United States Patent

Bookless

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[54] **QUICK RELEASE MAGNETIC LATCH FOR COPIER EXPOSURE STATION**

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[52] **U.S. Cl.** **355/75,** 355/99, 355/113

[51] **Int. Cl.**.....**G03b 27/62**

[58] **Field of Search**.....355/72, 74, 75, 71, 82, 99, 355/104, 113, 117, 19, 40

[56] **References Cited**

UNITED STATES PATENTS

777,097	12/1904	Herman	355/117
3,445,164	5/1969	Browning	355/82
3,478,658	11/1969	Yow-Jiun Hu et al.	355/40 X

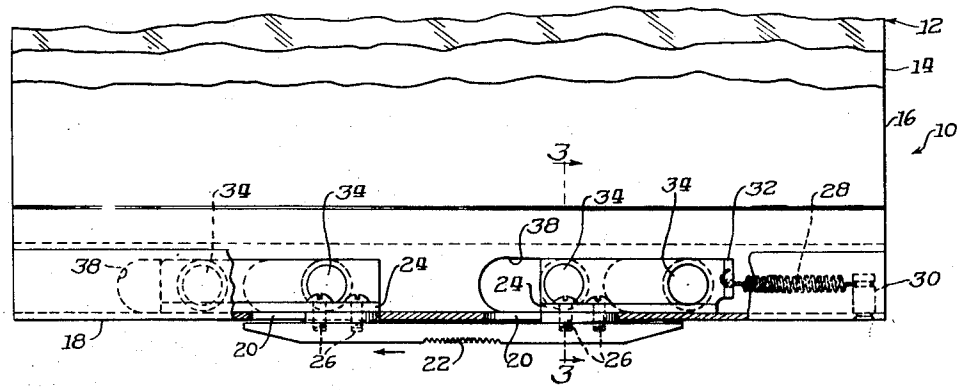
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[57] **ABSTRACT**

A latch for a copier exposure station including laterally slideable ferromagnetic members that coact with underlying stationary ferromagnetic members. The latch finds particular utility in a duel-blanket exposure station.

3 Claims, 4 Drawing Figures



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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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QUICK RELEASE MAGNETIC LATCH FOR COPIER EXPOSURE STATION

BACKGROUND-SUMMARY OF THE INVENTION

This invention relates to an improved latching mechanism. It finds special utility in a copier exposure station which includes a plurality of cover sheets overlying the exposure window. Such an exposure station forms the subject of copending U.S. Pat. application, Ser. No. 39,757, filed May 22, 1970, the disclosure of which is hereby incorporated by reference.

In the exposure station of the aforementioned type a transparent editing blanket directly overlies the exposure window and a conventional opaque blanket overlies the editing blanket. As treated in detail in said copending application it is desirable to selectively raise the blankets individually or together. To accomplish this result great care must be taken in designing a latch to insure that it will neither mar the surface of the exposure window nor mutilate any documents that are to be copied.

All of these problems are avoided in the design of this invention. A handle is provided that includes transversely movable magnets. The magnets register with another set of magnets or ferromagnetic material such as steel when both blankets are to be raised simultaneously. By transversely moving the magnets out of registry with the corresponding magnets or ferromagnetic material the blankets may be lifted separately.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and advantages of this invention will become clearer in the following detailed description in conjunction with the drawings in which:

FIG. 1 is a top view of a latch incorporating the principles of this invention.

FIG. 2 is a front view of the latch depicted in FIG. 1.

FIG. 3 is a cross-sectional view taken along line 3—3 in FIG. 1.

FIG. 4 is a partial top view of the latch in FIG. 1 with the mechanism in a different operating position.

DETAILED DESCRIPTION

Referring now to FIG. 1 an exposure station indicated generally by the reference numeral **10** may be seen. This invention has general applicability and consequently neither has the copier been illustrated nor is the invention limited to an exposure station.

The depicted exposure station **10** includes an exposure window **12**, an editing blanket **14**, and an opaque cover **16**. The exposure window **12** is of conventional design and is where a document to be copied is normally placed face down. The relationship of the editing blanket **14** and the opaque blanket **16** is more fully explained in copending application, Ser. No. 39,757. Suffice it to say that at times it is desirable to lift both simultaneously for insertion or removal of a document and at others it is desirable to raise only the opaque blanket **16** to visually determine the registration of a document.

The preferred latching mechanism includes a U-shaped member **18**. Included in the U-shaped member **18** are two transversely elongated cutouts **20**. The cutouts **20** provide a means for mounting a handle **22** and a pair of L-shaped channels **24** by a set of screws **26**.

This assembly is movable transversely in the cutouts **20** and is spring biased rightwardly by a spring **28** connected at one end **32** to the right L-shaped channel **24** and at the other end to a post **30** that is rigidly secured to the U-shaped member **18**.

Two pairs of magnets **34** are rigidly affixed to the right and left L-shaped channels **24**. The magnets **34** are free to move transversely in slots **38** which are formed in the U-shaped member **18**.

In FIG. **2** it is shown that the U-shaped member **18** rigidly grips the opaque cover **16**. A slot **36** has been formed in the U-shaped member **18**, the blanket **16** inserted and the slotted portion compressed to tightly grip the blanket **16**. However, any means of affixing the blanket **16** to the U-shaped member **18** would be satisfactory.

In FIGS. **2** and **3** four magnets **40** are secured in the editing blanket **14**. In the position shown in FIGS. **1–3** the four upper magnets **34** register with the four lower magnets **40**. Because the magnets have faces of opposite polarity contiguous with each other the blankets **14, 16** are held together and may be raised simultaneously.

It is apparent that even though pairs of magnets have been depicted, combinations of magnets and ferromagnetic material such as iron, steel and the like could be satisfactorily utilized.

Referring to FIG. **4**, the handle **22** and in consequence the magnets **34** have been moved leftwardly. Since the motion is transverse to the lines of magnetic flux such a displacement is relatively easy even for latches that have great holding strengths. Now that the corresponding pairs of magnets **34,40** are out of registry, their attractive force is nil and the opaque blanket **16** may be lifted without raising the editing blanket **14**.

Thus, a new latch has been described and it is clear that many variations exist which have not been described in this preferred embodiment but are a part of the invention described in the appended claims.

The embodiment of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a copier exposure station the combination comprising:

a transparent exposure window;

first and second blankets overlying and co-extensive with said exposure window; and

single handle means for selectively raising either the uppermost of said first and second blankets only or both of said blankets simultaneously by means of said handle.

2. The combination set forth in claim **1** wherein said first blanket is uppermost and opaque, and said second blanket is lowermost and transparent.

3. In an exposure station the combination comprising:

a transparent exposure window;

a transparent editing blanket for covering said window;

an opaque cover for covering said editing blanket;

means for pivotally attaching said editing blanket and said opaque cover to said station;

handle means attached to said opaque cover;

said handle means including latch means selectively engageable and disengageable with coacting

means disposed on said editing blanket for permitting either said opaque cover alone or both said opaque cover and said editing blanket to be raised by said handle means.

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