Nov. 3, 1970 D. C. BARRETT 3,537,198

SHOPPING REMINDER

Filed Jan. 5, 1966 3 Sheets-Sheet 1

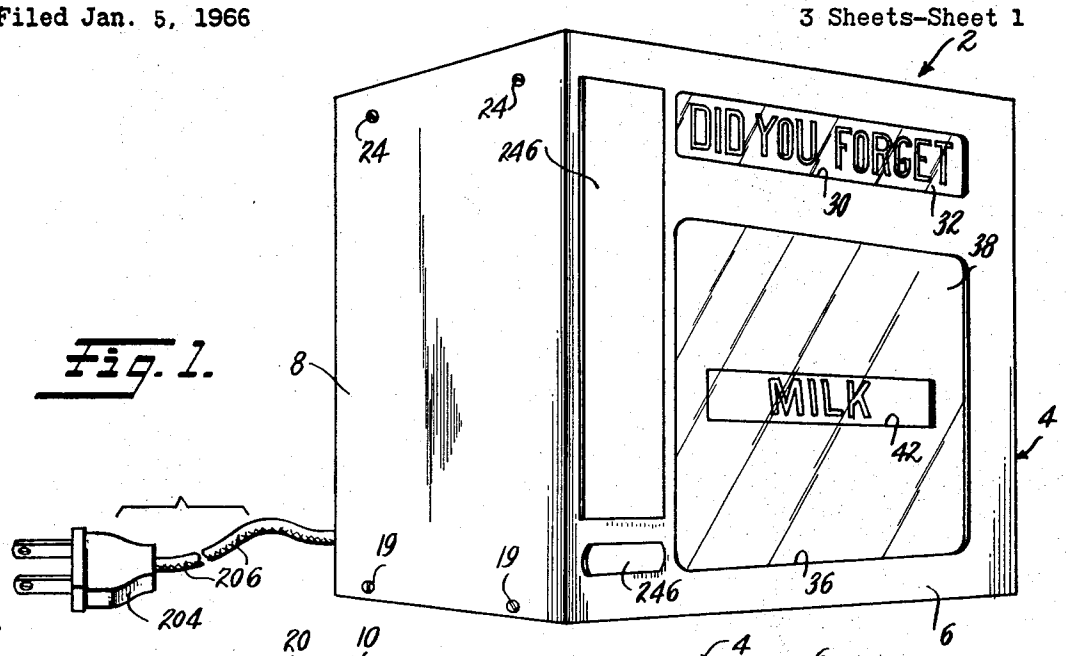


Fig. 1.

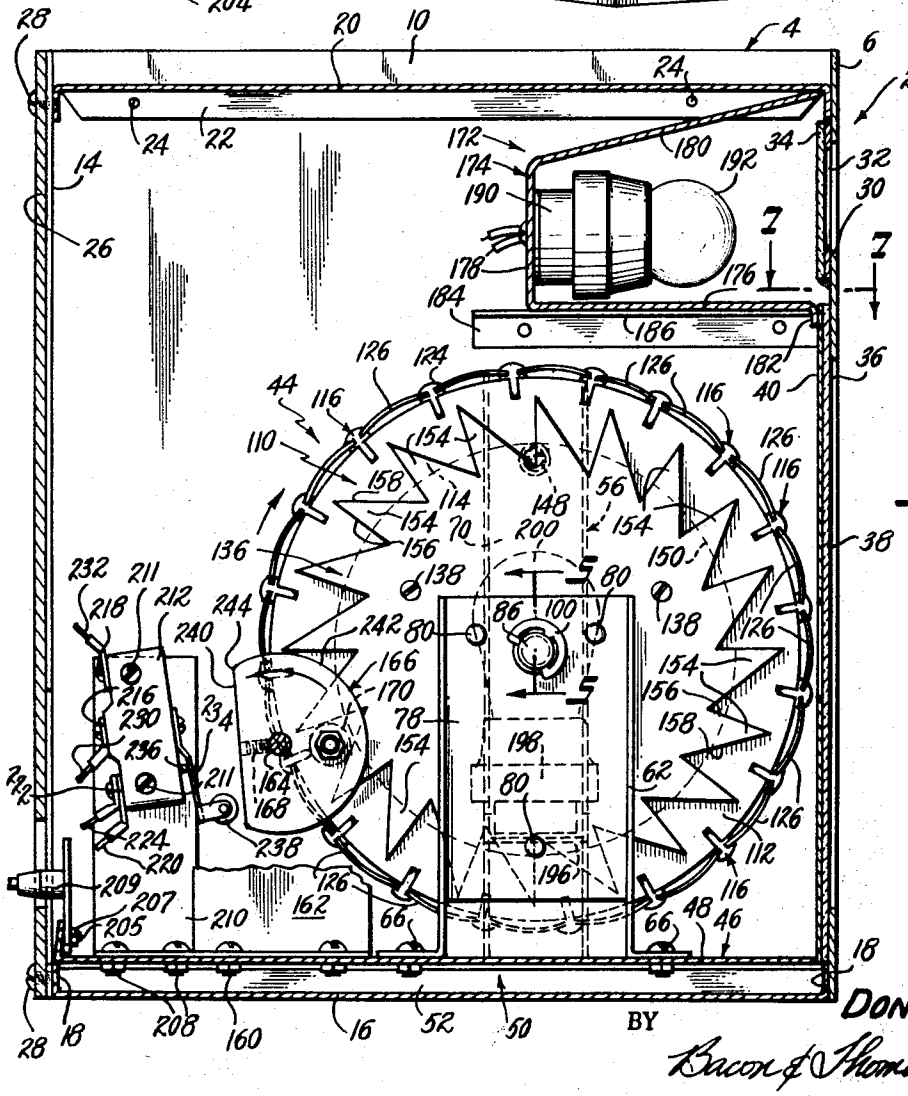


Fig. 3.

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Fig. 2.

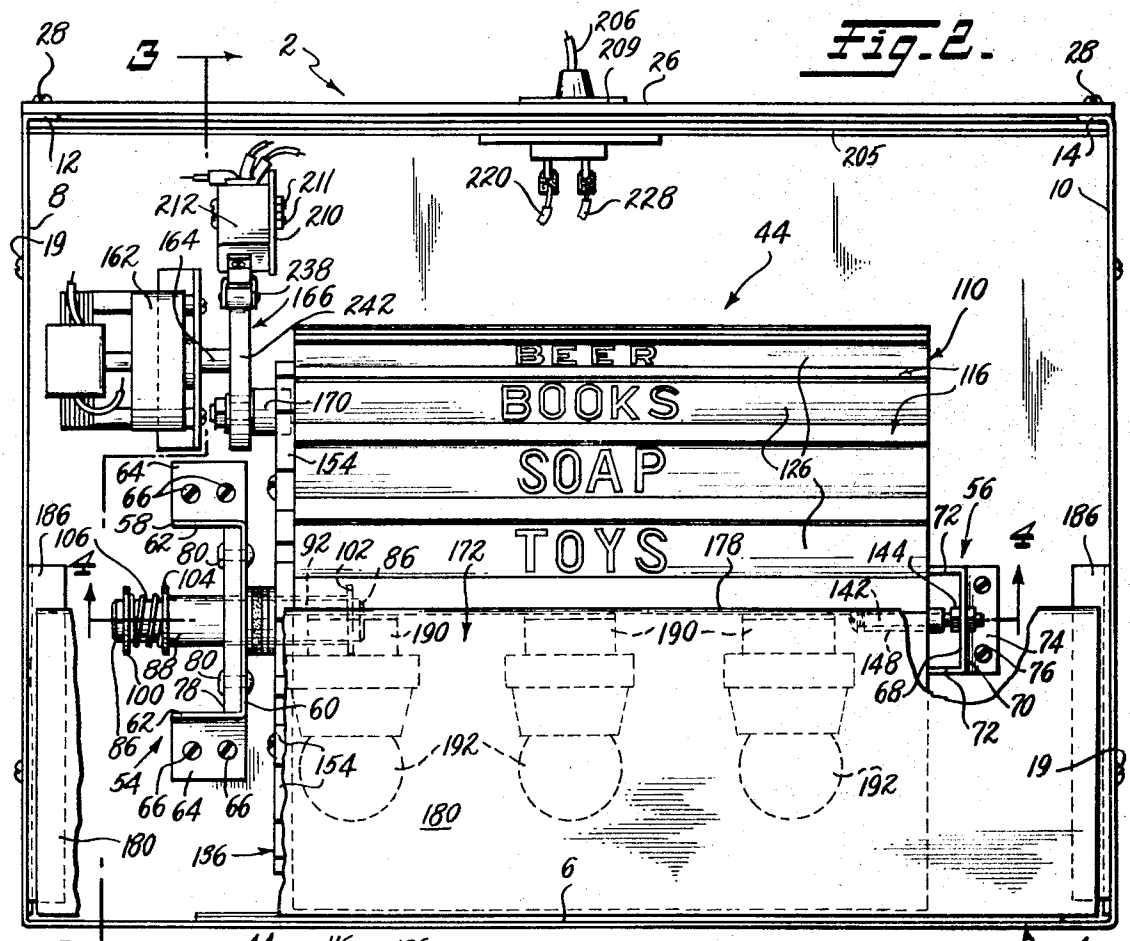
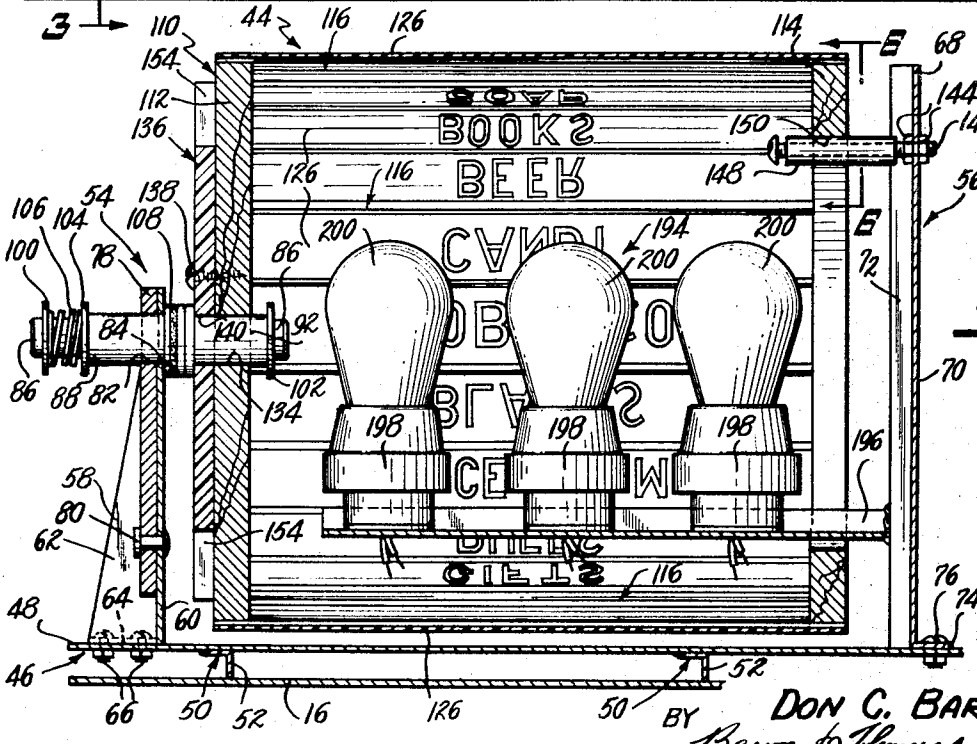


Fig. 4.



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Fig. 5.

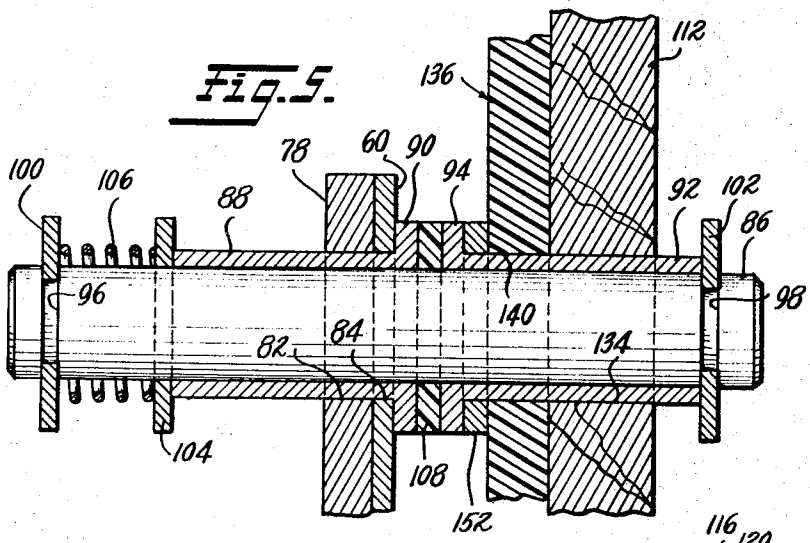
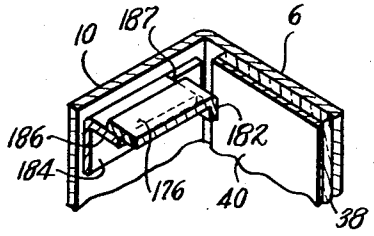


Fig. 7.



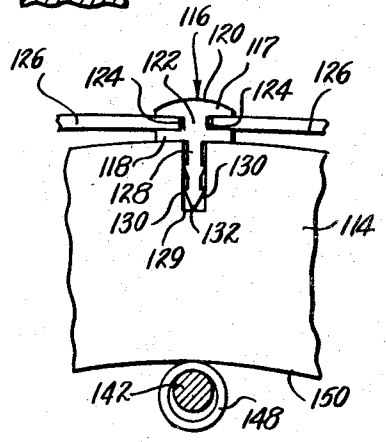


Fig. 6.

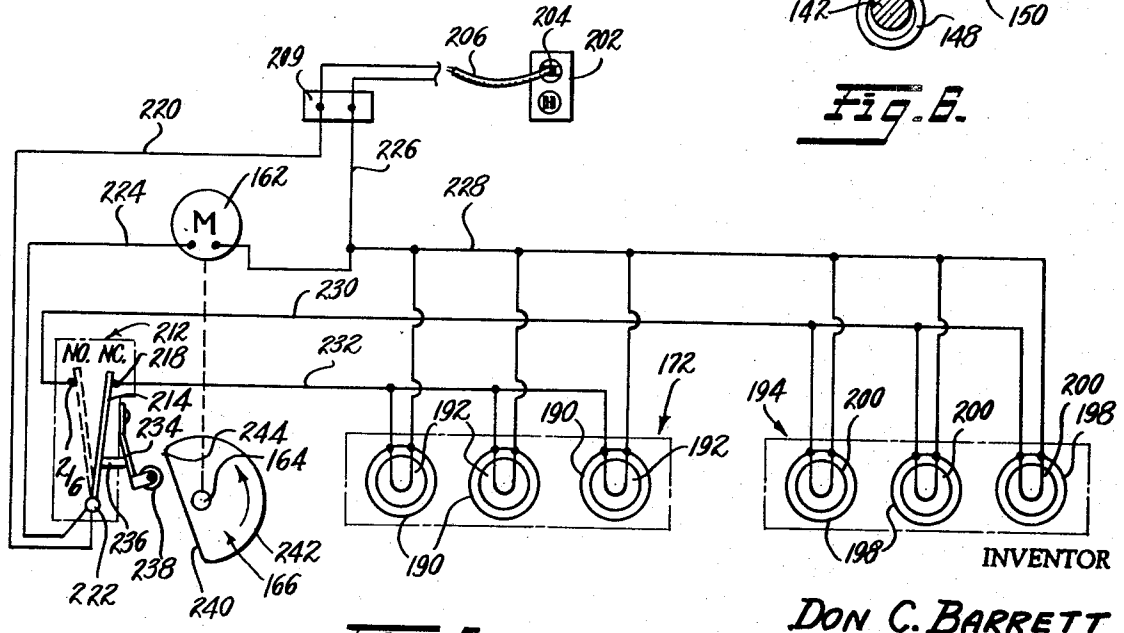


Fig. 8.

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3,537,198

SHOPPING REMINDER

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Filed Jan. 5, 1966, Ser. No. 518,825
Int. Cl. G09f 11/10
U.S. Cl. 40—77 14 Claims

ABSTRACT OF THE DISCLOSURE

A "shopping reminder" having an intermittently rotatable drum with a series of illuminatable product signs thereon. The drum is mounted in a housing having a viewing opening and having above such opening, a stationary sign to be illuminated. A toothed member is rotatable with the drum, step-by-step, and is actuated by a crank mounted on a driven cam to present successive signs at the viewing opening. The cam actuates switch means in timed sequence to the movement of the drum by the crank to alternately illuminate the stationary sign while the drum is being rotated and to illuminate the sign on the drum opposite the viewing opening while the drum is stationary.

This invention relates generally to a device for displaying and illuminating signs. The device may be generally characterized as a "shopping reminder," although its use is by no means limited to such category.

More particularly, the invention relates to an improved sign display device especially designed for use in retail stores to remind shoppers of items which they might have overlooked purchasing and/or to suggest purchasing such items. The device includes an intermittently-rotated drum having mounted thereon a series of signs which are individually displayed, step by step, to the viewer, preferably in combination with a stationary sign that flashes on-and-off to attract attention to the successively displayed signs. The device further includes lighting means for automatically illuminating, in alternation, the stationary sign, and the movable sign which has been brought into display position.

The on-and-off stationary sign is purposely designed to attract a shopper's attention, and for this purpose carries a legend such as "DID YOU FORGET." The individual movable signs each carry the name of a particular product stocked by the store, or any other desired legend. The illuminating means is designed to light up the stationary sign to attract the buyer's attention thereto during the period that the drum is in motion changing the display from one movable sign to the next, and to interrupt illumination during the transition period. After a movable sign has been moved into display position, the illuminating means functions so that the stationary sign ceases to be lit, and instead, the individual movable sign in display position is illuminated. The device is designed to automatically repeat this operating cycle until it is shutt off.

The principal object of the invention is to provide a "shopping reminder" intended to increase sales of merchandise in establishments where it is displayed.

Another object is to provide a display device incorporating a stationary sign, and a series of movable signs arranged to be individually displayed in sequence, step by step, and including means for alternately illuminating the stationary sign and the movable sign as they are successively displayed.

Another object is to provide means for use in a display device for automatically and alternately effecting illumination of a stationary sign, and one sign of a series of movable signs which is displayed for view.

A further object is to provide a simple drum mechanism

for individually displaying, step by step, a series of readily replaceable signs.

A still further object is to provide a simple means for intermittently rotating a sign display drum by a continuously running motor and simultaneously controlling the illumination of the drum, in alternation with the illumination of a stationary sign associated with the drum.

Still another object is to provide a display device of the type described which is relatively simple in construction, economical to manufacture and substantially trouble-free in service.

Other objections and many of the attendant advantages of the invention will become readily apparent from the following description, when considered in connection with the accompanying drawings, wherein:

FIG. 1 is a front perspective view of the sign display device of the invention showing the stationary "reminder" and one of the drum-mounted moveable signs;

FIG. 2 is an enlarged plan view of the display device of FIG. 1 with the housing cover removed, showing the means within the housing for illuminating the stationary sign and for successively displaying the movable signs;

FIG. 3 is a vertical sectional view, taken generally along the line 3—3 in FIG. 2, showing the intermittent drive mechanism for the drum and the switch arrangement associated therewith for effecting alternate operation of the two illumination systems;

FIG. 4 is a vertical sectional view, taken along the line 4—4 of FIG. 2, showing the interior of the drum;

FIG. 5 is a sectional view, taken along the line 5—5 in FIG. 3 through the drum support shaft, particaularly showing a friction retarding means associated therewith for preventing over-running of the drum;

FIG. 6 is a enlarged, fragmentary sectional view, taken along the line 6—6 in FIG. 4, showing a supporting means for the end of the drum remote from the drum support shaft;

FIG. 7 is a fragmentary, sectional perspective view, looking downwardly generally along the line 7—7 of FIG. 3, showing the construction of a bracket for holding the illuminating means for the stationary sign; and

FIG. 8 is a schematic view of the electrical circuit of the present sign display device.

Referring now to the drawings, the sign display device is indicated generally at 2, and includes a rectangular housing 4 having a front wall 6, and a pair of side walls 8 and 10 formed integrally with the front wall, and which terminate along their rear edge in inturned flanges 12 and 14, respectively. The housing 4 is closed at its lower end by a bottom wall 16, including upwardly extending flanges 18 along the edges thereof which are received within the front wall 6 and the side walls 8 and 10 and secured thereto by screws 19. A similarly formed top wall 20, having downwardly directed flanges 22 thereon, closes the upper end of the housing 4, said top wall being spaced below the upper edge of the front wall 6 and the side walls 8 and 10, and being secured in place by screws 24. The rear of the housing is closed by a plate 26, secured to the flanges 12 and 14 by screws 28.

The front wall 6 of the housing 4 has a horizontal, elongated, generally rectangular opening 30 near the upper end thereof. A stationary translucent sign 32 is secured by adhesive to the inner surface of the front wall 6 about the opening 30, and is backed by a glass plate 34 also secured in position by adhesive. The stationary sign 32 includes a translucent background portion which when illuminated is of a color to attract attention, say yellow, and which has the words "DID YOU FORGET," or some other suitable legend, lettered thereon. The lettering on the sign 32 can be either opaque or translucent, and the colors and material of the sign are chosen so that the legend will

be fully visbile when the sign is illuminated from the rear thereof. If desired, only the lettered portions of the sign **32** need be translucent, in which instance only the legend would appear lighted when the sign is illuminated.

The front wall **6** of the housing **4** also has a second and much larger rectangular opening **36** therein, positioned directly below the stationary sign **32**. A fully transparent sheet of glass **38** is secured by adhesive to the inner face of the wall **6** to cover the opening **36**, and the inner face of the glass sheet **38** has an opaque mask **40** secured thereto. The mask **40** has a centrally disposed, horizontally extending display opening **42** therein, through which the signs (to be described later) on the drum are successively displayed. The colors of the stationary sign **32** and of the mask **40** are preferably such as to contrast sharply with the color of the exterior of the housing **4**, so that attention will be drawn thereto.

The display means for the movable signs is indicated generally at **44**, and is mounted upon a platform **46** resting upon the bottom wall **16** between the front and rear flanges **18** thereof, FIG. 3. The display means is an insertable sub-assembly and comprises a platform **46** including a flat plate **48** having a plurality of parallel angle irons **50** welded to its undersurface, the vertical legs **52** of the angle irons **50** extending downwardly to rest on the bottom wall **16** between the flanges **18**. Secured to project upwardly from the platform **46** is a pair of aligned drum supports **54** and **56**. The support **54** includes a sheet metal bracket **58** comprising a rectangular vertical wall **60** and a pair of triangular side walls **62**, the latter having outwardly directed base flanges **64** on their lower end, which are secured to the platform **46** by bolts **66**. The support **56** includes a sheet metal bracket **68** comprising a vertical rectangular panel **70**, a pair of side flanges **72**, and an outwardly directed base flange **74** at the bottom of the panel **70**, the flange **74** being secured to the platform **46** by bolts **76**.

The outer side of the wall **60** of the bracket **58** has a relatively thick rectangular plate **78** secured thereto by rivets **80**, the upper end of the plate **78** and the wall **60** having aligned openings **82** and **84**, respectively, extending therethrough. Referring to FIGS. 3 to 5 in particular, a drum shaft **86** is mounted in a bushing **88** press-fitted in the openings **82** and **84** and has a flange **90** at its inner end engaged with the wall **60**. A similar bushing **92** is received on the inner end of the shaft **86**, and includes a flange **94** confronting the flange **90**. The inner and outer ends of the shaft **86** have annular grooves **96** and **98** therein, within which are received snap rings **100** and **102**, respectively, to maintain the shaft **86** assembled with the bushings **88** and **92**.

A washer **104** is mounted upon the outer end of the shaft **86** inwardly of the snap ring **100**, and a coil spring **106** is compressed between said snap ring and said washer, thereby urging the washer **104** against the adjacent end of the bushing **88** and holding the snap ring **102** against the end of the other bushing **92**. A nylon friction washer **108** is positioned between the bushing flanges **90** and **94**, and the spring **106** functions to maintain the flanges **90** and **94** in tight frictioned engagement with the opposite faces of the washer **108** to form a brake for retarding the rotation of a drum **110** arranged to rotate with the bushing **92**, as will be explained hereinafter.

The drum **110**, FIG. 4, includes radial end walls comprising a circular disc **112** and an annular ring **114**, said disc and ring being connected together by longitudinally extending, circumferentially spaced metallic channel strips **116**. The drum disc **112** and ring **114** may be made of wood, plastic, or any other suitable material. The channel strips **116** are preferably made of extruded aluminum, but can be made of hard plastic or any other equivalent material. Referring particularly to FIG. 6, each channel strip **116** includes a head **117** having an I-shaped cross-section and a flange **128** extending from the base of the I. The head **117** comprises a base web **118**, a top web **120**,

and an integrally formed spacing rib **122** which connects said base and top webs. Thus, the laterally extending portions of the base web **118** and the top web **120** define oppositely facing grooves **124**, **124** for slidably receiving the side edges of translucent, plastic signs **126** to be mounted on the drum **110**. The signs **126** can be bowed slightly transversely to provide a good friction fit with grooves **124** (FIG. 3).

Returning again to FIG. 6, the downwardly projecting flange **128** runs along the length of each channel strip **116** and has triangularly-shaped ridges **130** on the opposite sides thereof and terminates in a wedge-shaped bottom edge **132**. The channel strips **116** are secured to the disc **112** and ring **114** by driving the flanges **128** into evenly spaced radial slots **129** preformed in the periphery of the disc and ring. The channel strips **116** are firmly anchored to the disc **112** and ring **114** by the ridges **130**, which lock the strips in place. The channel strips **116** cooperate with the disc **112** and ring **114** to form the side wall of the drum **110**. In addition, the confronting grooves **124** on adjacent channel strips **116** receive the side edges of the translucent signs **126** so that nearly the entire inner surface of each sign is exposed to the interior of the drum **110**.

The disc **112** has an axial bore **134** to receive the busing **92**. A toothed nylon disc **136** is secured to the outer face of the disc **112** by one or more screws **138**, and has a central opening **140** in which the bushing **92** is press-fitted.

The upper end of the vertical portion of the bracket **68** has an opening in which a stove bolt **142**, FIG. 4, is secured at its threaded end by nuts **144**. The head of the bolt **142** lies within the drum **110**. A loosely fitted cylindrical sleeve **148** is rotatably mounted on the bolt **142** between its head and one of the nuts **144**. The sleeve **148** and bolt **142** function to steady or support the ring-end of the drum **110** for rotation about the axis of the shaft **86**, the vertical height of the bolt **142** above the platform **46** being such that, when the inner periphery **150** of the ring **114** is resting on the sleeve **148**, the center of the disc **112** and ring **114** will be axially aligned and disposed on a common horizontal axis parallel with the front wall **6** of the housing **4**. The axis of the drum **110** is also disposed in a horizontal plane passing approximately through the center of the elongated sign display opening **42**. The bracket **68** can be omitted, if desired, in which event the drum **110** will be supported in cantilever fashion by the drum shaft **86** and bracket **58**.

A spacer **152** is disposed between the toothed disc **136** and the bushing flange **94**, and because of the tight fit between the toothed disc **136** and the bushing **92**, the disc will rotate with the bushing. The spring **106** urges the bushing flanges **90** and **92** into frictional engagement with the opposite faces of the nylon washer **108**, the resultant brake action being designed to prevent the drum **110** from inertial rotation while allowing it to be easily rotated from one position of rest to another. This assures accurate successive indexing of the movable signs **126** with the display opening **42**, as in FIG. 3.

The drum **110** has sufficient channel strips **116** to mount a desired number of signs **126** on the cylindrical surface thereof. The drum **110** may be designed to carry any desired number of signs **126**, but in the embodiment shown, the number of signs is twenty. Each of the signs **126** carries a legend, for example, the name of one or more items, such as, BEER, BOOKS, SOAP, TOYS, etc., which can be purchased in the establishment where the device is installed, the lettered and/or the background portions of the signs **126** preferably being translucent. The display apparatus **44** is designed to present the signs **126** one at a time and in succession to the opening **42**. As each sign **126** is positioned to be viewed through the opening **42**, light from an illuminating means within the drum is directed through the translucent portions of the signs to illuminate the legend thereon.

The toothed disc **136**, as is best shown in FIG. 3, has saw-tooth like teeth **154** around the entire periphery thereof, there being one tooth **154** corresponding to each movable sign **126** on the drum **110**. Each tooth **154** includes a radial trailing edge **156** and an inclined leading edge **158**, which extends inwardly at an angle of about 30° relative to the trailing edge **156**.

Mounted upon the platform **46** by bolts **160**, rearwardly of the drum support **54**, is an electric motor **162** having a drive shaft **164**. The shaft **164** extends parallel to, and is disposed below the axis of rotation of the drum **110**, the shaft **164** being positioned with its axis in line with the cylindrical surface of the drum **110**. A cam **166** is mounted on the shaft **164** by a screw **168**. The cam **166** carries a crank pin with a roller driving element **170** thereon, which engages with one of the teeth **154** during each revolution of the cam **166** to rotate the drum **110** through an angle corresponding to the circumferential distance between the centers of adjacent channel strips **116**. This automatic rotation of the drum **110** results in the movable signs **126** being indexed in sequence and one at a time, for viewing through the opening **42**.

Positioned rearwardly of the stationary sign **32** is a preassembled insertable illuminating apparatus **172**, FIG. 3, including a forwardly facing, channel-shaped reflector **174** made from sheet metal, and comprising a horizontal bottom wall **176**, a vertical rear wall **178**, and an upwardly inclined top wall **180**, the bottom wall **176** terminating at its forward end in a downturned lip **182**. The housing side walls **8** and **10** have horizontal angle irons **184** attached thereto above the drum **110**. The angle irons **184** include inwardly directed top flanges **186** and lying in a common horizontal plan upon which the reflector **174** rests. As is best shown in FIG. 7, the forward end of the top flanges **186** of the angle irons **184** is cut away at **187** to enable the lip **182** to be hooked thereover, whereby the assembly is mounted in proper relation to the sign **32**. The rear wall **178** of the reflector **174** has three electric lamp sockets **190** secured thereto, each containing a light bulb **192**, which when energized illuminate the stationary sign **32**.

The drum **110** also has illuminating means **194** extending therein, including an upwardly facing channel **196** secured at one end to the bracket **68**, and arranged to extend horizontally through the ring **114**. In a device in which the stove bolt **142** and sleeve **148** are omitted, a shorter bracket could be substituted for the bracket **68**, or the channel **196** could be designed with a downwardly bent end and directly mounted upon the plate **48**, as a part of the sub-assembly. The channel **196** has three lamp sockets **198** attached thereto, each containing a light bulb **200**. Thus, when the light bulbs **200** are energized, light will be directed through the translucent signs **126** carried by the drum **110**, and whichever sign **126** is in registration with the opening **42** will be viewed illuminated.

The illuminating means **172** and **194** are interconnected in an electrical control circuit, shown schematically in FIG. 8. This circuit is designed so that the illuminating means **172** will be energized to light up the stationary sign **32**, while the display apparatus **44** is being moved to change one movable sign **126** for another at the opening **42**. When a sign **126** has been indexed with the opening **42**, the circuit functions to deenergize the illuminating means **172**, and to energize the illuminating means **194** to light up the drum and movable sign **126** on display.

Referring now to FIGS. 8, the control circuit is supplied with electrical current from an outlet **202** through a conventional two-prong plug **204** carried on the end of a cord **206**. The cord **206** is connected with a junction box **209** attached to a flange **205** on the plate **48** by bolts **207**, thus forming part of the display assembly **44**. Secured to the platform **46** by bolts **208** is a bracket **210**, to which is attached by screws **211** a two-position microswitch **212**, including a reslient switch blade **214** and a pair of contacts **216** and **218**, the contact **216** being

"Normally Open" (N.O.) and the contact **218** being "Normally Closed" (N.C.). A lead **220** extends from one side of the junction box **209** to a terminal **222** associated with the blade **214**, and a second lead **224** extends from the terminal **222** to one side of the motor **162**. A lead **226** extends from the junction box **209** to the other side of the motor **162**. Thus, when the plug **204** is inserted into the outlet **202**, the motor **162** will be energized and the drum **110** will operate.

A conductor **228** is connected with the lead **226** and with one side of each of the groups of lamp sockets **190** and **198**, respectively. A conductor **230** is connected to the "Normally Open" switch contact **216**, and to the other side of each of the lamp sockets **198**, whereby the lamp bulbs **200** are connected in parallel between the leads **230** and **228**. Similarly, a conductor **232** extends from the "Normally Closed" switch contact **218** to the other side of the lamp sockets **190**, so that the lamp bulbs **192** are connected in parallel between the conductors **232** and **228**. It is thus evident that when the switch blade **214** is in its "Normal" position, in engagement with the contact **218**, the lamp bulbs **192** will be lit, and the lamp bulbs **200** will be without current; the blade **214** being spring biased so that when in its "Normal" position it contacts the terminal **218**. When the switch blade **214** is moved from the contact **218** to the contact **216**, the lamp bulbs **192** will be deenergized, and the lamp bulbs **200** will receive electrical current, causing the same to light up. Thus, the illuminating means **172** and **194** are alternately operated.

The switch **212** includes a resilient operating arm **234** attached at one end to the switch body, and arranged to operate a sliding pin **236** engaged at one end with the blade **214**. The arm **234** carries a roller **238** on the tip thereof, and when said arm is depressed the pin **236** will move the spring biased blade **214** from the "Normally Closed" contact **214** to the "Normally Open" contact **216**. When the arm **234** is released, the spring blade **214** is automatically returned to its "Normal" position.

The switch **212** is mounted to have its operating arm **234** actuated by the cam **166**, FIG. 3, which is mounted upon the shaft **164** so that it will rotate continuously while current is supplied to the motor **162**. The cam **166** is made from a disc having a section thereof cut away over an arc length of about 120 degrees to provide a flat side **240**, and an arcuate cam surface **242**, which extends over an angle of about 240 degrees. The axis of the crank roller **170** is positioned on a radius about 125 degrees from the leading edge **244** of the arcuate cam surface **242**, and the cam **166** and the switch **212** are arranged so that the arcuate cam surface **242** will be out of engagement with the switch roller **238** while the crank roller **170** is engaged with any one of the teeth **154**.

It is thus seen that while the crank roller **170** is in engagement with a tooth **154** to rotate the drum **110**, the switch roller **128** on the operating arm **234** will be free, and the switch blade **214** will be positioned to engage the "Normally Closed" contact **218**, whereby the stationary sign **32** will be illuminated by the lamp bulbs **192**. After the crank roller **170** disengages the toothed disc **136**, the leading edge **244** of the arcuate cam surface **242** will engage the switch roller **238**, with the result that the operating arm **234** will be depressed, thus moving the blade **214** from the "Normally Closed" contact **218** to the "Normally Open" contact **216**. When this occurs, the lamp bulbs **192** will be de-energized and the stationary sign **32** will be darkened, while at the same time, the lamp bulbs **200** will be lighted to illuminate a sign **126** which is on display through the opening **42**. The lamp bulbs **200** will remain illuminated for a predetermined period of time while the arcuate cam surface **242** is in engagement with the switch roller **238**, which period will terminate just before the cam **166** is rotated sufficiently to again engage the crank roller **170** with one of the teeth **154**. The operating arm **234** will then be

released and will return to its original position, whereupon the lamp bulbs **192** will be again energized to illuminate the stationary sign **32**, and the lamp bulbs **200** will be darkened. The display apparatus **44** then functions to change to the next successive movable sign **126**, completing an operating cycle.

It is thus seen that a display device has been provided which fulfills all of the objects above set forth. If desired, the device can be designed to broadcast music or other sound, such as, store announcements, page personnel, etc., to further enhance the value thereof. Referring to FIG. **1**, the front panel **6** is shown to be equipped with grills **246** on one side of openings **30** and **36**, underneath which loudspeakers and controls, respectively, can be mounted, if desired.

Obviously, many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically shown and described.

I claim:

1. Sign display apparatus, comprising: a housing including a front wall having a viewing opening through which a sign can be displayed; display means within said housing; a series of movable signs associated with said display means; an element mounted to move only with said display means; means including a rotating member for intermittently engaging and actuating said element, moving said dispaly means to sequentially display said signs one at a time at said viewing opening; illuminating means arranged so that when energized it will direct light to the movable sign being displayed at said viewing opening; and control means connected with said illuminating means, including a switch connected in circuit with said illuminating means, said rotating member being arranged to intermittently, directly engage and also actuate said switch in timed relation to the operation of said display means to alternately: (1) de-energize said illuminating means while said display means operates to effect change of one movable sign for another movable sign at said viewing opening; and (2) energize said illuminating means during the interval between successive sign changes while the newly displayed sign is stationary and is being displayed at said viewing opening.

2. In combination: a rotatable body; means supporting said rotatable body for intermittent rotation about an axis passing through said body; means for imparting intermittent rotary movement to said rotatable body comprising: a toothed member connected for rotation with said rotatable body, a driven shaft, and a cam driven by said shaft and carrying a crank element engageable with successive teeth on said toothed member one tooth at a time, and switch means arranged to be actuated by said cam independently of said crank element in alternation with the intermittent rotary movement of said body by said crank element.

3. Sign display apparatus, comprising: a housing including a front wall having a viewing opening through which a sign can be displayed; display means within said housing; a series of movable signs associated with said display means, said display means being operable to sequentially display said signs one at a time at said viewing opening; a stationary sign spaced from said viewing opening; first illuminating means arranged so that when energized it will direct light to the movable sign being displayed at said viewing opening; second illuminating means arranged so that when energized it will direct light to said stationary sign; and control means connected with said first and said second illuminating means, and operable in timed relation to the operation of said display means to alternately: (1) energize said second illuminating means and de-energize said first illuminating means for a first predetermined period of time, while said display means operates to effect change of one movable sign for another movable sign at said viewing opening; and (2) de-energize said second illuminating means and energize said first illuminating means for a second predetermined period of time, while said display means is not operating and a movable sign is being displayed at said viewing opening.

4. Sign display apparatus as recited in claim **3**, wherein the stationary sign is located on the front wall above the viewing opening.

5. Sign display apparatus as recited in claim **3**, wherein the display means includes: a cylindrical drum; means mounting said drum for rotation about the axis thereof, said drum being arranged so that a portion of the periphery thereof confronts the viewing opening; means on said drum mounting said movable signs on the periphery thereof; and means, including a motor having a shaft for rotating said drum step by step to sequentially display said movable signs at said viewing opening.

6. Sign display apparatus as recited in claim **5**, wherein the first illuminating means includes at least one lamp bulb disposed within the drum, and wherein the signs mounted upon said drum are translucent so that at least a portion of the inner surface of each is exposed to light from said lamp bulb.

7. Sign display apparatus as recited in claim **5**, wherein the control means includes: a two-position switch; an electrical circuit including said two-position switch and said first and said second illuminating means; and a cam mounted upon the shaft of the motor and arranged to move said two-position switch from one position to the other position thereof during each revolution of said shaft, only said first illuminating means being energized when said switch is in said other position, and only said second illuminating means being energized when said switch is in said one position.

8. Sign display apparatus as recited in claim **5**, including additionally: friction brake means connected with said drum to retard free rotation thereof.

9. Sign display apparatus as recited in claim **5**, wherein the drum includes a pair of spaced, circular end walls, and wherein the means for detachably mounting the movable signs on said drum includes a plurality of parallel, circumferentially spaced, longitudinally extending, channel strips secured to said end walls and extending therebetween, the confronting portions of adjacent channel strips having grooves therein for slidably receiving opposite lateral edges of the movable signs.

10. Sign display apparatus as recited in claim **9**, wherein one of the drum end walls comprises a circular disc, and wherein the means for mounting said drum for rotation about the longitudinal axis thereof includes: a support mounted within the housing; and shaft means on said support, the center of said disc end wall being supported on said shaft means.

11. Sign display apparatus as recited in claim **10**, wherein the other end wall of the drum is an annular ring, and wherein roller means is mounted on a support and engages with the inner surface of said annular ring.

12. Sign display apparatus as recited in claim **5**, wherein the means for revolving the drum step by step includes: a toothed member connected coaxially with the drum and being provided with teeth corresponding in number to the number of movable signs that can be mounted upon said drum; and wherein a crank element is mounted eccentrically relative to the shaft of the motor, and is engageable with one of said teeth during each revolution of said shaft to revolve said drum a distance equal to the circumferential width of one of the movable signs.

13. Sign display apparatus as recited in claim **12**, including a cam mounted upon the motor shaft, and wherein the crank element is mounted upon said cam, and wherein the control means includes: an electrical control circuit containing the first and second illuminating means, a switch connected in said circuit and being movable from a first position, wherein said second illuminating means is energized and said first illuminating means is de-energized,

to a second position, wherein said first illuminating means is energized and said second illuminating means is de-energized; biasing means for urging said switch into said first position; and actuating means carried by said switch and engageable by said cam while the motor shaft is rotating to move said switch into said second position, said cam being shaped so that said switch is in said first position while the drum is effecting a change of one sign for another at the viewing opening.

14. Sign display apparatus comprising: a housing including a front wall having a viewing opening through which a sign can be displayed; a rotatable body within said housing intermittently rotatable about an axis passing through said body; a series of movable signs associated with said body; a toothed member connected with said body; a driven shaft; a cam driven by said shaft and carrying a crank element engageable with successive teeth on said toothed member, one at a time, for intermittently operating said body to sequentially display said signs one at a time at said viewing opening; illuminating means arranged so that when energized it will direct light to the movable sign being displayed at said viewing opening; and control means connected with said illuminating means including a switch connected in circuit with said illuminating means, said cam being arranged to also actuate said switch in timed relation to the operation of said body to alternately: (1) de-energize said illuminating means while said body is being operated to effect change of one movable sign for another movable sign at said viewing opening; and (2) energize said illuminating means during the interval between successive sign changes while the newly displayed sign is stationary and is being displayed at said viewing opening.

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