

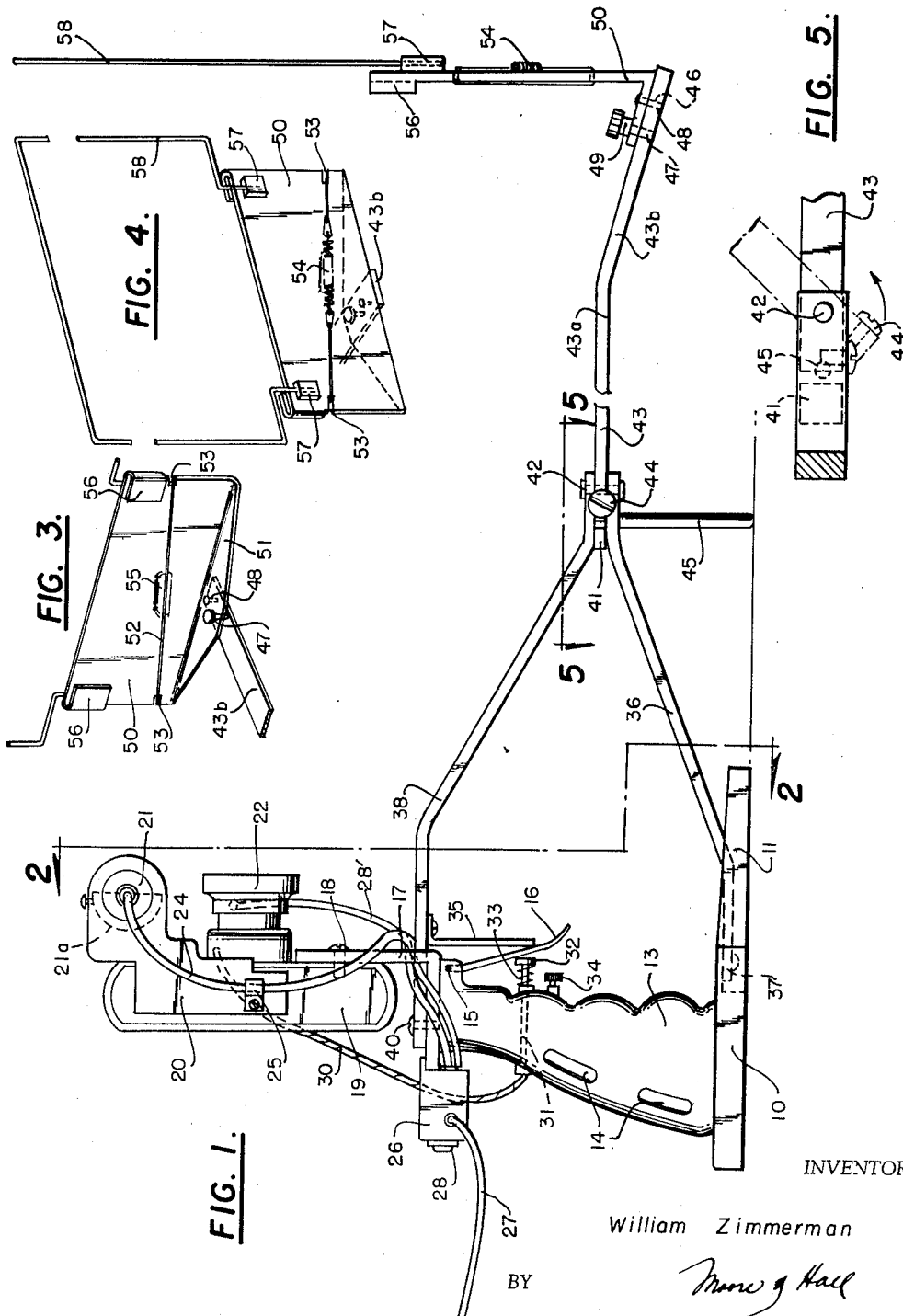
June 28, 1960

W. ZIMMERMAN
PHOTOGRAPHIC EQUIPMENT

2,942,537

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2 Sheets-Sheet 1



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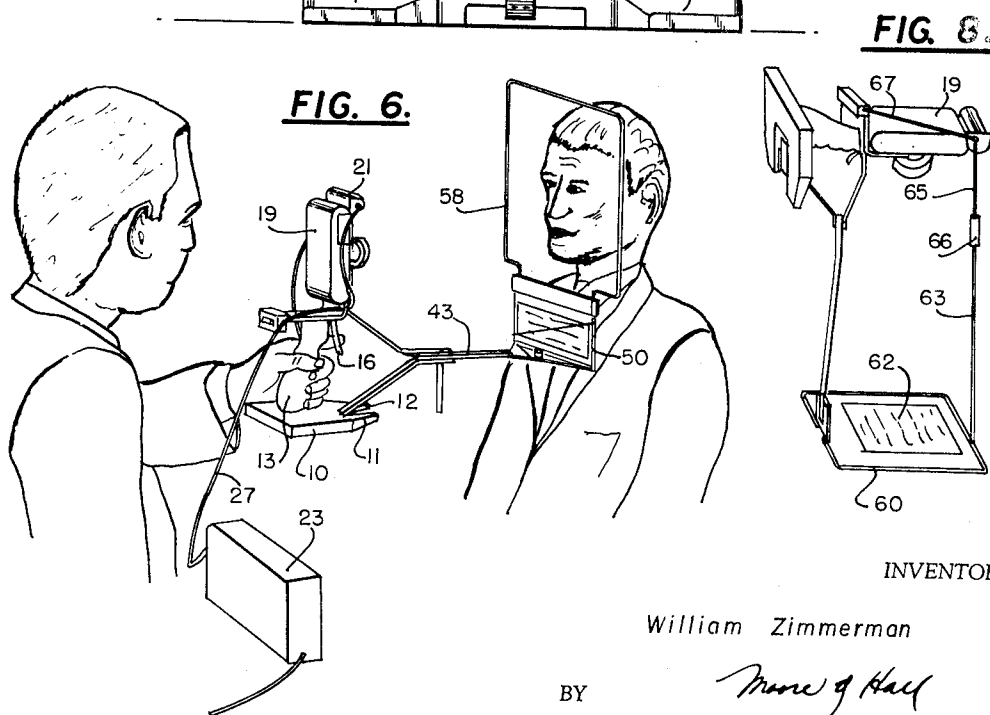
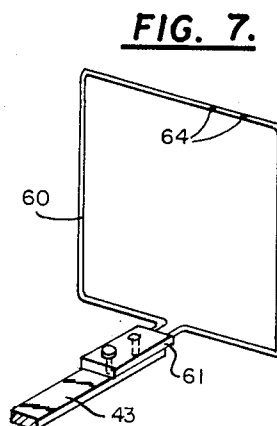
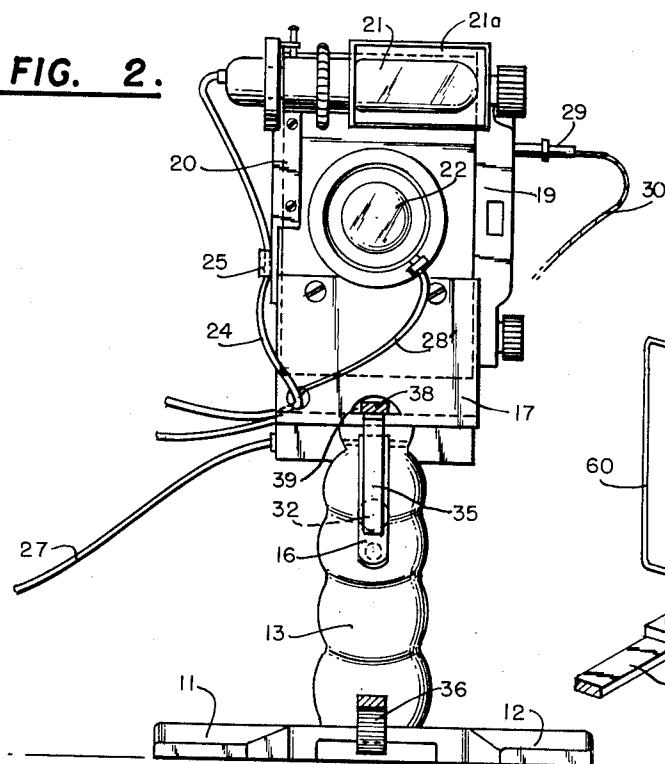
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2 Sheets-Sheet 2



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PHOTOGRAPHIC EQUIPMENT

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5 Claims. (Cl. 95—1.1)

The present invention relates to photographic equipment of the type adapted to take photographs of both a person and a document on a single frame of film; and is more particularly concerned with improved apparatus of this general type which is simpler and less expensive in construction and more easily operated by unskilled persons than has been possible heretofore.

As is well known to those skilled in the art, it is often desired to record a document and person on a single frame of film, in order that a permanent record may be formed of the document and a person having some relevant relationship thereto. By way of example, banks, supermarkets, and the like engage in the cashing of checks, and often wish to record the check being cashed and the person cashing the same in order to deter the passing of bad checks, and to have a permanent record in the event that a bad check is passed. Under other circumstances, it is desired to photograph a person with certain identifying information, in order to produce identification cards and the like.

Various structures have been suggested in the past for making such permanent records containing the plural types of information mentioned. In general, however, these apparatuses have been fairly complex structurally whereby they are relatively expensive to manufacture and maintain; and moreover, they have been rather difficult to operate, requiring a number of preliminary adjustments whereby a skilled operator has been necessary to assure that a proper record is made. In addition, the photographic equipment of types employed heretofore in such record making applications have utilized special films which can be processed only with considerable expense and at relatively wide spaced time intervals whereby the actual records have been rather expensive.

These disadvantages have often been accompanied by the further disadvantage that equipment employed heretofore has been specifically designed for a given single record making operation, such as the photographing of checks and the person cashing the same; and prior equipments have not been versatile enough to permit other or varied recording operations to be effected. This lack of versatility, in conjunction with the complexity, cost and difficulty of operation, has resulted in relatively limited use of record making equipment of the types described, notwithstanding the obvious need and considerable benefits attendant the use of such equipment.

The present invention serves to obviate the foregoing difficulties, and is particularly concerned with an improved form of photographic apparatus so constructed and arranged that it may be employed in a variety of record making operations, with the actual structure and operation of the device being so simple that the equipment can be utilized by unskilled persons at relatively little expense, but with thorough assurance that a proper record will be made each time.

It is accordingly an object of the present invention to provide an improved apparatus adapted to make photographic records.

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A further object of the present invention resides in the provision of an apparatus adapted to photograph a document and person simultaneously.

Still another object of the present invention resides in the provision of a record making apparatus which is simpler in construction and less expensive to manufacture, operate and maintain, than has been the case in prior apparatuses adapted for similar use.

Still another object of the present invention resides in the provision of an improved form of photographic apparatus which is readily portable and which is adapted to perform a variety of distinct recording functions.

A still further object of the present invention resides in the provision of an improved record making apparatus which can be operated without the need of preadjustments, whereby relatively unskilled persons can make photographic records as the occasion arises.

In providing for the foregoing objects and advantages, the present invention contemplates the provision of an automatic, low cost photographic apparatus comprising a fixed focus camera adapted to utilize standard film, e.g. 35 mm. film. The aforementioned fixed focus camera is mounted upon a relatively light-weight stand which, as will be described subsequently, includes a pistol-grip handle portion having a triggering mechanism interconnected to the camera shutter and to illumination equipment carried by the camera. The camera shutter and illumination equipment can thus be synchronously operated through a simple depression of the aforementioned triggering mechanism. The camera itself preferably comprises one adapted to positively prevent double exposure; and the camera is, as mentioned, of fixed focus type with the focus of the camera being preset during the manufacture of the overall equipment, whereby no adjustments in focus need be made during subsequent operation of the equipment.

The camera stand is further associated with an improved bracket arrangement, such as will be described, which includes an elongated supporting arm adapted to carry at one end thereof, at a position corresponding to the focal length of the camera lens, appropriate interchangeable structures adapted to support a document for recording the same. The aforementioned structures, positioned at the focal length of the camera lens, include, as will be described subsequently, a bracket structure adapted to receive a document, and further adapted to removably receive a frame element for framing the head of a subject being photographed. Moreover, the aforementioned elements may be replaced, as desired, by a special framing element for use during other record making operations, such as micro-filming and the like.

In the operation of the device an operator need merely insert a document in place on the aforementioned bracket structure and then hold or position the overall apparatus in proper position relative to a person being photographed. Simple depression of the equipment triggering mechanism thereafter makes a permanent record of both the document and subject; and the fixed focus characteristics of the camera and light synchronization features assure that the record so made is in proper focus, is properly illuminated, and results in a clear permanent record on a single frame of film.

The foregoing objects, advantages, construction and operation of the present invention will become more readily apparent from the following description and accompanying drawings, in which:

Figure 1 is a side view of the improved equipment constructed in accordance with the present invention.

Figure 2 is a front view of the equipment taken on line 2—2 of Figure 1.

Figure 3 is a front perspective view of a document

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holding element constructed in accordance with the present invention.

Figure 4 is a rear perspective view of the structure shown in Figure 3.

Figure 5 is a view taken on line 5—5 of Figure 1.

Figure 6 is an illustrative view showing one use of the equipment.

Figure 7 is a perspective view of an alternative framing structure such as may be employed in the present invention; and

Figure 8 is an illustrative view of another use of the equipment employing the framing structure of Figure 7.

Referring now to Figures 1 and 2, it will be seen that an improved record making apparatus constructed in accordance with the present invention comprises a base or standard 10 having a pair of spaced legs 11 and 12 extending therefrom. The upper surface of base 10 also has a pistol-grip handle member 13 upstanding therefrom, as illustrated; and said handle member 13 may be hollowed out as at 14 to make the overall base structure relatively light. As a practical matter, handle member 13 is integrally formed with the base member 10, with the overall structure comprising a body of cast aluminum. The upper portion of handle member 13 includes a pivot structure 15, supporting a trigger 16 whereby one employing the arrangement can grasp the overall structure by means of the pistol-grip handle 13 and actuate the trigger 16 associated therewith (see, in this respect Figure 6).

An L-shaped mounting bracket 17 has a horizontal leg thereof affixed to the upper end of handle member 13; and the other leg of said L-shaped bracket 17 extends vertically, as illustrated in Figure 1, whereby said bracket member is adapted to receive and retain, by means of screw members 18, a camera 19. The particular camera employed in the present invention comprises a 35 mm. standard roll film camera, adapted to receive conventional film having 36 frames on a roll. The use of such a standard roll film camera is a particular feature of the present invention inasmuch as it obviates the complexity and expense attendant more elaborate structures suggested heretofore wherein extremely long rolls of film of special size and requiring special processing, are employed in record making devices. By the use of a 35 mm. roll film camera, standard film may be readily loaded, and unloaded for processing, and the processing itself is considerably simpler and less expensive than has been the case heretofore.

The camera 19 is of the type well known in the art adapted to prevent double exposures from occurring; and such a camera is desired to assure that each record, made in accordance with the present invention, has but a single subject on each frame of film. In addition, the camera 19 is of the fixed focus type and the focus is preset during initial assembly of the equipment, whereafter this same preset focus is employed without alteration during use of the device. It will be appreciated, of course, that the prefocussing feature employed in the present invention simplifies considerably the operation of the overall mechanism, and permits use by persons relatively unskilled in the photographic arts, inasmuch as no camera adjustments (other than the cocking of the shutter) need be effected prior to the actual making of a record.

A further bracket 20 is attached to the upper portion of camera 19, and bracket 20 supports a source of illumination 21 thereon at a position over the lens 22. This positioning of the illumination source 21 is especially desirable inasmuch as it tends to eliminate "hot spots" in the record being made, and effects better light diffusion than other arrangements. The source 21 may comprise either an incandescent lamp or a strobe light; and when a strobe light source is actually employed, it may be energized by means of a power pack 23 (see Figure 6) of known configuration.

The source 21 includes a shade member 21a; and when source 21 is a strobe light, shade member 21a is preferably rotatable in position so as to vary the amount of light

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which falls upon the subject being recorded, thereby to vary the contrast of the record made. In practice, shade 21a will not be varied but can be adjusted to some desired position giving proper illumination under the particular ambient lighting circumstances at the location where the records are ordinarily made.

The illumination source 21 is connected by means of a wire 24, retained in place on member 20 by an element 25, to a junction box 26. Junction box 26 in turn is connected to the power pack 23 by a wire 27; and said junction box 26 includes a pilot lamp 28 cooperating with the power pack 23 to indicate when the power pack has acquired a sufficient charge to permit firing of the strobe lamp 21. In the event, of course, that an incandescent light source is employed, the power pack 23 and other components associated therewith, can be eliminated and the lamp 21 can be directly connected to an appropriate line source, e.g. through a manual switch.

The camera 19 contains contacts on the interior thereof as is conventional, for firing the lamp 21 in synchronism with the actuation of the camera shutter. In particular, these contacts are connected by means of a wire 28' to the junction box 26 whereby depression of the shutter pin 29 completes the circuit for the energization of lamp 21.

Shutter pin 29 (see Figure 2), is connected, by a flexible synchronization cord 30 of known design, to the base structure 10; and in particular, to a portion of the pistol-grip handle 13. The synchronization cord 30 includes an elongated wire or pin 31 passing through the handle portions 13, with the outer extremity of said wire or pin 31 having an enlarged head 32 spring biased in an outward position by means of a spring 33. Head 32 bears upon the inner surface of trigger 16 whereby said trigger 16 may be depressed against the bias of spring 33 to actuate the camera shutter and simultaneously to energize the lamp 21. An adjustable stop member 34 is also provided, as shown, below the position of pin 33 to limit the possible depression of trigger 16; and a further stop member 35 is provided to limit the outward movement of trigger 16.

As mentioned previously, the camera 19 is prefocused; and in accordance with the present invention, a novel supporting structure is provided for supporting documents and/or for defining an area in the focal field of the camera. This improved structure comprises a first lower brace member 36 which has one end thereof passing between the legs 11 and 12 of the base member 10 (see Figures 2 and 6) whereby it is fastened in place at a point 37 on the base member 10. A second brace 38 is also provided, which passes through an aperture 39 in the vertical leg of L-shaped mounting bracket 17, whereby said second or upper brace 38 may be fastened to the horizontal leg of bracket 17 and to handle member 13 at a point 40. The two braces 36 and 38 include, as illustrated in Figure 1, first portions adjacent their points of attachment which are disposed substantially horizontal and in substantially parallel relation to one another; and the braces 36 and 38 then extend angularly toward one another whereby the outer ends of the two braces are disposed closely adjacent to one another and are retained in this closely adjacent but spaced relationship by a spacer block 41.

A pivot 42 passes between the adjacent portions of braces 36 and 38 and this pivot serves to receive and pivotally retain an elongated arm 43. Arm 43 also includes a screw member 44, having the head thereof so dimensioned that it overlaps portions of each of the brace members 36 and 38 whereby, as illustrated in Figure 5, the arm 43 can be rotated in a single direction relative to and intermediate the outer extremities of brace members 36 and 38. In practice, the arm 43 can be folded back toward handle member 13 when it is desired to store the overall apparatus; and said elongated arm 43 can thereafter be pivoted outwardly to its fully extended position, when a record is to be made. A sup-

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porting leg 45 is also provided depending downwardly from the outer extremity of brace 36 to provide an additional point of support for the junction of elements 36, 38, 41 and 43, when the overall structure is placed upon a flat surface; and by reason of the braces 36 and 38, as well as by reason of the depending leg 45, the arm 43 is always in the same position relative to the lens 22 of camera 19.

Arm 43 (which is partially broken in Figure 1) includes a first substantially horizontal portion 43a and a second portion 43b angularly disposed thereto, with this angular disposition being provided in order to assure that the framing and document supporting structure (to be described subsequently) does not show up in the ultimate record. Arm 43 has its length so chosen with respect to the lengths of braces 36 and 38 that the outermost extremity of arm 43, when said arm is unfolded to its fully extended position, is disposed in the focal field of the pre-focused camera 19. This outermost extremity of arm 43 further includes a pair of apertures, one of which 46 is unthreaded and the other of which 47 is threaded; and these apertures are adapted to receive and retain appropriate removable and interchangeable fixtures adapted for the making of various types of records. Each such fixture includes a pin 48 adapted to cooperate with the hole 46; and further includes retaining screw 49 adapted to cooperate with the threaded hole 47 whereby the fixture can be removably attached to the outermost extremity of arm 43 and held in a fixed position relative thereto in the field of focus of camera 19.

The actual forms of structures which can be associated with the outermost extremity of arm 43 are, as mentioned previously, interchangeable in accordance with the particular form of record to be made. One such fixture is shown in Figures 3 and 4 (and in Figures 1 and 6), and this particular form of fixture is particularly adapted for the making of records comprising a document and a person having some relation thereto, such as may be employed in the making of identification cards or other records having both a picture and written information thereon; and/or such as may be employed in forming a single record of a check and the person cashing the same.

The fixture shown in Figures 3 and 4 comprises a plate member 50 having a transverse base portion 51 for support; and the said fixture 50 further includes a retaining wire 52 extending diagonally across the face thereof and passing through edge notches 53 to the rear of the plate, where it is held in tension by a helical spring 54. Wire 52 is provided for retaining an appropriate document, such as a check, in a flat configuration at the field of focus of camera 19; and the plate 50 includes a depression 55 substantially centrally located to facilitate insertion of the check. Plate 50 further includes adjacent its upper edge, a pair of ears 56 adapted to receive a slip of paper or the like having other desired information thereon, such as the name and address of a person being photographed.

The rear surface of plate 50 includes a pair of blocks 57 having elongated substantially vertical bores therein adapted to removably receive a wire framing member 58 extending above the plate 50. Wire framing member 58 need not be employed in conjunction with plate 50, but can be employed if desired to define an area framing out the head of a person being photographed thereby to facilitate sighting of the overall apparatus; and in this respect, it should be noted that the conventional sight provided on camera 19 is not employed, and need not be employed inasmuch as the arm 43 readily assures that the camera may be properly located and positioned relative to a subject being photographed.

When the bracket structure thus described in reference to Figures 3 and 4 is employed, the overall apparatus can be operated in the manner illustrated in Figure 6. The arm 43 is extended to its full outward position, whereafter the plate 50 can be supplied with an appropriate docu-

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ment such as a check to be recorded. The entire apparatus which is light and highly portable, can thereafter be lifted by an operator and so positioned that the plate 50 is below the chin of a person being photographed, and the head of the person being photographed can be positioned within the area of wire frame 58, if such frame is employed, to further assure that the camera is properly positioned. A simple depression of trigger 16 thereafter causes a record to be made of both the document (e.g. check) and the person, with this record being on a single frame of the roll film employed.

It should be noted in passing that the arrangement as thus employed places both the document and the person being photographed in the focal field of the single lens 22 utilized in camera 19; and this structure must be compared and distinguished from other structures suggested heretofore wherein the document, if recorded at all, was recorded by a separate lens from that employed to photograph the person. By placing both the document and person in the field of focus of a single lens, the overall structure and its operation becomes substantially less complex than other arrangements suggested in the past.

As mentioned previously, one of the highly valuable features of the present invention comprises its versatility, in that it may be employed for the making of various kinds of records by simple interchange of the fixtures associated with arm 43. One such other type of fixture is illustrated in Figure 7, with this fixture being employed for micro-filming or document copying purposes. The particular form of fixture shown in Figure 7 eliminates the plates 50 and comprises a rectangular frame 60 attached to a supporting block 61 having the pin and screw structures necessary for mounting frame 60 on the outermost extremity of arm 43. When this particular fixture comprising frame 60 is employed, the frame defines an area for receiving a document to be copied; and the overall apparatus can therefore be employed, as illustrated in Figure 8, for document copying purposes.

In particular, the entire apparatus can be supported on frame 60 rather than on its base 10; and in the upright position shown in Figure 8 the overall apparatus exhibits stable equilibrium whereby it may be stood on a table or the like for the copying of various records 62. When employed as shown in Figure 8, further bracing structures should be provided in order to assure that the camera 19 holds a fixed position relative to the document 62. These further bracing structures can comprise an elongated brace 63 which is pivotally attached to the frame 60 by means of apertures such as 64; and the brace 63 may include a portion 65 connected at one end thereof to a portion of camera 19 and detachably connected to brace portion 63 by means of an appropriate separable coupling 66 whereby portions 63 and 66 can be readily parted for purposes of storing the structure. In addition to the brace 63-65, another brace 67 can be provided between the camera 19 and the base or handle structure 10-13 to further limit possible variations in position of camera 19.

While I have thus described a preferred embodiment of the present invention, many variations will be suggested to those skilled in the art. It must therefore be emphasized that the foregoing description is meant to be illustrative only and should not be considered limitative of my invention. All such variations and modifications as are in accord with the principles described are meant to fall within the scope of the appended claims.

Having thus described my invention, I claim:

1. In combination, a substantially flat base member having a pistol-grip handle portion upstanding therefrom as a unitary portion thereof, an L-shaped bracket having one leg thereof attached to the end of said handle portion removed from said base member, a 35 mm. roll film fixed focus camera attached to the other leg of said L-shaped bracket, illumination means attached to said

camera, trigger means adjacent said pistol-grip handle, means coupling said trigger means to said illumination means and to the shutter of said camera for actuating the same simultaneously, a first brace attached at one end thereof to said L-shaped bracket, a second brace attached at one end thereof to said flat base member, said first and second braces being disposed one above the other and extending angularly toward one another whereby the other ends of said braces are spaced closely adjacent to one another at a position in front of and below said camera and above the extended plane of said base member, an elongated arm having one end thereof disposed between and attached to said other ends of said braces, a supporting leg depending from the lower one of said braces to the extended plane of said base member for supporting the junction of said braces and elongated arm when said base is placed upon a table or the like, said elongated arm extending as a cantilever away from said braces, supporting leg, handle portion, and camera, and means on said elongated arm for defining the position of the field of focus of said fixed focus camera.

2. The combination of claim 1 wherein said elongated arm includes first and second portions angularly disposed to one another.

3. The combination of claim 1 wherein said one end of said elongated arm is pivotally mounted between said other ends of said braces.

4. A portable photographic apparatus comprising an elongated pistol-grip handle member having means at the upper end thereof adapted to support a fixed focus camera, first and second bracing members positioned one above the other and extending transverse to the direction of elongation of said handle member from positions adjacent the top and bottom of said handle member respectively, said bracing members being inclined toward one another and terminating closely adjacent to one another at a position outwards of an intermediate portion of said handle member, a pivot structure carried by said bracing members at their said adjacent termini, said pivot structure being located at a position between and spaced from both said handle member and the field of focus of said fixed focus camera, and a single elongated cantilever having one end thereof attached to said pivot structure whereby said cantilever may be pivotally rotated between said bracing members toward and away from said handle member, said single elongated cantilever being rotatable in a plane extending through said pivot structure and lying between said first and second bracing members whereby the free end of said cantilever is disposed between said bracing members at a position inward of said pivot structure closely adjacent to said handle member when said cantilever is rotated to a position wherein said free end is closest to said handle member, the free end of said cantilever being remote from said handle member and spaced outwardly of said pivot structure by a

distance corresponding substantially to the length of said cantilever when said cantilever is rotated to a position wherein said free end is farthest from said handle member, said cantilever free end being located substantially at the field of focus of said fixed focus camera when said cantilever is rotated to said position wherein said free end is farthest from said handle member.

5. A document photographing apparatus comprising in combination, a substantially flat structural base having a supporting member upstanding therefrom, a fixed focus camera attached to said supporting member at a position removed from said base, a first brace having one end thereof attached to said base, said first brace extending angularly upward away from said base to a position above the extended plane of said base and below the lens of said camera, a second brace disposed above said first brace and having one end thereof attached to said supporting member, said second brace extending angularly downward away from said supporting member toward said first brace, the other ends of said first and second braces being disposed closely adjacent to one another at said position in front of and below the lens of said camera and above the extended plane of said base, an elongated arm having one end thereof pivotally attached to said adjacent other ends of said braces whereby said arm is adapted to be pivotally rotated relative to said braces toward said camera when said apparatus is not in use and is adapted to be pivotally rotated relative to said braces away from said camera to a fully extended position when a document is to be photographed, the other end of said elongated arm being located at a position in the field of focus of said fixed focus camera when said arm is in said fully extended position thereby to define the position wherein documents to be photographed by said camera should be located, a supporting leg extending from one of said braces in a direction transverse to the extended plane of said substantially flat structural base for supporting said braces and said elongated arm at a position spaced from said structural base when said structural base is placed upon a table or the like, and a plate member attached to said other end of said arm and extending in a plane transverse to the direction of elongation of said elongated arm, said plate member including means for retaining a document in the field of focus of said camera.

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