

[54] **PRICE BOARD SLIDE SWITCH**  
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[58] Field of Search..... 200/11 G, 16 C, 16 D, 200/166 SD

3,705,963 12/1972 King et al..... 200/16 C

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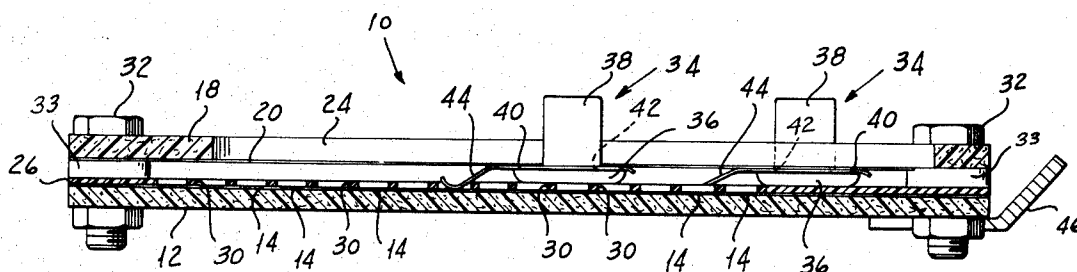
[57] **ABSTRACT**

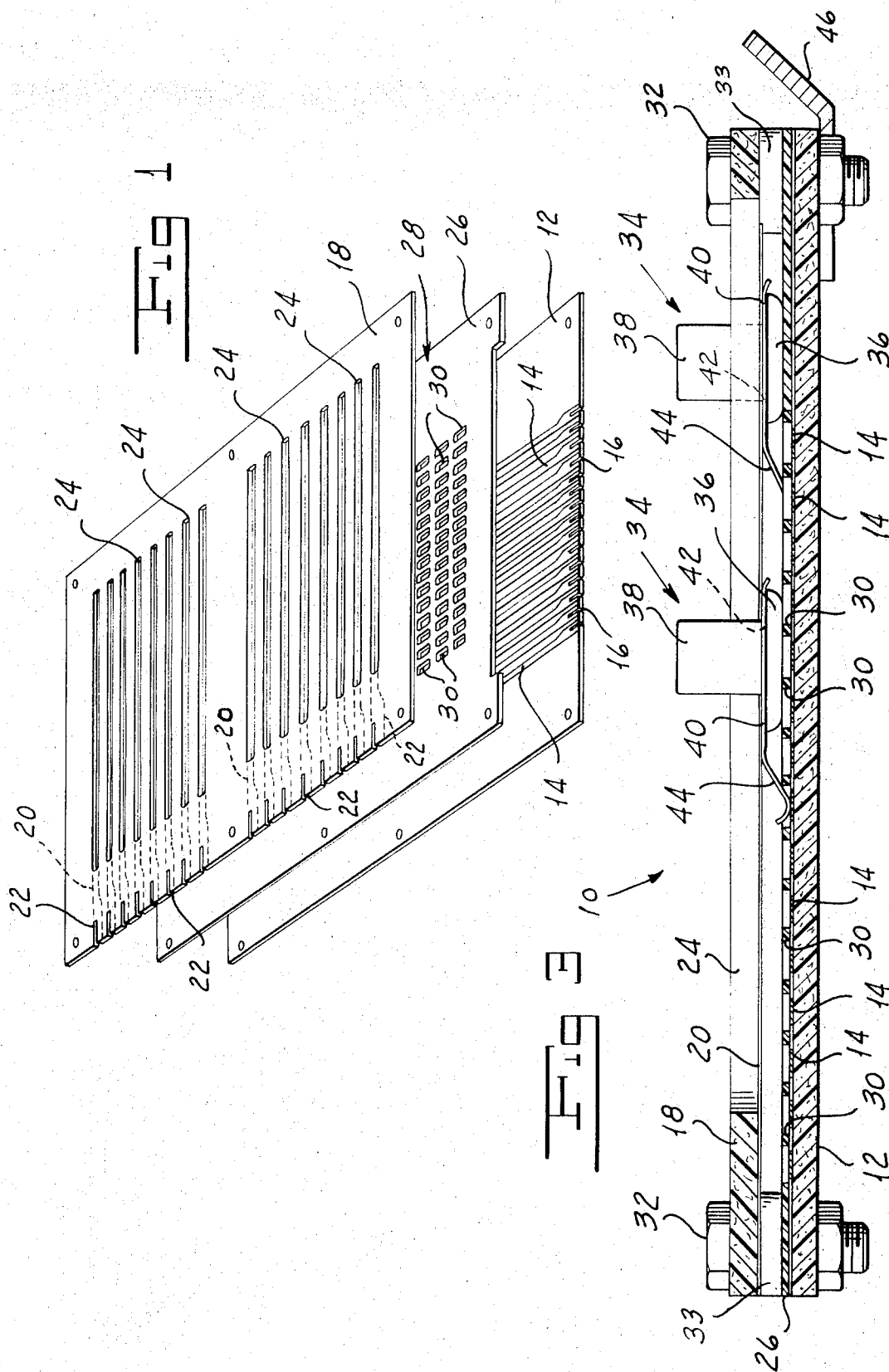
A price board selection switch assembly for facilitating the operation of selectively setting and of changing the various prices at which a plurality of respective merchandising machine delivery units will dispense articles of merchandise in which a plurality of sliding contacts are mounted for movement along respective first printed product line conductors on the undersurface of an upper board and for movement of spring fingers on the contacts over lines of holes in a detent board for selective engagement with second printed price line conductors carried by the upper surface of a lower board and extending in a direction generally perpendicular to that of the first conductors.

**4 Claims, 3 Drawing Figures**

[56] **References Cited**

| UNITED STATES PATENTS |        |                        |             |
|-----------------------|--------|------------------------|-------------|
| 3,027,506             | 3/1962 | Stenhammer et al. .... | 200/16 D UX |
| 3,261,930             | 7/1966 | Sorenson .....         | 200/11 G    |
| 3,205,319             | 9/1965 | Anderson et al.....    | 200/16 C    |
| 2,796,473             | 6/1957 | Davis .....            | 200/16 C    |
| 3,670,117             | 6/1972 | Yancey .....           | 200/16 C    |





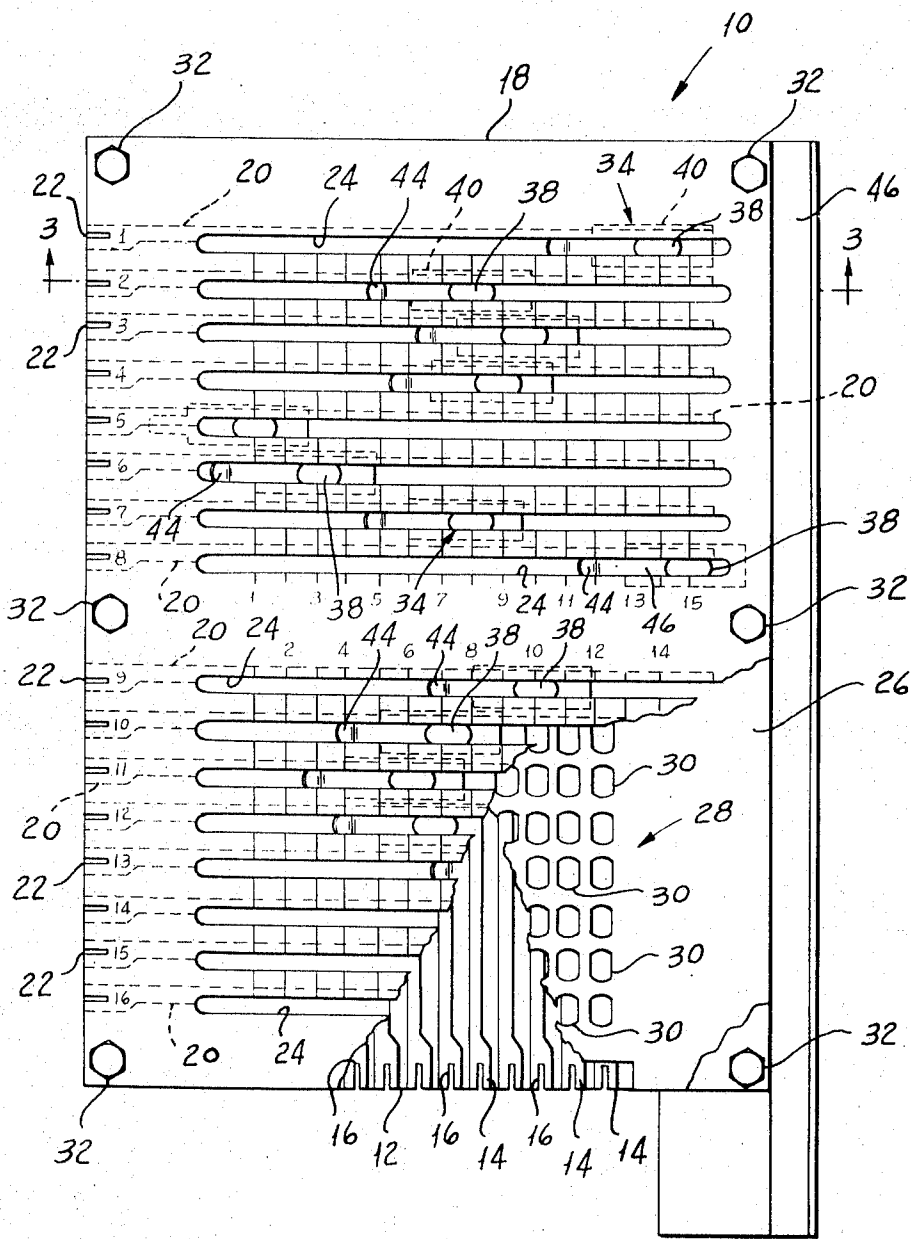


Fig 2

## PRICE BOARD SLIDE SWITCH

### BACKGROUND OF THE INVENTION

There are known in the prior art merchandising machines including a plurality of article delivery units which are adapted to dispense articles of merchandise selling at various different prices. Such machines are provided with mechanism for accepting money and for totaling the sum of money deposited therein. Whenever a sum of money aggregating the purchase price of any article has been deposited in the machine, the corresponding delivery mechanism is enabled to permit it to be activated upon actuation of a suitable selecting mechanism. A plurality of price lines leading from the totalizer system are selectively interconnected with a plurality of product lines to permit operation of the machine in the intended manner.

The operation described above of interconnecting the various price lines leading from the totalizer mechanism to the various product lines, is achieved in the prior art by means of a price board switch arrangement. In one form of price board selection switch which has been employed in the prior art, a plurality of spaced price line conductors carried by one side of a selection board are adapted to be interconnected with a plurality of spaced product lines on the other side of the board, projections of which product lines intersect the price lines. This may be achieved, for example, by means of conductive pins or the like, inserted through the board at locations at which the price line projections intersect the product lines.

While the price selection board described above achieves its intended purpose of permitting the price lines to be selectively interconnected with the product lines, it incorporates a number of defects. First, the removable pins which are employed to make the interconnections may become lost. Secondly, the operation of changing the prices at which the various articles are sold is not as simple as is desirable.

Attempts have been made in the prior art to overcome these problems by providing sliding switches which can make the interconnections and which can be shifted to other positions to change the prices at which articles are sold. One example of such an arrangement is disclosed in Anderson et al U.S. Pat. No. 3,205,319. In the arrangement shown in that patent, a plurality of conductive rails are assembled over a price board with the rails extending generally perpendicularly to a plurality of spaced conductors on the board. A switch element slidably supported on a lower portion of each rail has resilient arms adapted to engage in detents in the upper edge of the rail slot releasably to hold the switch element in any one of a number of positions at which it engages a conductor on the board. Respective manually operable elements are adapted to be actuated to move the switch to its various positions. While this arrangement facilitates the operation of setting and of changing the price at which an article in one of the associated machine delivery mechanism sections is sold, it incorporates a number of defects. First, it is relatively complicated for the result achieved thereby. Owing to that fact and to the nature of the various components of the switch, it is expensive to manufacture. It is, moreover, relatively bulky for the result achieved thereby.

I have invented a price board selector switch assembly which overcomes the defects of selector board

switch assemblies of the prior art. My price board switch assembly facilitates the operation of setting the price at which an article is to be sold by a unit of the machine as well as the operation of changing the price at which any article is sold. My price board assembly is relatively simple in construction. It is inexpensive to manufacture as contrasted with price board selection switches of the prior art. It is compact as contrasted with price board assemblies of the prior art adapted to facilitate the operations of setting and changing prices.

### SUMMARY OF THE INVENTION

One object of my invention is to provide a selector switch price board assembly for facilitating the operations of setting and of changing the various prices at which articles of merchandise are delivered by a multiple unit merchandising machine.

Another object of my invention is to provide a price board selection switch assembly which overcomes the defects of selection switch assemblies of the prior art.

A further object of my invention is to provide a price board selector switch assembly which is relatively simple in construction as contrasted with selector slide switch assemblies of the prior art.

Yet another object of my invention is to provide a price board selection switch assembly which is less expensive to construct than are selector slide switch assemblies of the prior art.

A still further object of my invention is to provide a price board selection switch assembly which is relatively compact as compared with selector slide switch assemblies of the prior art.

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

In general, my invention contemplates a price board selector slide switch assembly for use with a merchandising machine adapted to sell a plurality of articles at various prices in which sliding contacts are adapted to move along product line printed conductors carried by the undersurface of an upper board to permit contact fingers on the contacts to ride over lines of holes in a detent board so as selectively to engage spaced price line conductors on the upper surface of a lower board and in which the lower board conductors run generally perpendicularly to the upper board conductors and in which manually operable elements extending through slots in the upper board permit the contacts to be move to their various positions.

### BRIEF DESCRIPTION OF THE DRAWINGS

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:

FIG. 1 is an exploded view illustrating various elements of my price board selector switch assembly.

FIG. 2 is a plan view of my price board selector switch assembly with parts broken away.

FIG. 3 is a sectional view of my price board selector switch assembly taken along the line 3—3 of FIG. 2 and drawn on an enlarged scale.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings my price board selector switch assembly, indicated generally by the refer-

ence character 10, includes a lower board 12 which may, for example, be 0.093 inches thick epoxy resin-impregnated glass fiber board. The board 12 is provided with a conductive film such as copper coated with nickel and rhodium plating to permit the formation of "printed" circuit conductors 14 by techniques known to the art. It will be seen that I provide a plurality of conductors 14 extending in spaced relationship in one direction along the board 12. Conductors 14 extend to terminal slots 16 in the edge of the board to permit the application of terminals thereto.

My assembly includes an upper board 18 which, like the lower board, may be 0.093 inch thick epoxy resin-impregnated glass fiber board the underside of which carries a conductive film which permits of the formation of printed conductors 20 on the undersurface of the board 18. I provide two groups of the conductors 20 extending across the underside of the board 18 in spaced relationship and in a direction generally perpendicular to the direction of extent of conductors 14 so that projections of the conductors 20 intersect the conductors 14. Each conductor 20 extends to a terminal slot 22 in the left hand edge of the board as viewed in FIG. 1. I form the board 18 with a plurality of slots 24 extending alongside the conductors 20.

My assembly 10 further includes an intermediate detent hole board 26 having a matrix 28 of detent holes 30 therein. I assemble the boards 12, 18 and 26 with the board 26 resting on the upper surface of board 12 and with the board 18 in spaced relationship above board 26 by any suitable means such as by bolts 32 and spacers 33.

My price board selector switch assembly includes a plurality of slide switch assemblies each indicated generally by the reference character 34. Each assembly 34 includes an actuating element having a head 36 adapted to ride over the upper surface of board 26 and having a tab 38 extending upwardly through a slot 24 in the board 18. Each of the bases 38 is adapted to receive a sliding contact 40 by means of an opening 42 in the contact. Owing to the arrangement by virtue of which openings 42 in contacts 40 receive the tabs 38 to permit assemblies 34 to be sandwiched between the boards 18 and 26, the need for employing rivets to make up the contact assemblies has been eliminated, further reducing the cost of producing the price board.

I form each of the elements comprising the base 36 and tab 38 from any suitable insulating material such, for example, as Delrin 500 which is the registered trade mark of E.I. DuPont de Nemours & Co. of Wilmington, Del. for an acetal homopolymer. The contacts 40 may be made of any suitable material such, for example, as 0.006 inches thick phosphor bronze spring material. It will be appreciated that the dimension of each contact 40 is such that it rides along the conductor 20 alongside the slot 24 associated with the hole while being clear of the contact 20 of the slot immediately therebelow as viewed in FIG. 2.

I provide each of the contacts 40 with a spring finger 44 adapted to ride over the row of holes below the slot 24 with which the contact 40 is associated. I provide my assembly 10 with any suitable means, such for example, as a bracket 46 of zinc plated steel or the like for facilitating the mounting of the assembly 10 on the frame of the merchandising machine with which it is to be used.

Preferably I provide the surface of the board 18 with various indicia. First, since there are 16 conductors 20, I place the numbers 1 through 16 alongside the respective slots 22 in the left edge of the board as viewed in FIG. 2. Similarly, I provide indicia alongside the slots 24 for indicating the conductor 14 engaged by the contact arm 44 associated with a lug 38 when the lug 38 is in a particular position. That is to say, since there are fifteen conductors 44 with lug 38 of any assembly 34 adjacent the mark "15" alongside its slot, the arm will engage the extreme right hand conductor 14 as viewed in FIG. 2.

In use of my price board selector switch assembly 10, I connect terminals leading to the respective price terminals of the totalizer mechanism (not shown) with which my machine is used, in the slots 16 so that conductors 14 correspond to respective price lines. Similarly, I connect terminals in the slots 22 to respective delivery units of a machine with which my assembly 10 is used, so that the lines 20 correspond to respective product lines. These connections having been made, I position the lugs 38 of the switch assemblies 34 corresponding to the various products at locations such as will connect the product line 20 to the price line 14 corresponding to the price at which the article is to be sold. More particularly, if product "1" is, for example, to sell at price "14", I position the lug 38 of the uppermost assembly 34 as viewed in FIG. 2 adjacent the mark corresponding to price "14". By virtue of this positioning, the arm 44 of this assembly will engage the conductor 14 next to the extreme right hand conductor 14 as viewed in FIG. 2. Thus, the uppermost product conductor 20 is connected to the next to the right price line. Similarly, if I wish to sell product "2" at price "8", I position the lug 38 of the next to uppermost assembly 34 adjacent to the mark corresponding to price "8" so that the arm 44 engages the eighth from the left price line 14 to connect the second from the top product line 20 to that price line. In this manner, all of the product lines 20 may selectively be connected to the price lines 14 in such a way that the products are vended at different prices or at the same price as the case may be.

It will readily be appreciated that the detenting action of the spring contact arm 44 cooperating with hole 30 maintains all of the slide switches in the positions to which they have been moved and prevents accidental dislodgment therefrom. Whenever it is desired to change the price of the product, the corresponding lug 38 is moved to release the detent action and reestablish that action when the lug has been moved to the mark corresponding to the changed price.

It will be seen that I have accomplished the objects of my invention. I have provided a price board selection switch assembly which overcomes the defects of switch assemblies of the prior art. My assembly permits the prices of various articles to be set in a rapid and expeditious manner and to be easily changed. My price board selector switch assembly is relatively simple in construction as contrasted with slide switch assemblies of the prior art. It is less expensive to manufacture than are slide switch price assemblies of the prior art. It is more compact than are slide switch price assemblies of the prior art.

It will be understood that certain features and sub-combinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of my

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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 price board selection switch assembly including in combination, a first board of insulating material having inner and outer surfaces, a plurality of product line conductors extending in spaced parallel relationship in one direction across said inner surface of said first board, said first board being formed with a plurality of slots extending alongside said respective product line conductors, a second board of insulating material having inner and outer surfaces, a plurality of price line conductors extending in spaced parallel relationship along said inner surface of said second board in a direction intersecting said one direction, a detent board of insulating material formed with a plurality of spaced openings having a spacing between adjacent openings corresponding to the spacing between said price line conductors, means for assembling said first and second and detent board with said inner surfaces of said first and second boards in spaced facing relationship and with said detent board overlying said inner surface of said second board with said openings aligned with said price line conductors, a plurality of contact supports of

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insulating material, each of said supports comprising a body mounted for sliding movement below one of said slots and across said openings and a tab extending through one of said slots and a plurality of contact members of conductive material each of said contact members having a base sandwiched between said body and one of said product line conductors and a resilient arm extending from said base toward said detent board and adapted to engage said price line conductors as said tab moves along said slot, each said resilient arm cooperating with said openings to form detent means for holding said arm in engagement with one of said price line conductors.

2. A price line selection switch assembly as in claim 1 in which said openings comprise a pattern of holes including rows and columns of holes, the spacing between said rows corresponding to the spacing between said product line conductors, and the spacing between said columns corresponding to the spacing between said price line conductors.

3. An assembly as in claim 1 in which each of said contact bases is formed with an opening for receiving the tab of the associated support for readily detachably assembling said support with said contact.

4. An assembly as in claim 1 in which said conductors are printed conductors.

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