(54) Title: A STRIP HOLDER

(57) Abstract

The invention relates to an arrangement for temporarily fixating the position of a flexible strip (17) which is carried by and guided in a holder (10) and which is intended to be provided with, or has been provided with information, and which holder presents mutually opposing, strip-guiding slots (16) through which the strip passes, wherein the space between the slots forms a window-part in which information can be presented and which includes a strip support or slide surface (15). The invention is mainly characterized in that the strip (17) is provided along its length and/or width with holes or recesses (20, 30; 42, 52) which are intended to coact with one or more pins (21, 31; 41, 51; 61).
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A STRIP HOLDER

The present invention relates to an arrangement for temporarily fixating the position of a manually displaceable and flexible strip which is supported by and guided by a strip holder and which is intended to be provided with, or has been provided with indicia or signs which impart information to the viewer, said strip holder being of the kind which comprises a frame structure, mutually opposing, strip-guiding slots defined in said frame structure, and a strip-supporting surface which extends between said mutually opposing slots to form so-called windows.

A known holder of this kind includes a rectangular or elongate rectangular frame in which there is contained a number of mutually adjacent window-forming parts. Each such window part extends between the side members of the holder frame and intermediate members or walls and is intended to coact supportingly with a flexible strip. The strip will normally have information printed thereon, for instance information in the form of signs or indicia, such as numerals and/or letters imprinted in specific fields on the strip. In the case of an information carrier or display of this kind, comprising a strip holder and flexible strip, it is possible to position each strip manually in a smooth and continuous fashion. The intention is that a number of mutually adjacent strips will present indicia which together will disclose information which can be read horizontally.

A common problem with this known information carrier is that it is difficult to align the mutually adjacent strips so that the information is presented in a
straight line along the holder. Because it is necessary
to move the strip manually in order to bring respective
fields into the positions desired, the time taken to
position the various indicia or signs on each strip so
that said signs will lie in a straight line is highly
time consuming. Furthermore, despite the
accuracy with which each information field of the
various strips is positioned in respective windows,
these fields are liable to be displaced relative to one
another in the order of some millimeters, therewith
presenting a ragged line of information. Another draw-
back is that the positions of the strips may be changed
either intentionally or unintentionally, so as to
present wrong information.

Accordingly, a primary object of the invention is to
provide an information carrier of the aforesaid kind
which will enable a strip carried by the holder to be
latched in predetermined positions therein.

This object is achieved in accordance with the inven-
tion by providing the strip along its length and/or
width with holes or recesses intended for coaction with
one or more pins disposed directly or indirectly on the
holder.

This arrangement will enable the signs or indicia found
on a plurality of mutually adjacent information-
carrying strips mounted in the holder to be brought
readily into linear alignment with one another, i.e. in
the absence of any relative displacement of the signs
presented, so that said presented signs will be
arranged aesthetically in a straight line.
According to one preferred embodiment of the invention, the information-carrying strip is provided with at least one recess or one hole, and at least one such recess or hole is intended to coact with at least one pin.

In the case of wide information-carrying strips, the strips may be provided with several recesses or holes for coaction with a corresponding number of pins.

The pin or pins may either be stationarily fixed on an appropriate holder surface or may be resiliently mounted.

Another object of the present invention is to provide an information carrier of the aforesaid kind in which a strip that is latched in a predetermined position in the holder can be readily released and manually shifted so as to bring a desired sign into position in the display window.

This object is achieved with an improved information carrier by fixedly mounting the strip supporting surface of the holder means and by configuring the holder so that when pressure is applied to the flexible strip, part of said strip will be caused to take a first position while the remainder of the strip will be caused to take a second position in which the strip is no longer engaged by the pin or pins.

According to one preferred embodiment, the fixed strip supporting surface, which functions as a strip guide and slide surface, is provided with a recess or hollow which is spaced from the pin or pins and into which that part of the strip located above said recess can be
pressed.

When the recess or hollow in the strip supporting surface is, for instance, centrally positioned, that part of the strip which lies across the recess will be brought into abutment with the bottom of said recess when downward pressure is exerted on this strip part, at the same time as the two edges of the strip will endeavour to move in an opposite direction, at least in the vicinity of a hole or recess in the strip, therewith lifting the strip out of engagement with the pin or pins on the holder.

In another, conceivable embodiment the strip supporting surfaces of the holder comprise ridges over which the side edges of respective strips pass. The spacing between the ridges corresponds to the aforesaid recess or hollow, therewith performing an identical function.

It is also possible in practice to provide for this release of the strip from its engagement with a pin or pins on the holder, by constructing the strip supporting surface on the holder so that when a force is applied on the strip, the strip supporting surface will yield against a spring force so as to release the strip from its engagement with the pin or pins on the holder.

The pin or pins intended for coaction with the recesses or holes in the flexible strip may be fixedly or displaceably mounted.

In another embodiment of the improved information carrier, the strip supporting surface of the holder is configured with a part which extends over said recess or hollow and which is provided at some location along
its length with at least one pin and which, in a first position, is preferably positioned in substantially the same plane as the strip supporting surface, such that said pin will coact with a recess or a hole in the strip and can be displaced resiliently to a second position in which the pin is brought out of engagement with the strip.

In all embodiments, the flexible strip, when released from its latching engagement with the pin or pins, can be readily moved by the operator so as to bring the next-following sign on the strip into the display position, the hole or holes provided in the vicinity of this last mentioned sign snapping into a corresponding pin or pins.

The information-carrying strip may be a known, endless strip in loop form. It is preferred, however, to use a self-coiling strip of the kind which forms mutually concentric coils, for instance a strip or tape of the kind taught by US-A-1,105,288. Naturally, straight strips of flexible material can also be used. When this latter type of strip is used, means will preferably be provided for preventing the strip from being withdrawn completely from the holder.

Other features of the inventive arrangement and advantages afforded thereby are set forth in the depending claims and made apparent in the description and drawings.

The invention will now be described in more detail with reference to a number of embodiments thereof illustrated in the accompanying drawings, in which
Figure 1 illustrates part of a known holder which coacts with a flexible strip, Figure 1A, and which together form an information carrier on which the inventive arrangement is based;

Figure 2 illustrates part of the holder of Figure 1 in accordance with a first embodiment;

Figure 2A illustrates a preferred, self-coiling, flexible strip intended for use with the holder illustrated in Figure 2;

Figure 3 illustrates a second embodiment of an inventive holder;

Figure 3A illustrates a preferred self-coiling, flexible strip intended for use together with the holder illustrated in Figure 3;

Figure 4 illustrates a third embodiment of an inventive holder capable of coacting with a strip illustrated in Figure 4A;

Figure 5 illustrates a fourth embodiment of an inventive holder;

Figure 5A illustrates a flexible strip intended for use with the holder illustrated in Figure 5; and

Figure 6 is a cross-sectional view of a fifth embodiment of an improved holder constructed in accordance with the invention.
The known holder illustrated in Figure 1 is identified generally with the reference numeral 10 and has the form of an elongated frame structure comprising mutually opposite long sides 11, 12 and mutually opposite short sides, of which one, 13, is shown in the Figure. Extending in spaced relationship between the long sides 11, 12 are vertical walls 14. The holder 10 is thus divided into a number of mutually adjacent window-parts defined by the sides of the holder and the walls 14 respectively. Each such window-part includes substantially an arcuate, fixedly arranged strip supporting surface 15, which also functions as a guide surface along which the strip slides, this strip supporting surface being referred to hereinafter as the platen.

Respective platens 15 define with opposing wall surfaces 11 and 12 a horizontally extending slot or corresponding opening 16. The highest point of the arcuate platen 15 lies approximately in the same plane as the outer surfaces of the frame members or walls 11, 12, 13 and functions as a supporting and guiding slide surface platen for its respective, individual flexible strip 17 (Figure 1A), which may be a self-coiling strip of a known kind (US-A-1,105,288) and have a width slightly smaller than the horizontal extension of the opening 16. The strip 17 preferably carries printed signs, such as numbers and/or letters of any desired size and printed along the length of the strip 17. The strip 17 is caused to coact with the holder 10, by inserting respective end parts of the strip 17 into the upper and lower part of the opening 16, such that a part of the strip lies against the platen 15 on the holder 10. The strip 17 can now be moved manually and continuously so, that the desired sign is located within respective window-parts while supported by the platen 15. In this case, each strip 17 coils about horizontal axes.
Figures 2 and 2A illustrate a first embodiment which enables the signs carried by the information strip to be positioned constantly in a predetermined, optimum position.

In this embodiment, the whole of at least one long side of the strip is provided with notches 20 which are arranged at a predetermined distance apart and each of which is intended to coact with a fixed pin or peg 21 projecting from the centre of respective partition walls in the holder 10 (and thus approximately in the centre of the window-part) or alternatively from one edge of the holder, and extend in over the platen 15 on said holder. When the information carrying strip 17 (Figure 2A) is moved manually in a vertical direction, a notch 20 will always coact with the projecting pin 21 in a window-part, therewith enabling the sign intended for display to be optimally positioned, simply by moving the strip 17 incrementally. In practice, it is sufficient to provide a single notch 20 adjacent each sign carried by the strip. In other words, the position of the notch on the strip is contingent on the position of the sign thereon.

In order to facilitate release of the latched strip 17 from its latching engagement with the pin or peg 21, the platen 15 on the holder 10 may be provided with a recess or hollow 22, preferably a centrally located recess, whose centre is spaced from the fixed pin 21. With an information carrying strip fitted to the holder, the recess or hollow 22 in the platen 15 will lie directly beneath a part of the strip 17. By pressing the strip inwardly roughly in the centre of the strip 17, the two mutually opposing, free edge parts of the
strip will attempt to move upwards. By moving the strip in the desired direction at the same time, the pin 21 will slide against the undersurface of the strip 17 and then automatically snap into a following notch 20 in the strip 17. The number of notches 20 is preferably equal to the number of signs on the strip.

Figures 3 and 3A illustrate another embodiment in which the notches 20 of the strip 17 earlier described are replaced with holes 30 located sequentially along at least one long side of the strip (Figure 3A). Each such hole is intended to coact with a fixed pin or peg 31 projecting out from the platen. The strip 17 is released from its latching engagement with the pin in the aforesaid manner.

In this case, the self-coiling strip 17 is positioned so that the coiling axes extend vertically and the strip 17 is then intended to be moved or displaced laterally in order to bring the desired sign on the strip into its intended window-part. In this case, the recess or hollow 22 is located nearer the bottom, longitudinally extending frame member of the holder 10. This embodiment also affords the advantage that the information or signs carried by the strip 17 can be positioned transversely to the longitudinal direction of the strip, as opposed to the earlier described embodiment, in which the signs or information is arranged in the longitudinal direction of said strip. This arrangement enables the strip 17 to be provided with a larger quantity of information than in the earlier case. As will be understood, it is also possible to dispense with the partition walls 14 and place strips 17 in mutually adjacent rows in the holder 10. In this case, the mutually opposing holes or slots 16
will extend vertically from the inside of one long frame member 11 of the holder, down to the inner surface of the opposite long frame member 12.

Figure 4 and 4A illustrate a third embodiment of the improved information carrier. In this embodiment, the recess or hollow 22 on the holder 10 has an approximate keyhole configuration and one end of a resilient part 45 is fastened to the slide and guide surface 11. The opposite end of the part 45 presents an outwardly projecting pin 41. In the latching position of the strip 17, the pin 41 projects up through the opening 42 (Figure 4A). When pressure is applied to the strip 17 in the region of the recess 22, the aforesaid part 45 will be urged resiliently downwards in the recess 22 and release the strip 17, thereby enabling the strip to be moved laterally for the purpose of bringing another sign on the strip into position.

Figures 5 and 5A illustrate a fourth embodiment of the improved information carrier. In this embodiment, the holder 10 has a resilient, displaceable part 55 provided with a pin 51 essentially of the same kind and fastened in the same manner as the pin 41 of the Figure 4 embodiment, but with the difference that the locking engagement between pin 51 and apertures 52 in the strip 17 cannot be seen. This is achieved by extending the bottom frame member 12 of the holder outwards, so that its upper edge protrudes above the pin 51 in its strip-latching position.

A fifth embodiment of the improved information carrier is illustrated in Figure 6.
In this case, the whole of the platen 15 of the holder 10 is displaceable in the direction of the arrow A against the action of a spring element 60. In this case, a fixed pin 61 is provided on the inside of the vertical, mutually opposing outer walls of the holder 10. When pressure is exerted onto the outer surface of the strip 17, the platen 15 is caused to move rearwards therewith releasing the holes on the strip 7 coacting with the pins. By applying an outwardly or downwardly directed displacement force on the strip 7 immediately after depressing the strip, the strip can be caused to move such that the pin 61 slides over the outwardly facing surface of the strip, so as to snap automatically into the next following hole in said strip. As in the case of the Figure 5 embodiment, the latching engagement of the strip 17 cannot be seen, which is an advantage in some cases.

As before mentioned, a known, self-coiling strip 17 is preferred, since the display surface of the strip located between the strip coils is under a certain amount of tension, thereby preventing outward bulging of the sign or information carried by the strip. This does not exclude the use of other kinds of flexible strips, however. The strip may be made from a wide selection of materials.

There is in theory no limit to the number of display fields which can be arranged in a holder 10, from one field and upwards. The amount of information that can be contained by the flexible strip is contingent on the length and width of the strip.

It will be obvious to one of normal skill in this art that the number of recesses/holes in the strip 17 and
their positions can be varied within wide limits. Similarly, the number of fixed and/or displaceable pins can also vary. From the aspect of manufacture, the position of a pin in or adjacent the holder 10 and the position of a hole or recess in a coacting strip 17 can be readily co-oriented in a manner to ensure that the information-carrying strip will always be latched in the position desired. In a typical case, the pins may have a circular cross-section although pins of other cross-sections can be used. The holes formed in the tape will preferably be larger than the cross-dimension of a pin. When the pin has a circular cross-section, the holes may even be oval, so as to provide a desired clearance between pin and hole. In a typical case, the pin will protrude by two to four millimeters and consequently the displacement movements of the strip 17 in order to release the strip from its latching engagement with the pin or pins is very short.
CLAIMS

1. An arrangement for temporarily fixating the position of a manually displaceable and flexible strip (17) which is supported by and guided by a strip holder (10) and which is intended to be provided with, or has been provided with indicia or signs which impart information to the viewer, said strip holder being of the kind which comprises a frame structure (11, 12, 13), mutually opposing, strip-guiding slots (16) defined in said frame structure, and a strip-supporting surface or platen which extends between said mutually opposing slots to form so-called window-parts. characterized in that the strip (17) is provided along its length and/or width with holes or recesses (20, 30; 42, 52) which are intended to coact with one or more pins (21, 31, 41, 51, 61).

2. An arrangement according to Claim 1, characterized in that the strip (17) presents at least one recess or one hole (20, 30, 42, 52) for each sign; and in that at least one such recess or one such hole is intended to coact with at least one pin (21, 31, 41, 51, 61) which projects from the holder either directly or indirectly.

3. An arrangement according to Claim 1, or 2, characterized in that the pin or pins (21, 31; 61) is/are permanently arranged and integrated with the holder (10).

4. An arrangement according to Claim 1, or 2, characterized in that the pin or pins (41, 51) is/are resiliently mounted.
5. An arrangement according to any one of the preceding Claims, characterized in that the platen (15) is fixedly mounted on the holder and is configured so that when a force is applied to the flexible strip (17), a part of the strip (17) will be brought to a first position whereas the remainder of the strip (17) will be brought to a second position, thereby enabling the strip (17) to be released from its engagement with the pin or pins (21, 31, 41, 51, 61).

6. An arrangement according to Claim 5, characterized in that the platen (15) on the body (10) has formed therein a recess or hollow (22) at a distance from said pin or pins, this recess functioning to enable that part of the strip (17) located above said platen (15) to be depressed and therewith release the strip (17) from its engagement with said pin or pins (21, 31, 41, 51, 61).

7. An arrangement according to Claim 5, characterized in that the platen (15) comprises mutually parallel and spaced ridges over which the side edges of the strip (17) run or are guided.

8. An arrangement according to one or more of Claims 1-6, characterized in that the platen (15) has a width which corresponds substantially to the width of the strip (17).

9. An arrangement according to Claim 6, characterized in that the platen (15) is configured with a part (45, 55) which extends over said recess or hollow and which is provided at a selected location along its length with at least one outwardly projecting pin (41, 51), and which part (45, 55) is
located, in a first position, in substantially the same plane as the platen (15); and in that the pin (41, 51) is intended to coact with a recess or a hole (42, 52) in the strip (17) and is resiliently displaceable to a second position in which the pin or pins (41, 51) are released from their engagement with the strip (17).

10. An arrangement to any one of Claims 1-6, characterized in that the platen (15) is arranged for movement against the effect of a spring force generated by a spring element (60) when pressure is exerted on the strip, so as to release the strip (17) from its engagement with the pin or pins (61).

11. An arrangement according to any one of the preceding Claims, characterized in that the information-carrying strip (17) is an endless strip.

12. An arrangement according to any one of the preceding Claims, characterized in that the information-carrying strip (17) is a self-coiling strip.

13. An arrangement according to any one of the preceding Claims, characterized in that the ends of the information-carrying strip (17) have means for preventing the strip from being withdrawn completely from the holder.
### INTERNATIONAL SEARCH REPORT

**International Application No**

PCT/SE 91/00038

#### I. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both National Classification and IPC

**IPC5**: G 09 F 11/29

#### II. FIELDS SEARCHED

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Documentation Searc**hed other than Minimum Documentation to the Extent that such Documents are Included in Fields Searc**hed

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#### IV. CERTIFICATION

**Date of the Actual Completion of the International Search**

24th April 1991

**Date of Mailing of this International Search Report**

1991-04-26

**International Searching Authority**

SWEDISH PATENT OFFICE

**Signature of Authorized Officer**

Mantved Weiss
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ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. PCT/SE 91/00038

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