May 29, 1945. M. C. G. MØLLER 2,376,932

SIGN

Filed Dec. 21, 1939

Fig. 1

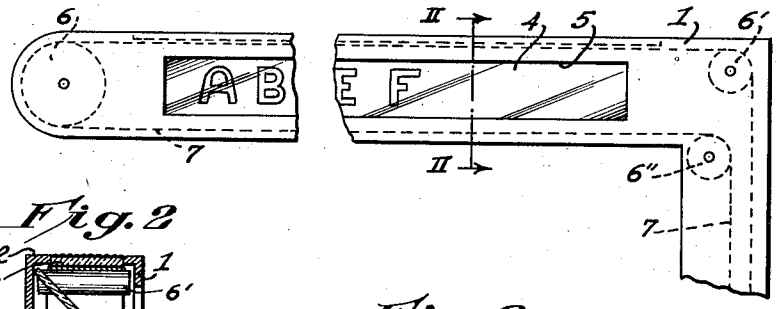


Fig. 2

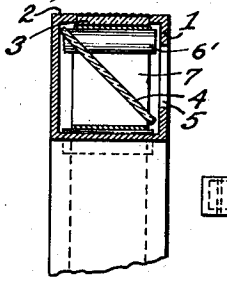


Fig. 3

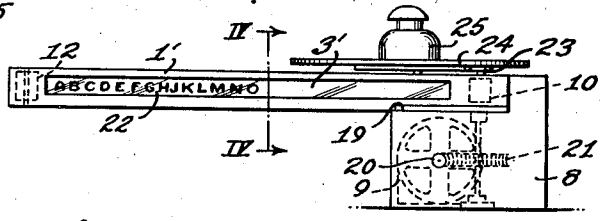


Fig. 4

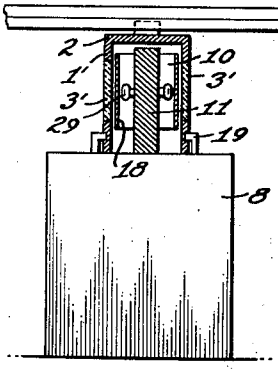


Fig. 5

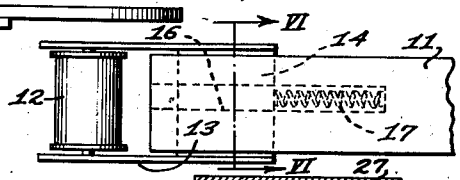


Fig. 8

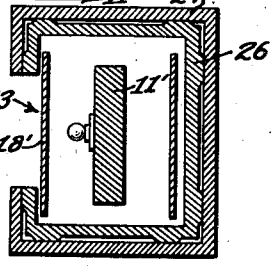


Fig. 6

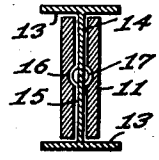
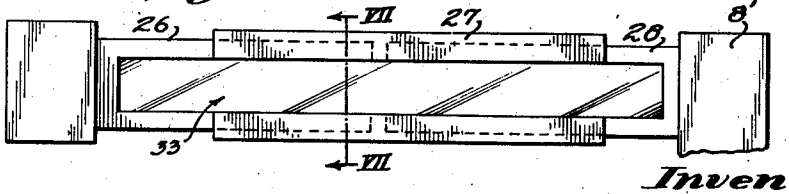


Fig. 7



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UNITED STATES PATENT OFFICE

2,376,932

SIGN

Magdalin Christian Gleerup Møller, Copenhagen, Denmark; vested in the Alien Property Custodian

Application December 21, 1939, Serial No. 310,291

6 Claims. (Cl. 40—32)

My present invention relates to signs, and more particularly to signs having a movable text or display strip inserted in the path of the light rays from either daylight or artificial lights.

Thus, the invention has for its objects, first, to produce a sign in which a long movable text can be used, that is gradually moved past a window in which the text will be visible either directly or indirectly in a mirror; secondly, to construct said sign in such a manner as to make it possible to place the same for advertising purposes in a shop window, in street cars, or in other places, where a small but effective sign is desired; third, to build a sign which needs no care, and which will run continuously when first started, by using only a small amount of electric current; fourth, to produce a sign by means of which it is possible, in combination with the advertising text, to display the goods in a very effective and attractive way.

With these objects in mind, the sign may, in accordance with the invention, be constructed in different ways.

In my said invention, a text-strip may be used which is guided over two rollers in one bight.

In order to attain as brilliant an effect as possible, especially when a perforated strip is used, I may fit the glass pane of the window with optically acting projections or the like, preferably small hemispheres of about the same size as the perforations, thereby the advantage is attained that the small projections on the front face of the pane will have the effect of small luminous lamps which owing to the motion of the strip will have a gleaming appearance. The mirror should be adjustable, in such a manner that the light reflected towards the pane will act as favourably as possible. It may be of special advantage to arrange the mirror to be swung in such a manner that during daytime it can catch the daylight and project the same through the holes in the perforated strip, while during the night it can be swung into such a position that it will catch the light from lamps disposed either within the casing of the sign, or outside the same. The mirror may be partly transparent, if desired, in such a manner that light from the rear side of the mirror can also be taken into use, and the mirror may be connected to contacts serving to close and break the electric-current supply to the lamp, in such a manner that the same will be extinguished when the sign acts as a daylight sign.

In many cases it is important that the portion of the sign that contains the opening, through which the text of the sign can be read, should be of very small dimensions, in such a manner that it easily can be disposed at a point at which the text is desired to be read. The motor with driving pulley belonging thereto and serving to feed the ribbon forwardly may then be disposed at a hidden place. It becomes possible thereby to dispose such signs at points where otherwise they could not be placed, owing to the space they would occupy. This applies especially to the mounting in store windows or similar places.

According to the invention, this object is attained in that a casing or box is fitted with a long and narrow box part enclosing the forwardly moving and returning parts of the ribbon, and which contains the openings through which the text can be read.

The invention comprises also special constructions of the narrow box part by which the field of usefulness of the same is increased.

The box part may be detachably fastened to the casing encircling the driving motor, and may enclose a rod disposed thereon and supporting, at its free end, a spring-actuated supporting roller for the ribbon part running forth and back through the box part.

Thus an easy exchange of the ribbon is rendered possible, if it is desired to alter the text.

In order that the sign may easily be adjusted to windows of various sizes, it is preferable to let the box part be telescopic, so that the same can be pulled out or pushed in, all according to the conditions of space at the place where the sign is to be placed.

The box may further be fitted with lighting devices of a kind commonly known. Outside the box part, the ribbon may move in any conventional manner. Many bights may pass over many rollers, in such a manner that a very long ribbon with a correspondingly long text can be contained in the box enclosing the driving motor. It is, however, also feasible to dispose a long ribbon forming several bights and passing over several rollers, in the long and narrow box part.

The entire sign with the driving mechanisms belonging thereto may also be disposed in a drawer adapted to be pulled out, and again pushed into position, in the apparatus in which the sign is disposed, for instance a vending machine.

In the drawing forming part of this specification and in which similar numerals indicate corresponding parts:

Figure 1 shows a sign in side elevation.

Figure 2 is a section, taken on the line II—II of Figure 1.

Figure 3 shows an elevation of another embodiment of the invention.

Figure 4 is a section, taken on the line IV—IV of Figure 3.

Figure 5 shows the extreme end of a supporting bar for the band on an enlarged scale.

Figure 6 is a section, taken on the line VI—VI of Figure 5.

Figure 7 is a side elevation of still another embodiment of the invention.

Figure 8 is a section, taken on the line VIII—VIII of Figure 7.

The sign consists essentially of a box 1 fitted with a cover 2 which in the construction shown in Figs. 1 and 2 does not cover the entire upper side of the box, but leaves an opening with a window-pane 3 free, so that light from above can strike an obliquely disposed mirror 4 provided in the box, in such a manner that the same will project the light rays forward through an opening 5 in the front face of the box. Just behind the pane 3, a strip 7 is passed over rollers 6, 6' and 6''. The strip 7 may preferably be made from an opaque material, for instance black paper, in which a text is produced by perforation.

The strip 7 should preferably be endless, and be moved forward past the pane 3 by means of a motor, disposed in the lower part of the box 1 not shown on Figs. 1 and 2.

Instead of perforated letters or the like on the strip, transparent letters or dark letters on a transparent background may be used.

On account of the strip 7 being directed quite closely past the pane 3, no light can escape through the pane, without having passed the strip.

As it may be of importance, in many cases, that the box enclosing the window with the strip and the mirror should take up as little space as possible, the driving motor for the same may be disposed outside of the box. The box may then be dimensioned in such a manner that it does not take up much more space than the strip, neither vertically nor horizontally, and the strip may be returned along the box, on the other side of the mirror, as shown in Figs. 1 and 2.

The sign shown in Figs. 3–6 consists mainly of a box 8 in which a driving motor 9 for a driving pulley 10 is disposed. To the top side of the box a long bar 11 is attached which at its free end carries a supporting roller 12 which is journalled in two plates 13 united by a transverse plate 14 inserted in a slot 15 formed in the end of the bar 11 and terminating in a hole 16 in which a spring 17 is inserted which tends to press against the plate 14 and, thereby, the roller 12 in an outward direction. And endless text ribbon 18 passes around the rollers 12 and 10. On the upper side of the box 8 keys 19 are provided which can engage corresponding grooves in the side of the long narrow box part 1' which tightly encloses the ribbon parts passing around the rollers 12 and 10, and is fitted with openings with corresponding panes 3' through which the letters 22 on the ribbon 18 can be read.

When the motor 9 through the gearing 20, 21 sets the roller 10 into a rotary motion, the text ribbon will be moved forward past the opening panes 3', and the advertising text can then be read through the same. The box 8 can be disposed in a hidden place, so that merely the long narrow box part 1' will be visible.

The driving roller 10 may support a friction roller 23 disposed outside of casing 8 or a gearwheel, which is in contact or engagement with a disc 24 which is rotatably disposed on the top side of the sign, and thus will be rotated simultaneously with the motion of the text ribbon. On the disc, articles 25 to be displayed can be placed, and the public can thus observe the same from all sides during their rotary motion. The advertising value will be enhanced by displaying on the disc 24 the articles described in the movable text. In order to make the text visible electric lamps 29 are disposed in the box 1.

In the construction shown in Fig. 7, there is provided, on the upper side of the motor box 8', a box consisting of three parts 26, 27 and 28 forming a telescoping long and narrow box part enclosing the text band. By this construction the advantage can be attained that the length of the sign can easily be adjusted according to the space conditions at hand, as the box part 26—28 can be pulled out or pushed together.

Sections 26 and 28 of the telescoping box of Fig. 7 are similar and each are slidably engaged within the central section 27 in the manner shown in Fig. 8. The sign of Figs. 7 and 8 is shown as having a bar 11' which is similar to bar 11 and which carries means such as electric lamps for illuminating the text ribbon or endless band 18' on which the advertising matter appears. Each of the box sections 26, 27 and 28 is provided with a window, generally indicated as 33 and through which the text ribbon 18' is observable.

I claim:

1. In a display device in combination with an enclosure having a motor therein, an elongated enclosure extending from said first enclosure, and formed of a plurality of telescoping sections, each of said sections being provided with an opening, the sections when engaged with each other forming said elongated enclosure and the openings in the sections forming a window which extends substantially throughout the length of the elongated enclosure, an endless indicia-bearing display strip in said elongated enclosure, said elongated enclosure having means for throwing light on said strip, rollers journalled within said elongated enclosure and driven by said motor, said rollers carrying said display strip and being so disposed as to provide a space between opposite portions of the strip, and a flat bar member disposed in said space and forming a support for at least one of said rollers.

2. In a display device in combination with a box having a motor therein, a bar carried by and having one end extending from said box, a roller journalled in said box adjacent and driven by said motor, a second roller supported on said bar for rotation beyond the free end of said bar, an endless display strip movable over said rollers, enclosure means secured to said box and surrounding said bar and the roller carried thereby, said enclosure means being provided with a window through which said strip is visible, and means provided in the enclosure means for illuminating said strip.

3. In a display device, the combination set forth in claim 2 wherein means are provided for supporting said second roller in journals movable towards and away from the free end of said bar.

4. In a display device, the combination set forth in claim 2 wherein said second roller is mounted in journals movable towards and away from the free end of said bar and wherein spring means

carried by said bar constantly urge the second roller away from the free end of the bar.

5. In a display device, the combination set forth in claim 2 having said bar provided with a slot which extends inwardly from the free end of the bar, support means for said second roller slidably mounted in said slot, and resilient means within said bar in contact with said support means for urging the support means towards the free end of the bar.

6. In a display device, the combination set forth in claim 2 wherein means are provided for detachably securing said enclosure means to said box, said securing means comprising groove means provided in said enclosure means and key means on said box engaged by the groove means.

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