

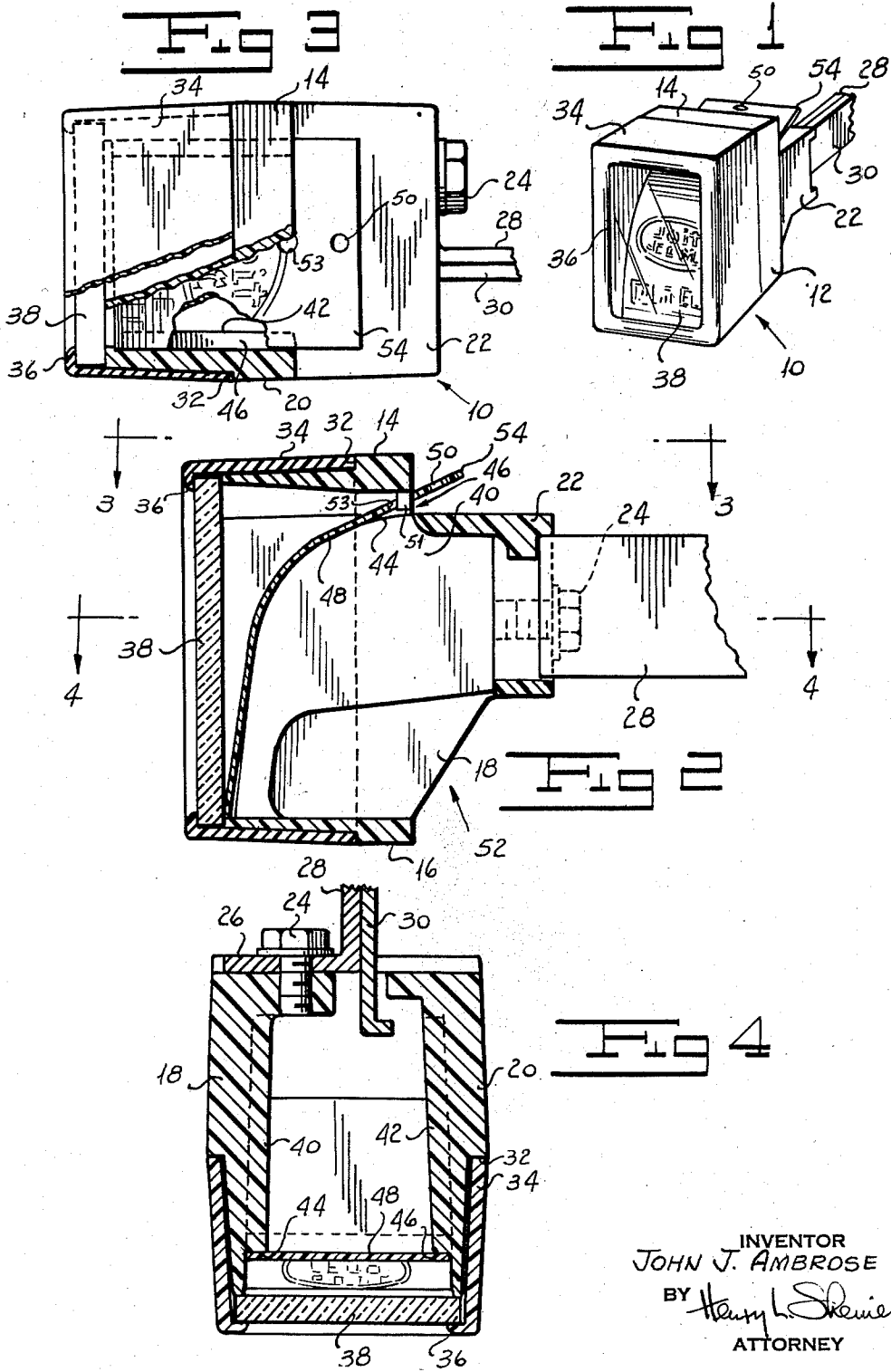
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ILLUMINATED PUSH-BUTTON ASSEMBLY

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1

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## ILLUMINATED PUSH-BUTTON ASSEMBLY

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5 Claims. (Cl. 40—331)

My invention relates to an illuminated push-button assembly and more particularly to an improved illuminated push-button assembly which is small, compact, and inexpensive and which provides an effective display of a card or the like indicating the type of merchandise associated with the button.

Modern cigarette-merchandising machines are required to dispense a large selection of various brands of cigarettes. Not only must a machine be capable of providing a large selection of brands, it also must permit the customer to select the type of cigarette he desires, such as, regular or king size, plain or filter tip, and the kind of package such as a pouch or a "flip-top" box. In order that a cigarette-merchandising machine dispense the large number of brands and types of cigarettes on the market today, it must be provided with a large number of columnar containers and with respective push buttons associated with the containers. The size of a cigarette-merchandising machine is limited by the space available at the sales location at which the machine is to be installed. Owing to this space limitation and since a large number of selector buttons are required, the individual buttons must be as small as is consistent with the function to be performed by the button.

To facilitate the selection of the brand and type of cigarettes desired by a customer, it is proposed to employ illuminated selector buttons. Illuminated push buttons broadly are known in the art. Examples of such buttons are shown in Andres Patent No. 2,265,164, Henry Patent No. 2,627,685, Verkuil Patent No. 2,684,411 and in Danziger et al. Patent No. 2,853,585.

A variety of illuminated push-button constructions have been proposed in the prior art. It has been suggested that the button be molded entirely from clear plastic to provide a window through which a display card or the like can be viewed. This solution has not proved satisfactory since the plastic window is soft and becomes scratched in use, thus detracting from the appearance of the display. It has further been proposed that a button be formed with a molded window made of plastic or glass. These molded plastic or glass buttons introduce distortion in the display with the result that the display is not as effective as is desired.

Owing to the constantly changing tastes of the purchasing public and to the introduction of new brands and types of cigarettes, it is desirable that the push-button assembly permits the display card to be rapidly and expeditiously changed. The Danziger patent referred to hereinabove shows an assembly with a removable display card. In order that the display be changed, however, it is necessary to disassemble parts of the display assembly in order to gain access to the card.

In addition to the defects of the push-button assemblies of the prior art pointed out hereinabove, those assemblies are generally cumbersome, complicated, and expensive. They are not sufficiently small to permit full advantage to be taken of the capabilities of modern merchandising machines of dispensing a very large number of different kinds and brands of cigarettes.

2

I have invented an improved illuminated push-button assembly which provides the greatest viewing area with the least amount of distortion for the space occupied by the button. My assembly is not subject to scratching in use and introduces substantially no distortion in the display. My assembly permits the legend to be rapidly and expeditiously changed without disassembly of any of the parts thereof. My push-button assembly is especially adapted for use on modern merchandising machines providing a very large selection of a number of types and brands of cigarettes.

One object of my invention is to provide an improved push-button assembly which provides a large viewing area with a minimum distortion for the area occupied by the face of the assembly.

Another object of my invention is to provide an improved illuminated push-button assembly which is small, compact, and inexpensive to manufacture.

A further object of my invention is to provide an improved illuminated push-button assembly which permits the replacement of a display legend without disassembly of parts.

Still another object of my invention is to provide an illuminated push-button assembly which is especially adapted for use on modern merchandising machines providing a very large selection of types and brands of cigarettes.

Other and further objects of my invention will appear from the following description:

In general my invention contemplates the provision of an illuminated push-button assembly including a molded plastic body which receives a thin frame to retain a plate glass window sandwiched between the body and the frame. I form the rear of the body with an opening through which a translucent display card may be inserted into position behind the window. Curved tracks guide the card to a location at which it may be viewed. With the card in position on the tracks, a portion of the card extends through the rear opening to a position at which it is readily accessible to permit the card to be changed without disassembly of parts. I employ a suitable adhesive for retaining the frame on the assembly body.

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views;

Figure 1 is a perspective view of my illuminated push-button assembly.

Figure 2 is a sectional view of my illuminated push-button assembly.

Figure 3 is a top plan view of my illuminated push-button assembly with parts broken away and taken along the line 3—3 of Figure 2.

Figure 4 is a sectional view of my illuminated push-button assembly taken along the line 4—4 of Figure 2.

Referring now more particularly to the drawings, my illuminated push-button assembly, indicated generally by the reference character 10, includes a body or housing 12 having a top wall 14, bottom wall 16 and side walls 18 and 20. I provide the housing 12 with a rear extension 22. Any suitable means such as a screw 24 or the like secures an offset portion 26 of a push rod 28 to the extension 22. Rod 28 supports a link 30 by means of a resilient driving connection (not shown). In response to operation of the assembly 10, rod 28 drives link 30 to operate the dispensing mechanism (not shown) with which the assembly is used. One form of machine with which my assembly is adapted to be used is shown in detail in the copending application of Merrill Krakauer and John J. Ambrose, Serial No. 799,261, filed March 13, 1959, for a Manual Console Cigarette Merchandising Machine.

3

I mold the body 12 from any suitable plastic molding material. Preferably I employ a material such as Cyclocac which is the registered trademark of the Marbon Chemical Division of the Borg-Warner Corporation for a high-impact styrene type thermoplastic resin. This material is a tricopolymer of polystyrene, acrylonitrile and butadiene. I provide the body 12 with a peripheral shoulder 32 to permit the body to receive a generally rectangular frame 34 formed from a suitable material such as plastic metal, or the like. I secure the frame 34 in position on the body 12 by means of a suitable adhesive such, for example, as a styrene solvent. I form the frame 34 with a peripheral, retaining lip 36 which holds a window 38 formed of plate glass sandwiched between the frame 34 and body 12. It will be seen that the walls of frame 34 are so thin and the arrangement of the parts of my assembly is such that the window 38 occupies substantially all of the area of the face of my button assembly. The plate glass window 38 introduces substantially no distortion into the display.

I form the side walls 18 and 20 of my assembly with respective bosses 40 and 42 forming curved guide tracks 44 and 46. The extension 22 provides an opening 46 in the back of the assembly to afford access to the guides 44 and 46. I mark the legend to be displayed by my assembly on a flexible card 48 which is formed from a suitable translucent material such as paper or plastic. I provide the card 48 with a hole 50 for receiving a wire or the like to permit a number of cards to be handled and stowed with ease. An opening, indicated generally by the reference character 52, below the extension 22 permits light from any suitable source (not shown) to pass through the card 48 to illuminate the display legend on the card. I form the top wall 14 with a depending protrusion or pin 51 adapted to fit into a hole 53 in the card 48. When a card is slid into the housing its natural resilience causes pin 51 to snap into hole 53. This pin positively holds the card in the housing and prevents vibration from working the card out of position.

In use of my illuminated push-button assembly, the parts thereof are assembled and secured to each other in the manner outlined hereinabove. When a display card 48 is to be inserted into the assembly, its lower edge is pushed into the body 12 through the opening 46. Upon engaging the window 38, the bottom edge of the card is directed downwardly and the card conforms itself over a substantial portion of its length to the guide surfaces 44. The length of the card is such that with the lower edge of the card in engagement with the bottom 16, a portion 54 of the card extends out of the opening 40 rearwardly of the assembly 10. This portion 54 of the card is readily accessible to an operator servicing the machine to permit the display to be changed rapidly without disassembly of any of the parts of the button assembly. The length of the card is such that a portion thereof always engages the top wall 14 with the result that a major portion of the length of the card conforms to the guide surfaces 44 and 46 to provide a display covering a greater area than the area which would be covered by a plain card having a surface parallel to the surface of the plate glass window 38.

It will be seen that I have accomplished the objects of my invention. I have provided an illuminated push-button assembly providing a large viewing area for the available space. My assembly accomplishes this result without appreciable distortion. My assembly is smaller and more compact than are assemblies of the prior art with the result that my assembly is especially adapted for use on modern machines affording a multiplicity of selections. The display provided by my assembly may be rapidly and expeditiously changed without disassembly of any of the parts of the assembly. My push button is not subject to damage from scratching and the like in use.

It will be understood that certain features and sub-combinations are of utility and may be employed without

4

reference to other features and sub-combinations. This is contemplated by and is within the scope of my claims. It is further obvious that various changes may be made in details within the scope of my claims without departing from the spirit of my invention. It is, therefore, to be understood that my invention is not to be limited to the specific details shown and described.

Having thus described my invention, what I claim is:

1. A push button assembly including in combination a housing formed with a front opening, means in said housing for supporting a translucent display in a position to be viewed through said opening by transmitted light, a flat plate glass window adapted to fit over said opening, a frame for securing said plate glass window in position over said opening, an opening in the rear of said housing adapted to permit illumination of the rear of said display and a slot adjacent the upper portion of the rear of said housing for inserting said display into said housing.

2. A push button assembly including in combination a housing formed with a front opening, means in said housing for supporting a translucent display in a position to be viewed through said opening by transmitted light, a flat plate glass window adapted to fit over said opening, a frame for securing said plate glass window in position over said opening, an opening in the rear of said housing adapted to permit illumination of the rear of said display, a slot adjacent the upper portion of the rear of said housing for inserting said display into said housing and means for guiding said display into said position within the housing at which it may be viewed through said window with a portion of said display extending out through said rear slot to permit said card to be readily removed rearwardly.

3. A push button assembly including in combination a housing formed with a front opening, a flat plate glass window adapted to fit over said opening, a frame for securing said plate glass window in position over said opening, a slot adjacent the upper portion of the rear of said housing for inserting said display into said housing, curved guide tracks for supporting a display within said housing in a position to be viewed through said window by transmitted light with a portion of said display extending rearwardly out of said rear slot and an opening in the rear of said housing adapted to permit illumination of the rear of said display.

4. A push button assembly including in combination a molded plastic housing formed with a front opening, means in said housing for supporting a translucent display in a position to be viewed through said opening by transmitted light, a flat plate glass window adapted to fit over said opening, a frame, means securing said frame to said housing with said window sandwiched between the housing and said frame, an opening in the rear of said housing adapted to permit illumination of the rear of said display and a slot adjacent the upper portion of the rear of said housing for inserting said display into said housing.

5. A push button assembly including in combination a molded plastic housing formed with a front opening, a flat plate glass window, a molded plastic frame for retaining said window in position over said opening, means cementing said frame to said housing with said window sandwiched between the frame and the housing, means in said housing for supporting a translucent display in a position to be viewed through said window by transmitted light, an opening in the rear of said housing adapted to permit illumination of the rear of said display and a slot adjacent the upper portion of the rear of said housing for inserting said display into said housing.

#### References Cited in the file of this patent

#### UNITED STATES PATENTS

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2,853,585	Dansiger	Sept. 23, 1958