United States Patent [19]

Sarier et al.

[11] **3,747,246**

[45] **July 24, 1973**

[54] **INFORMATION DISPLAY APPARATUS**

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[22] Filed: **July 12, 1971**

[21] Appl. No.: **163,537**

[52] **U.S. Cl.** **40/86,** 40/77.4

[51] **Int. Cl.** **G09f 11/02**

[58] **Field of Search** 40/86–95, 77.4, 77.6, 117, 65

[56] **References Cited**

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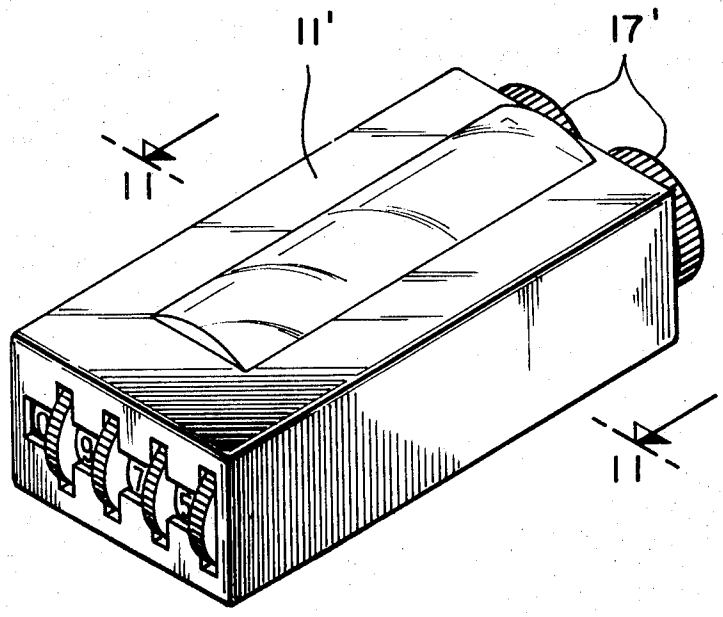
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Assistant Examiner—J. H. Wolff
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[57] **ABSTRACT**

Information display apparatus for selectively displaying and indicating quantitative information concerning foods, stocks, currency and other items having measurable compositional characteristics. The apparatus includes a housing and a pair of rotatable rollers mounted within the housing upon which an elongated flexible sheet is rolled. The sheet contains quantitative information regarding the items and may be viewed through an aperture provided in one side of the housing. External knobs affixed to one end of the rollers permit movement of the sheet and the information within the aperture. A digital register comprising either a plurality of elongated slidable strips, or rotatable cylinders, having numerals printed thereon which may be viewed through rectangular windows provided in the housing, is included to allow the sum total of selected quantitative information to be recorded by the user. Alternate embodiments are considered.

2 Claims, 11 Drawing Figures



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SHEET 1 OF 2

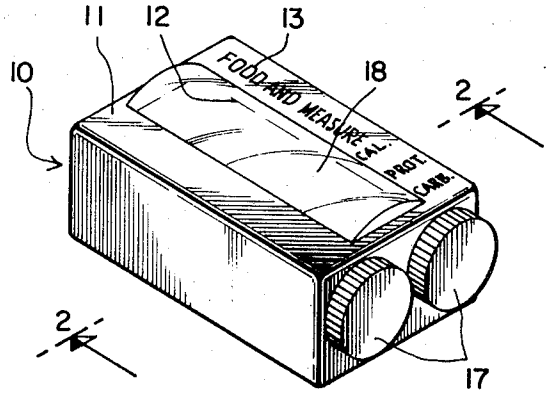


Fig. 1.

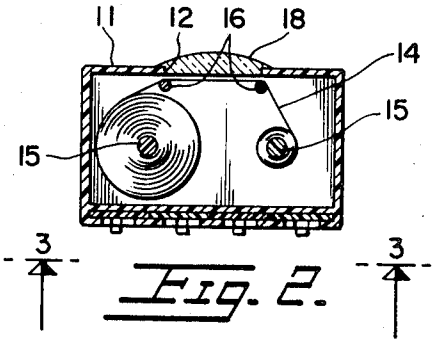


Fig. 2.

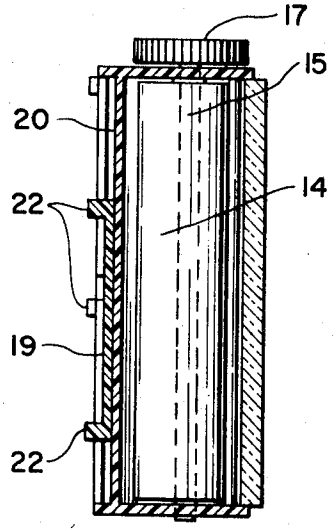


Fig. 4.

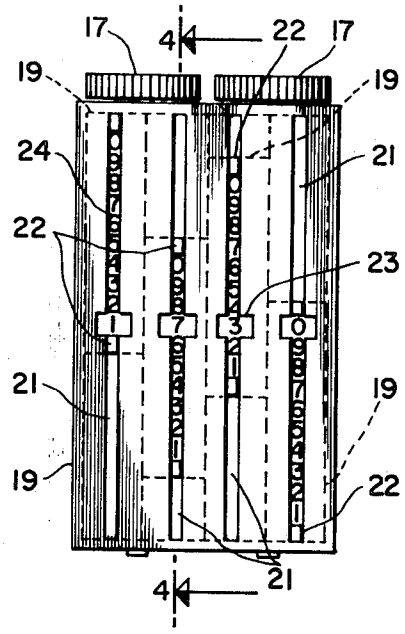


Fig. 3.

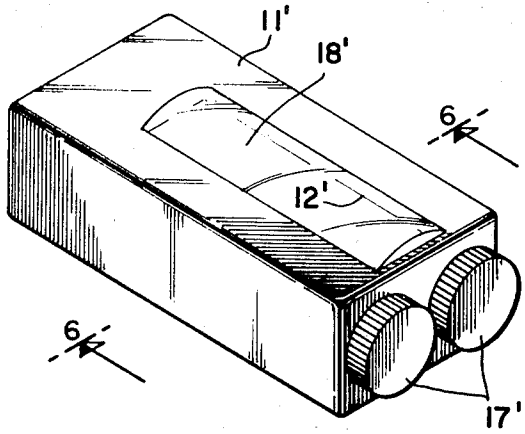


Fig. 5.

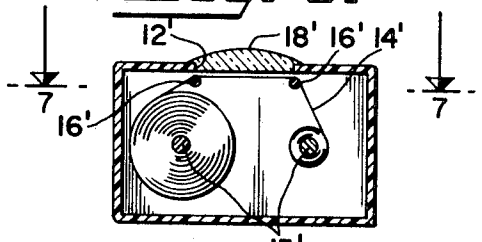


Fig. 6.

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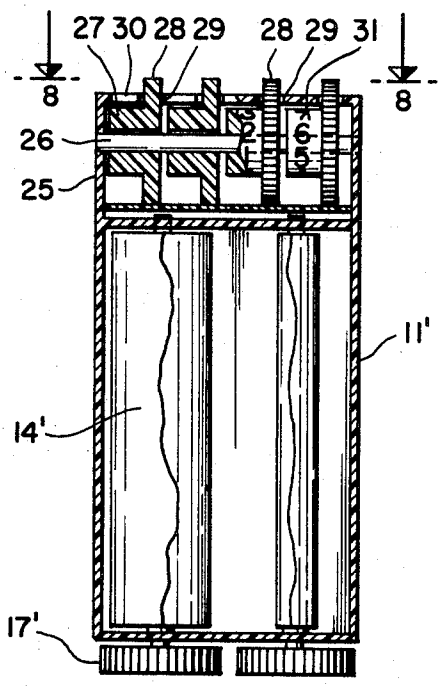


Fig. 7.

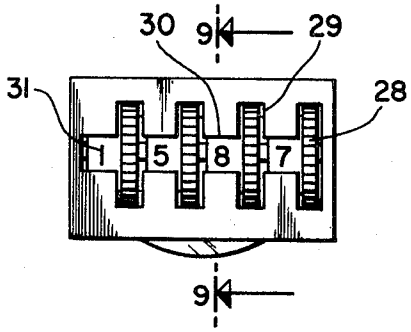


Fig. 8.

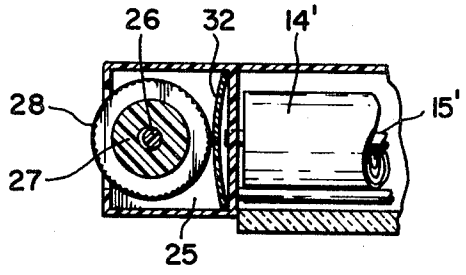


Fig. 9.

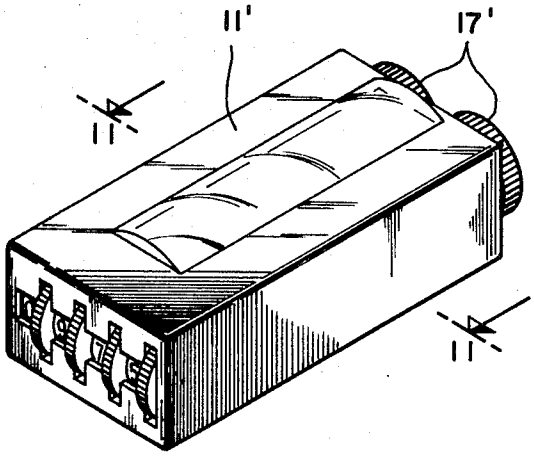


Fig. 10.

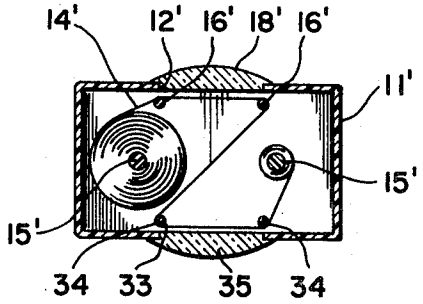


Fig. 11.

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INFORMATION DISPLAY APPARATUS

The present invention relates to an information display apparatus, and in particular, to a miniature register and information indicator for displaying, indicating and recording quantitative information concerning foods, stocks, currency and other items having measureable compositional characteristics.

Accordingly, the present invention provides a display apparatus for selectively displaying and indicating quantitative information including a housing having an aperture provided in one side thereof, and indicia on the external surface of said housing adjacent said aperture. A pair of rollers are mounted in the sides of the housing so as to extend through the interior portion thereof substantially parallel to each other, and are provided with external knobs affixed to one end thereof for permitting rotation of the rollers from the outside of the housing. An elongated sheet of flexible material has its ends attached to the rollers, and carries printed quantitative information concerning the items selected. The sheet is disposed adjacent the aperture and the indicia on the housing, and is movable within the aperture by rotating the knobs provided on the rollers.

The apparatus may include a plurality of elongated strip members, having numerals printed thereon slidably mounted in the housing for recording the sum of selected quantitative information indicated on the sheet. The strip members have rectangular guide members affixed perpendicularly to each end thereof. A plurality of elongated slots, having rectangular windows disposed at approximately the center thereof, are provided in one side of the housing for slidably receiving the guide members and thereby allowing selected numerals printed on the strip members to be positioned in the windows by the user as desired.

Instead of the strip members, the apparatus may include a plurality of rotatable cylinders having numerals printed thereon. The cylinders are mounted in a separate rectangular compartment, affixed to the side of or slidably disposed in the housing, on an elongated tubular rod which has its ends mounted in the walls of the housing. A plurality of rectangular windows are provided in the side of the compartment for allowing the numerals to be viewed and the knurled edges to be rotated. A pair of rollers, similar to those on which the flexible sheet is disposed, may also be mounted in the compartment, and a sheet of material mounted thereon, for recording the desired sums.

The housing may also include a second aperture provided in a side of the housing opposite the first aperture, and the sheet of material may have quantitative information printed on both sides thereof, for permitting the viewing of information on both sides of the sheet simultaneously. A convex magnifying glass or plastic window may also be mounted in the apertures to permit easy reading of the information printed on the sheet.

The sheet may contain information concerning, for example, foods and their amounts of calories, proteins and carbohydrates, or it may contain information concerning stocks and bonds and their high and low prices, dividends, interest rates, etc.

It is therefore an object of the present invention to provide a display apparatus for selectively displaying and indicating quantitative information concerning

foods, stocks, currency and other items having measurable compositional characteristics.

It is another object of the present invention to provide an indicating apparatus having a miniature digital register for recording the sum of measurable characteristics of a plurality of items displayed by the apparatus.

It is a further object of the present invention to provide an indicating apparatus which is simple in design easy to manufacture, and efficient and reliable in operation.

Other objects and features of the present invention will become apparent from the following detailed description considered in connection with the accompanying drawings. It is to be understood, however, that the drawings are designed for the purpose of illustration only and not as a definition of the limits of the invention.

In the drawings, wherein similar reference characteristics denote similar elements throughout the several views:

FIG. 1 is a perspective view of an information display apparatus constructed in accordance with the present invention;

FIG. 2 is a cross-sectional view of the display apparatus taken along section 2—2 of FIG. 1;

FIG. 3 is a bottom plan view of the display apparatus shown in FIG. 1;

FIG. 4 is a cross-sectional view of the display apparatus taken along section 4—4 of FIG. 3;

FIG. 5 is a perspective view of a second embodiment of an information display apparatus constructed in accordance with the present invention;

FIG. 6 is a cross-sectional view of the display apparatus taken along section 6—6 of FIG. 5;

FIG. 7 is a cross-sectional view of the display apparatus taken along section 7—7 of FIG. 6;

FIG. 8 is an end view of the display apparatus taken along section 8—8 of FIG. 7;

FIG. 9 is a partial cross-sectional view of the display apparatus taken along section 9—9 of FIG. 8;

FIG. 10 is perspective view of another embodiment of a display apparatus constructed in accordance with the present invention; and

FIG. 11 is a cross-sectional view of the display apparatus taken along section 11—11 of FIG. 10.

Referring to the drawings, indicating and display apparatus 10 comprises a substantially rectangular housing 11 in which aperture 12 is disposed. Indicia 13, shown by way of example as food and measure, and the amount of calories, protein and carbohydrates contained therein, are printed on the surface of housing 11 adjacent aperture 12. A sheet of flexible material 14, having quantitative information printed thereon, has its ends affixed to a pair of parallel rollers 15 which are rotatably mounted in the sides of housing 11. Sheet 14 is rolled up over each of the rollers in order to store the information carried thereon, and is guided adjacent the aperture by cylindrical guiding members 16. External knobs 17 are affixed to one end of the rollers 15 so that the sheet of material on the rollers may be moved past aperture 12 from outside housing 11. The knobs have a knurled edge to allow the user to grip the knobs easily. Convex magnifying window 18 may be mounted in aperture 12, if desired, in order to permit the printed information to be read more easily. However, this window is merely optional, and is not needed for the user

to read the information on the sheet. It may be constructed of either glass or plastic.

A plurality of elongated strip members **19** are slidably disposed in horizontal slots **20** provided in the bottom portion of housing **11**. Longitudinal slots **21** are also provided for slidably receiving guide members **22** which are affixed perpendicularly to the ends of strip members **19**. Rectangular-shaped windows **23** are provided in the housing at substantially the center of slots **21** so that the numerals **24** printed on strip members **19** may be viewed. End members **22** project past the bottom surface of the housing so that the user may grip the end members and adjust the position of each strip member until the desired numeral appears in window **23**. In this manner, a sum total of the quantitative information printed on sheet **14**, such as, for example, the number of calories consumed during a particular time, may be recorded.

Housing **11** and the other components comprising the indicating apparatus are preferably made of plastic. The top surface of, or the entire housing, may be transparent plastic, if desired. Indicia **13** could then be printed on a separate sheet of material and disposed under the top surface of the housing. However, any suitable material may be used.

Another embodiment of the present invention is shown in FIGS. **5–9**. Housing **11'** is provided with a separate rectangular compartment **25** at its end opposite knurled knobs **17'**. The compartment may be affixed to, or slidably disposed in, the end of housing **11'**. This embodiment of the invention is substantially the same as that shown in FIGS. **1–4**. Housing **11'** is provided with aperture **12'** in which convex magnifying window **18'** may be mounted, if desired. Sheet **14'** is attached to rollers **15'** and is guided past aperture **12'** by guiding members **16'**. Compartment **25** contains elongated tubular rod **26** upon which a plurality of rotatable cylinders **27** are mounted. The cylinders have knurled edges **28** which protrude through rectangular windows **29** provided in compartment **25** so that the cylinders may be rotated. Rectangular windows **30** are provided so that numerals **31** printed on cylinders **27** may be viewed. The cylinders form a digital register so that a sum total of quantitative information provided on sheet **14'** may be recorded. Flexible friction member **32** is mounted in compartment **25** behind knurled edges **28**. Member **32** frictionally engages the edges of the cylinder so that the cylinders remain stationary until rotated by the user. The cylinders may also be replaced by a pair of rollers having a sheet of material affixed thereto, similar to rollers **15** and sheet **14**, upon which the sums may be recorded.

In FIGS. **10** and **11**, another embodiment of the invention similar to that of FIGS. **5–9** is illustrated. Housing **11''** is provided with second aperture **33** disposed exactly opposite aperture **12'** in housing **11'**. Aperture **33** could, of course, be positioned anywhere in the housing in relation to aperture **12'**. Sheet **14'** has printed information disposed on both sides thereof, and is guided past apertures **12'** and **33** by members **16'** and **34** respectively. As in the previous embodiment, sheet **14'** has its ends attached to rotatable rollers **15'** which are controllable from the outside of housing **11** by external knobs **17'**. Convex magnifying window **35** may also be provided to permit easy reading of the data contained on sheet **14'**. This embodiment doubles the amount of information which may be read and stored by the display apparatus. The materials used for the construction of the embodiment are the same as those described with respect to FIGS. **1–4**. Convex windows **18'** and **35** may be either glass or plastic, as desired.

In use, the printed sheet contains information, such as the name of a food, the amount of food, and its respective calorie content, protein content and carbohydrate content. The user rotates knobs **17** to bring the particular food within the view of aperture **12** and may then read the calorie, protein and carbohydrate contents from the sheet. The digital register allows the user to keep track of the sum of any of the quantities, such as total calorie intake for a day. The user must merely add the additional numbers to the total shown in the rectangular windows on the device to keep the sum current.

It should be noted that display apparatus of the present invention may be used to display and record information concerning any particular item and not just food. The high and low prices of stocks and bonds, and their dividends and interest rates, may also be printed on the sheet. Currency conversion tables may also be included to enable the use of the device in another situation. The embodiment shown in FIG. **1** is merely an example and is not intended to limit the scope of the invention.

While only several embodiments of the present invention have been shown and described, it will be obvious to the persons skilled in the art that many changes and modifications may be made thereunto without departing from the spirit and scope of the invention.

We claim:

1. A miniature information display apparatus for selectively displaying and indicating quantitative information, comprising in combination:

an elongated rectangular housing having opposed parallel major surfaces and opposite side and end portions, an elongated rectangular aperture centered within each of said major surfaces;

a plurality of parallel guide members within said housing, each of said members being parallel with and adjacent to each of the longitudinal edges of said apertures, indicia impressed on the outside surface of said housing adjacent said apertures;

a pair of rollers, means for rotatably mounting said rollers within said housing parallel to each other and the longitudinal axis of said housing;

a pair of knurled control knobs, one of said knobs being affixed to one end of each of said rollers, and disposed adjacent each other along one end portion of said housing;

an elongated sheet of flexible material having the ends thereof attached to said rollers, respectively, said sheet being disposed around each of said guide rollers so as to display an opposite portion of said sheet in a parallel arrangement through each of said apertures, said sheet having quantitative information impressed on both sides thereof which cooperates with the indicia on the housing, so that by rotating either of said knobs, the sheet is directed past both said apertures;

a pair of transparent, convex, magnifying windows, disposed in said apertures, respectively, for magnifying the information impressed on said sheet; and

a plurality of cylinders having a concentric central aperture, said cylinders being mounted on a shaft which is affixed to said housing adjacent the other

of said end portions, the longitudinal axes of said shaft being disposed perpendicular to the longitudinal axes of said rollers, said cylinders including a knurled, outwardly extending concentric edge projecting out of said housing for rotating said cylinders, and a plurality of numerical characters imprinted seriatim along the periphery of said cylinders, said housing including a plurality of further apertures, each of which is disposed adjacent one of said cylinders so that the knurled edges of said cylinders extend through said further apertures and said numerical characters on said cylinders are viewable through said apertures, said cylinders providing an adjustable numerical record of the sum of selected numerical quantities printed on said sheet; whereby a running total of the quantative information selected by the control knobs can be maintained by adjusting the visible numerical characters imprinted on the cylinders.

2. The apparatus as recited in claim 1, wherein said housing further comprises a flexible friction member, mounted in said housing adjacent said cylinders, and engaging the knurled edges thereof, for securing said cylinders, and said numerical characters printed thereon, in the positions in said housing selected by rotation of said cylinders.

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