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A. C. GROVE

HOLDER

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3,051,123

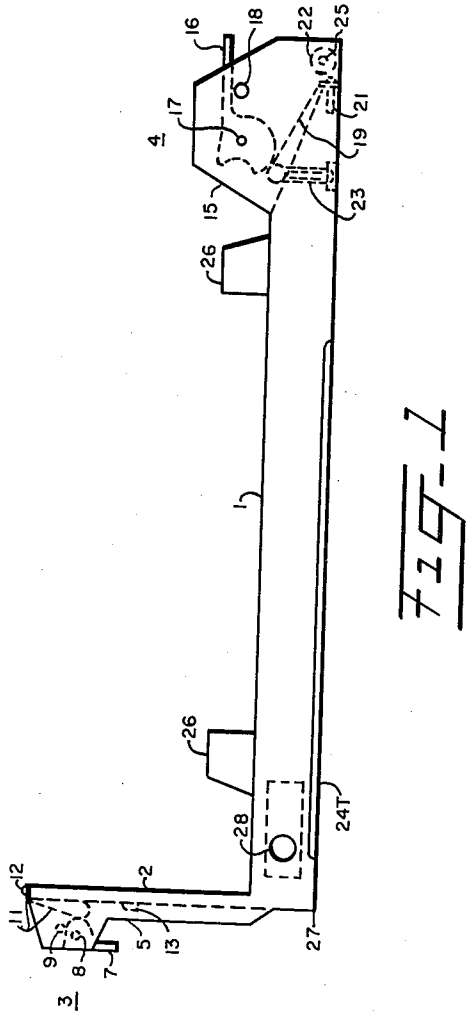


FIG-1

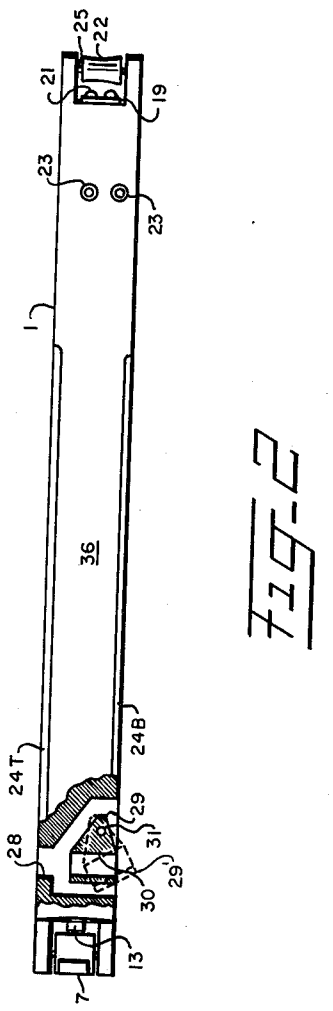


FIG-2

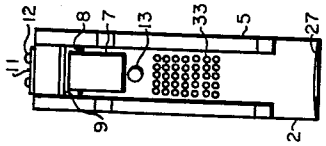


FIG-3

INVENTOR.
ALEXANDER C. GROVE

BY

ATTORNEY

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HOLDER

Alexander C. Grove, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware

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This invention relates to holders and more particularly to holders capable of holding a strip of material suitable for displaying printed matter and coded information for use in automatic and semi-automatic data display systems such as that disclosed in the application of Finkler et al., filed September 21, 1959, United States Patent Office, Serial Number 841,305.

One object of the invention is to provide a strip holder which is rugged, reliable and easy to load.

Another object of the invention is to provide a strip holder which contains a reliable device for indicating the presence or absence of abutting holders when the holders are assembled in their operational environment.

A further object of the invention is to provide a holder in which the strip bearing the displayed data will be held firmly and tightly against a platen surface in order to facilitate the printing of additional information thereon while the strip remains in its operational environment.

The invention contemplates a device for holding a strip of material suitable for the display of printed matter and coded information comprising, a substantially rigid body having a smooth elongated platen surface, clamping means at both ends of the device for holding the strip in contact with the platen surface, and means for providing a signal indicative of the relative position of the device with respect to other similar devices when they are assembled in an operational environment.

The foregoing and other objects and advantages of the invention will appear more clearly from a consideration of the specification and drawings wherein an embodiment of the invention is described and shown in detail for illustration purposes only.

In the drawings:

FIGURE 1 is a top plan view of a novel holder constructed in accordance with the invention.

FIGURE 2 is front elevation of the holder shown in FIG. 1; and

FIGURE 3 is a side elevation of the holder shown in FIG. 1.

The holder illustrated in FIGS. 1, 2 and 3 is particularly suited for use in a data display system such as that shown in the Finkler et al. application referred to above. The system disclosed by Finkler et al. utilizes the holders for supporting a paper strip which bears thereon printed information which may be updated from time to time. The updating is accomplished by a printer which is positioned at the strips.

The strips and their associated holders are assembled in a column and the printer traverses this column; and, in response to signals stops and prints information on one or more predetermined strips.

It is essential that a disturbance of the column which might have resulted in a change in the order of the strips be noted. Therefore the holders each contain means, which will be described in detail later, which cooperate with the other holders in the column for generating a signal which indicates when disturbance of the column has taken place.

In the drawings a holder constructed of a substantially rigid material has a main portion 1 and another portion 2 at right angles therewith to form an L shaped member.

A clamp 3 and a clamp 4 are positioned at the free ends of portions 2 and 1, respectively, of the holder and together hold the strip, not shown, in the proper position.

The portion 2 of the holder has a pair of guide rails 5 between which the strip is positioned. The rails extend further at the free end and support portions of the clamping device 3.

A cam shaped member 7 is pivotally mounted between the extended portion of the rails 5 on a shaft 8, and a rod 9 is positioned between the rails to restrict the movement of cam member 7.

A flat spring 11 is attached at the free end of portion 2 of the strip holder by means of screws 12 and its free end terminates in a curved portion under cam member 7.

A positioning stud 13 is attached to the holder and will mate with a hole in the strip to accurately position the strip. The strip is placed on the holder so that the hole engages the locating stud 13 and the end of the strip is inserted between the holder and spring 11; then cam member 7 is rotated counterclockwise to compress spring 11 and securely clamp the strip between the holder and spring 11.

The free end of portion 1 has a pair of extended walls 15 similar to the extended portions of rails 5 and these are used to support portions of clamping device 4. A cam shaped member 16 is pivotally mounted between walls 15 on a shaft 17, and a rod 18 is positioned between walls 15 to restrict the movement of cam member 16.

A flat spring 19 is attached at the free end of portion 1 of the strip holder by means of screws 21 and its free end terminates in a curved portion positioned under the cam member 16. The strip after passing over a roller 22 which is mounted on a shaft 25 is inserted between spring 19 and cam member 16. Member 16 is rotated in a clockwise direction until stop 18 is engaged. This movement places the strip under tension and clamps it between member 16 and spring 19.

A pair of set screws 23 engage the curved free end of spring 19 and are used to adjust the force exerted on the strip when it is clamped between the spring 19 and cam member 16.

The top and bottom front edges 24T and 24B, respectively, of portion 1 are chamfered to facilitate the withdrawal of the holder when it is positioned in a column of holders.

A pair of alnico magnets 26 extend rearwardly from portion 1 of the holder and are adapted to engage a pair of rails, not shown, when the holders are arranged in a column to maintain the proper positioning of the holders.

In order to hold the strip flat against the platen surface 36 of the holder, roller 22 is tapered toward its center and edge 27 at the other end of portion 1 of the holder is curved inwardly. This increases the tension on the top and bottom edges of the strip and provides a tight close fit along the entire length of the platen surface.

The generation of a disturbance signal to indicate the relative position of a holder with respect to other holders when they are assembled in a column is accomplished by passing a beam of light through the holder from top to bottom so that when a holder is abutted by another holder immediately below it the beam is unobstructed and when the holder is not abutted the beam is obstructed.

A passage 28 extends from the top surface of the holder to the bottom surface. A solid member 29 having an aperture 30 therethrough is pivotally mounted in the passage on a shaft 31. The aperture 30 and shaft 31 are so arranged that when the holder rests on another holder or other object light will be transmitted from the top to the bottom of the holder via aperture 30 but when the bottom of the holder is not in contact with an object or another holder light will not pass from the top to bottom of the holder since member 29 and aperture 30 will be urged by the force of gravity to an alternate position 29' shown in dashed line to obstruct the transmission of light through passage 28.

A 5 x 7 matrix of holes 33 is provided in portion 2. These holes permit the passage of light wherever a corresponding hole occurs in the strip being held by that particular holder. The 5 x 7 matrix permits the passage of light signals for identifying the information on the strip and the coded information punched into the strip will correspond to part of the printed information on the strip.

Although one embodiment only of the invention has been shown and described in detail it is to be expressly understood that the invention is not to be limited thereto.

What is claimed is:

1. A device for holding a strip of material suitable for the display of printed matter and coded information comprising; a substantially rigid body having a fairly elongated platen surface; a first clamping means located at one end of said device, said means including a resilient member attached to said device and arranged to clamp one end of the strip between the device and the member, and means having a cam surface pivotally mounted on said device and arranged to compress said resilient member when rotated in one direction about its mounting; a second clamping means located at the other end of said device, said means including a resilient member attached to said device, means having a cam surface pivotally mounted in said device and arranged to compress said resilient member to clamp the other end of the strip between the member and the cam means and place the strip under tension to position it against said elongated platen surface when rotated in one direction about its mounting; means interposed between said first and second clamping means for placing two edges of the strip under greater tension than its center to hold said strip edges tightly against said elongated platen surface; and means for providing a signal indicative of the relative position of the device with respect to other similar devices when they are assembled in a column, said means including a member having an aperture therethrough pivotally mounted in said device to provide a light communicating path when held in one position and to prevent the communication of light when in an alternate position.

2. A device for holding a strip of material suitable for the display of printed matter and coded information comprising, a substantially rigid body having an elongated platen surface, means for holding the strip in contact with the platen surface, a light columnating passage extending through said holder, a member pivotally mounted in the said passage so that the member permits the transmission of light through said passage when held in one position by contact with an adjacent holder and inhibits the transmission of light through the said passage when held in an alternate position when said member is not in contact with an adjacent holder.

3. A device as set forth in claim 2 wherein said pivotally mounted member has an aperture therethrough oriented in such a way that the aperture is in light transmitting alignment with the light columnating passage when the said member is held in the said one position and is in nontransmitting alignment with the said passage when the member occupies the said alternate position.

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