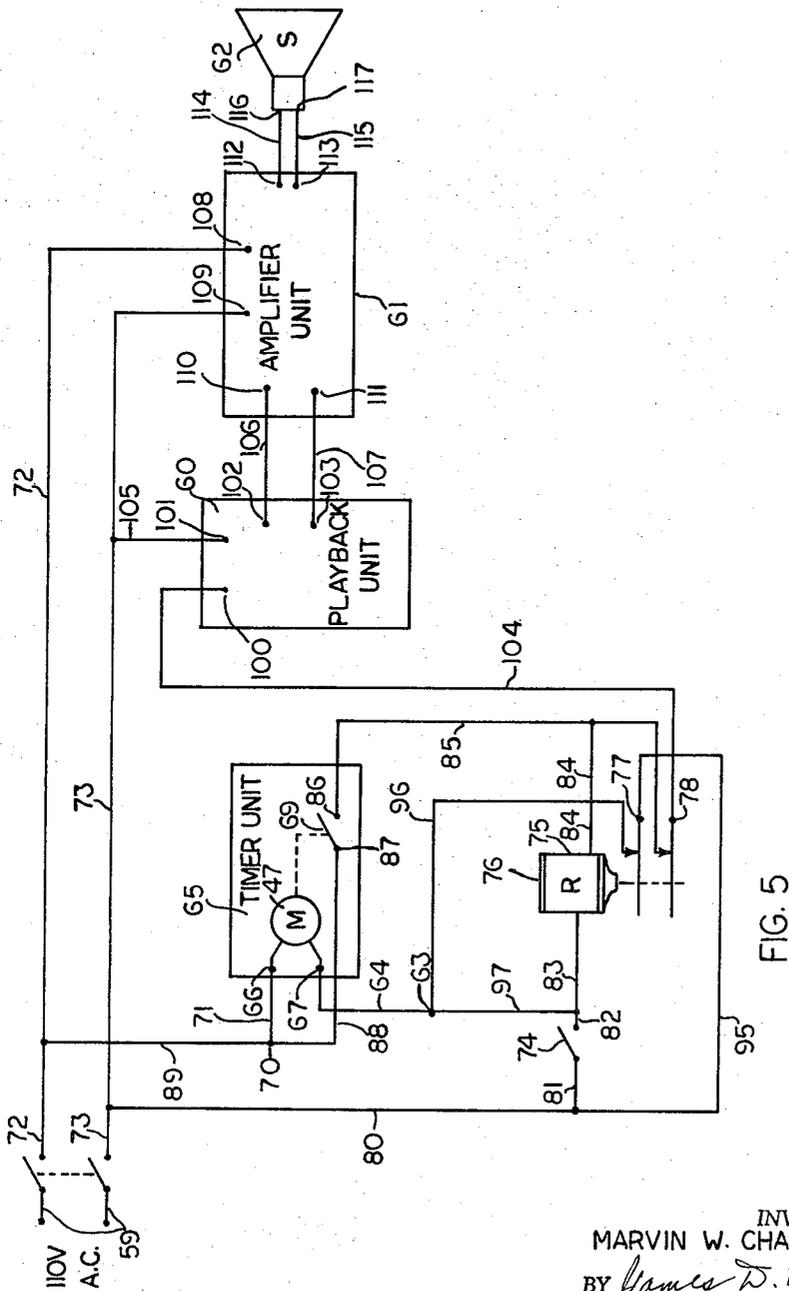


FIG. 5

INVENTOR.
MARVIN W. CHAPMAN
BY *James D. Walsh*
ATTORNEY

June 1, 1965

M. W. CHAPMAN

3,186,588

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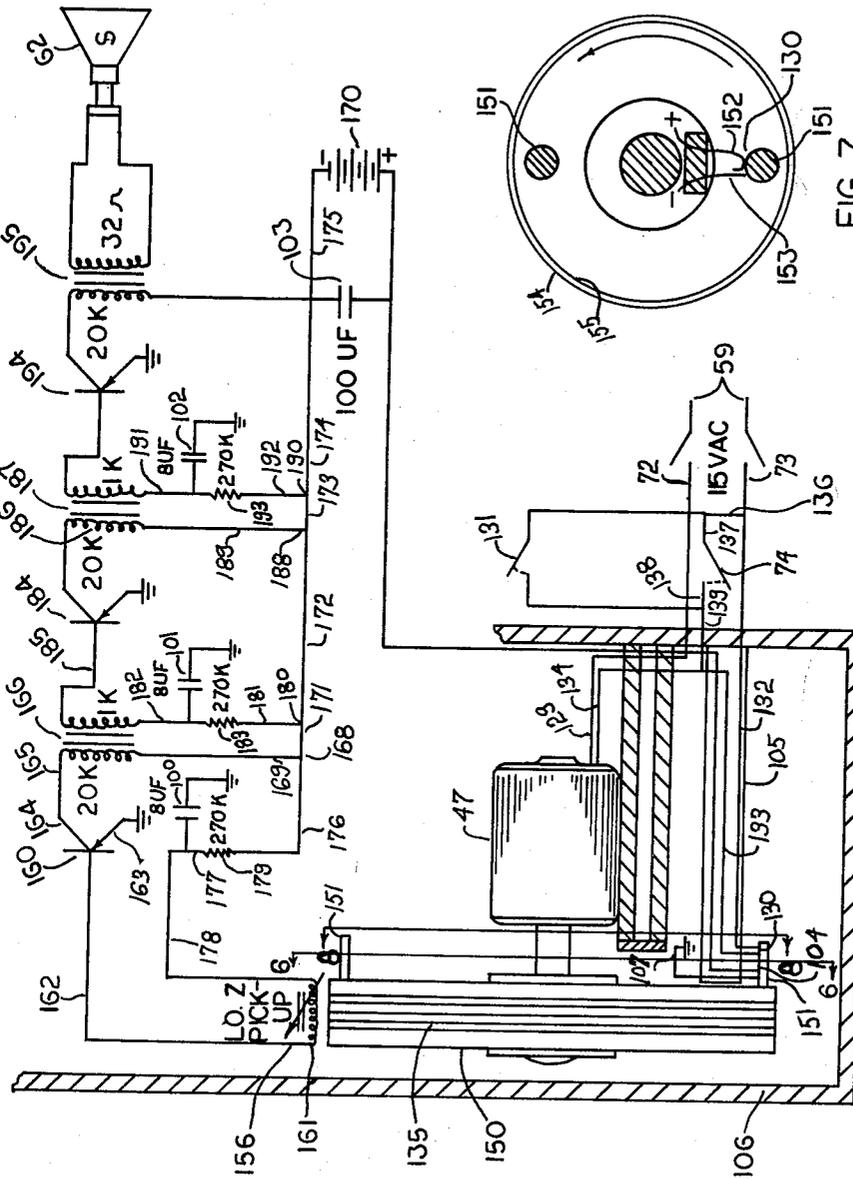


FIG. 7

FIG. 6

INVENTOR.
 MARVIN W. CHAPMAN
 BY *James D. Wolfe*
 ATTORNEY

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3,186,588

COIN OPERATED DISPENSER HAVING A MESSAGE MEANS

Marvin W. Chapman, 3108 Dornick Drive, Oklahoma City, Okla.

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10 Claims. (Cl. 221-3)

This invention relates to an improvement in coin operated article dispensing equipment and merchandizing means. More particularly, this invention relates to a coin operated article dispenser having a message device or means cooperatively associated therewith which is activated by the same coin that activates the dispenser.

Coin operated vending and dispensing equipment is used very extensively to market a host of products including making change but experience has demonstrated that those products, which are not supported by an aggressive advertizing program, are sold through dispensers at a considerable competitive disadvantage. Consequently, many merchandizers have lamented the lack of the opportunity to puff his wares and to solicit the purchase of his product prior to the selection of the article.

Accordingly, it is a principal object of this invention to provide an audible message means activatable by the same coin or coins which activates the vending machine and thereby permits the vendor to influence the public to purchase his product.

Another object of this invention is to provide an audible message means cooperatively associated with a coin dispenser to allow the prospective purchaser of a product or service to be advised of certain things prior to his purchase.

A further object of this invention is to provide equipment cooperatively associated with a coin operated dispenser to personalize the merchandizing of goods sold via said equipment.

A still further object of this invention is to provide an audible message means which may be used with any conventional coin operated dispenser without the need to take the dispenser out of service and return it to the warehouse to adapt or modify it whereby said message means may be used therewith.

With the above and other objects and advantageous features in view, the invention, which comprises a coin operated dispenser having an audible message means cooperatively associated therewith and activated by the same coin or coins that activates the dispenser, is more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more specifically defined in the claims appended hereto.

In the drawings,

FIGURE 1 is a front elevational view of a multiple storage rack or compartment type dispenser having an audible message means cooperatively associated with it and having part of the front broken away to show the relationship of the various components of the message means to the article storage compartment.

FIGURE 2 is a partial end elevational view of FIGURE 1 with the end panel of the cabinet removed to show the relationship of the coin path and the coin channel together with the switch means for operating the various devices.

FIGURE 3 is a view along 3-3 of FIGURE 2 showing the position of the coin in the coin path in relation to the switch means used to energize the audible message means.

FIGURE 4 is a fragmentary view in side elevation of another embodiment of the dispenser showing the article selector and a switch means integral therewith for re-activating the message means almost simultaneously with the release of the selected article.

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FIGURE 5 is a schematic, partially block diagram of one embodiment of the message means.

FIGURE 6 is a detail schematic diagram of the audio-message means having an all transistor amplification system which permits the message storage means, pickup means and amplification means to fit within the article storage compartment and which reduces the power required to operate said message means.

FIGURE 7 is a detail cross-sectional view taken along line 6-6 of FIGURE 6.

FIGURE 8 is a detail view taken along lines 8-8 of FIGURE 6 of the switch associated with the amplification circuit.

Referring first to FIGURE 1, the coin-operated dispenser is designated generally by the numeral 10 and the article storage rack or compartment are indicated by the numeral 11. Associated with each compartment or storage means 11 is an article selector or pull means comprising a hand member 12 extending backward as an elongated member 13, said elongated member, and a carrier means 14. Disposed beneath the lower end of the storage means 11 is an elongated recess like opening 15 to receive the article when it drops from the storage compartment.

The nature and mode of construction and operation of coin operated dispensers including money changers are well known. Some of the many kinds of dispensers are illustrated by the following U.S. patents bearing Numbers 1,979,043; 2,799,043; 2,838,077; and 2,834,512. Coin operated dispensers do not constitute a part of this invention except as set forth in the appended claims as part of the combination with the audible message means.

As indicated above, this invention comprises a coin operated article or product dispenser having cooperatively associated therewith an audible message means activatable by the same coin or other negotiable monies which dispose the dispenser to dispense at least one article.

In general, the coin operated dispenser comprises a cabinet 16 having at least one article storage means 11, a means for disposing the dispenser to dispense the article, a coin receiving means, an article selector, and the article release means. Normally, the cabinet 16 may be of many shapes, forms and sizes; and, in general, the exact shape, form and size of the cabinet is a function of the space available for its location in the merchandizing mart, rather than the type or kind of article to be sold.

Of course, it is appreciated that the type and kind of article or product to be vended from the dispenser may require the dispenser to contain certain distinctive features and accessories. For instance, a vending machine for bottle beverages generally is considerably different from a machine for vending cigarettes or candy or making change. One of the most striking differences probably is due to the need to cool the beverage. Where the beverage is dispensed from, then the dispenser must be equipped with accessories such as bulk storage, metering means and sometimes a blending or brewing means.

The article storage means of coin operated dispensers are divided generally into three kinds: viz. gravity feed, positive feed, and chain or force feed. This invention is applicable to any of the various kinds of article storage compartments.

Customarily, the mutiple compartment, multiple article or brand, dispensers have a double rack or track means (not shown) to increase the storage space available for the faster moving brands. Normally, the double track means shifts forward to move the article stored at the rear of the compartment to the front when the front

track is empty. This permits the articles stored in the rear track to be dispensed from the same dispensing opening when the selector means is operated.

The coin receiving means, generally, comprising a housing 17 mounted adjacent the front or top of the dispenser cabinet and said housing includes a coin channel 18 and a registering or totalizing means 19 and a coin receptacle 22. One end 20 of the coin channel 18 is in communication with the outside of the cabinet and the other end 21 is in communication with receptacle 22.

This arrangement permits the coins to be deposited in the channel 18 at the end 20. As the channel angles downward, the coin will move downward through the registry mechanism to receptacle 22.

The coin receiving means may be of many types as disclosed by the technical and patent literature, and specifically, by U.S. patents having the following numbers: 634,506; 2,141,950; 2,799,430; 2,816,639; and 2,837,195. The patents enumerated above also are intended to supplement applicant's disclosure on this complicated subject matter.

Referring again to FIGURE 2, a special adapter casing 30 is shown attached to the front of the cabinet 16 in juxtaposition over the open end 20 of the coin channel 18. Special adapter casing 30 is attached preferably to the cabinet by means of screws or bolts 31. Casing 30 preferably has openings so arranged to allow the bolts 31 to pass through the casing and be screwed into or through the holes 32 which are used to attach the hollow flared member 33, shown in dotted lines in FIGURE 2, the cabinet. Normally flared member 33 forms the entrance to the open end 20 of the coin channel and preferably member 33 is removed to permit adapter casing 30 to be attached over open end 20.

Located within box 30 is the audible message activation means. The nature of the activation means is best seen in FIGURE 3 where the coin path is aligned with channel 18 to form a coin passage. Thus, a coin 35 inserted therein as seen in FIGURE 2 moves downward through the passage to the position 36 and on down channel 18 through successive positions, such as those shown in dotted outline by numerals 37, 38 and 39 until the coin comes to rest in receptacle 22.

As the coin moves down the inclined path 34, it passes between the resilient electrical contacts 42. The resilient electrical contacts pass through holes 43 and are held in the position shown in FIGURE 3 by suitable means such as the small washer 44. The washers are soldered or brazed to the path member as shown. Also it is preferred that the path members be made from an insulating material or the path members are otherwise insulated to keep the coin from short circuiting the equipment.

One of the copper brushes 42 is soldered or otherwise connected to electrical lead 45 which has its other end attached to a power supply 59. The other brush 42 is similarly attached to electrical lead 46 and lead 46 has its other end attached to timer unit 65, for instance to the motor 47 of the message means. Hence, the passage of a coin between the brushes 42, closes the circuit and allows the current to flow to the timer unit or motor 47 and from there to the ground of the power supply.

Although the embodiment of the message means shown in FIGURES 2 and 3 is preferred, because casing 30 allows a dispenser to be adapted to use this device without extensive modifications, it is apparent that the coin switch means, i.e. the brushes 42 and leads 45 and 46 may be located anywhere along the channel. In fact, such an alternate position is shown in FIGURE 2 by the dotted lines numbered 48.

The movement of a coin or coins through the coin channel and the registry mechanism predisposes the dispenser to dispense at least one article. Passage of the coin trips pivot arm 50 and this activates cooperating links 51 and 52 which causes the lock member 53

to move down and away from the depending member 54. This disconnects members 53 and 54 to permit depending member 54 to move forward in cooperation with the pull on knob 12.

Since the carriage 14 (best seen in FIGURES 1, 2 and 4) moves in response to the movement of the knob, the carriage may move from beneath the storage compartment and thus allow the article selected to drop into the recess like opening 15. The article may be removed from opening 15 with the hand to complete the sale.

Normally, the dispenser has a means to prevent the dispensing of more than one article at a time. One means for accomplishing this objective is shown in FIGURE 1 where the compartments 11 are equipped with individual article holders 55. These article holders may be turned to position 56 prior to loading the compartment with the merchandise 57. When the article 57 is released upon actuation of knob 12, the holder drops to the position 58 as the jack 59 moves upward a step in response to the forward movement of the carriage. Jack 59 moves upward one step each time the carriage moves forward until it reaches position 60 and the last article 57 is dispensed to empty the compartment.

Instead of the mechanical mechanism for predisposing a dispenser to dispense, an electrical device such as that shown in U.S. Patent 2,834,512 may be used. In fact, the electrical devices for accomplishing this appears to be preferred by the vending trade.

The audible message means cooperatively associated with the dispenser is shown schematically in block diagram in FIGURE 5 and it comprises in general a power supply 59 in circuit with a timer unit 65, a playback unit 60, an amplification unit 61 and a speaker 62.

The timer unit 65 has a pair of control terminals 66 and 67, respectively, connected to motor 47 which is mechanically coupled with the single pole, single throw switch 69 to momentarily open the switch at the termination of some predetermined period of time. Terminal 66 is connected to conductor 89 at the terminal 70 by conductor 71. Terminal 67 is connected to terminal 63 by conductor 64.

Switch 69 of the timer unit is coupled in series with the coil 75 of the relay 76 and the coin switch 74 by conductors 80, 81, 82, 83, 84, 85, 88 and 89 respectively to form an actuation circuit between the power lines 72 and 73. A coin between brushes 42 closes switch 74 and thereby energizes motor 47 which closes switch 69 to energize relay 76 to close the normally open single pole, single throw switches 77 and 78 associated with the relay.

When the coin moves past the brushes, switch 74 opens and breaks the actuation circuit but the opening of switch 74 does not de-energize relay coil 75. Since switches 77 and 78 are closed, the holding circuit keeps the relay energized. Specifically the holding circuit is a circuit in parallel with the actuation and comprises conductors 80 and 95 and switch 77 connected in series to relay 75 by successive conductors 96, 97 and 83.

Relay coil 75 remains energized until switch 69 is momentarily opened by the motor means 47, which has a mechanical type coupling with switch 69 to open the switch after some predetermined time interval. Opening switch 69 with switch 74 open stops the motor and thereby stops the reproduction of the message.

When switches 77 and 78 are closed by the relay, switch 77 maintains the energization of the timer unit 65 while switch 78 simultaneously therewith energizes the playback unit 60. Playback unit 60 has its terminal 100 connected to switch 78 by leads 104 and its terminal 101 is put in circuit with power line 73 by conductor 105. The audio output terminals 102 and 103, respectively, are connected to terminals 110 and 111 of the amplifier unit by conductors 106 and 107. It is understood

that the playback unit may be any of the conventional types, such as wire or tape recorders, capable of responding to electrical energization.

The audio amplifier unit may be of the conventional type or like the preferred form shown in FIGURE 6. Amplifier unit 61 has its output lead connected to the speaker 62 by the respective conductors 114 and 115. These conductors have their respective ends connected to terminals 112, 113, of unit 61 and terminals 116 and 117.

A preferred method of mounting speaker 62 is shown in FIGURE 1 where the speaker in a suitable resonant box is attached to the front of the cabinet by four screws tapped into the cabinet. It should be readily apparent that the speaker may be positioned anywhere about or within the cabinet that is convenient.

Referring again to FIGURE 1, a preferred embodiment of the message means is shown comprising the compact unit 120 fitted in one of the storage compartments. The exact nature of compact unit 120 may be more clearly seen by referring to FIGURE 6 to see how the timer unit, playback unit and amplification unit are designed to fit in a package no larger than a carton of cigarettes.

Referring to FIGURE 6, it may be seen that the three switches 74, 130 and 131 are connected in parallel circuits. These three switches control the operation of motor 47 and thereby control the reproduction of the message stored on the message means 135. For example, closing switch 74 starts motor 47 since it is connected in series with the motor between the power line 72 and 73 by the following conductors 136, 137, 138 and 139, 134 and 129. Motor 47 turns disk 150, which has at least one elongated member 151 projecting therefrom and, in response to the rotation of member 151, switch 130 closes since member 151 no longer contacts resilient member 152 to hold it out of contact with the other arm 153 of switch 130.

Thus, the rotation of member 151 closes switch 130 and energizes the parallel holding circuit formed by it in conjunction with conductors 132, 133 and 134. Since the holding circuit is energized, motor 47 continues to operate when switch 74 opens until the rotation of disk 150 brings one of the projecting members 151 into contact again with resilient member 152 to break the contact between the arms of switch 130. The de-energization of the hold circuit, upon the opening of switch 130, stops motor 47 and the play of the message.

Disk 150 has a message storage means 135 associated with its circumference 155. This message storage means may be an electro-magnetic tape, a wire or an in-line magnetic substance attached to the surface of the disk which permits a message to be transferred to the message storage means by any of a number of methods well known to the art.

Rotation of disk 150 passes the message storage means beneath a pick-up means 156. The passage of the message storage means beneath the pick-up head, which is shown as the low impedance type in FIGURE 6, generates a fluxuating voltage into the circuit of amplification unit 61. Other types of pick-up heads may be used but the low impedance type uses less power.

Referring again to FIGURE 6, the embodiment of the amplifier unit comprises three transistors connected in series by means of transformer type couplings. Although the various stages of the amplification system are shown coupled by means of transformers in FIGURE 6, other means of coupling the amplification stages may be used, for example, a capacitive or inductive type coupling. It should also be understood that NPN type transistors may be used instead of the PNP type shown in FIGURE 6 provided the circuit is modified to give the proper bias to the circuit. Also, any of the many kinds of triodes and pentodes tubes may be used but the power requirements will be greater than for the transistor system.

The base of transistor 160 in the first stage amplifica-

tion circuit is connected to the output side 161 of the pick-up head 156 by conductor 162. The emitter terminal 163 is grounded to the compact unit housing but the collector terminal 164 is joined by conductor 165 to the primary of transformer 166. The output side of the primary of transformer 166 is connected to terminal 168 by conductor 169 which is in circuit with the negative pole of the battery 170 by means of conductors 171, 172, 173, 174 and 175. Terminal 168 is also in circuit with the input side of the pick-up head by means of conductors 176, 177 and 178 and resistance 179.

The secondary winding of transformer 166 has one side thereof joined to terminal 180 via the conductors 181 and 182 and resistance 183, and the other side thereof connects to the base of transistor 184 by lead 185. The emitter terminal of transistor 184 is grounded and the collector terminal is in circuit with the primary 186 of transformer 187 which in turn is connected to terminal 188 by conductor 189. Similarly, the secondary winding of transformer 187 in the third amplification stage is connected to terminal 190 via conductors 191 and 192 and the resistance 193. The output side of transformer 187 is connected to the base of transistor 194, which has its emitter grounded and its collector connected to the primary of the speaker transformer 195. Thus, the power output of the secondary winding of the speaker transformer is used to operate the speaker 62 which is in closed circuit therewith. Hence, it is apparent that the voltage generated by passage of the message storage means pass the pick-up means is amplified sufficiently to operate speaker 62, provided the various components are of the proper size and capacity to operate the speaker. These values are indicated in FIGURE 6 for the preferred embodiment.

It is apparent to those skilled in the art that part of the amplified current is fed back to the preceding amplification stage and that under certain conditions the circuit would become degenerative. Therefore, the respective resistances 179, 183 and 193 are used to give the proper bias to their respective transistors and the grounded capacitors 100, 101 and 102 respectively are used to prevent the circuit from becoming degenerative.

To smooth out any fluctuation in voltage supplied by the battery or other equivalent power source, the negative and positive sides thereof are connected by capacitor 103. The positive side of the battery is connected to switch 104, which is preferable of the same construction as switch 130. The construction of switch 104 is seen best in FIGURE 8 where the switch 104 is mounted on support element 105 in a manner analogous to the mount used for switch 130. Switch 104 is opened and closed by member 151 in a manner analogous to that described for switch 130. The negative pole of switch 104 is grounded to the electrical component mount and holder 106 at 107.

Referring to FIGURE 4, it will be seen that, when the knob 12 is pulled forward, depending member 108 moves forward to contact lever 109. Lever 109 pivots downward about pivot 110 as the carriage 14 moves forward until contact between the electrical contacts 112 and 113 is made to close switch 131. Spring 111 breaks the electrical contact of switch 131 as the carriage returns to its original position. When switch 131 closes, motor 47 is started, and since switch 131 is in a parallel circuit with the holding circuit, the holding circuit is re-energized. Thus, the message means continues to play the message until member 151 again contacts switch 130.

It is obvious that a message, for example, of solicitation would be incongruous after the buyer purchases the desired article; therefore, the size of the disk 150 and the speed of motor 47 are preferably chosen to permit one revolution of the disk to play a message not to exceed about 30 seconds in length. Although longer playing time may be provided, applicant has found 3 to 5 seconds to be the most effective sales promoter. In this regard it is essential that the speed of the message storage means pass the pickup means be the same as that at which the

message is placed on the message storage means to obtain the best reproduction of the message.

In the preferred operation, disk 150 has two projections 151 so spaced on the side of the disk to control the length of the message. Thus, the first part of the message would be played until projection 151 comes into contact with switch 130 and then when switch 131 is closed, the second part of the message is played.

A further advantageous feature of the embodiment of FIGURE 6 is the elimination of a means to move the pick-up head transversely of the disk to play a plurality of messages stored in side by side relationship around the circumference of the disk. Also, the conductors of the embodiment shown may be of the printed circuit type and thus contribute to the compactness of the message means.

This application is a continuation-in-part of an application filed August 4, 1958, and bearing Serial Number 752,844, now abandoned, for Coin Operated Dispenser Having a Message Means.

What is claimed is:

1. In a coin operated talking article dispenser including a multiple means for storing articles to be dispensed, a coin receiving means for selecting and ejecting an article from the dispenser after activation thereof by the insertion of the correct number of coin(s) into said coin receiving means, and an audible message means cooperatively connected with said coin receiving means, the improvement comprising a means for starting and timing the playing of a message by the audible message means upon the insertion of the correct number of coin(s) into the coin receiving means prior to the selection of the article, and a means activatable by the operation of the means for selecting the desired article to reactivate the means for starting and timing the playing of a second message by the audible message means.

2. In the dispenser of claim 1, the improvement wherein the message means is unitized, and the unit fits within one of the article storage means.

3. In a coin operated talking article dispenser including a multiple means for storing articles to be dispensed, a coin receiving means for selecting and ejecting an article from the dispenser after activation thereof by the insertion of the correct number of coin(s) into said coin receiving means, and an audible message means cooperatively connected with said coin receiving means, the improvement comprising a means for starting and timing the playing of a message by the audible message means which means for starting and timing the playing of a message is activated solely by the insertion of the correct number of coin(s) into the coin receiving means and prior to the selection of the article purchased, and a means activatable by the operation of the means for selecting the desired

article to reactivate the means for starting and timing the playing of a second message by the audible message means.

4. In the dispenser of claim 3, the improvement wherein the message means has a fixed pick-up head and the message retaining means travels relative to said head.

5. In a coin operated talking article dispenser including a multiple means for storing articles to be dispensed, a coin receiving means for selecting and ejecting an article from the dispenser after activation thereof by the insertion of the correct number of coin(s) into said coin receiving means, and an audible message means cooperatively connected with said coin receiving means, the improvement comprising providing a means that starts the playing of the message of the audible message means upon the insertion of the correct number of coin(s) into the coin receiving means to thereby obtain the cooperative connection between the coin receiving means and the audible message means and a means for timing the playing of the message.

6. In the dispenser of claim 5, the improvement wherein the audible message means is unitized, said unit fitting within one of the individual article storage compartments.

7. In a coin operated dispenser including a multiple means for storing articles to be dispensed, a coin receiving means for selecting and ejecting an article from the dispenser after activation thereof by the insertion of the correct number of coin(s) into said coin receiving means, and an audible message means cooperatively connected with said coin receiving means, the improvement comprising providing a means for starting and timing the playing of a message by the audible message means, which means for starting and timing the playing of a message is activated solely by the insertion of the correct number of coin(s) into the coin receiving means and prior to the selection of the article purchased.

8. In the dispenser of claim 7, the improvement wherein the message means has a fixed pick-up head and the message retaining means travels relative to said head.

9. In the dispenser of claim 7, the improvement wherein the said means for timing the message is set for about five seconds.

10. In the dispenser of claim 5, the improvement wherein the message plays for about five seconds.

References Cited by the Examiner

UNITED STATES PATENTS

2,421,835	6/47	Durant	194—15
2,626,785	1/53	Lewis et al.	194—15
2,679,917	6/54	Andres	194—15 X

LOUIS J. DEMBO, *Primary Examiner.*

RAPHAEL M. LUPO, *Examiner.*