Feb. 12, 1952 L. R. AILES 2,585,420

ADJUSTABLE MECHANICAL PRICE MARKER

Filed July 2, 1948

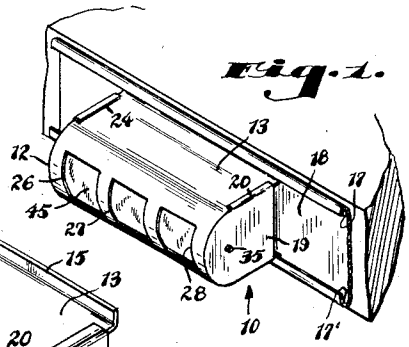


Fig. 1.

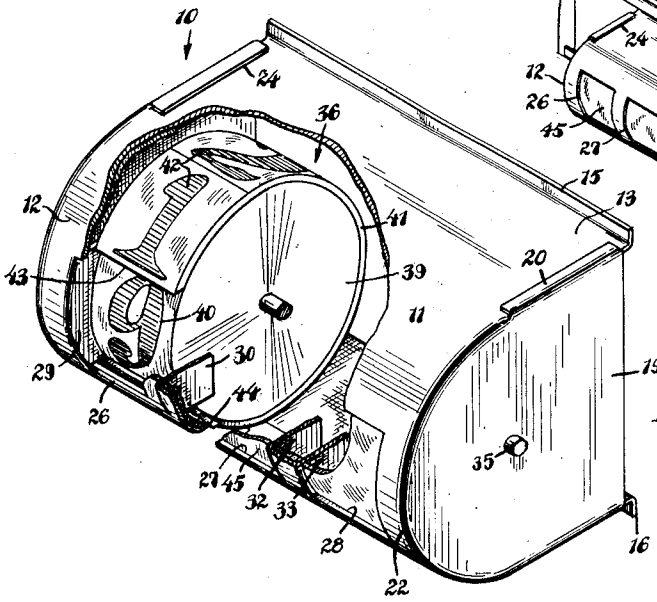


Fig. 2.

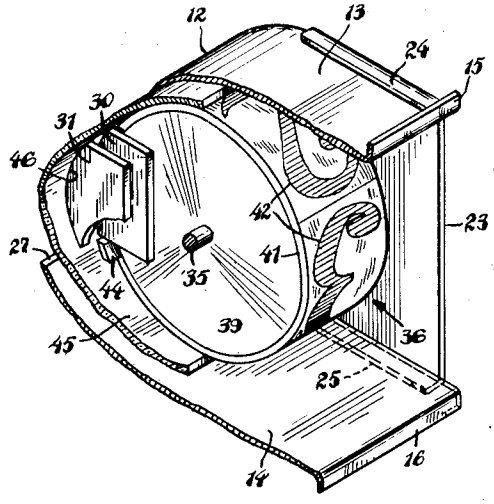


Fig. 3.

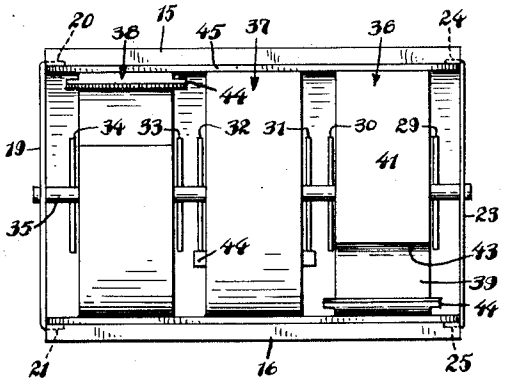


Fig. 4.

INVENTOR.
LAWRENCE R. AILES,
BY: Harold B. Wood.
ATTORNEY.

Patented Feb. 12, 1952 2,585,420

UNITED STATES PATENT OFFICE

2,585,420

ADJUSTABLE MECHANICAL PRICE MARKER

Lawrence R. Ailes, Connersville, Ind.

Application July 2, 1948, Serial No. 36,640

10 Claims. (Cl. 40—68)

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The primary object of the present invention is to provide a device usable primarily in retail stores such as grocery stores, drug stores, hardware stores, and the like, and particularly in those stores in which the customer is expected to help himself from the shelves. It is customary to attach mounting brackets to the forward edges of shelves of such stores, such brackets being of such character as to receive small cardboard tickets, each bearing a numeral; and not only is the task of keeping the price markings always current a very arduous one, but also storekeepers experience difficulty in maintaining a stock of individually-numbered tickets for such use, and keeping the stock of such tickets in proper order for use. The device of the present invention, to which I prefer to refer as an adjustable mechanical price marker, may be mounted in the standard bracket and is manipulable to display any desired price. It is self-contained and eliminates the necessity for maintaining and manipulating a stock of individual tickets.

According to my invention, the device is of such character that it is readily mountable in the standard bracket, readily removable therefrom, readily manipulable by an authorized person to change the marking displayed thereby, and yet substantially protected against manipulation by an unauthorized person.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is a perspective view of my automatic price marker supported in place upon a standard shelf-edge bracket;

Fig. 2 is an enlarged perspective view of the device of my invention, parts being broken away for clarity of illustration;

Fig. 3 is a similar perspective view of a fragment of the marker, as seen from the rear; and

Fig. 4 is a rear elevation of my invention, drawn to a reduced scale.

Referring more particularly to the drawings, it will be seen that my adjustable mechanical price marker comprises a housing indicated generally by the reference numeral 10 and including a body 11 consisting of a continuous sheet of any suitable material which will preferably have a substantial inherent resiliency. I presently believe that sheet steel of 26 gauge is the optimum material for the sheet 11.

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The sheet 11 is bent to substantially U-shape to provide a curved base 12 and substantially parallel legs 13 and 14. The base 12 is curved about an axis located substantially midway between the parallel legs 13 and 14, and said legs project substantially beyond such axis. The leg 13 terminates in an upwardly turned flange 15, while the leg 14 terminates in a downturned flange 16, said flanges being receivable in the upper and lower channels 17 and 17' of a standard shelf-edge bracket 18. An end plate 19, having an upper flange 20 overlapping the edge of the leg 13 and a lower flange 21 overlapping the edge of the leg 14, is assembled with one end of the sheet 11, said end plate having a radiused portion 22 which is substantially coincident with the base 12 of the sheet 11; and a similar end plate 23 is provided with flanges 24 and 25 overlapping the opposite edges of the legs 13 and 14. If desired, the end plates 19 and 23 may be integral with the sheet 11. It will be seen that the flanges 20, 21, 24 and 25 cooperate with the legs 13 and 14 to limit separation thereof, while nothing except the inherent resiliency of the sheet 11 restrains said legs against movement toward each other. Thus, the housing 10 may be readily mounted in a bracket of the character indicated at 18, by exerting pressure against the legs 13 and 14 to bring the flanges 15 and 16 toward each other sufficiently to permit them to pass the overhanging flanges of the channels 17 and 17', then moving the flanges 15 and 16 into registry with said channels, and releasing such pressure to permit the inherent resiliency of the sheet 11 to force the flanges 15 and 16 into the channels 17 and 17'. The housing 10 will thereby be retained in position unless and until the legs 13 and 14 are again squeezed together to move the flanges 15 and 16 from the channels 17 and 17'.

The curved base 12 of the sheet 11 is formed with a plurality of axially spaced open windows 26, 27 and 28, and I prefer to form those windows by slitting the metal at points midway between the axially spaced edges of each window, and along the axially extending edges of each window, and then bending the metal of the sheet 11 inwardly to provide the ears 29, 30, 31, 32, 33 and 34. Thus, the axially spaced edges of each window are guarded by substantially parallel ears projecting generally in the direction of projection of the legs 13 and 14, but terminating short of the axis of curvature of the base 12.

A journal element 35 is supported in the end

plates 19 and 23 with its axis coincident with the axis of curvature of the base 12; and I prefer to mount said journal element in such a manner that it will be nonrotatable with respect to the end plates. Any suitable means of accomplishing this purpose may be used. Independently rotatably mounted upon said journal element, I provide a plurality of wheels, equal in number to the number of windows in the base 12 of the housing, each wheel being positioned in axial registry with one of said windows. In the illustrated embodiment of the invention, I provide three windows and three wheels, indicated generally by the reference numerals 36, 37 and 38, respectively. The wheels are identical in construction, and therefore the specific details of only one will be described.

The dimensions of a device of the character here under consideration are, of course, limited by the environment in which the device is to be used. In order that the device may not project substantially above and/or below the surface of a standard store shelf, it is essential that its vertical dimension shall not exceed 2". Obviously, when the device is used as a price marker, it is essential that it be so constructed that any one of ten numerals may be displayed through each of the windows 26, 27 and 28. Since the vertical dimension of the housing 10 may not exceed 2", it will be obvious that the external radius of each wheel must be less than 1". The circumference of a wheel having a radius of $^{15}/_{16}$" is approximately 5 and $^{14}/_{16}$". If ten numerals are to be arranged upon the periphery of a wheel having a radius of $^{15}/_{16}$", each numeral would have to be not more than ½" high, with a spacing of less than ⅛" between numerals. Experience indicates that markings of the character here under consideration must be made up of numerals having a height of at least ⅞". It follows that it is not practical to try to arrange ten numerals about the circumference of a wheel small enough to be usable in the environment for which my invention is adapted.

Therefore, each wheel 36, 37 and 38 comprises a primary element 39 having a series of numerals 40 arranged upon its periphery; and a secondary element 41 frictionally sleeved upon the external periphery of the primary element for rotation relative thereto, and bearing a series of numerals 42 upon its external periphery. The element 41 is generally opaque but, in the illustrated embodiment of the invention is interrupted to provide a window 43. It will be obvious that, alternatively, the element 41 could be continuous, opaque throughout its major extent, but provided with a transparent section corresponding to the interruption in the illustrated embodiment, to provide a window through which any selected one of the indicia 40 might be exposed to view.

Six numerals of the series from 0 through 9 are arranged upon the periphery of the primary element 39. In the illustrated embodiment of the invention, the radius of the primary element is ⅞". Thus, each numeral on the circumference of said element 39 may be ⅞" high, with a spacing of slightly more than $^{3}/_{32}$" between numerals. The remaining four numerals of the series are arranged about the external circumference of the element 41. Each numeral on the element 41 is, likewise ⅞" high; and it will be clear that there may be a spacing of nearly ½" between the numerals of that series.

Since each of the wheels 36, 37 and 38 registers with one of the windows 26, 27 or 28, and since the axial extent of each wheel is substantially equal to the axial extent of the corresponding window, it will be apparent that each wheel is retained, against substantial axial movement upon the journal element 35, by its engagement between the ears guarding its associated window. Thus the ears 29 and 30 will prevent substantial axial movement in either direction of the wheel 36, while the ears 31 and 32 and the ears 33 and 34 cooperate similarly with the wheels 37 and 38, respectively.

The element 41 of each wheel is provided with a laterally extending finger 44 whose path is intersected by one of the ears cooperating with the corresponding wheel. The finger 44 is so arranged with respect to the window 43 that, when the finger 44 engages one edge of the cooperating ear, the window 43 will register with the associated window in the sheet 11, thereby exposing a portion of the circumference of the element 39 to view through the associated window in the housing. Additionally, the cooperation of the finger 44 with its associated ear facilitates manipulation of the element 39 relative to the element 41. That is, with the wheel 36 in the position in which it is illustrated in Fig. 2, an authorized person, having removed the housing 10 from the bracket 18, may grasp the element 39, from the rear end of the housing 10, and shift the same in a clockwise direction as viewed in Fig. 2, while the element 41 is held against corresponding rotation by the finger 44 engaging the ear 30, to expose, through the window 26, any one of the numerals on the circumference of the element 39. To bring one of the numerals 42 on the element 41 into registry with the window 26, the wheel 36 will be rotated in a counter-clockwise direction from the position illustrated in Fig. 2.

In order to guard against unauthorized manipulation of the wheels, I prefer to close the windows 26, 27 and 28 by means of a transparent element 45. Preferably, that element will be a sheet of Celluloid or other flexible, transparent, plastic material which will inherently conform to the shape of a surface against which it is pressed. The sheet 45 is provided with a plurality of slots 46, one for registry with each of the ears 29, 30, 31, 32, 33 and 34, and is pressed against the inner surface of the base 12 before assembly therewith of the wheels 36, 37 and 38 and the journal element 35. The sheet 45 will, of course, be retained in position by the penetration of said ears through said slots.

Alternatively, of course, the sheet 45 may be a non-flexible sheet suitably contoured to conform to the inner surface of the base 12.

I claim as my invention:

1. In a device of the class described, a housing including a generally U-shaped resilient sheet comprising a curved base and a pair of substantially parallel legs each terminating in a flange projecting away from the companion leg, the curved base of said sheet being provided with window means, end plates associated with said sheet, each end plate being integrally attached to said base but loose with respect to at least one of said legs and further being provided with means cooperating with said legs to limit separation of said legs without limiting movement of said legs toward each other, journal means supported in said housing and extending past said window means, and a wheel mounted on said journal means for rotation about the axis thereof and in registry with said window means, said

wheel carrying indicia to be viewed through said window means.

2. In a device of the class described, a housing including a generally U-shaped flexible sheet comprising a curved base and a pair of substantially parallel legs each terminating in a flange projecting away from the companion leg, the curved base of said sheet being provided with window means, end plates associated with said sheet, journal means supported in said housing and extending past said window means, and a wheel mounted on said journal means for rotation about the axis thereof and in registry with said window means, said wheel carrying indicia to be viewed through said window means, said wheel further comprising a drum element bearing indicia on its periphery and a sleeve element bearing indicia on its external periphery and sleeved on said drum element with its internal surface frictionally engaging, and solely supported on, the periphery of said drum element for rotation relative thereto about said axis, said sleeve element being generally opaque but being provided with a window therein permitting exposure therethrough of any selected one of the indicia on said drum element.

3. In a device of the class described, a sheet of material having a generally U-shaped form to provide a base curved about an axis located substantially midway between the legs of the U and between said base and the ends of said legs, said base being provided with a plurality of openings therethrough spaced longitudinally of said axis, an integral ear located at each longitudinal boundary of each opening and projecting generally in the direction of projection of said legs but terminating short of said axis, a journal element mounted on an axis coincident with said first-named axis, and a plurality of wheels mounted on said journal element for independent rotation about said axis, said wheels being equal in number to said openings and each being positioned in registry with one of said openings, the ears associated with each opening cooperating with the associated wheel to retain the same against substantial axial movement, and each wheel bearing on its periphery a series of indicia selectively exposable through its associated window.

4. The device of claim 3 in which each leg terminates in a flange angularly related to its leg and projecting away from the other leg, and including end plates cooperatively associated with said sheet, each end plate having a portion engageable with each leg to limit separation of said legs without interfering with movement of said legs toward each other.

5. The device of claim 4 in which said journal element is fixedly supported in said end plates.

6. The device of claim 3 including a flexible sheet of transparent material mounted on that surface of said base adjacent said wheels, closing said windows, and provided with a slot for each of said ears, said ears penetrating said slots to support said transparent sheet in position.

7. The device of claim 3 including a sheet of transparent material, curved upon an axis coincident with the axis of curvature of said base and having an external radius substantially equal to the internal radius of said base, said transparent sheet being provided with a slot for each of said ears and being mounted with its outer surface substantially in contact with the inner surface of said base to close said windows, said ears penetrating said slots to support said transparent sheet in such position.

8. The device of claim 7 in which each of said wheels comprises a drum element bearing indicia on its periphery and a sleeve element bearing indicia on its external periphery and sleeved on said drum element with its internal surface frictionally engaging, and solely supported on, the periphery of said drum element for rotation relative thereto about said axis, said sleeve element being generally opaque but being provided with a window therein permitting exposure therethrough of any selected one of the indicia on said drum element.

9. The device of claim 8 in which the sleeve element of each wheel is provided with a finger whose path intersects one of the ears of the base window with which said wheel is associated, said finger being so related to the window in said wheel element that, when said finger is engaged with one edge of said ear, the window in said wheel element will register with the associated base window.

10. For use in a price indicating device or the like, a wheel comprising a drum element bearing indicia on its periphery and a sleeve element bearing indicia on its external periphery and sleeved on said drum element with its internal surface frictionally engaging, and solely supported on, the periphery of said drum element for rotation relative thereto about the common axis of said elements, said sleeve element being generally opaque but being provided with a window therein permitting exposure therethrough of any selected one of the indicia on said drum element.

LAWRENCE R. AILES.

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