

June 27, 1939.

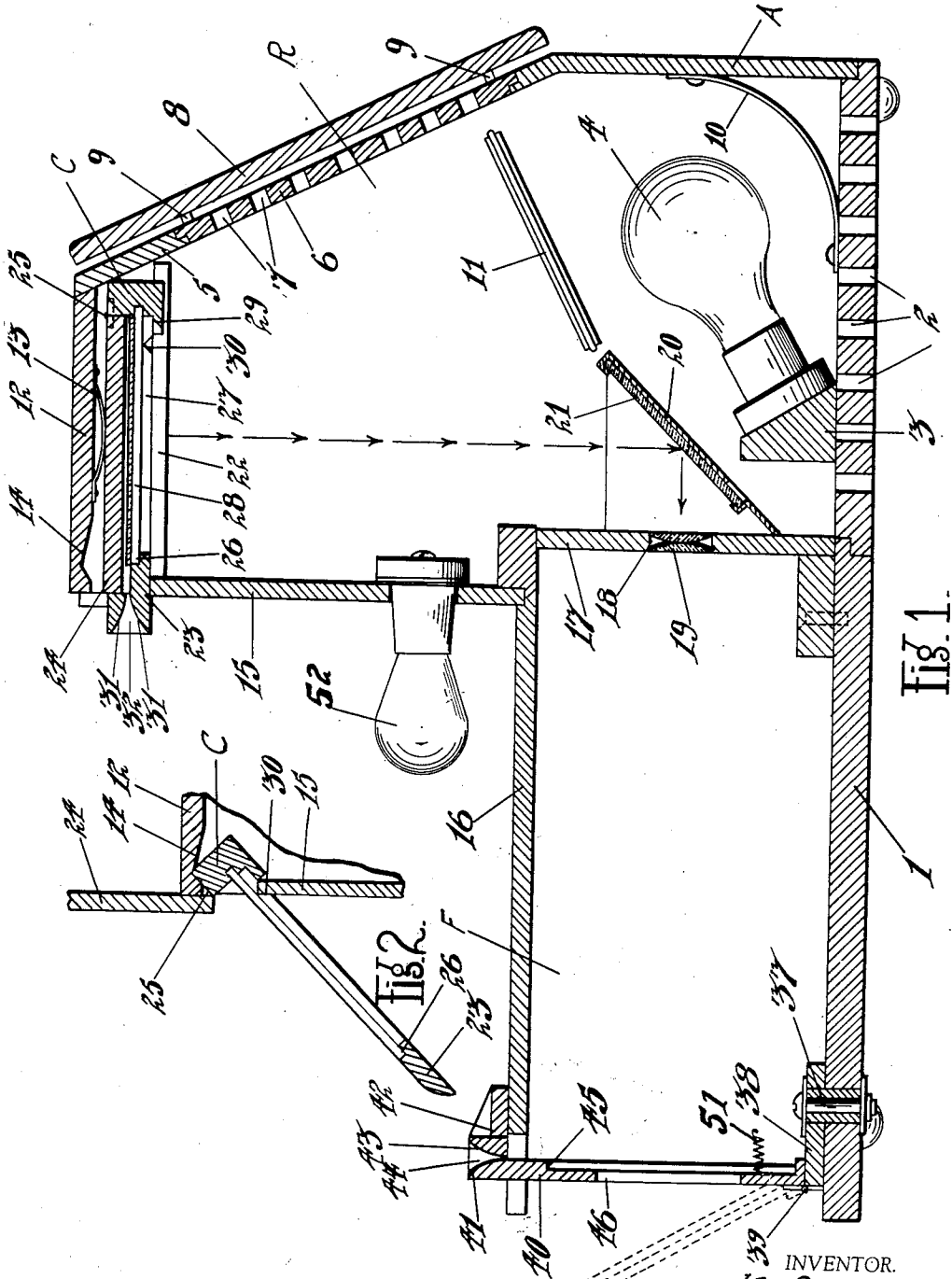
I. B. CURRENT ET AL

2,163,776

COPYING CAMERA

Filed Aug. 26, 1936

2 Sheets-Sheet 1



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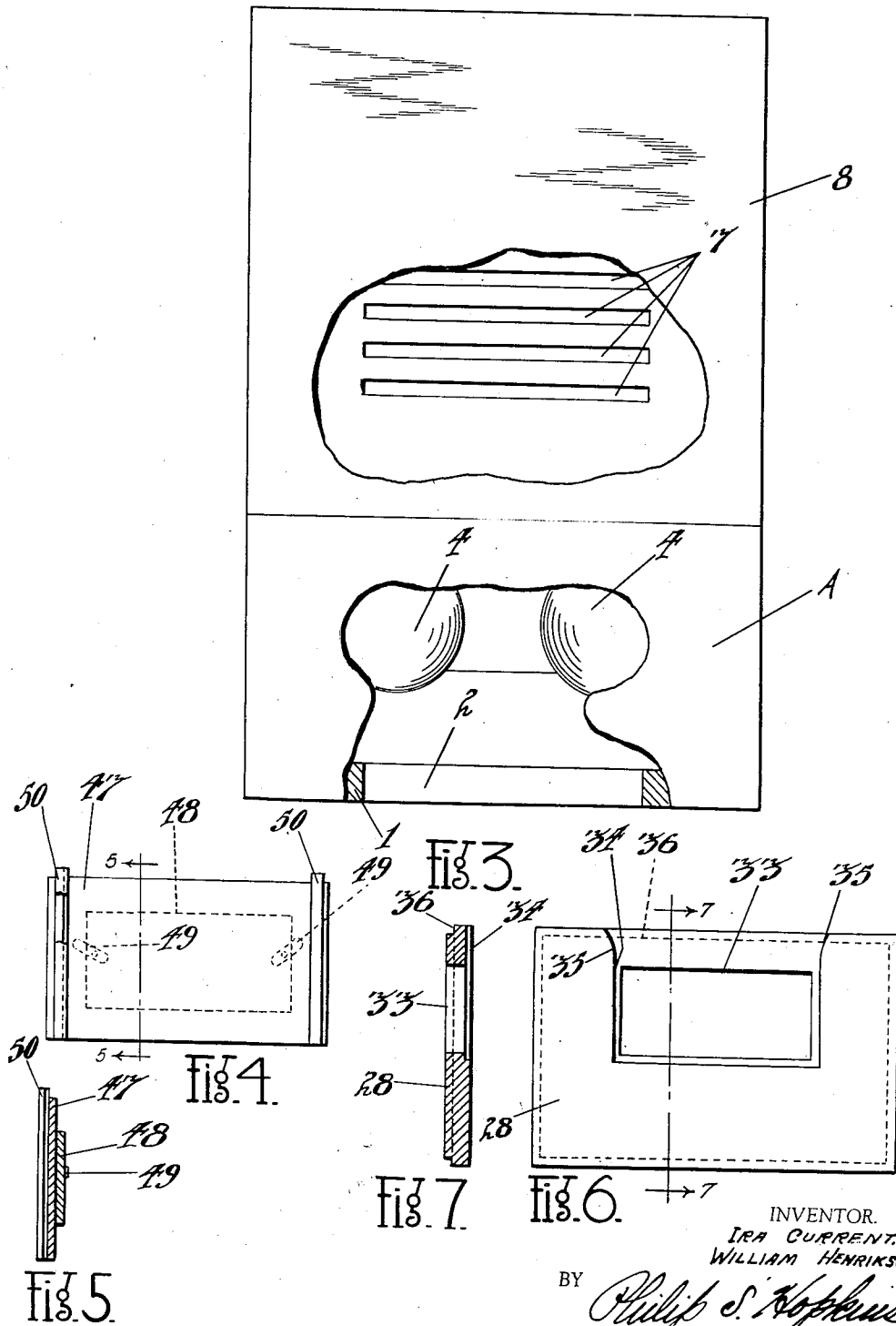
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COPYING CAMERA

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Application August 26, 1936, Serial No. 97,981

6 Claims. (Cl. 88—24)

Our invention relates to a copying camera and particularly to a camera for copying photographically and selectively the data on parts of cards or the entire data thereon, as desired.

Our improved copying camera is designed specifically for photographically transferring from one card to another certain selected data such as, for instance, the signature on a bank card or record to a new card or record of like character.

Our camera is particularly useful in banks where deposit cards or slips are used and on which the depositor places his signature in a certain place on the card, the rest of the card being ruled for subsequent use, such as for entries of deposits, withdrawals, etc. In the past each depositor has been required to sign a new card each time the old one has been filled up with entries, thus causing inconvenience and additional work both to the bank and to the depositor. By the use of duplicate cards, partially sensitized, and by means of our improved copying camera, the original signature on the first deposit card signed by the depositor can be photographically copied and transferred from the original to a new card without requiring a depositor to come to the bank and sign.

This is one very practical use and purpose of our invention and in connection with which it has been illustrated and will be described. Obviously, other uses and applications of the camera come within the scope of the invention.

One of the objects of our invention lies in the provision of a novel holding means for the material to be copied.

Another object lies in the provision of improved means for holding the sensitive material upon which the original is photographically copied.

Other objects and advantages will be apparent as the description proceeds, reference now being had to the figures of the accompanying drawings forming a part of this application and wherein like reference numerals indicate like parts.

In the drawings

Figure 1 is a side sectional view of my improved copying camera.

Figure 2 is a detail sectional view illustrating the holder for the material to be copied, in its open position.

Figure 3 is a rear view of the copying camera, with parts being broken away for clearness.

Figure 4 is a plan view of the frame or holder for the sensitized card or material.

Figure 5 is a sectional view of such frame taken on the line 5—5 of Figure 4.

Figure 6 is a plan view of the frame or holder for the material to be copied.

Figure 7 is a detail sectional view of such frame taken on the line 7—7 of Figure 6.

The camera comprises essentially a casing designated generally as A and including a bottom 1, one end of which is provided with slots or perforations 2 for the admission of air into the casing. Mounted upon suitable blocks or supports 3 on this slotted part of the bottom 1 are lamps 4 for illuminating the material to be copied. The lamps 4 are so disposed as to directly overlie the perforated bottom portion whereby the air entering the casing from the outside will pass around the lamps for cooling purposes.

A portion of rear wall of the casing is disposed on an angle as at 5 and has removably mounted therein a wall section 6 slotted or perforated as at 7, carried by a cover member 8 secured thereto as by means of the screws 9. Cover 8 is spaced from the perforated section 6, as shown clearly in Figure 1, to permit the circulation of air from within the casing out through the perforation 7 and around the cover 8, escaping to the atmosphere. This angularly disposed section of the back wall substantially overlies the lamps 4 so as to permit quick egress of the heated air from such lamps to the outside of the casing.

The perforated section 6 with the cover 8 is readily removable to permit access to the interior of the casing. The cover 8 overlying the perforations 7 provides an effective light lock against the entry of light through such perforations into the casing. A reflector member 10 may be provided in back of the lamps 4 whereby the rays from such lamps are reflected upwardly and angularly through a diffusing screen 11 to the top of the casing where the material to be copied is positioned, whereby such material is brightly and evenly illuminated by the lamps.

The rear part of the casing A extends upwardly as indicated in Figure 1 and is provided with a fixed top 12, the underside of which is provided with a leaf spring 13 for a purpose to be described. The forward edge of the underside of this top 12 is notched as at 14, also for a purpose to be described.

A front plate 15 extends downwardly from the top 12 engaging its bottom edge with the top 16 of the forward extension of the casing. A partition 17 divides the casing into a rear compartment R and a front compartment F and

disposed in an opening 18 in this partition is a lens unit 19.

The partition 17 carries an angular supporting bracket 20 upon which is disposed a mirror or other reflecting surface 21 in position to reflect an image from a point adjacent the top 12, through the lens 19 to the front of the casing. The supporting bracket 20 is so arranged in relation to the lamp 4 as to shield the lamp from rays from such lamp except as are reflected from the image at the top of the casing.

Within the compartment R and spaced below the top 12 there are provided side supporting rails or guides 22 to slidably receive a cradle C consisting of a lower frame 23 and an upper cover 24, hinged thereto as at 25. This cradle C, when the cover 24 is closed, is therefore readily slidable into or outwardly of the casing and when disposed within the casing, as shown in Figure 1, the release spring 13 engages the cover 24 to hold it in closed position.

The lower part 23 of the cradle is grooved as at 26 around the edges of an opening 27, such grooves adapted to receive a frame 28 which carries the material to be copied and which is held in its seated position in the cradle member 23 by the cover 24 engaging thereover.

The rear edge of the cradle member 23 is provided with a downwardly extending portion 29 and the sides of this portion adjacent the rear edge thereof are notched as at 30. By reason of this construction when the cradle is pulled outwardly, as shown in Figure 2, the stop member 29 engages the upper edge of the front plate 15 to limit the outward movement of the cradle, and the notches 30, cooperating with the notch 14 on the underside of the top 12, permit tilting the cradle and the opening of the cover 24 thereof, whereby the cradle is made conveniently and readily available for inserting the holder 28 for the material to be copied, or for removing or replacing the same.

When the cradle is in its closed position and inside the casing, it is in proper alignment with the lamp 4 and diffusing screen 11 to be properly illuminated and also in proper position with respect to the mirror 21 for the reflection of the image of the material carried in the cradle through the lens 19 to the front of the casing.

The free ends of the upper and lower portions of the cradle member have their adjacent surfaces bevelled as at 31 to provide a throat 32 serving as a guide for the entry of cards thereinto. The card extending into the cradle through the throat 32, directly overlies the frame 28 and the opening 27 in the cradle, for illumination by the rays from the lamp 4. The frame 28 is in the nature of a mask and may have an opening therethrough of any desired size, shape and position with respect to the opening 27. This frame 28 is shown in detail in Figures 6 and 7 in which one form only is shown. Obviously, the opening 33 in this frame may be of any desired size to accommodate the particular data to be copied and to mask off from the card any data which it is desired to omit in the copy. The frame may be provided on one side adjacent the opening 33 with a recessed portion 34 open at one edge of the frame and bevelled as at 35 to provide guide means for the ready entry of the card to a position overlying the opening 33 by means of which it is held in predetermined position. The opposite side of the frame 28 may be grooved around the edges as

at 36 to fit into the lower cradle member 23 in cooperation with the groove 26.

Secured to the bottom 1 adjacent the front end of the compartment F of the casing, as by the screws 37, is a supporting strip 38 to which is hinged as at 39 a front door 40 extending upwardly to a point beyond the top 16 of this compartment. The upper extending end of this door 40 is bevelled as at 41, and mounted upon the top 16 directly adjacent the door 40 when in its closed position, is a guide block 42 also bevelled as at 43 to provide a throat 44 for the entry of cards either wholly or partially sensitized, for exposure with the image of the material to be copied carried in the cradle C.

The door 40 is recessed on its inner surface as at 45 and is provided with an opening 46. Adapted to be received within the recess 45 and opening 46 is a card frame 47 (see Figures 4 and 5). This frame is provided on one side with a projecting portion 48 adapted to enter and close the opening 46 in the door 40 and is provided on its outer surface with pivoted catch members 49 adjacent its ends for turning to locking engagement over the outside surface of the door 40 whereby the frame is removably secured in position on the door.

The opposite side of the frame 47 is provided adjacent its ends with guide strips 50 forming grooves or channels in alignment with the throat 44 and by means of which the sensitized card is guided and held in proper position and alignment with the lens 19 through which the image is projected. A coil spring 51 has one end secured to the door 40 and its opposite end secured to a side wall of the casing and serves to normally pull the door to closed position.

The frame 47 for receiving the sensitized cards may be of any desired size or shape, depending upon the size of the apparatus and the position of the guides 50 for the sensitized cards is of course determined by the width of the card to be used.

Where cards of various sizes are to be copied, the user of this apparatus will be provided with a plurality of the holder frames 47 and also of the frames 28—one for each size of card or portion of the card to be copied. The ready removability of the frames 28 and 47 lends the apparatus considerable flexibility in the type and size of card to be copied.

Mounted upon the front wall 15 is a lamp 52, preferably of ruby color, or having other safety characteristics, which serves as a means of illumination for the operator in using the machine.

The operation of our invention will now be briefly described. Assuming that a bank deposit card containing the original signature of a depositor has been completely filled with entries and it is desired to provide a new card for this depositor for additional entries. The operator withdraws the cradle C to the position shown in Figure 2 and places therein the frame 28 provided with masking means for all portions of the original deposit card except the signature thereon. The cradle is then returned to the position shown in Figure 1 and the card inserted through the throat 32 until its back edge engages the rear part of the cradle C. In this position the frame 28 masks all but the signature on the card.

The operator then opens the door 40 and places therein the frame 47 of a size to receive a new deposit card corresponding to the original and having at a corresponding end or position, light-sensitive material adapted to be exposed by the

image of the signature on the original. This frame 47 is then fastened in position by the turn buttons 49 and the door 40 permitted to close. The new card with its sensitized portion is now inserted through the throat 40, guided by the ribs 50 until it reaches the bottom of the door frame in which position the sensitive material is in alignment with the lens 19.

The operator now illuminates the lamp 4 for the desired period of time necessary to expose the sensitive card to the illuminated image of the signature on the original card, whereupon the lamp is extinguished, and the sensitive card removed for development in the usual photographic baths, whereupon a new deposit card is provided with a photographic reproduction of the original signature thereon and which can be used for continued entries without requiring the depositor to come in and sign the new card.

It will be understood, of course, that a variety of types of cards and transfers may be made with this copying camera, and the removable and interchangeable frames for the cards render the apparatus widely useful for copying purposes.

The focus of the lens 19 is of course fixed for the proper projection of the image of the original material sharply to the plane of the sensitized card. Obviously such projection may be—and usually is—the exact size of the original, although it may be reduced or enlarged as may be required.

The apparatus is simple in operation, inexpensive to manufacture, portable in size, and does not require the services of a skilled operator.

Of course changes may be made in details of construction and arrangement of parts without departing from the spirit and scope of our invention. We do not limit ourselves, therefore, to the exact form herein described other than by the appended claims.

We claim:

1. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied comprising a cradle slidably mounted in said casing, and stop means on said cradle cooperating with said casing to limit the outward movement of the cradle, said cradle having a portion pivoted thereto, said pivoted portion being held in closed position by the top of the casing when the cradle is disposed therein and being operable to open position only when said cradle is in its outermost position, and resilient means on the underside of the top of said casing for engaging the pivoted portion of said cradle in closed position.

2. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied comprising a cradle slidably mounted in said casing, and stop means on said cradle cooperating with said casing to limit the outward movement of the cradle, said cradle having a portion pivoted thereto, said pivoted portion being held in closed position by the top of the casing when the cradle is disposed

therein and being operable to open position only when said cradle is in its outermost position, and resilient means on the underside of the top of said casing for engaging the pivoted portion of said cradle in closed position, and a removable guiding and masking frame in said cradle for the material to be copied.

3. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied comprising a cradle slidably mounted in said casing and adapted for pivotal movement in respect thereto in its outermost position, said cradle having a top portion pivoted thereto and adapted for opening in such outermost position, and means for holding said pivoted portion in closed position when the cradle is within the casing, the outer free ends of said cradle projecting beyond said casing and being bevelled to form a guide for the insertion of the material to be copied.

4. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied comprising a cradle slidably mounted in said casing and adapted for pivotal movement in respect thereto in its outermost position, said cradle having a top portion pivoted thereto and adapted for opening in such outermost position, and means for holding said pivoted portion in closed position when the cradle is within the casing, the outer free ends of said cradle projecting beyond said casing and being bevelled to form a guide for the insertion of the material to be copied, the lower portion of said cradle having an opening therethrough, and a guiding and masking member in said cradle cooperating with said opening and with said bevelled ends for properly positioning the material to be copied with respect to said illuminating and projecting means.

5. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied, a pivoted door on said casing, and a holder for sensitized material removably mounted on said door, and means normally urging said door to closed position on said casing, and bevelled means on said door and casing to form a guide for the insertion of sensitized material into said holder with the door in closed position.

6. A copying camera comprising a casing, illuminating and projecting means therein, a holder for material to be copied, a pivoted door on said casing, and a holder for sensitized material removably mounted on said door, and means normally urging said door to closed position on said casing, and bevelled means on said door and casing to form a guide for the insertion of sensitized material into said holder with the door in closed position, and means carried by said holder and cooperating with said door for removably securing the holder thereto.

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