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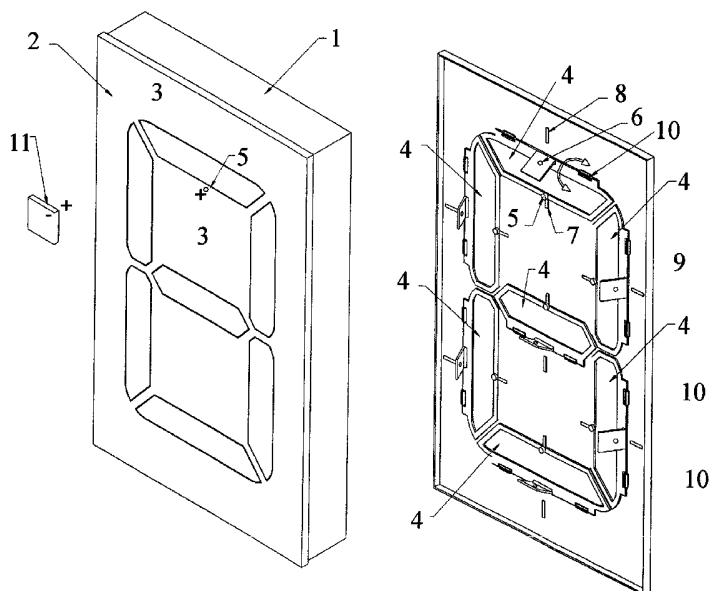
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(54) Title: DIGITAL PRICE INDICATOR



(57) Abstract: A price indicator comprising a numeral display body (2) having segment cavities (3) representing seven segments of the numeral "8" and a transparent sheet (1) mounted behind the numeral display body (2) and covering means (4) movable for making any one of the seven segments of the segment cavities (3) obscure or unobscure characterized in that the covering means (4) are pivotably mounted to inner surface of the numeral display body (2) for each of the segment cavity (3), and in that the covering means (4) comprises plurality of magnets (5,6) drivable by an external magnet (11) and the magnets (5, 6) are associated with metal elements (7, 8) for both closed position corresponding to covering of respective segment cavity and open position corresponding to uncovering of respective segment cavity.

DIGITAL PRICE INDICATOR

TECHNICAL FIELD

- 5 This invention relates to a price indicator for mainly gas or petrol stations and particularly relates to pivotable covering means, preferably flaps, rotated by a magnetic-based pivot system so that transparent plate can be detected by an observer for having the numerical information of the price indicator.

Price indicators have been successfully practiced over the world by the major
10 reason of fluctuating prices. One of the most evident application fields of the price indicators is the gas or petrol stations wherein prices are not stable and perhaps would not be stable ever due to global economic effects.

Notwithstanding the fact that the price indicators are intended to employ for displaying the prices itself, they may serve any information dissemination,
15 particularly based upon numerical information for the public. This is the reason that the price indicators have relatively higher constructions for exhibiting the information to the observers.

Having high constructions, the price indicators may not be facilitated to change numerical information manually as desired. Since the basic structure of a price list
20 comprises a background medium and a number pattern having different colors to be detected by the observers.

BACKGROUND ART

The present invention concerns a price indicator of the kind comprising a plate (or display body) having segment cavities representing seven segments of the
25 numeral "8" and a transparent sheet mounted behind the plate and covering means movable for making any one of the seven segments of the segment cavities obscure or unobscure. Such a price indicator is known from EP 0 810 573 disclosing opaque plates associated with transparent areas forming the numeral "8". The opaque plates are movable through magnetic mechanism comprising

metal chips which are welded to springs. Therefore the opaque plates are driven to make planar movement so that the transparent sheet behind the opaque plate can be revealed or not as desired.

Another and perhaps more primitive, application is based upon manually replacing preformed numerals by means of holders having magnets or rubber suction cups at one end thereof.

More complicated proposals are those employing semi or full automatic embodiments. For example, replacing of the numerals through electronic technology is one of the recently encountered proposals.

While having several advantages of the embodiments currently in use such as operation simplicity, automatic controllability and so on, known price indicators have some evident disadvantages. For example, manually replaced price indicators requires considerable labor and are vulnerable in respect of external effects including moisture, air dust etc., since a protective means can not be located over the numbers for such a structure.

In the structure disclosed in EP 0 810 573 height difference between plate surface having the numeral and covering means is evidently a disadvantage that leads to light reflection and resulting a color difference between plate surface and covering means. This color difference deprives the function of the price indicator.

As for the other proposals based on electronic and semi or full automatic technologies, as known a person skilled in the art, these kind of structures are inevitably expensive and requires huge investment costs which is doubtful to be exploited thereof by every practitioner.

DESCRIPTION OF THE INVENTION

The object of the present invention is to provide a price indicator of a kind which can be effectively operated without allowing light reflection and color difference between covering means (closing flaps) and plate (display body) surface.

Another object of the present application is to provide a price indicator operated by a magnetic force and enabling relatively simple and cost-effective embodiment.

In accordance with the invention, these objects are accomplished in a price indicator of the above mentioned kind in that the covering means, closing flaps, in particular, are pivotably mounted to inner surface of the numeral plate, so as to cover a numeral display body, for each of the segment cavity, and in that the closing flaps comprise a plurality of magnets drivable by an external magnet and associated with metal elements for both closed position corresponding to covering the segment cavity and open position corresponding to uncovering the segment cavity.

- 10 A price indicator formed in accordance with the present invention has a number of advantages. Since the closing flap is pivoted by means of the force facilitated through same poled magnets, i.e. external magnet and the magnets mounted on the closing flap, there is no height difference between the numeral display body surface and the covering means (closing flap) formed, therefore there will be neither light reflectance nor color difference occur between the numeral display body and the covering means (closing flap). Furthermore, replacing the numeral is so easy that it merely requires an external magnet having the same pole than the magnets on the closing flap.

DESCRIPTION OF THE FIGURES

- 20 Further objects and advantages of the present invention will become apparent upon reading the following description taken in conjunction with the appended drawings wherein:

Figure 1A illustrates the perspective view of the price indicator wherein closing flaps are all in closed position in conjunction with the present invention.

- 25 Figure 1B illustrates the perspective view of the rear side of the numeral display body wherein closing flaps are all in closed position in conjunction with the present invention.

Figure 2A illustrates the perspective view of the price indicator wherein closing flaps are partly in closed position in conjunction with the present invention.

Figure 2B illustrates the perspective view of the rear side of the numeral display body wherein closing flaps are partly in closed position in conjunction with present invention.

REFERENCE NUMBERS OF THE COMPONENTS

- 1 Transparent sheet
- 2 Numeral display body
- 3 Segment cavity
- 4 Closing flap
- 5 Closing magnet
- 6 Opening magnet
- 7 Closing magnet connecting rod
- 8 Opening magnet connecting rod
- 9 Magnet holder
- 10 Pivot bearing
- 11 External magnet

5

DETAILED DESCRIPTION OF THE INVENTION

Figure 1A illustrates the perspective view of the price indicator wherein closing flaps are all in closed position in conjunction with the present invention and Figure 1B illustrates the perspective view of the rear side of the numeral display body wherein closing flaps are all in closed position in conjunction with the present invention.

According to the figures, there are 7 segment cavities (3) grooved on the numeral display body (2) to form the numeral "8". Numeral display body (2) is the fr

surface and can be detected by the observers. Closing flaps (4) are mounted on the rear surface of the numeral display body (2) and can not be detected by observers when open. The number of closing flaps (4) is 7 for corresponding edges of the segment cavities (3). Closing flaps (4) are mounted beside corresponding segment cavity (3) by appropriate attachment means like pivot hinges therefore defining a pivot bearing (10).

The external surface of the closing flaps (4) are dyed to same color with the numeral display body (2), so when they are in the closed position, segment cavities (3) do not allow the color that is induced by the transparent sheet. Therefore they cannot be detected by an observer.

As seen in the Figure 1B and 2B, the closing flaps (4) are pivotable around pivot bearing (10) axis. There are pluralities of magnets mounted to the closing flaps (4), preferably one closing magnet (5) is mounted to longitudinal edge which is transversal to the edge of the pivot bearing (10) of the closing flaps (4) and other opening magnet (6) is mounted to a magnet holder (9) attached to the pivot bearing (10) axis.

In closed position, the closing magnet (5) is in contact with a closing magnet connecting rod (7) placed on the rear side of the numeral display body (2). When shifting the closing flaps (4) from closed position to open position, an external magnet (11) is brought closer from external surface of the numeral display body (2) to the closing magnet (5), the poles of the former and the latter are the same so that the magnetic force induced provides detachment of the components closing magnet (5) and closing magnet connecting rod (7). Once the components are detached, the closing flap (4) is pivoted around the axis of pivot bearing (10) therefore leading the closing flap (4) to open position.

In order to hold the closing flaps (4) in open position, an opening magnet is mounted preferably to a magnet holder (9) which is attached to alongside of pivot bearing (10) axis. In the open position, opening magnet is in contact with opening magnet connecting rod (8) placed on the rear side of the numeral display body (2).

Figures 2A and 2B schematically illustrates formation to display "7", as the close flaps (4) forming the number "7" are held in open position, the color provided the transparent sheet (1) is detected through the segment cavities (3) observers.

- 5 In the preferred embodiment of the invention, numeral display body (2) thickness is 2-4 mm. and the material thereof is an opaque self-colored or folio cover plastic. The closing flap (4) thickness is 1-3 mm. and made of a plastic-based material.

- 10 Preferably, the numeral display body (2) is coated by a sufficiently thin transparent covering so that the display would not be affected by the external conditions such as moisture, dust and so on.

The external magnet (11) is optionally engaged to an end of a stick having sufficient length so that the external magnet (11) and the open and close magnets (5,6) can be associated.

15

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CLAIMS

1. A price indicator comprising a numeral display body (2) having segment cavities (3) representing seven segments of the numeral "8" and a transparent sheet (1) mounted behind the numeral display body (2) and covering means (4) movable for making any one of the seven segments of the segment cavity (3) obscure or unobscure characterized in that the covering means (4) is pivotably mounted to inner surface of the numeral display body (2) for each of the segment cavity (3), and in that the covering means (4) comprises plural magnets (5,6) drivable by an external magnet (11) and the magnets (5,6) are associated with metal elements (7,8) for both closed position corresponding to covering of respective segment cavity and open position corresponding to uncovering of respective segment cavity.
5
2. A price indicator as claimed in claim 1, characterized in that the covering means (4) is a closing flap (4).
10
3. A price indicator as claimed in anyone of the preceding claims, characterized in that a pivot bearing (10) bears the covering means (4) pivoting around axis of the pivot bearing (10).
15
4. A price indicator as claimed in anyone of the preceding claims, characterized in that in the closed position, a closing magnet (5) preferably mounted along longitudinal edge which is transversal to the edge of the pivot bearing (10) is in contact with a closing magnet connecting rod (7).
20
5. A price indicator as claimed in anyone of the preceding claims, characterized in that in the open position, an opening magnet (6) preferably mounted to magnet holder (9) attached to the pivot bearing (10) is in contact with opening magnet connecting rod (8).
25
6. A price indicator as claimed in anyone of the preceding claims, characterized in that the external magnet (11) has the same pole with that of the opening and closing magnets (6,5), whereby as the external magnet (11) is brought close

to the magnets (6,5), the covering means (4) is pivoted around the axis of pivot bearing (10).

- 5 7. A price indicator as claimed in anyone of the preceding claims, characteri
in that the numeral display body (2) is coated by an adequate thin transpa
covering for insulating the numeral display body (2) from external effects s
as dust, moisture etc.

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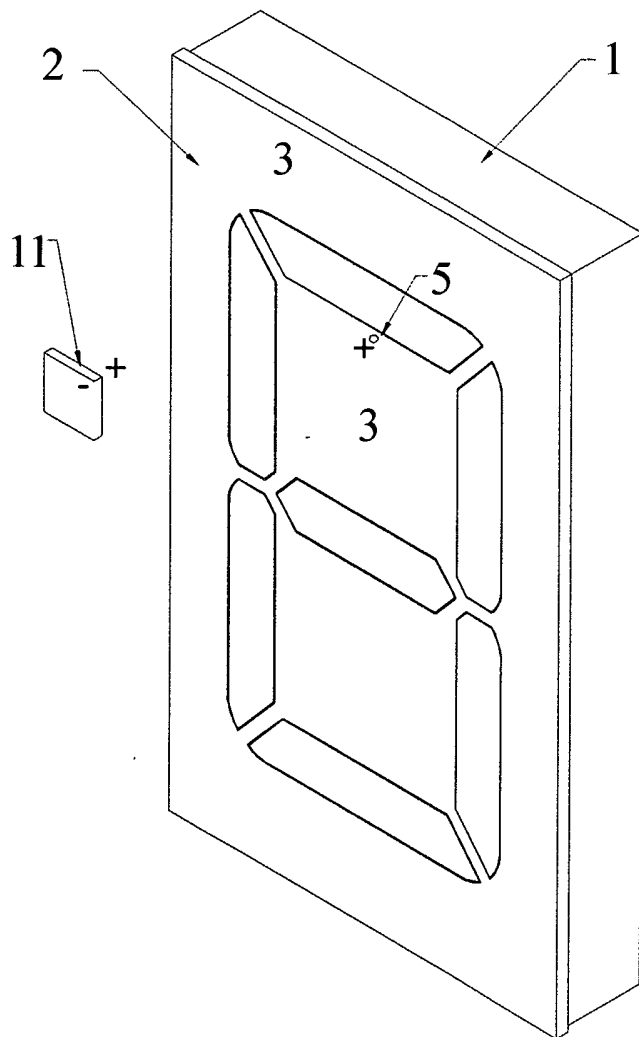


FIG. 1A

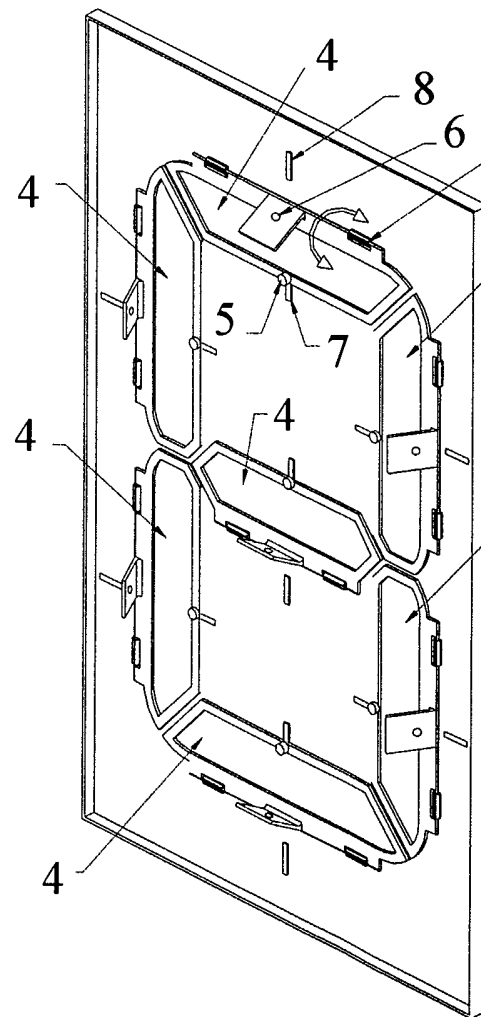


FIG. 1B

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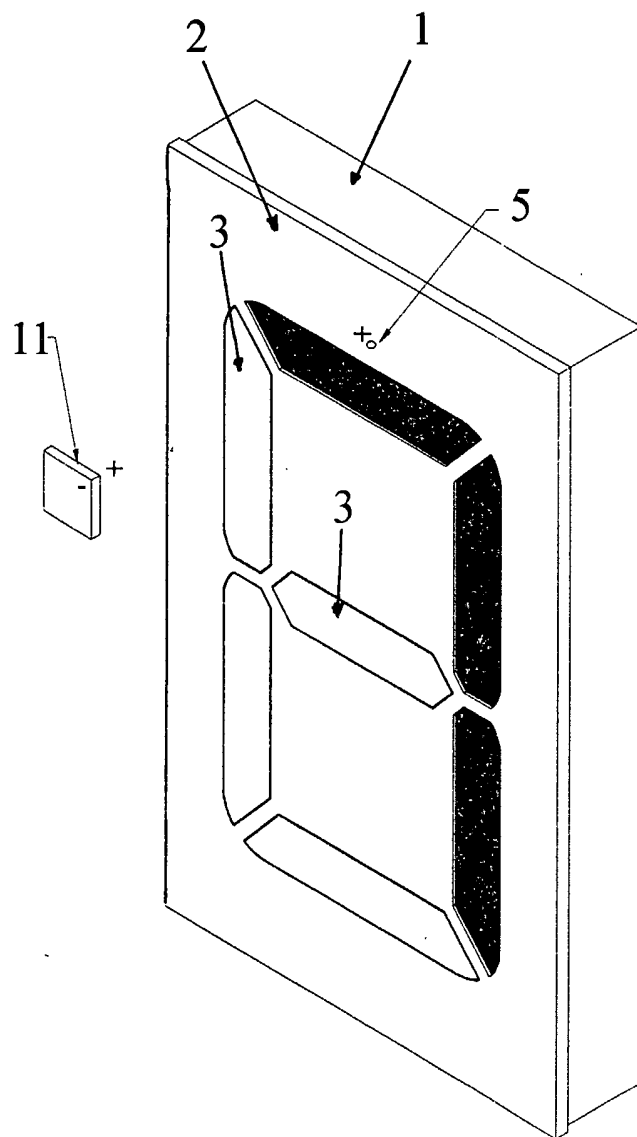


FIG. 2A

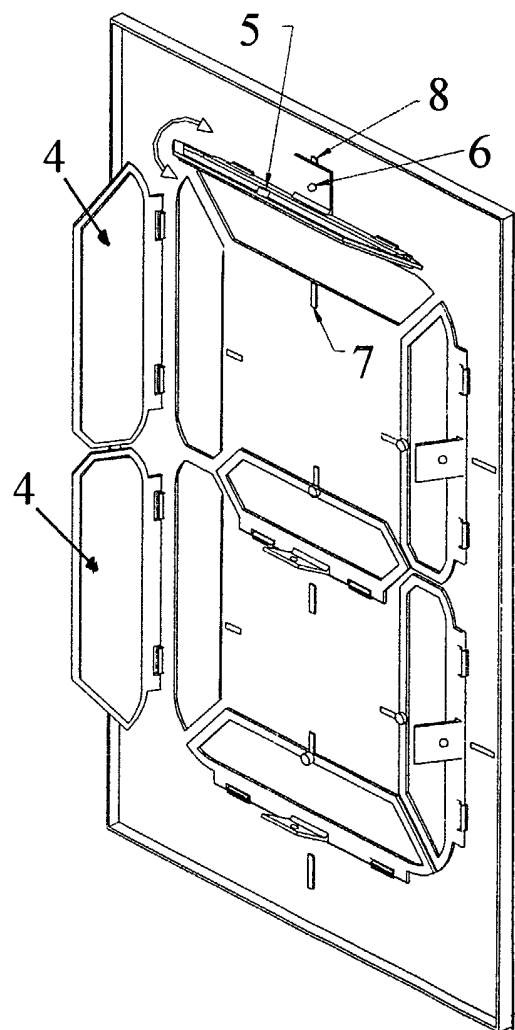


FIG. 2B

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G09F9/37

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 810 573 A (NUOVO PIGNONE SPA) 3 December 1997 (1997-12-03) cited in the application claim 1; figure 1 ---	1-7
A	FR 2 640 790 A (IND ENTREPRISE) 22 June 1990 (1990-06-22) abstract; figure 1 ---	1-7
A	US 4 161 832 A (BERGAMINI GIORGIO) 24 July 1979 (1979-07-24) abstract; claim 1 -----	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/TR 02/00038

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