

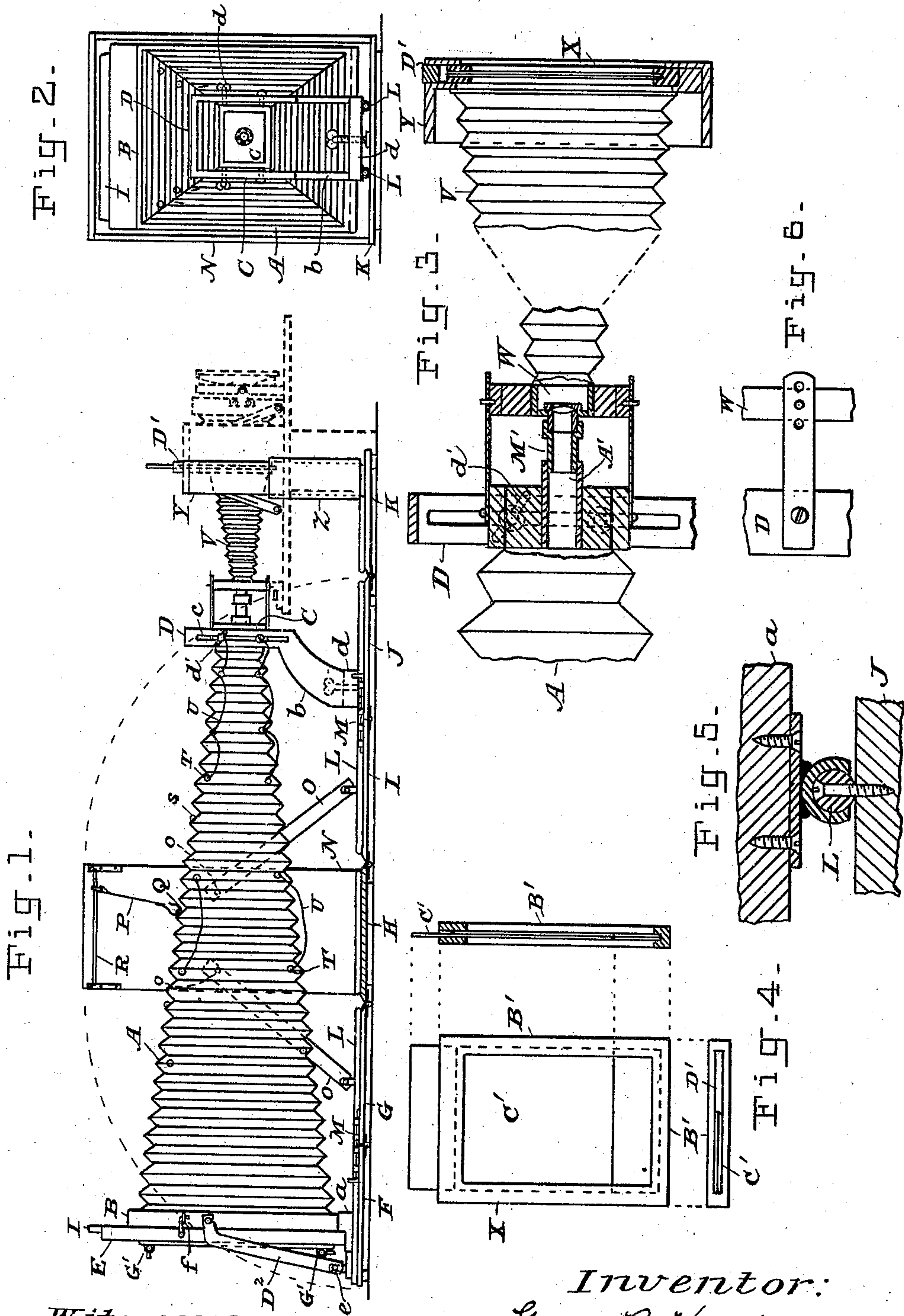
No. 693,713.

Patented Feb. 18, 1902.

G. B. HUTCHINGS.
DEVICE FOR ENLARGING NEGATIVES.

(Application filed Feb. 26, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE B. HUTCHINGS, OF GALVESTON, TEXAS.

DEVICE FOR ENLARGING NEGATIVES.

SPECIFICATION forming part of Letters Patent No. 693,713, dated February 18, 1902.

Application filed February 26, 1901. Serial No. 48,893. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. HUTCHINGS, a citizen of the United States, residing at Galveston, Texas, have invented a certain new or Improved Device for Enlarging Negatives, of which the following is a full, clear, and exact specification.

My invention relates to a contrivance for enlarging negatives, and has for its object to produce a device of this kind of exceedingly simple construction, portable in character, readily prepared for use, and as readily folded together into a small and compact form.

A further object of my invention is to dispense with the use of the so-called "dark room" or other cumbersome methods of enlarging negatives now employed.

The said invention consists, substantially, of collapsible bellows slidable upon tracks, a covering or casing in sections for inclosing the operative parts of my device, an improved printing-frame, with means therein for excluding light therefrom, a special form of negative-plate holder, and other details of structure and combinations of parts hereinafter more fully described, and particularly pointed out in the claims.

Referring to the accompanying drawings, forming part of my application, wherein similar letters of reference indicate similar parts throughout the several views, Figure 1 is a side elevation of my device with bellows extended and a negative-projector applied thereto, a portion of the latter being in dotted lines. Fig. 2 is a front view showing the bellows contracted. Fig. 3 is a view, partly in section, illustrating the front portion of my invention with the negative-projector secured in position. Fig. 4 is a view, sectioned in part, showing the construction of my negative-plate holder. Fig. 5 is a sectional detail view of the tracks and the block sliding therein. Fig. 6 is a detail view of a catch acting as auxiliary support for the small bellows of the negative-projector.

In order to give a clear understanding of my invention, I will describe same with reference to the drawings, in which A represents the bellows secured at the rear end to a frame B and at the front end to a smaller frame C. The frame C is supported by a standard D, consisting of a base-block *a*, a curved foot *b*,

and parallel slotted bars *c*. The frame C slides up and down in the slits of the standard D and is secured in the position desired by means of clamps *d*, fixed on the frame. The rear frame B is mounted upon and secured to the block *d* and is also supported by the link D, which is pivoted at *e*. The link D is notched near its upper end, the notch engaging with a pin *f* on the frame B and holding the latter firmly in place. For holding the supporting-blocks of the frames B and C in their proper position I provide set-screws E, which may be loosened or tightened, as desired.

The covering or casing of my device is composed of hinged sections F G H I J K, upon which are double tracks L L, whereon the blocks *a* and *d* slide. In order to hold the hinged sections firmly together, I provide bolts M to be shot over the hinges. The section H forms the bottom of the enlarging-machine when closed, the sections F G and I J two sides, respectively, the section K the top, and the other two sides are standards or boards N, rising from the section H and held together at the top by horizontal rods. (Not shown in the drawings.)

Pivoted at their lower ends to the sections G and I are sliding supports O O, having notches near their upper ends by which they engage with the pins *o o*, secured on the interior of the standards N. As the sections G and I are raised from their horizontal position the notches of the supports O are lifted from the pins *o*, and the edges of the supports slide upwardly on the pins *o*, thus not interfering with the folding of the casing. For supporting the bellows in position and maintaining them at a proper level I provide rods P, supplied with hooks Q, depending from bars R, secured to the standards N. On the hooks Q are hung rings S, fastened on the upper exterior portion of the bellows. Secured at intervals at the side of the bellows is a double row of rings T, with bands U (preferably rubber) passing through them to enable portions of the bellows to be contracted. The bands may either pass between two rings and be provided with a snap for holding the rings together or they may be secured to the front of the bellows and the latter may be drawn forward by the action of the bands.

The negative-projector, Fig. 3, consists of the small bellows V, the protruding lens, shutters, and diaphragm W, and the negative-plate holder X, supported in the box Y, which
 5 is adjustable to the desired height in the frame Z. For making the connection between the projector and the bellows A, I provide a small cylinder M', of any appropriate material, passing from the lens of the projector to the opening A' of the bellows, thereby
 10 excluding the entry of light from the exterior.

In Fig. 4 I have shown a form of negative-plate holder for use with my invention, consisting of the frame B', the sides of which are
 15 mortised to the depth indicated by the dotted lines, and a ground-glass plate C', with the negative to be slid into the mortises in the frame. Pivoted at one end to the box Y and
 20 lying over the top of the frame B', I secure a bar D', of wood or other material, to hold the negative-plate holder in position and also to exclude light therefrom. It may be here stated that in lieu of employing my improved
 25 negative-plate holder an ordinary camera with open back and protruding lens may be employed, provided the plate-holder found in such cameras has the center removed and ridges are left about the sides of the frame
 30 to prevent the light from passing through any other part than the center.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

35 1. In combination, the rectangular frame having hinged front and back, tracks on said front and back and the bottom of the frame, front and rear bellows-supporting frames slidably mounted on said track, a bellows ex-
 40 tending between said frames, a longitudinal

rod on said rectangular frame, and a connection from the central portion of the bellows slidably engaging said rod, substantially as described.

2. In combination, the box having its front 45 and back sides open, a front and a back hinged to the bottom of the box and adapted to form therewith a flat support for the bellows and to fold up to close said sides, standards slidably carried by said support, and a bellows 50 carried by said standards, said front and back each comprising hinged sections, the outer sections being adapted to drop down into a vertical plane out of the way when the bellows-support is adjusted inward upon the in- 55

3. In combination, the box having two opposite sides open and an open top, a hinged front and a hinged back adapted to fold down to form a bellows-support, said front and back 60 each comprising a plurality of sections, a top-closing section hinged to the edge of the front, all of said sections having hinge connections permitting the sections to swing down into vertical position, locking devices, bolts across 65 the joints of some of the sections for holding them against folding and bellows-supports slidably carried by said sections, substantially as described.

4. In combination with the frame and the 70 elongated bellows, of retracting devices carried by said bellows whereby one portion may be retracted without affecting the other part, substantially as described.

In witness whereof I have hereunto set my 75 hand in presence of two witnesses.

GEORGE B. HUTCHINGS.

Witnesses:

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