C. J. ELLIS.

COPY HOLDER.

APPLICATION FILED JUNE 10, 1909.

978,719.

Patented Dec. 13, 1910

2 SHEETS—SHEET 1.

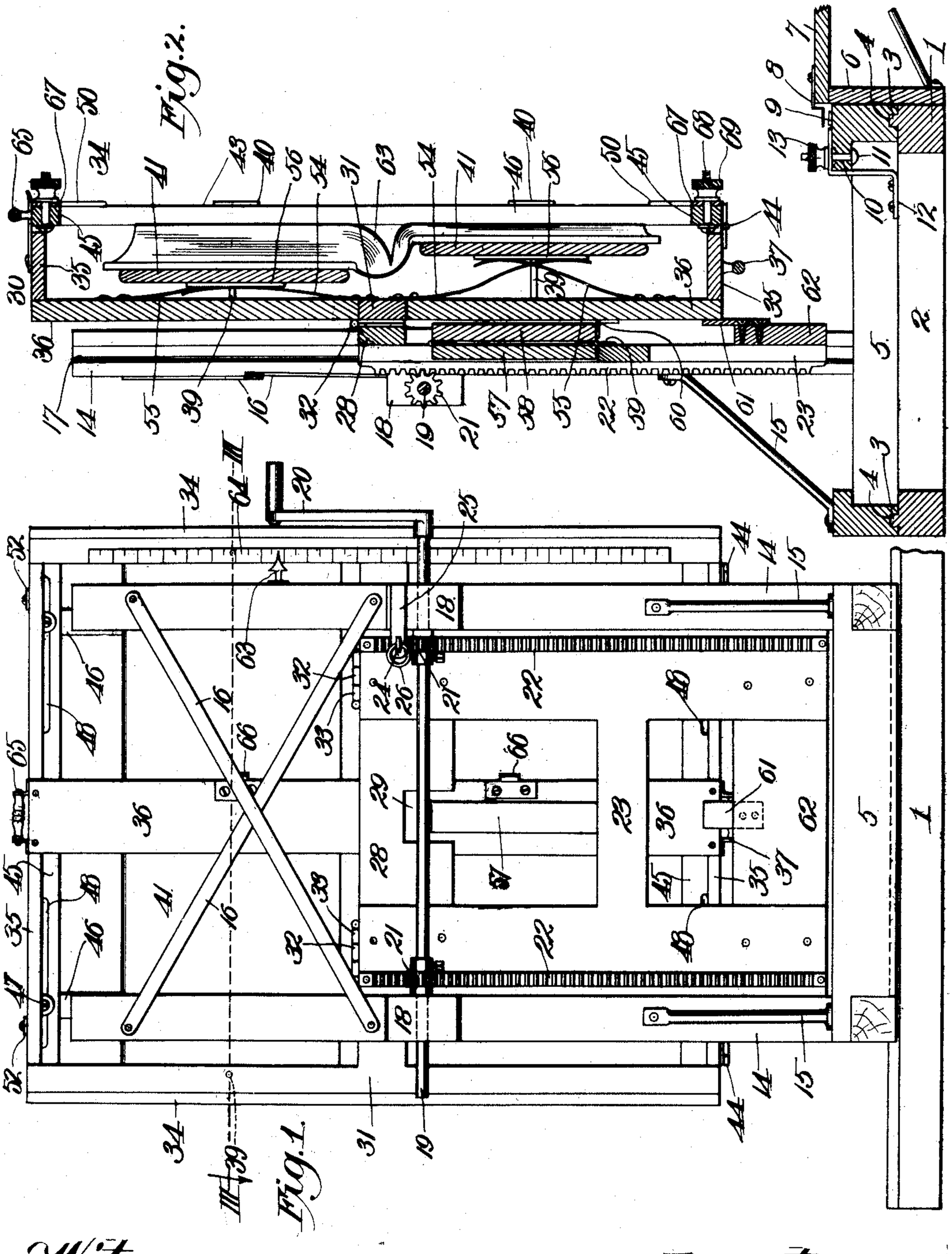

Fig. 2.

Fig. 1.

Witnesses
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By George H Thorp Atty.

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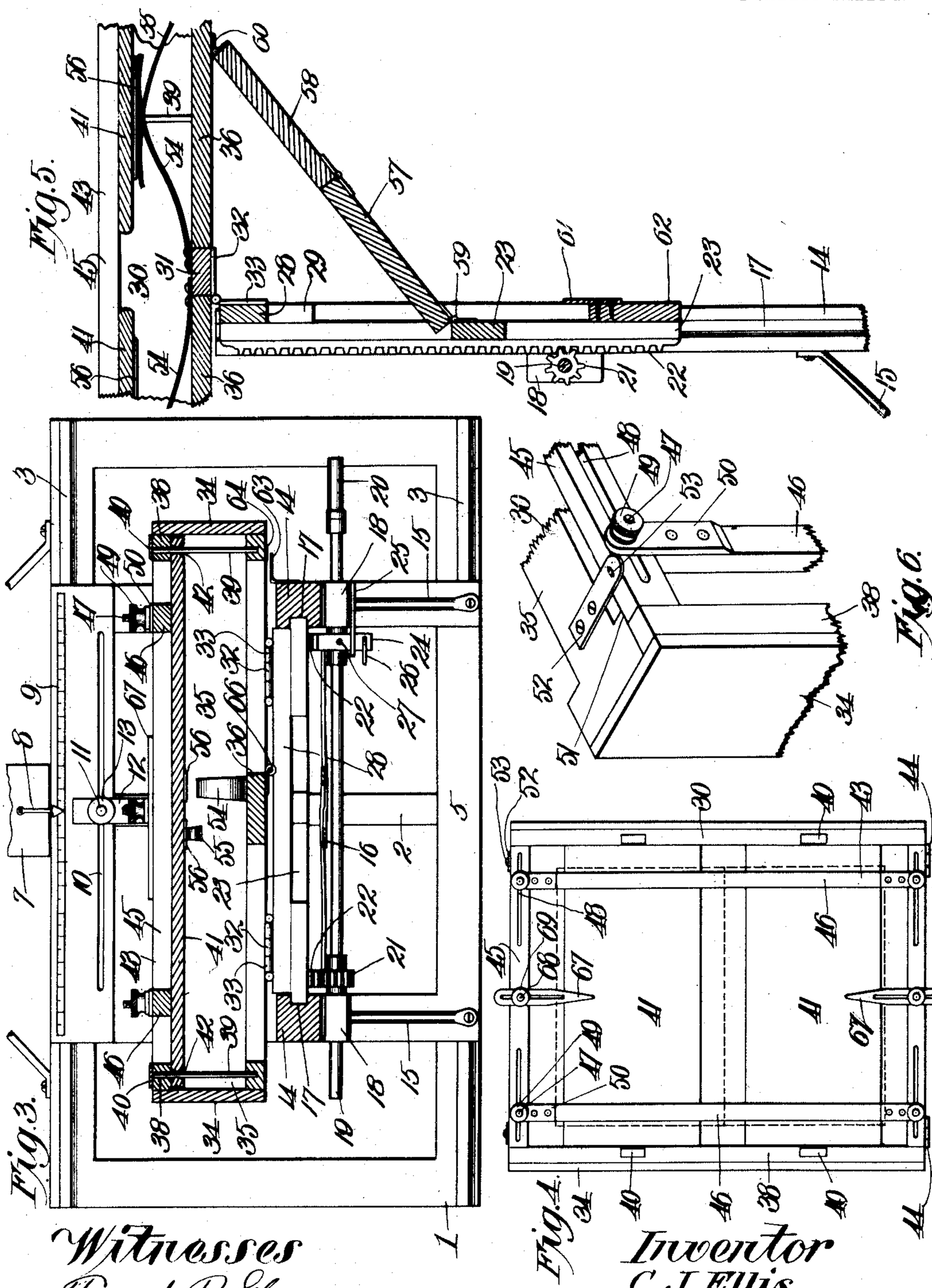

Fig. 5.

Fig. 3.

Fig. 6.

Fig. 4.

Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

CALVIN J. ELLIS, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE CAMERAGRAPH COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF ARIZONA TERRITORY.

COPY-HOLDER.

978,719. Specification of Letters Patent. Patented Dec. 13, 1910.

Application filed June 10, 1909. Serial No. 501,290.

To all whom it may concern:

Be it known that I, CALVIN J. ELLIS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Copy-Holders, of which the following is a specification.

This invention relates to copy holders, and more particularly to a device for holding books, maps or other objects for photographic reproduction, and my object is to produce a copy holder of this character adapted for adjustment vertically or laterally to facilitate the alinement of the object with the camera employed to produce the negative from which printed reproductions are made.

A further object is to produce a box to receive the object and spring-pressed plates to hold such object, irrespective of its size or thickness, firmly in the box.

A further object is to produce means for so guiding and supporting such plates as to permit the same to assume angles to the box to facilitate the securing of an object in position.

Another object is to produce a box of the character outlined, capable of being swung to a horizontal position to facilitate the placing of a book or other object in or its removal from position.

With these general objects in view, and others as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which;

Figure 1, is a back view of a copy holder embodying my invention, as arranged in operative position. Fig. 2, is a central vertical section of the same. Fig. 3, is a horizontal section taken on the line III—III of Fig. 1. Fig. 4, is a front view of a box forming a part of the device, on a reduced scale. Fig. 5, is a section in the same vertical plane as Fig. 2, with the box in the position it occupies preliminary to its reception of a book or other object or to the removal of such book or object. Fig. 6, is a perspective view of a corner of the box and the corresponding corner of the skeleton door thereof.

In the said drawings, 1 indicates a rectangular base and 2 a central cross-bar connecting the front and rear sides of said base, the latter also having parallel transverse tongues 3 projecting upward from its front and rear sides and engaging grooves 4 in the lower faces of the front and rear sides of a rectangular frame 5 adapted for lateral adjustment on base 1, the front edge of said frame 5 bearing against the depending arm 6 of a bar 7 adapted to be slidably connected in any suitable manner, to a photographic apparatus, not shown, it being also understood that the slidable connection with the photographic apparatus referred to, forms no part of this invention and is therefore not illustrated. Bar 7 is provided at its rear end with an index-finger or pointer 8 overlying a transverse scale-bar 9 secured upon the upper edge of the front side of the slidable frame 5, and said front bar of the slidable frame 5 is also provided with a transverse slot 10 receiving a bolt 11 extending up through a Z-shaped bracket 12 secured to cross-bar 2 of base 1, a clamping-nut 13 engaging said bolt for the purpose of clamping the slidable frame 5 rigidly upon the base.

A vertical frame rigidly carried by the slidable or adjustable frame 5 is constructed as follows: 14 is a pair of vertical standards rigidly erected in any suitable manner, on the side-bars of frame 5 and connected by braces 15 to the rear side of said frame and to each other by crossed braces 16. The said standards are provided in their inner faces, with vertical grooves 17, and at their rear sides and about midway their height, with bearing-blocks 18 for a transverse shaft 19 provided with a crank-handle 20 at one end, and with a pair of cog-pinions 21 meshing with vertical rack-bars 22 secured to the rear side of a vertically-arranged and preferably H-shaped slide-frame 23 fitting at its edges in the grooves 17 of said standards 14, and in order to secure the slide-frame at the desired point of vertical adjustment after being raised by the cog-wheels through the proper manipulation of the crank-handle, I employ a latch-bar 24 mounted in an arm 25 projecting from one of the bars 18, said latch-bar being adapted to engage the adjacent rack-bar 22, and having a ring or handle 26 by which it may be drawn back from engagement with said rack-bar. The latch-

bar has a stop-pin 27 for preventing it from being totally withdrawn from arm 25. Frame 23 carries a cross-bar 28 at its upper end and front side as a means of supporting a box hereinafter described, and spacing such box when vertical from said frame to accommodate a break-joint brace also hereinafter described, the said cross-bar having a notch 29 in its lower side to further accommodate such break-joint brace.

The box above referred to, is identified generally by reference character 30, and consists of an H-shaped bottom 31 provided with hinge members 32 connected to the hinge-members 33 secured to cross-bar 28 of frame 23, so as to be capable of occupying the vertical position shown in Fig. 2 or the horizontal position shown in Fig. 5. The sides 34 of said box project from the sides of said bottom and the ends of the box connect the upper and lower ends of the bottom and sides, the said ends being braced midway their length by the bars 36 connected also with the bridge-portion of the H-shaped bottom. As shown in Figs. 1 and 2, a handle 37 is provided for the box at one end for convenience in swinging the latter from its vertical to its horizontal position or vice versa. It is understood that before the box can be swung to its horizontal position, the slide-frame 23 must be raised until its upper end is at least flush with the upper ends of standards 14, as will be readily understood by reference to Figs. 1, 2 and 5.

38 are stop-bars secured to and projecting inward from the front edges of the sides of the box, and connecting said stop-bars with the side-portions of the H-shaped bottom are pins 39 preferably held in place by plates 40 secured to the front sides of stop-bars 38.

41 are clamp-plates arranged within the box and extending from one side thereof to the other and provided with holes 42 loosely receiving pins 39 so as to be capable of assuming an angular relation to the face and bottom of the box for the purpose of facilitating the insertion in the box of a book, map or other object to be photographed, such object being adapted to be placed between one or both of the plates 41 and the skeleton door 43 hinged at one end at 44 to the adjacent end 35 of the box; said skeleton door consisting of a pair of cross-bars 45 and a pair of normally-vertical bars 46 receiving bolts 47 extending forward through slots 48 in bars 45 and engaged by nuts 49 for clamping said bars 45 and 46 rigidly together so as to constitute the door hereinbefore mentioned, it being noticed that the bars 46 occupy the same plane as bars 45 and are equipped with rigid extensions 50 to overlap and fit against the front faces of bars 45 and receive the bolts 47 and the clamping pressure of the nuts 49, as shown most clearly in Fig. 6. It will also be noticed by reference to Figs. 2 and 6 that the ends 35 of the box are narrower than the side-bars 34 to permit the door to assume a position between the stop-bars 38, and that such ends are formed with shoulders 51 near their extremities to limit the closing movement of the door, the end 35 adjacent to the free end of the door, being equipped with spring-catches 52 for automatic engagement with pins 53 projecting from the free edge of the door to lock the latter in its closed position. By adjusting bars 46 toward and from each other they can accommodate books or other objects to be photographed, of varying sizes, a small book being adapted to be clamped between said bars of the door and one of the plates 41, a large book being clamped between said bars of the door and both clamping plates 41, the latter being spaced apart as shown in Fig. 2 to accommodate the back or hinge portion of a book as shown in Fig. 2. To hold the plates advanced with a yielding pressure independently of each other, leaf-springs 54 project upward and downward from the bottom of the box, and bear at their free ends against said plate, a similar pair of springs 55 being secured to the bars 36 of the bottom of the box and bearing at their free ends against plates 41, smooth wear-plates 56 being secured to the plates 41—if made of wood as preferred—to eliminate wear and reduce to the minimum the friction incidental to the relative sliding action which occurs between the springs and the wear-plates as the plates 41 move forward or rearward to permit of the insertion in the box of the book or other object to be photographed.

For the purpose of automatically securing the box in its horizontal position, I provide a break-joint brace (hereinbefore mentioned) between frame 23 and the box, said brace consisting of a pair of bars 57 and 58 hinged together at one end, and respectively hinged at their opposite ends at 59 and 60 to frame 23 and one of the bars 36 of the bottom of the box, the arrangement being such that when the box occupies a horizontal position, the bars 57 and 58 are alined and form an inclined brace to hold said box in such horizontal position (see Fig. 5). When the box is swung back to a vertical position it is arrested by a stop-plate 61 projecting upward from a cross-bar 62 of frame 23.

Assuming that the frame 5 has been adjusted laterally on the frame or base 1 to and secured at the desired point by clamping nut 13, the operator grasps crank 20 and withdraws latch-bar 24 from operative position. He then turns the crank 20 to ele-

vate the slide-frame 23 and box 30 until the index-finger 63 projecting from one of the standards 14, registers with a scale-bar 64 on the bottom of the box (see Fig. 1), and while holding the box elevated he forces latch-bar 24 forward to again engage the rack-bar and thus prevent downward movement of the vertically-adjustable frame 23 and the box carried thereby. The action described takes place if the book or other object is already in place in the box. If not, the crank-handle is manipulated until the upper end of the frame 23 attains the level of the top of the standards, and then the latch-bar is reëngaged with the said rack-bar to hold the parts in such position. The box is then swung on its hinges 32 to the horizontal position shown in Fig. 5—preferably by grasping handle 37. In this action the break-joint brace unfolds to the inclined position shown in the last-named figure and thus automatically braces the box in its horizontal position. The operator then disengages the spring-catches 52 from engagement with pins 53 to permit the door to be opened by swinging it upward on its hinges 44, the door being preferably opened by grasping the handle 65 projecting from the cross-bar 45 equipped with the pins 53. The book or other object being then placed in the box upon the yieldingly-elevated plates 41, the door is reclosed and its bars 46 engage the opened book at the opposite ends of its printed surfaces the pressure of the springs being sufficient to hold the book firmly in position when the box is swung back to its vertical position, it being necessary before the box can be thus swung back to manually break or fold the break-joint brace upwardly, as will be readily understood. If the book is too high after the box is thus swung back to a vertical position, the handle 20 is grasped and the latch bar 24 withdrawn from the rack-bar to permit the box and frame 23 to slide downward, sufficient resistance being imposed upon the handle to prevent the too-rapid descent of said box and frame. When lowered the proper distance as indicated by the index-finger 63 and scale-bar 64, the latch-bar is caused to reëngage the rack-bar and thus secure the box at the proper altitude. Where a book is clamped in the box, of such size or in such condition—from warpage perhaps—that its leaves tend to bow out sufficiently between clamp-bars 46 to interfere with proper photographic reproduction, such bowing may be restrained sufficiently to insure a good photographic copy by means of slotted fingers 67 which are mounted on bolts 68 carried by bars 45 and engaged by nuts 69 for clamping such fingers in operative positions shown in Fig. 4, or in inoperative positions parallel with bars 45, as shown in Fig. 2, and in this connection it should be stated that it is only necessary to employ said fingers occasionally in the operative position referred to.

From the above description it will be apparent that I have produced a copy holder embodying the features of advantage enumerated as desirable and which is susceptible of modification in various particulars without departing from the principle and scope of the appended claims.

Having thus described the invention what I claim as new and desire to secure by Letters-Patent, is;

1. A copy holder, comprising a base, a frame laterally-adjustable on the base, standards carried by the frame, a frame vertically-adjustable on said standards, means for securing the last-named frame at the desired altitude, a box hinged to said vertically-adjustable frame and capable when the upper end of the latter attains the level of the top of the standards, of being swung to a horizontal position over the latter, and a break-joint brace connecting the vertically-adjustable frame and said box to automatically brace the box in such horizontal position.

2. A copy holder, comprising a base, a frame laterally-adjustable on the base, standards carried by the frame, a frame vertically adjustable on the standards, means for securing the last-named frame at the desired altitude, a box hinged to said vertically-adjustable frame and capable when the upper end of the latter attains the level of the top of the standards, of being swung to a horizontal position over the latter, means for automatically securing the box in such horizontal position, a hinged door for said box, means to lock the door in its closed position, a plate within the box, and springs bearing against and interposed between the said plate and the bottom of the box to hold the former pressed yieldingly toward the said door, and a pair of guide and supporting pins carried by the box and extending loosely through said plate.

3. In a copy holder, a pair of grooved standards, a vertically-adjustable frame slidably mounted in the grooves of said standards, vertical rack-bars secured to said frame, a transverse shaft bearing a journaled relation to said standards and provided with a crank-handle and with cog-pinions engaging said rack-bars, an arm rigid with said standards, a latch-bar slidably mounted in said arm and adapted to engage one of the rack-bars to hold the slidable frame at the desired elevation, a box hinged to the upper end of the slidable frame and adapted to swing in a vertical plane from a vertical to a horizontal position and vice versa, a stop-plate rigid with

the slidable frame to hold the box in a vertical position, means to automatically brace the frame in its horizontal position, a skeleton door for the box, means to lock the door in its closed position, a pair of plates suitably guided and supported within the box, and springs interposed between and bearing against the bottom of the box and said plates and tending to force the plates toward said door.

In testimony whereof I affix my signature in the presence of two witnesses.

CALVIN J. ELLIS.

Witnesses:

FRANK R. GLOVE,

G. Y. THORPE.