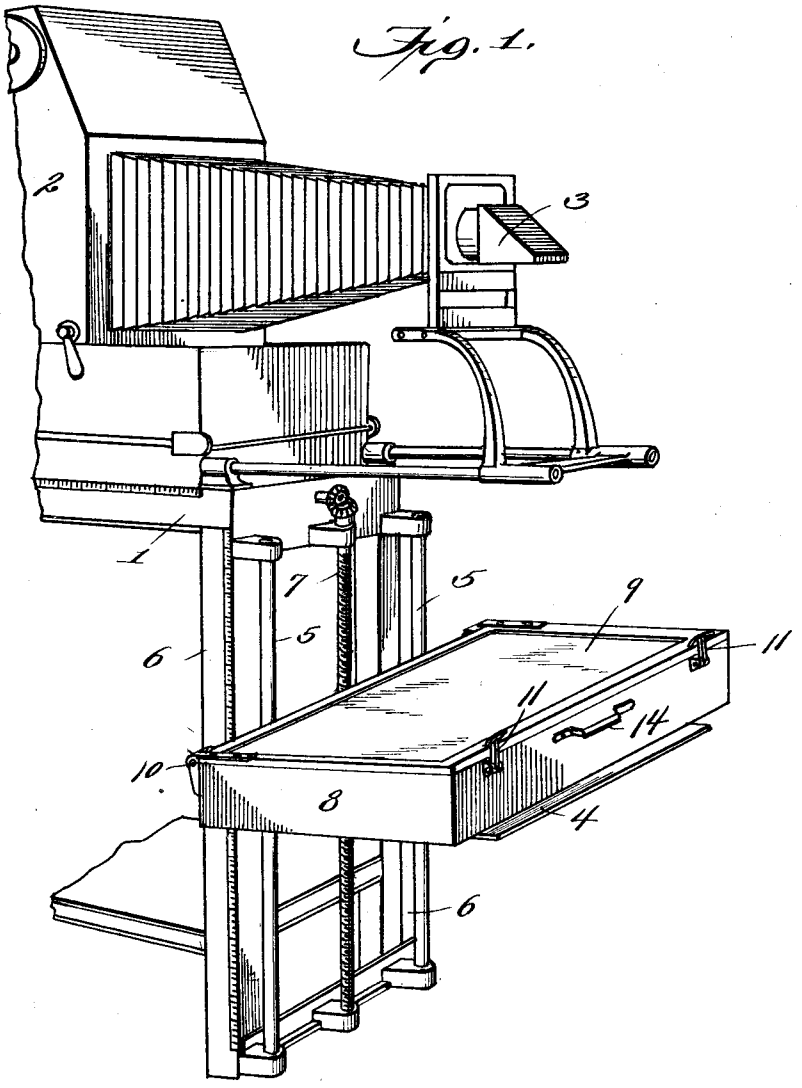
Feb. 19, 1929. 1,702,494

A. W. CAPS

COPY HOLDER FOR PHOTOGRAPHIC MACHINES

Filed March 3, 1925 3 Sheets-Sheet 1

Fig. 1.



INVENTOR.
Arthur W. Caps
BY
ATTORNEY.

Feb. 19, 1929. 1,702,494

A. W. CAPS

COPY HOLDER FOR PHOTOGRAPHIC MACHINES

Filed March 3, 1925 3 Sheets-Sheet 2

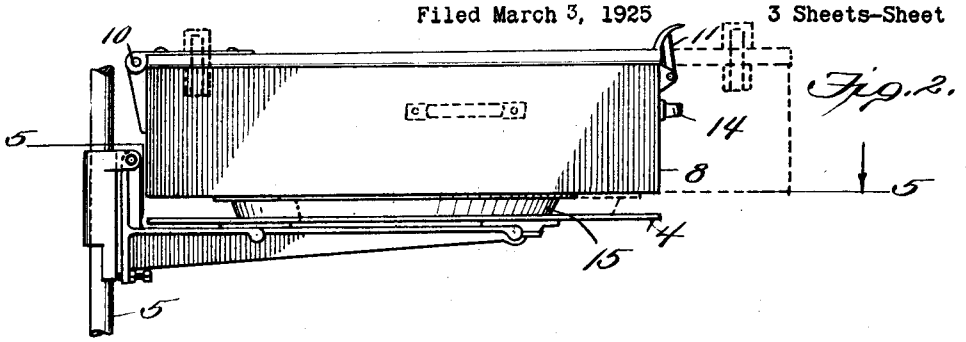
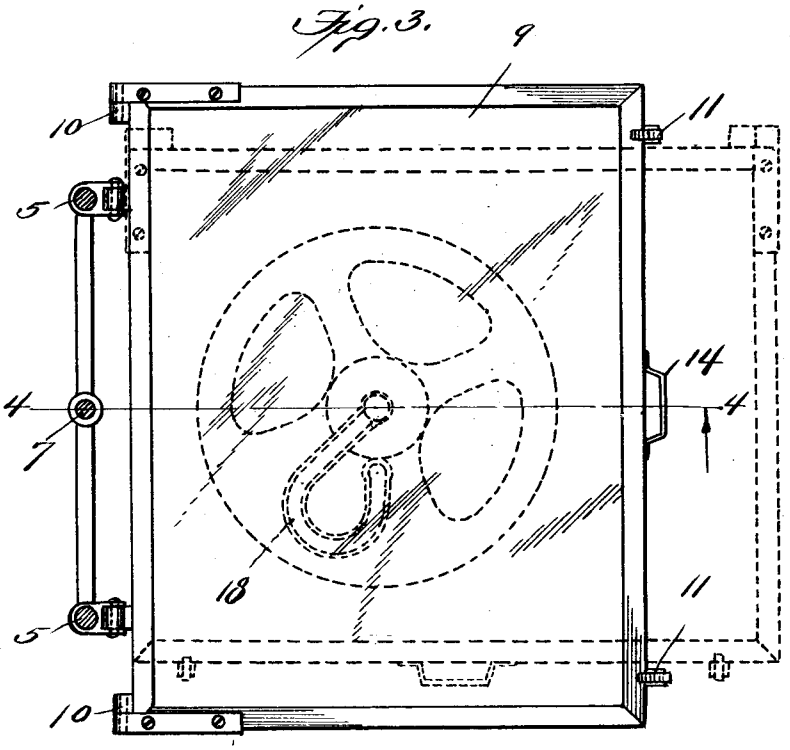


Fig. 2.

Fig. 3.



INVENTOR.
Arthur W. Caps
BY
James L. Norris
ATTORNEY.

Feb. 19, 1929. 1,702,494

A. W. CAPS

COPY HOLDER FOR PHOTOGRAPHIC MACHINES

Filed March 3, 1925 3 Sheets-Sheet 3

Fig. 4.

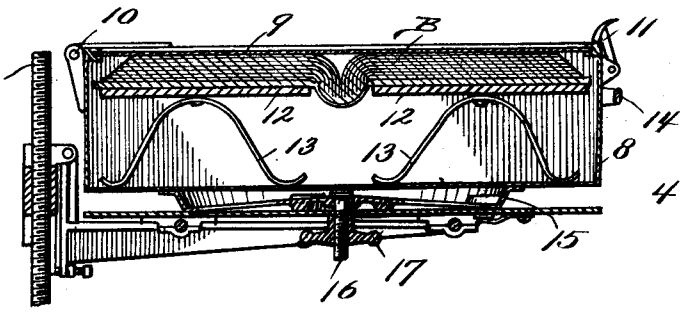


Fig. 5.

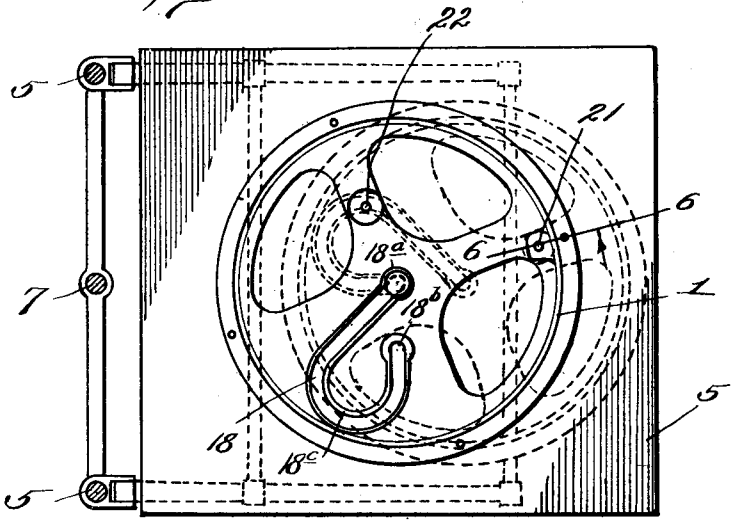
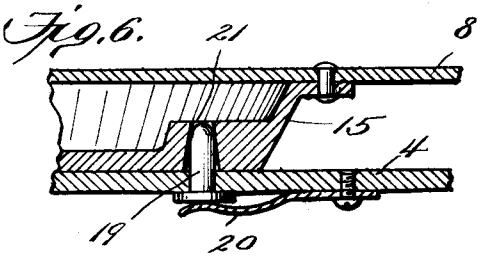


Fig. 6.



INVENTOR.
Arthur W. Caps
BY
ATTORNEY.

Patented Feb. 19, 1929. 1,702,494

UNITED STATES PATENT OFFICE.

ARTHUR W. CAPS, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PHOTOSTAT CORPORATION, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

COPYHOLDER FOR PHOTOGRAPHIC MACHINES.

Application filed March 3, 1925. Serial No. 12,910.

My present invention relates to improvements in book holders or copy boards, and especially those of the kind used in conjunction with or as a part of photographic apparatus employed for the purpose of producing photographic copies of books, documents and the like.

In using such book holders or copy boards, it becomes necessary, at times, to turn or partially rotate the book, document or the like being photographed, in order that printing or writing which extends lengthwise or vertically on a page, instead of extending across the page, as usual, may, in the photographic copy of such page, extend across the page. Where, as is usual, the book holder is arranged immediately in front of the legs of the table which supports the photographic apparatus, it has been impossible to turn or rotate the book holder as its corners would strike against such legs. Consequently, it has heretofore been necessary to remove the book or copy from the holder and to replace it after turning, and then to restore the book or copy to its former position, these operations, however, being inconvenient and involving the loss of much time.

The primary object of this invention is to provide means which enables the book holder or copy board to be easily and quickly turned from its normal or usual position to a position at a right angle thereto, and restored to its initial or normal position, whereby the reading or other matter which may be arranged in one way upon the original book or copy may be arranged in a different way in the reproduction or copy thereof, such means insuring the correct centering of the book or copy in front of the photographic lens when the book holder is set in either of its positions, and it guiding the book holder while being turned from one position to the other so that the operation is facilitated and striking of the corners of the book holder against the adjacent legs of the table is avoided.

To these and other ends, the invention consists in certain improvements and combinations and arrangements of parts, all as will be hereinafter more fully described, the features of novelty being pointed out particularly in the claims at the end of the specification.

In the accompanying drawings;—

Figure 1 is a perspective view of the front end of a photographic copying machine equipped with a book holder constructed in accordance with the present invention;

Figure 2 represents, on an enlarged scale, a side elevation of the book holder as shown in Figure 1, the dotted lines indicating the position of the book holder when turned at a right angle to its normal or usual position;

Figure 3 represents a top plan view of the book holder as shown in Figure 2, the legs of the supporting table for the photographic machine being shown in section, and the dotted lines indicating the position of the book holder when it is turned into a position at a right angle to its normal or usual position;

Figure 4 represents a cross-section on the line 4—4 of Figure 3, looking in the direction of the arrow;

Figure 5 represents a section taken on the line 5—5 of Figure 2 and looking in the direction of the arrow; and

Figure 6 represents a detail, on an enlarged scale, the section being taken on the line 6—6 of Figure 5 and looking in the direction of the arrow.

Similar parts are designated by the same reference characters in the several views.

The present invention is applicable, generally, to book holders and analogous devices adapted to be employed generally for the purpose of holding or supporting a book or the like normally in a given position and where it is desirable to turn or rotate the book or the like angularly so that the reading or other matter thereof may appear at a different angle. The invention is particularly applicable to photographic copying machines of the class employed for the purpose of making photographic reproductions of the pages of books, documents and the like, it enabling the reading or other matter contained in the book or original to be re-arranged in the photographic copy thereof so that it may appear in the desired way in the copy. More particularly, the invention enables a book undergoing photographic copying to be easily and quickly turned at a right angle to its normal or usual position so that reading or other matter on a page thereof which may read vertically of such page may be reproduced in the copy so that it reads horizontally or across

the page. The preferred embodiment of the invention is shown in the accompanying drawings and will be hereinafter described in detail. It is to be understood, however, that the invention is not restricted to the precise construction shown, as equivalent constructions are contemplated, and such will be included within the scope of the claims.

In the present instance, 1 designates the forward end of the table which supports a photographic copying machine 2 which may be of any suitable type employing a photographic lens and prism unit 3 which receives the light rays from a book or object supported beneath it and projects such rays onto a photographic strip or other sensitized medium contained within the machine, the construction and mode of operation of machines of this class being well known in the art. The book or other object to be photographed is conveniently supported in a horizontal position beneath the lens and prism unit by a plate or board 4 and this board is usually supported by and adjustable vertically on guides 5 which are attached to the forward side of the legs 6 of the table, a screw 7 serving to adjust the said board and to support it in its different adjusted positions. In making photographic copies of books, it is usual to employ a book holder 8 which may consist generally of a rectangular casing which is preferably oblong so that it may accommodate to the best advantage books of various sizes and shapes. The top of the book holder, preferably has a glass or transparent panel 9 adapted to bear against the pages of an open book, thus positioning the pages correctly in the plane for which the photographic machine has been focused, and this glass panel may be fitted in a frame which is hinged at 10 to one side of the casing so that it may be readily opened to permit insertion or removal of the book or turning of the pages thereof, catches 11 serving to hold the glass panel in closed position. The book designated B may be supported within the book holder by boards 12, and in order to compensate for differences in the thickness of the two sides of an open book, these boards may be supported by springs 13 which rest against the bottom of the book holder and support the boards 12 therein. A handle 14 is preferably provided at the front of the book holder to facilitate its manipulation. Book holders of different constructions may be used, the book holder shown and described above being an example of one suitable for use in carrying out the invention.

According to the present invention, the hook holder is mounted on the board or support 4 so that it may swivel or rotate in a plane parallel with its top surface, it is guided during its rotating movements so that the corners of the book holder will not strike the table legs or the guides 5 thereon, and furthermore, the book holder is properly centered in each of the positions into which it may be turned. Preferably, and as shown in the present instance, the bottom or under side of the book holder has a base or disk-like member 15 secured thereto and the board 4 is provided with a pivot 16 preferably a bolt having a clamping nut 17 threaded thereon and bearing against the under side of the said board. This pivot or bolt projects upwardly through the board and through the cam slot 18 which is formed in the bottom of the base or member 1, the upper end of the pivot or bolt being headed as shown. The upper or headed end of the pivot or bolt, when the latter is unclamped by loosening of the nut 17, is movable freely in the cam slot 18 incident to shifting of the book holder on the board, but when the pivot or bolt is clamped by tightening of the nut 17, the base or member 1 attached to the book holder will be drawn down against the board 4, thus securing the book holder immovably thereon. The base or disk-like member 1 is fixed to the under side of the book holder centrally with respect to the width and length of the book holder, and one end 18^a of the cam slot terminal is located at this central point while the other end 18^b of the cam slot is offset relatively to the end 18^a in a direction longitudinally of the longer dimension of the book holder and for a distance equal to half the difference between the diagonal dimension and the short dimension or width of the book holder.

The oblong rectangular book holder is adapted to occupy either of two positions; that is, either the position shown in Figure 1 and illustrated by the full lines in Figures 2 and 3, in which case, its longer dimension is arranged transversely of the photographic machine, or a position at right angles thereto as indicated by the dotted lines in Figures 2 and 3, in which position the longer dimension of the book holder is arranged longitudinally of the machine. Means is preferably provided for registering and yieldingly retaining the book holder in each of these positions. Preferably, and as shown in the present instance, such means comprises a pin or plunger 19 which works vertically through an aperture in the board 4 and is normally and yieldingly pressed upwardly by a spring 20 which may be attached to the under side of the board 4, as shown in Figure 6. The base or member 15 is provided with apertures 21 and 22 which are suitably arranged therein so that when the book holder occupies the normal position shown in Figure 1 and by the full lines in Figures 2 and 3, the pin or plunger 19 will engage in the aperture 21, thereby holding the book holder in such position, and when the book holder occupies its turned position, as indicated by the dotted lines in Figures 2 and 3, the pin or plunger 19 will register with and project into the aperture 22, thereby retaining the book holder in such position. The posi-

tions occupied by the base or member 15 when the book holder occupies its normal and turned positions respectively, is indicated by the full and dotted lines in Figure 5.

The mode of operation is as follows: Normally the book holder will occupy the position shown in Figure 1 and by the full lines in Figures 2 and 3, its longer dimension being then arranged transversely of the machine. When it is desired to turn or rotate the book holder so that a page of the book being photographed having printed or other matter thereon reading vertically of the page may be reproduced in the photographic copy so that such matter in the reproduction reads normally or across the page, or for other causes, the clamping nut 17 is loosened, the copy holder is grasped by the hands of the operator and is first pulled upwardly, this operation disengaging the pin or plunger 19 from the aperture 21, thus releasing the book holder for rotation, and the book holder can then be rotated by pulling it forward, in consequence of which the pivot or bolt 16 travelling in the cam slot 18 will cause the book holder to shift laterally relatively to the board 4 until the peak 18c of the cam slot is reached, whereupon the book holder is rotated in the proper direction and finally pushed back toward the table legs or guides 5 until the centering or locating pin 19 enters the aperture 22. When the book holder comes to rest, as the result of this operation, its longitudinal dimension will be arranged longitudinally of the machine, one of its ends being adjacent to the guides 5, and in the position previously occupied by a longitudinal side of the book holder. The book holder is restored to its former or normal position by repeating the operation just described except that when the pivot 16 reaches the peak 18c of the cam slot, the book holder is swung or turned in the reverse direction.

During the shifting of the book holder from its normal to its turned position, and vice versa, the curve in the cam slot in cooperation with the pivot 16 will insure forward movement of the book holder which will be sufficient to cause the corner of the book holder to clear the table leg or guide which it passes during this turning movement, and the ends of terminals of the cam slot in cooperation with the pivot 16, will bring the book holder to rest, at the end of its shifting or turning movement in either direction, when such turning or shifting movement has been completed, the center of the long and short dimensions of the book holder, in either of the two positions occupied thereby, being centered laterally beneath the lens and prism unit 3.

I claim as my invention:—

1. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copy holder movable laterally and rotatably with respect to the axis of the lens, and means for guiding the copy holder during its lateral movement relatively to the support, said means comprising a pivot on one of the parts and cooperative engaging means on the other part permitting displacement of said pivot relatively to said last mentioned part.

2. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copy holder movable laterally and rotatably thereon with reference to the axis of the lens, and means for centering the copy holder on the support with respect to the axis of the lens when it is shifted into either of two positions, said means comprising a pivot on one of the parts and guiding means on the other part permitting displacement of the pivot relatively to said last mentioned part.

3. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copy holder movable laterally and rotatably thereon with respect to the axis of the lens, and means for guiding the copy holder during its lateral movements comprising a pivot on one of the parts and cooperative engaging means on the other part permitting displacement of the pivot relatively to said last mentioned part, said guide means also including means for limiting the displacing movement of said pivot.

4. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of an oblong rectangular copy holder movable laterally and rotatably thereon with respect to the axis of the lens, and means comprising a pivot on one of the parts and cooperative cam means on the other part for guiding the copy holder during its lateral movements and for arresting such movements as the copy holder assumes either of two different angular positions relatively to the support.

5. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a rectangular copy holder movable laterally and rotatably thereon, and means for guiding the copy holder during its lateral movements comprising a pivot on one of the parts and cooperative cam means on the other part, said cam means having a curve therein offset toward one of the diagonals of the copy holder.

6. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a rectangular oblong copy holder movable laterally and rotatably thereon with respect to the axis of the lens, and means for guiding the copy holder during its lateral movements and for limiting its said movements comprising cam means embodying cooperating cam

elements on the respective parts, said cam means having terminals one located centrally of the long and short dimensions of the copy holder and another terminal offset from the first-mentioned terminal a distance substantially equal to half the difference between the long and short dimensions of the copy holder.

7. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, a rectangular oblong copy holder movable laterally and rotatably thereon, and means for guiding and arresting the lateral movements of the copy holder comprising a pivot on one of the parts and cooperating cam means on the other part, said cam means having a terminal located centrally of the long and short dimensions of the copy holder and having another terminal offset from the first-mentioned terminal a distance substantially equal to half the difference between the long and short dimensions of the copy holder, the cam means also having a curved portion extending between said terminals and arranged toward a diagonal of the copy holder.

8. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copyholder on said support, a pivot on one of said parts, cooperating guiding means on the other of said parts providing for sliding movement of said pivot therealong whereby said copyholder is movable laterally of said support, and means cooperable with said guiding means for retaining said pivot in either of two positions relatively thereto, whereby said copyholder will be retained in either of two positions relatively to the support and the lens axis.

9. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copy holder movable laterally and rotatably relatively to said support and to the axis of the lens whereby it may occupy either of two positions in either angular relation, means comprising a pivot and cam slot connection between said copyholder and support for guiding the copy holder during its lateral movements to bring it into either of said positions, and means operative automatically when the copy holder is brought into either of said positions to retain the pivot in a selected position in said cam slot and thereby retain said copyholder in either of said positions.

10. The combination with a support and a photographic apparatus including a lens adapted to be focused upon said support, of a copy holder having a base movable laterally and rotatably on the support with respect to the lens axis and provided with a cam slot formed with an intermediate curve, and a clamping element on the support projecting into said slot and movable rotatably in and lengthwise of said slot.

In testimony whereof I have hereunto set my hand.

ARTHUR W. CAPS.