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2,239,196

VENDING AND DISPLAY DEVICE

Filed July 1, 1940

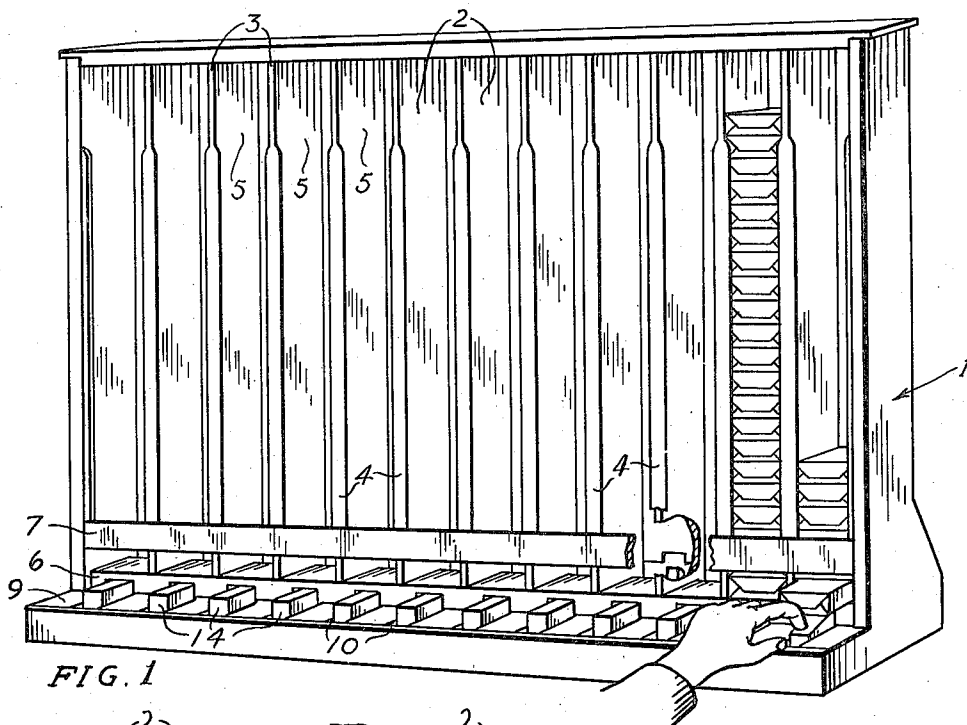


FIG. 1

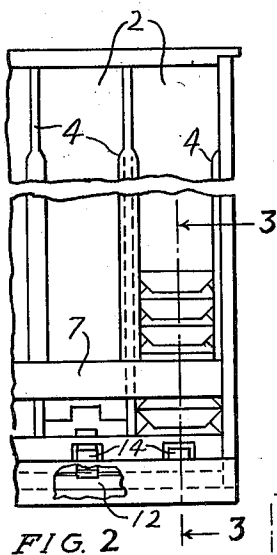


FIG. 2

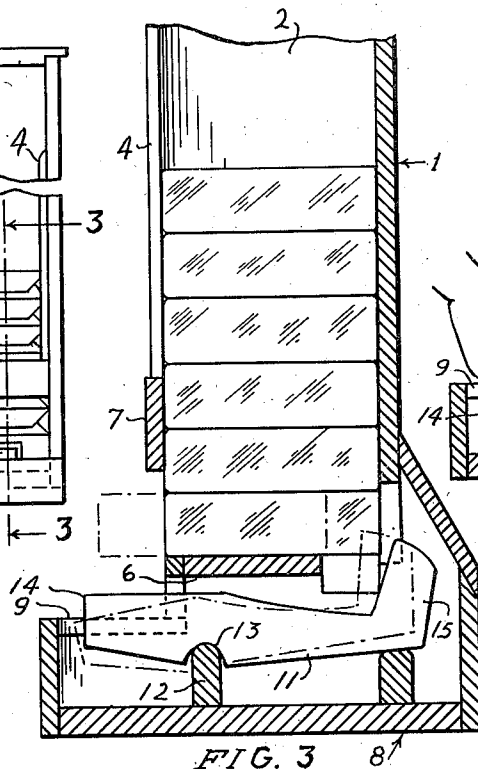


FIG. 3

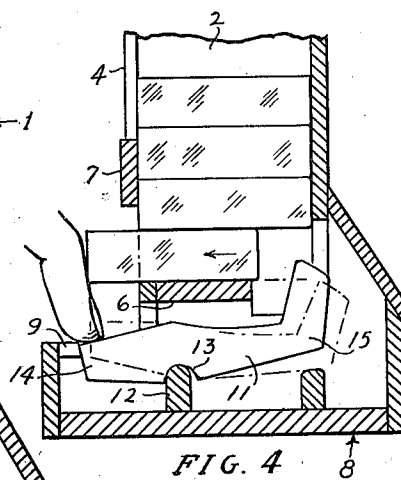


FIG. 4

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VENDING AND DISPLAY DEVICE

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3 Claims. (Cl. 312-63)

The principal object of this invention is to provide a merchandise display and vending device for articles of merchandise in which a plurality of vertical stacks of said articles can be arranged side by side and the lowermost article of each stack may be selectively engaged and moved outwardly so that it can be withdrawn from said stack.

My invention relates particularly to racks in which packages of cigarettes and the like may be stacked and selectively withdrawn. I am aware that it is old in the art to provide display and vending devices of this general type, but my invention is particularly directed to the means by which the lowermost article can be laterally moved from under said stack. A device of this character, and particularly the ejecting device, must be simple, inexpensive and must be easily and positively actuated so that the operator thus can selectively engage one of said articles of merchandise.

I attain the objects of my invention by providing a rack having a plurality of vertically extending compartments. In each of said compartments, a stack of merchandise can be arranged in stacked arrangement upon the floor of said compartment. Extending from the bottom of each compartment and of such size as to permit only one of said articles of merchandise to be displaced laterally therefrom, is an aperture and I provide ejecting mechanism of substantial mass, which mechanism normally is out of engagement with said lowermost article. Said ejector mechanism can be actuated by the operator's finger and said mechanism having substantial mass, will strike the article of merchandise selected a hammer-like blow and drive it outwardly through said aperture until it strikes the operator's finger. The hammer-like blow tends to drive said article of merchandise outwardly, independently of whether there are one or many of the articles of merchandise stacked upon said lowermost article. The operator can immediately and without looking, locate the article because it has struck his finger and it can then be quickly removed from the stack to permit the remainder of the articles in the vertical stack to fall downwardly so as to rest again upon the floor of said compartment in which said articles of merchandise are stacked. I preferably arrange a tray, extending directly below and laterally beyond the vertical stack so that key portions of the ejected devices can be arranged in a bank resembling the black keys of a piano. Said key portions extend upwardly beyond the horizontal plane of said tray as do the

black keys of a piano keyboard, and the operator can thus quickly and almost without viewing said keys, locate the correct one to be actuated.

Further details of my invention are hereinafter described with reference to the accompanying drawing, in which:

Fig. 1 is a perspective view of a merchandise display and vending device embodying my invention, portions of said display and vending device being shown broken away to permit the illustration of parts lying thereunder which would otherwise be concealed;

Fig. 2 is a front elevation of a fragment of said device shown foreshortened and with parts broken away;

Fig. 3 is a vertical fore and aft section taken on the line 3-3 in Fig. 2, said figure being shown on larger scale and being fragmentary, the ejecting mechanism being shown also in dotted outline in one position as it is arranged when it is actuated, and

Fig. 4 is a similar smaller scaled detail view illustrating the manner in which the lowermost article of merchandise is struck and thrown forwardly by the hammer-like action of the ejector.

A rack embodying my invention comprises a body 1 which I prefer to make of wood, but which may, if desired be made of any other suitable material. Said body is divided into a plurality of compartments 2 by partitions 3. I prefer to leave the front side of said compartments largely open in order that the merchandise therein shall be visible. To this end, I fasten strips 4 along the front edge of partitions 3, said strips being sufficiently wide to retain the merchandise within compartments 2, but not wide enough to cover a substantial portion of the fronts of said compartments. I prefer to make the top portions of said strips narrow in order to leave openings 5 at the top of each compartment sufficiently wide to permit the merchandise to be inserted there-thru.

A strip 6 (Fig. 3) runs the full length of the rack and serves as a floor for compartments 2. I prefer also to provide a strip 7 running the full length of the rack, said strip being positioned at the proper height above floor 6 to permit only one article at a time to be ejected thru the aperture defined thereby. However, strip 7 is not necessary since the wide portions of strips 4 may extend downward a distance sufficient to define an aperture of the required height. In other words, when the lowermost article is ejected it is necessary to hold back the next article. This

may be done either by strip 7 or by the ends of strips 4.

Having described the compartment portion of my invention, I will now describe the ejecting mechanism thereof. I provide a tray 8 directly underneath said compartments, said tray projecting forwardly and rearwardly thereof. The forwardly projecting portion of said tray has a cover 9 in which are slots 10, one for each compartment. Ejector members 11 are pivotally mounted on strip 12, which may run the full length of the rack, forming a common fulcrum for all of the ejector members. I prefer to make the top of strip 12 semicircular, and to provide half-round grooves 13 in the under side of ejector members 11.

I prefer to place said grooves somewhat forward of the center of gravity of said ejector members, and to make the latter of substantial mass. The forward portions 14 of said ejector members project thru slots 10 in the manner of the black keys of a piano, and, when struck, they strike the lowermost article of merchandise a blow in much the same way that a piano wire is struck. The rear portions 15 of said ejector members constitute hammer elements for striking the article of merchandise.

It will be seen that this ejector mechanism may be constructed very cheaply, and that it will function in a very satisfactory manner. When one of the keys is struck, the heavy hammer element quickly ejects an article of merchandise and then returns to its normal position without the aid of springs. Because of the substantial weight of said hammer element, the article is ejected in the same way when it is the last one in the compartment as when the compartment is full. Or if an article is too large for the compartment, the heavy hammer will eject it where a lighter hammer would fail. Furthermore, the article is ejected directly against the finger that strikes the key, and it may, therefore, be quickly grasped.

An important feature of my invention is the quickness with which the desired article may be selected and procured by the attendant, thus saving the time of both the attendant and his customer. Another important feature is the visibility of the merchandise, the customer being thereby enabled to choose his preferred article, and the proprietor being able to see at all times whether or not his stock is running low.

I claim:

1. A merchandise display and vending device comprising a vertical rack defining a plurality of vertically extending compartments each having a floor and adapted to accommodate a plurality of articles of merchandise in stacked arrangement upon said floor, a discharge aperture formed at the bottom of each compartment to accommodate the lateral discharge of one only of said articles from said compartment, a pivoted ejector member for each compartment underlying the latter, having an upstanding hammer element at one end proportioned and arranged to extend into said compartment spaced from said aperture to engage and to drive the lowermost article in said compartment thru said aperture, said ejector member being of substantial mass, pivotally mounted at one side of the center of mass thereof so that said hammer element is normally out of engagement with the article in said compartment, having a finger operated key portion lying laterally to one side of said compartment and directly below the floor

of the latter, and a tray extending from below and laterally to one side of said compartment, upwardly facing slots in said tray, said ejector members lying in said tray and having the key portion of each lying in one of said slots and projecting upwardly from said tray, whereby when said key portion is manually depressed by the operator's finger said ejector member is moved about its pivot, the hammer portion is thrown into engagement with an article and strikes said article, driving it thru the aperture and into engagement with the finger of the operator.

2. A merchandise display and vending device comprising a vertical rack defining a plurality of vertically extending compartments each having a floor and adapted to accommodate a plurality of articles of merchandise in stacked arrangement upon said floor, a discharge aperture formed at the bottom of each compartment to accommodate the lateral discharge of one only of said articles from said compartment, a pivoted ejector member for each compartment underlying the latter, having an upstanding hammer element at one end proportioned and arranged to extend into said compartment, spaced from said aperture to engage and to drive the lowermost article in said compartment thru said aperture, said ejector member being of substantial mass, pivotally mounted at one side of the center of mass thereof so that said hammer element is normally out of engagement with the article in said compartment, having a finger operated key portion lying laterally to one side of said compartment and directly below the floor of the latter, and a common pivot member extending transversely of and below said vertical compartments, a groove arranged on the lower face of each of said ejector members, each of said ejector members being arranged with the groove therein overlying and engaging the upper face of said pivot member, whereby when said key portion is manually depressed by the operator's finger said ejector member is moved about its pivot, the hammer portion is thrown into engagement with an article and strikes said article, driving it thru the aperture and into engagement with the finger of the operator.

3. A merchandise display and vending device comprising a vertical rack defining a plurality of vertically extending compartments each having a floor and adapted to accommodate a plurality of articles of merchandise in stacked arrangement upon said floor, a discharge aperture formed at the bottom of each compartment to accommodate the lateral discharge of one only of said articles from said compartment, a pivoted ejector member for each compartment underlying the latter, having an upstanding hammer element at one end proportioned and arranged to extend into said compartment spaced from said aperture to engage and to drive the lowermost article in said compartment thru said aperture, said ejector member being of substantial mass, pivotally mounted at one side of the center of mass thereof so that said hammer element is normally out of engagement with the article in said compartment, having a finger operated key portion lying laterally to one side of said compartment and directly below the floor of the latter, a tray extending from below and laterally to one side of said compartment, upwardly facing slots in said tray, said ejector members lying in said tray and having the key portion of each lying in one of said slots and

projecting upwardly from said tray, and a common pivot member extending transversely of and below said vertical compartments, a groove arranged on the lower face of each of said ejector members, each of said ejector members being arranged with the groove therein overlying and engaging the upper face of said pivot member, whereby when said key portion is manually de-

pressed by the operator's finger said ejector member is moved about its pivot, the hammer portion is thrown into engagement with an article and strikes said article, driving it thru the aperture and into engagement with the finger of the operator.

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