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(71) Applicant: **Keymite Ltd.**
Banbury, Oxfordshire OX15 5HT (GB)

(72) Inventor: **Gray, Richard John**
Banbury, Oxfordshire OX15 5HT (GB)

(74) Representative: **Stanley, Michael Gordon**
Michael Stanley & Co.,
P.O. Box 270
Banbury, Oxfordshire OX15 5YY (GB)

(54) A display device

(57) A display device comprising a holder (23) having at least one display window (24) with a respective elongate flexible strip (10) bearing characters (11) for display in the window (24). The strip (10) has longitudinal edges (12,13) having a plurality of spaced elongate notches(14) extending longitudinally along one edge (13) at regular intervals, and the window (24) has a side (34) with a lug (33) thereon which is engagable with said notches (14) when a repeat unit of the strip is correctly positioned in the window (24). The strip (10) is transversely moveable within the window (24) to disengage the lug (33) from a notch (14).

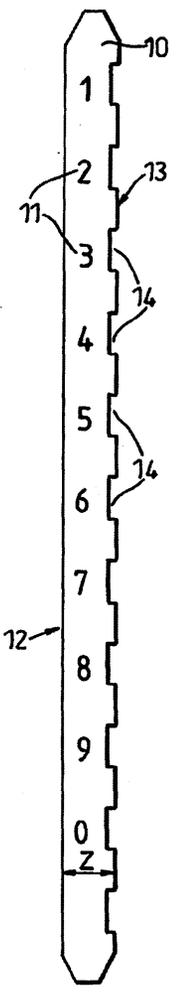

Fig. 1

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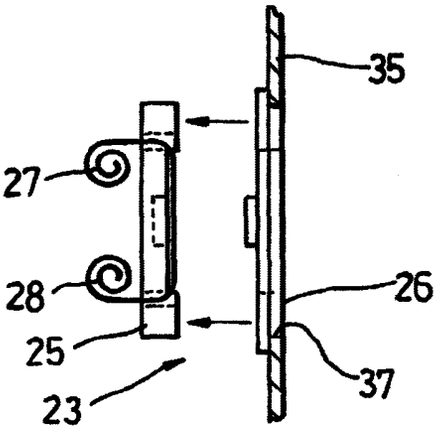

Fig. 6

Description

Field

[0001] This invention relates to a display device for the display of information.

Background

[0002] Information devices which incorporate changeable characters are known. Such devices frequently include a plurality of windows through which a flexible strip bearing characters passes, so that only the character aligned with the window is visible. Such a device is shown in British Patent 963447.

[0003] In such devices the strip may be stored by rolling up the ends of the strip so that as the strip is moved through the window one end unrolls and the other end rolls up. A problem with this type of device that the natural curl in the strip tends to move the displayed character especially if the device is knocked or jolted. In order to prevent this problem the device shown in GB 2236 207 is equipped with a strip having holes therein that are engageable with movable pins in order to lock the strip in position. A similar device is shown in EP-A-0512 045 in which the strip passes over a resilient platform which is depresses to release the strip from a fixed pin. Such devices are complicated and require some means of releasing the strip from the pins before the characters can be changed typically by some deformation of the flexible strip. A simplified device is shown in GB-a-2318443 in which a strip having undulating sides is accommodated in similar shaped windows and the strip is released by wiping the strip over shaped sides of the windows, the strip being sufficiently flexible to rise over the window edges.

[0004] The present invention provides a simple display device that can hold the strip in position and which provides for movement of the strip without deforming the exposed strip located in the window.

Statements of Invention

[0005] According to the present invention there is provided a display device comprising a holder having at least one display window therein, and an elongate flexible strip which bears characters thereon for selective display in the window, the strip having longitudinal edges with longitudinally extending notches formed in one edge of the strip at regular repeat units of strip, and which are engagable with a lug on one side of the window when a repeat unit of the strip is correctly positioned in the window, the strip being displaceable transversely of the window to disengage from said lug allowing the strip to move longitudinally through the window.

[0006] The or each strip passes longitudinally through a recess located in a film carrier and aligned with a respective window aperture, the strip passing over a support platform in the base of the recess.

[0007] Preferably, the or each window is located in a frame and forms a viewing aperture having a width smaller than the width of the strip.

[0008] Each lug may be formed on the underside of the frame for the respective window adjacent one side of the window aperture and is received in a co-operating notch in the corresponding side of the respective recess in the carrier.

[0009] The holder is moulded from a suitable plastics material e.g polystyrene or acrylic, preferably as two units, a front plate including viewing aperture(s) and respective frame(s), and a rear plate including the recess and support platform.

[0010] The front plate may be formed with a raised central front portion which in use is received in an aperture in decorative or other surrounds.

Description of Drawings

[0011] The invention will be described by way of example and with reference to the accompanying drawings in which:

Fig. 1 is a strip as used in the device according to the invention,
Fig. 2 is a front view of a carrier used in a display holder according to the invention,
Fig. 3 is a section on the line II-II through the carrier of Fig.2,
Fig. 4 is a front view of the frame,
Fig. 5 is a section on the line V-V of Fig. 4, and
Fig. 6 is a side elevation of the carrier and frame prior to assembly also showing the frame located in a surround.

Detailed Description of the Invention

[0012] With reference to Fig. 1 there is shown an elongate flexible strip 10 bearing characters 11 thereon. The strip 10 is preferably made from a plastic film such as cellulose acetate or polyester film or could be formed from rolled reinforced paper. The strip 10 has one straight longitudinal edge 12 and its other longitudinal edge 13 has a plurality of elongate notches 14 formed in the edge margin of the strip at regular spaced intervals. The notches 14 extend longitudinally of the strip 10. The characters 11 are aligned relative to the notches 14 allowing the notches 14 to be used for the alignment of the strip relative to a display window. The elongate notches have a longitudinal length about 3-6 times its transverse width.

[0013] With reference now to Figs. 2 to 6, the display device comprises the strip(s) 10 and a rectangular planar holder 23 with a plurality of display windows 24 therein arranged in a linear array. In this example there are five rectangular windows 24 but there could be any number as required upwards from one window, and the

windows may have any desired shape. The holder 23 is formed from two parts, a film carrier 25 and a frame 26 which overlies the carrier 25.

[0014] The frame 26 comprises an outer frame 31 which in use lies adjacent the carrier 25, and a raised inner frame 32. Each windows 24 passes through both the inner and outer frames 31,32 and one side 34 of each window 24 formed in the outer frame 31 has a lug 33 formed thereon on its underside which projects away from the frame 31 towards the carrier 25. Each lug 33 is located substantially at the mid-height of said one side 34 and extends along said side for about 1/3 of its length. The thickness and depth of the lug are substantially equal and are such as to match the width of the notches 14. The shoulder formed between the inner and outer frames 31,32 allows the display device to be pushed into an aperture 37 in a support 35 which may be decorative or display information.

[0015] The carrier 25 has a plurality of rectangular recesses 41 formed in its front face adjacent the frame 26. Each recess 41 aligns with a respective window 24 in the frame and has a through slot 42,43 at the top and bottom thereof. The base of each recess 41 forms a flat platform 44 extending between the two slots 42,43. In use, end portions of the strip 10 are formed into storage rolls 27,28, with a mid portion of the strip 10 extending between the two rolls 27,28. The strip 10 is stored on the rear face of the carrier 25 and passes longitudinally through the recess 41 from the upper roll 27 through the gap 42, across the flat surface of the platform 44, through the gap 43 and into the bottom roll 28.

[0016] The recesses 41 each have a width W which is wider than the width X of the windows 24 and one side 45 of each recess 41, corresponding with the side 34 of the window, is provided with a notch 46. Each notch 46 can accommodate a respective lug 33 on the corresponding window so that when the frame 26 is imposed over the carrier 25 each edge margins of each recess 41 are covered by the side of each window 24 and each lug 33 projects transversely into each respective recess by a height H and is also accommodated in a respective notch 46.

[0017] The overall width Z of the strip 10 is slight smaller that the width W of each window less the height H of each lug (W-H). This allows the films strip 10 to move sideways or transversely in each recess. The notches 14 in the edge of the strip 10 accommodate the lugs 33. The overall width Z of the strip is also slightly wider that the width X of the windows.

[0018] To move the strip 10 up or down a respective window 24 the strip is touched and moved transversely in its recess 41 to disengage a notch 14 from the respective lug 33. The film is then wiped longitudinally up or down as required unreeling from one roll 27,28 and feeding into the other roll 28,27. The strip is sufficiently resilient and flexible to move through the window and another notch 41 can relocate on the respective lug 33 when a desired character on a repeat unit is correctly located for display in said window. The edges 12 & 13 of the strip are hidden by the overhang of the windows 24 over the sides of the recesses 41. This invention provides a simple display device having no moving parts other than the strip.

Claims

1. A display device comprising a holder (23) having at least one display window (24) therein, and an elongate flexible strip (10) which bears characters (11) thereon for selective display in the window (24), the strip (10) having longitudinal edges (12,13) with notches (14) formed in one edge (13) thereof at regular repeat units of strip, and which are engagable with a lug (33) on one side (34)of the window (24) when a repeat unit of the strip is correctly positioned in the window, **characterised in that** the notches (14) in said one edge (13) of the strip extend longitudinally of the strip (10) and said strip (10) is displaceable transversely of the window (24) to disengage from said lug (33) to move longitudinally through the window (24).

2. A display device as claimed in Claim 1 **characterised in that** the or each film strip (10) passes through a recess (41) in a film carrier (25) which is aligned with a respective window (24) and passes over a support platform (44)located in the base of the recess (41).

3. A display device as claimed in Claim 1 or Claim 2, **characterised in that** the or each window (24) is formed in a frame (26,31,32) and forms a viewing aperture having a smaller width than that of the strip.

4. A display device as claimed in Claim 3, **characterised in that** each lug (33) is formed on the underside of the frame (31) adjacent one side (34) of a respective window.

5. A display device as claimed in Claim 4 **characterised in that** each lug (33) is received in a co-operating notch (46) in the side of the respective recess (41) in the carrier (25).

6. A display device as claimed in any one of Claims 3 to 5, **characterised in that** the frame (26) is formed with a edge margin (31) which sits against the film carrier (25) and a raised central front portion (32) which in use is received in an aperture (37)in a support (35).

7. A display device as claimed in any one of Claims 2 to 6 **characterised in that** the holder (23) is moulded from a suitable plastics material as two units, a

front plate (26) including viewing aperture(s) (24), and a rear plate (25) including the carrier (25) and support platform (44).

8. A display device as claimed in any one of Claims 1 to 7 and further including a support (35) having an aperture (37) therein, and said holder (23) is mounted in the aperture (37).

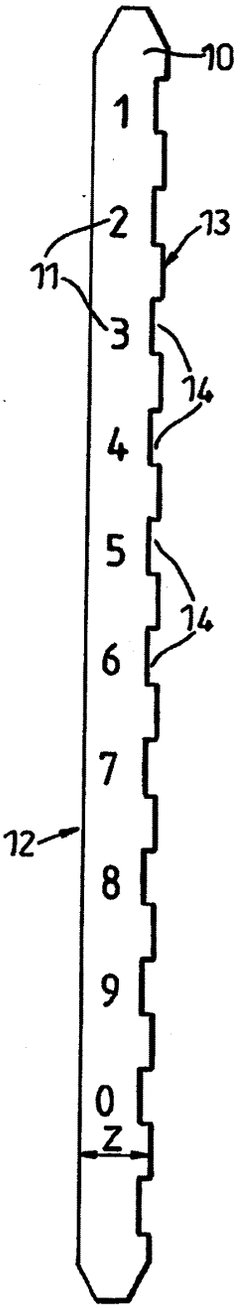

Fig. 1

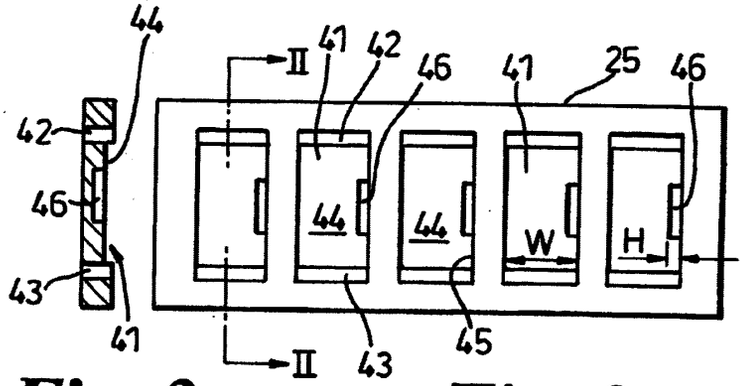

Fig. 3

Fig. 2

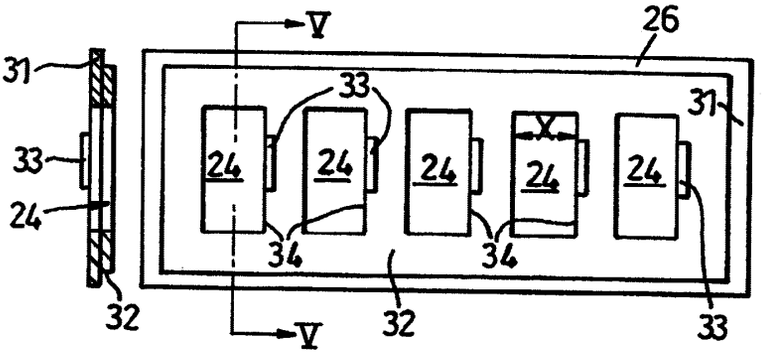

Fig. 5

Fig. 4

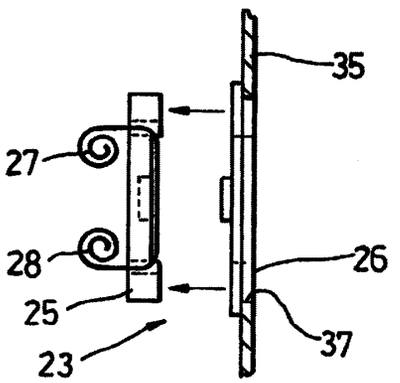

Fig. 6