

Nov. 28, 1967

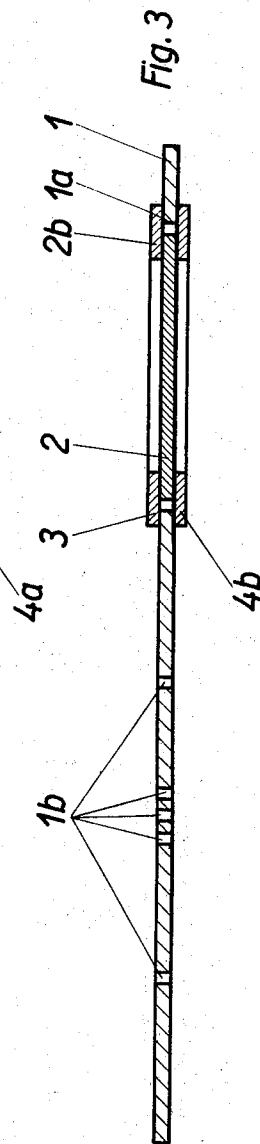
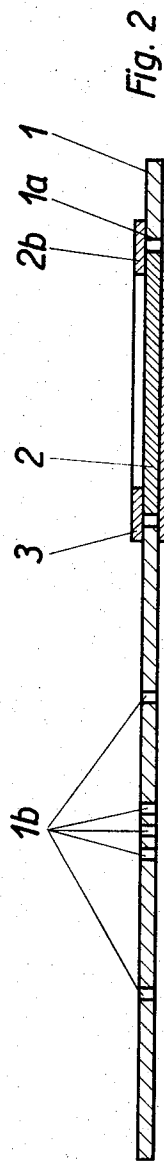
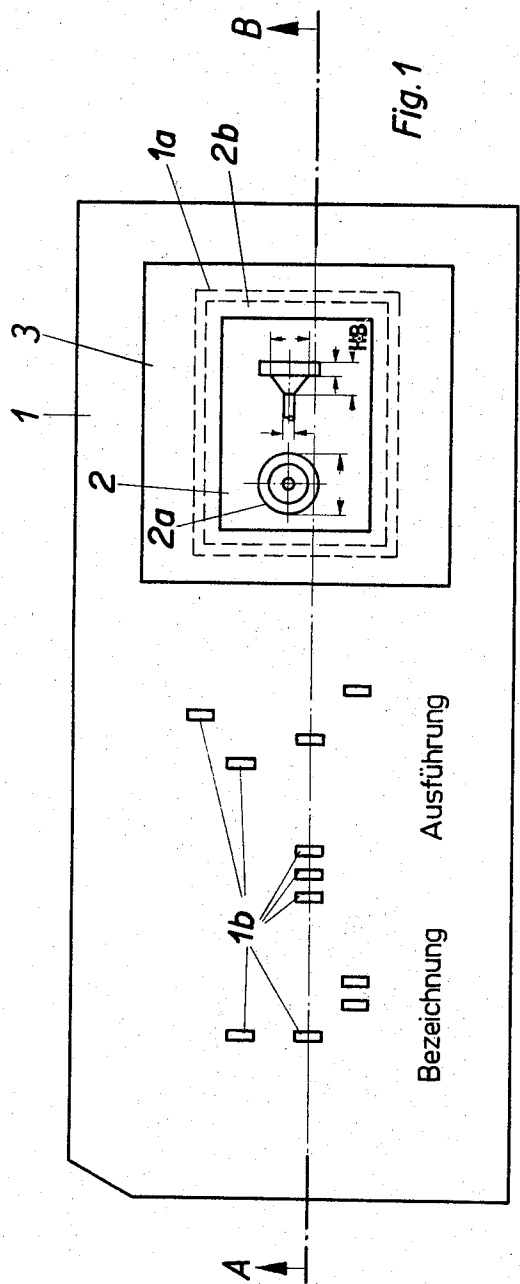
W. KOSCHIER

3,354,568

RECORD CARD WITH FILM INSERT

Filed Jan. 6, 1965

2 Sheets-Sheet 1



Nov. 28, 1967

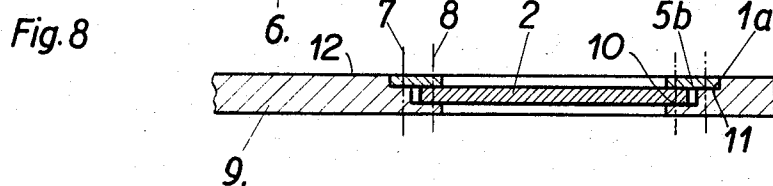
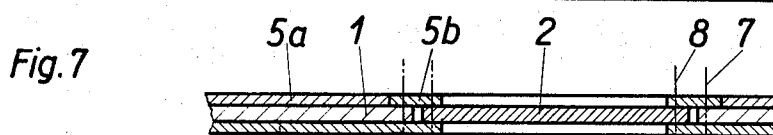
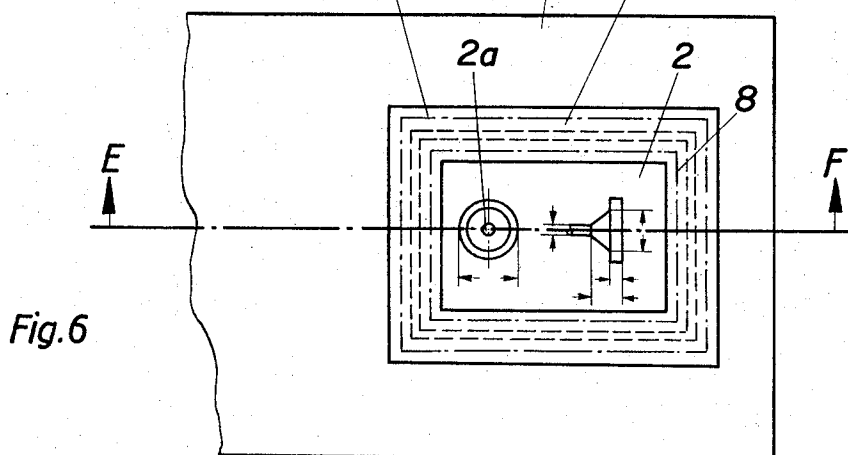
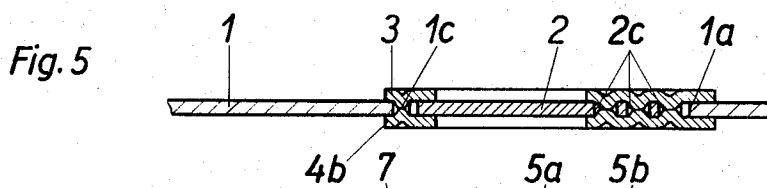
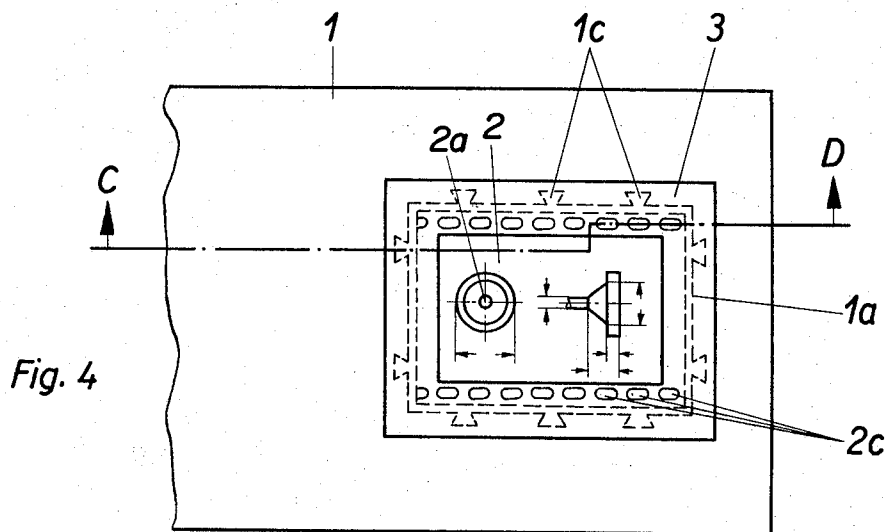
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RECORD CARD WITH FILM INSERT

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2 Sheets-Sheet 2



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3,354,568

RECORD CARD WITH FILM INSERT
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ABSTRACT OF THE DISCLOSURE

The invention is a punched record card for being mechanically sorted according to information encoded thereon and which bears a photographic film for image information, the film being mounted on the card over an aperture therein by a frame of foil material. Foils may cover the remainder of the card and one transparent foil may cover the film.

The invention relates to a record card, such as a punched card whose holes represent data or information for mechanical scanning and subsequent use, and more particularly to such a card having an aperture containing a transparent photographic film mounted on the card for photographic reproduction of image information.

An object of the invention is to fasten the transparent film onto the card in such a manner that the fastening means allows chemically developed film as well as unexposed film to be inserted in the aperture of the card and to allow exposure of the film from at least one side face of the card.

Another object is to provide a card and film combination which will enable the removal of dust that may accumulate on the transparent photographic film.

Another object is to provide a card bearing the photographic film which will not warp due to unequal expansion under influences of heat and humidity changes.

Further objects of the invention are explained in the description to follow which refers to the drawing, on enlarged scale, wherein:

FIG. 1 is a plan of a card carrying a photographic film;

FIG. 2 is a longitudinal sectional view of the card of FIG. 1, the section being taken along the line A-B of FIG. 1 looking in the direction of the arrow of said line;

FIG. 3 is a sectional view similar to FIG. 2, showing a modification of the invention;

FIG. 4 is a plan of another form of the invention;

FIG. 5 is a sectional view of the card in FIG. 4, the section being taken along the line C-D of FIG. 4, looking in the direction of the arrows of said line;

FIG. 6 is a plan of yet another form of the invention;

FIG. 7 is a sectional view of the card of FIG. 6, the section being taken along the line E-F of FIG. 6 looking in the direction of the arrows of said line, and

FIG. 8 shows a modification of the invention.

Description of the preferred embodiments

FIGS. 1 and 2 show a card 1 provided with a rectangular aperture 1a for a transparent photographic film 2 and with the usual punch holes 1b. The film 2 bears, after exposure and development, image information such as 2a. Secured on the side faces of the card at the zone of the aperture are respective coverings or foils 3 and 4a, the foil 3 being in the form of a frame extending inwardly over the film margins 2b which are generally not serviceable for image reproduction. In FIG. 2 the foil 4a completely covers the film, while in FIG. 3 the foil 4b opposite foil 3 is also frame-like and leaves the film open at both of its side faces. The material of the card 1 is generally cardboard whereas the foils 3, 4a and 4b are of material which can be processed to foils of minimum thickness, yet with high strength, for example plastic or

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metal foil which can be permanently secured to the card 1 such as by cementing or welding.

In the construction according to FIGS. 2 and 3 with at least one face of the film being open to the exterior, automatic self-developing cameras may be used to focus the image 2a on the film after the latter is mounted on the card. The film surface open to the exterior may be treated with the necessary developing and fixing chemicals. When a fully covering foil such as 4a for the film is used, the foil is of transparent material.

The film may be inserted in the aperture 1a if only one side edge of the two foils is not adhered to the card. The invention is therefore suitable for use with both developed film and unexposed photographic film. With the latter, the image 2a can be produced and fixed simultaneously with the punching of holes 1b so that need for sorting cards to correlate the image with the punched data is eliminated. In the event that the film need not be exchanged for another at a later time, it is possible to insert the film in the aperture 1a prior to adhering one of the foils to the card and the missing foil is then later secured to the card, or both foils can be applied and secured simultaneously.

FIGS. 4 and 5 show a form of the invention with an especially suitable mode of fixation of the foils on the card as well as on the film 2, wherein the margins of the aperture 1a are provided with slots 1c and those of the film with holes 2c through which the two foils 3 and 4b are secured to each other permanently as by cementing or welding. This form of mounting of the film on the card compensates to a high degree strains due to temperature changes and different coefficients of heat expansion of the card and foils. Commercial strip film having sprocket feed holes in the side margins make this form of film desirable for use in this form of the invention. This mode of mounting may be used with a foil such as 4b in FIG. 3.

FIGS. 6 and 7 show another form of the invention wherein a frame-like foil 5b is secured on one face of the card at the zone of the aperture for retaining the photographic film 2 therein and an interfitting foil 5a surrounding and flush with foil 5b is secured on and covers the remainder of the contiguous surface of the card. The opposite surface of the card bears a one piece foil 6 of the same shape and location relative to the aperture as foils 5a and 5b together. This construction enables the insertion of the film 2 in the aperture after foil 6 is applied and secured, but before foil 5b is completely secured. The film 2 may be loose between foils 5b and 6 or it may be attached to both of these foils at lines 8 shown in dot and dash in FIG. 6 or at one or more points on such lines. The foils may be of plastic and if so, they may be welded to the photographic film. Furthermore if the card 1 is of plastic, as it may advantageously be, if it is subjected to wide changes of temperature and humidity, the foil 5b may be welded to the card 1 as along the line 7.

Thus, in assembly, if the foils 5b and 6 and the card are all of plastic, the securing of the foils on the card can be carried out by only one stamp welding operation as at points in the lines 7 and 8. If the material of the foils is transparent, visible matter on the card 1 can be sealed over by the foils 5a and 6 which enables protection against wear and falsification.

In the form of the invention shown in FIG. 8 the card 1 and foils 5a and 6 are combined into an integral card 9. The card has an internally extending ledge 10 about the aperture as a support for the marginal portions of the film 2 and is provided with a perimeter rabbet groove 11 to receive the frame foil 5b flush with the adjacent face 12 of the card 9. The card is preferably of plastic as stated of FIG. 7.

The invention permits the insertion of the photographic film whether exposed and developed or unexposed, under

an unsecured foil edge at the margin of the aperture 1a. With at least one face of the film being open to the exterior it may receive an image and be developed while on the card 1. Moreover the open face or faces may be dusted off to remove any accumulation of dust on the open face. Reproduction of the image 2a by transmitted light is not prevented by the continuous foil 4a provided the latter is transparent. Since both faces of the combined card and foils are almost alike there is little tendency for the combination to become warped by changes in atmospheric conditions.

I claim:

1. In combination, a record card for mechanically scannable information and provided with an aperture, two foils secured to the respective opposite faces of the card, a photographic film bearing photographic information within the aperture and between the foils, one of the foils being frame-like and covering the film at edge portions substantially devoid of photographic information, the second of the foils covering edge portions of the film and covering completely the contiguous face of the card, and a third foil interfitting flush with the frame-like foil and covering the remainder of the face of the card carrying the second of the foils.

2. In a combination as claimed in claim 1, the second of the foils being transparent and covering the whole film.

3. In a combination as claimed in claim 1, the rim width of the frame being substantially constant therearound with substantially equal widths of framing extending over the card and the film respectively.

4. In a combination as claimed in claim 1, said second of the foils extending over only the edge portions of the film unusable for photographic information.

5. In a combination as claimed in claim 1, said foils being of plastic.

6. In a combination as claimed in claim 1 said foils being transparent.

7. In combination, a record card provided with a plurality of mechanically scannable information indicators for distinguishing similar cards of differing scannable information, said cards being provided with an aperture, a photo-sensitive film within the aperture, and a frame-like retaining means adjacent the perimeter of the aperture for holding the film in the aperture, at least one surface of the photosensitive film being open to permit application of developing and fixing agents to the film for producing a permanent visible image on the film after the film has been photographically exposed.

8. In a combination as claimed in claim 1, said retaining means being substantially flush with the surface of the card.

9. In combination, a record card for information and provided with an aperture; perimetric ledge means extending inwardly from the periphery of the aperture, a photographic film in the aperture and on and in contact with the ledge, the card being also provided with a perimetric rabbet groove about the aperture and a frame over the aperture and film and in the rabbet groove substantially flush with the adjacent outer face of the card, the frame being of foil material and secured to the card.

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