

W. A. LEGGO.
Photographic Apparatus.

No. 138,663.

Patented May 6, 1873.

FIG. 1

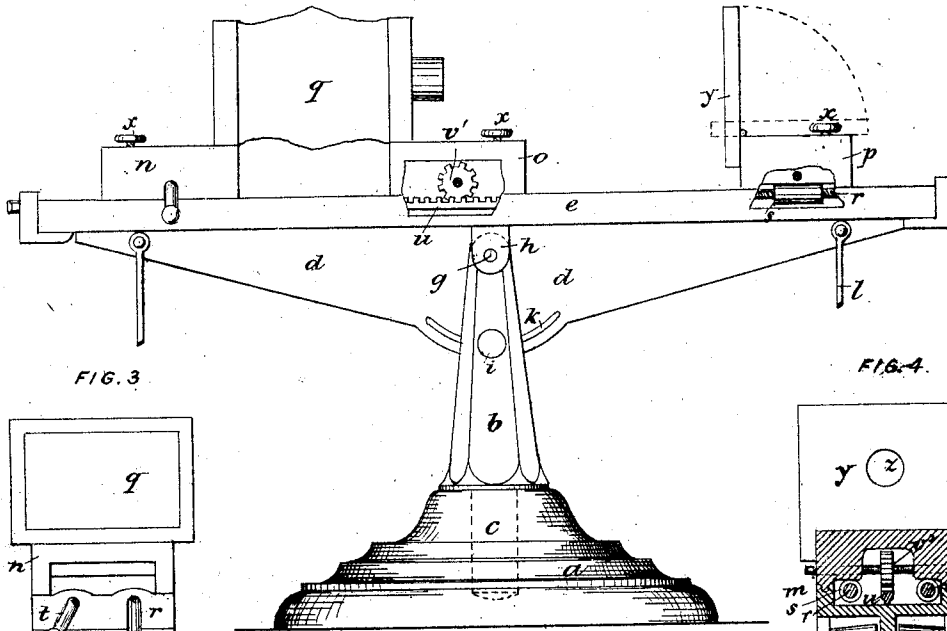


FIG. 3

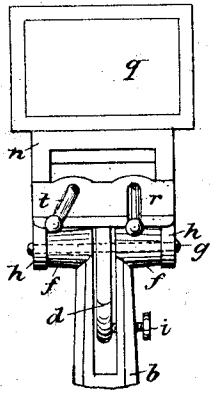


FIG. 4

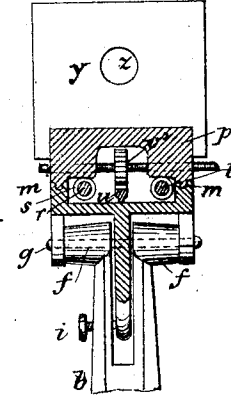
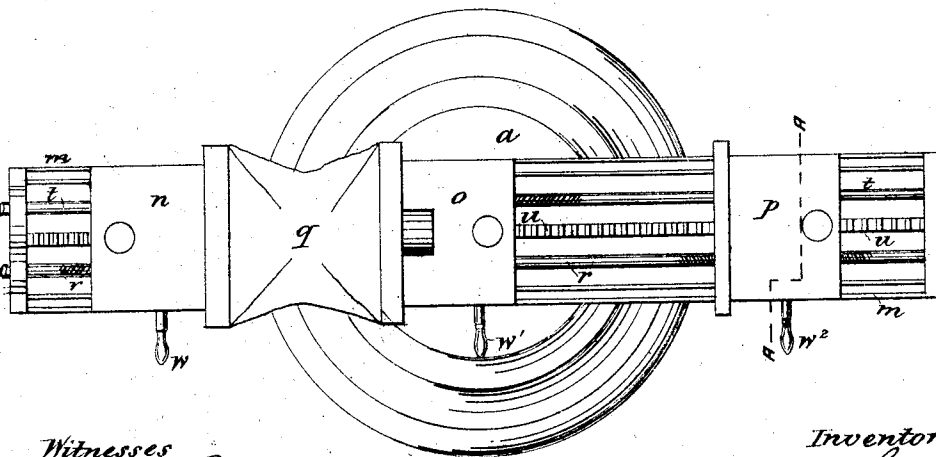


FIG. 2



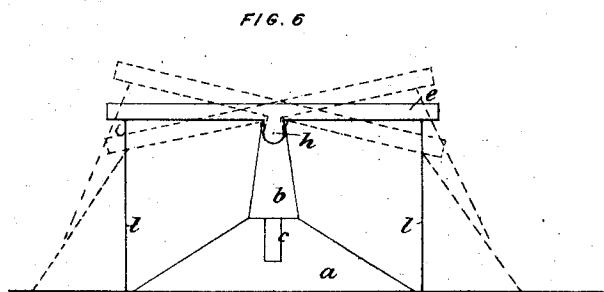
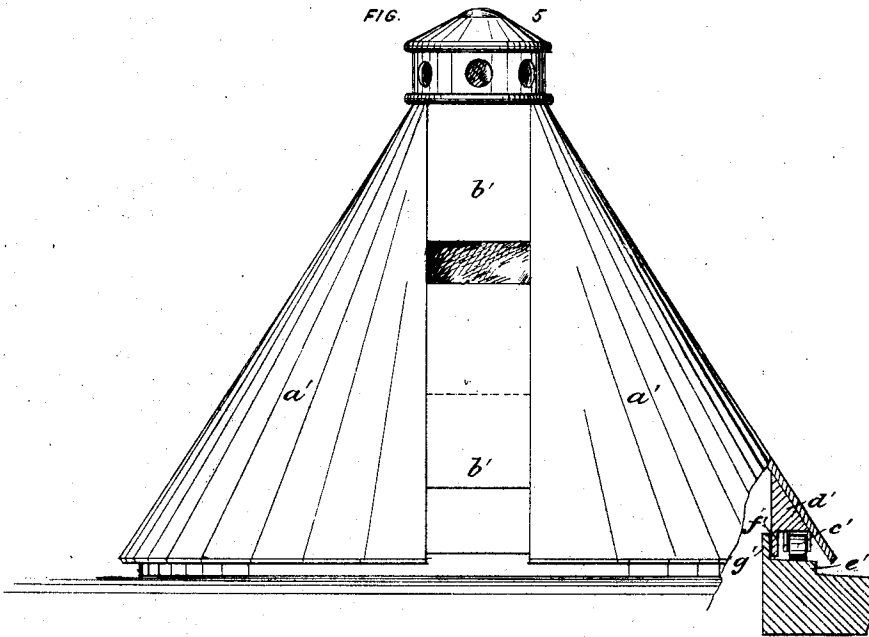
Witnesses
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Robt. Belland

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UNITED STATES PATENT OFFICE.

WILLIAM AUGUSTUS LEGGO, OF MONTREAL, CANADA.

IMPROVEMENT IN PHOTOGRAPHIC APPARATUS.

Specification forming part of Letters Patent No. **138,663**, dated May 6, 1873; application filed August 6, 1872.

To all whom it may concern:

Be it known that I, WILLIAM AUGUSTUS LEGGO, of the city of Montreal, in the district of Montreal, in the province of Quebec, Canada, have invented a new and useful Improved Photographic Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, where—

Figure 1 represents a side elevation of the camera-stand. Fig. 2 represents a plan of the same. Fig. 3 represents an end elevation of the same. Fig. 4 represents a transverse vertical section of the same on line A A, Figs. 1 and 2. Fig. 5 represents a view of rotary roof, showing construction. Fig. 6 represents a diagram showing different positions of camera and stand.

My invention has reference, more particularly, to improvements on the construction and arrangement of camera-stands, by which the operator, standing at one end of the stand, can easily adjust the exact amount of extension of the camera, and also the distance between it and the object to be photographed; and also means for tilting the camera-stand to enable the rays of the sun to fall more directly on the object; and also to enable positives to be taken with the same instrument; and also, in combination with the camera-stand, a rotary roof provided with sliding shutters for the admission of the direct rays of sunlight upon the object to be copied, thereby illuminating the picture in the most perfect manner.

Similar letters of reference indicate like parts.

Letter *a* is the foot of the camera-stand of sufficient breadth to obviate any chance of tipping over. *b* is the upright support of the bed, its lower end being formed as a pin, *c*, of less diameter than the remainder of the support *b*, entering to its full length an aperture formed for that purpose in the foot, and fitting it loosely enough to allow the support *b* to be rotated easily in the stationary foot *a*. The support *b* is at its upper end forked to a suitable depth, sufficient space being left between the forks for a longitudinal rib, *d*, secure-

ly attached to the bed of the stand *e* or made in one with it. This forked end terminates in hubs *f*, a pin, *g*, passing both through them, the rib *d* and projections *h* from the under side of the bed thus securely attaching the bed *e* to the support *b*, and yet allowing either end of the bed to be raised or lowered to any extent required, a set-screw, *i*, passing through the forked end of *b* and working against a rib, *k*, formed in the rib *d* fixing the bed at any angle required. *l* are legs or props to the stand, which are of such length that when the bed is perfectly level their ends just rest on the ground, and are used when focusing the picture. The bed *e* is, as shown in Fig. 4, of the section of a shallow trough, the top edges of the sides being grooved, as shown at *m m*. Into these fit the correspondingly-formed lower edges of the sides of boxes *n*, *o*, and *p*, the two former supporting the ends of the camera *q*, and the latter the object to be photographed. These boxes are moved lengthwise of the bed *e* as follows: A small shaft, *r*, running the whole length of the bed, and rotated by a crank-handle, as shown in Fig. 3, has cut upon it for a sufficient distance from each end, a right and a left handed screw, respectively, and working in a corresponding thread cut in rings or collars *s* securely attached to the under side of the boxes *n* and *p*, through which it passes. Instead of the ring or collar *s*, a fork, falling between the threads of the screws, is used, and is in many cases preferable, as it may be easily thrown in and out of gear. In like manner the shaft *t*, rotated as before, passes through and works in a ring secured to the under side of the box *o*. A rack, *u*, runs the whole length of the bed *e*, and into it mesh the teeth of pinion-wheels *v v¹ v²*, arranged as shown, in each of the boxes *n*, *o*, and *p*, and rotated by handles *w w¹ w²* on their spindles, or in any other convenient manner. Set-screws *x* secure the boxes in their places when adjusted to their proper relative positions. *y* is the object-stand, hinged to the box *p*, kept in position by a stay, and having an aperture, *z*, formed in it. This aperture would be useful in copying positives from negatives, but is not necessarily of the size shown.

The camera-stand, instead of being arranged as described, may, if desired, be set upon rigid legs.

The operation of my invention is as follows: The camera-stand, being brought to a level by allowing the legs *l* to touch the floor, the picture to be copied is securely fixed on the object-stand *y*, which may be placed horizontal on the box *p*, thereby enabling the picture to be adjusted with greater accuracy and far more easily. The operator at the back of the stand, by means of the crank-handles working the screwed shafts *r* and *t*, brings the boxes *n* *o* *p* into their proper relative positions, as in ordinary photographing, and they are then secured by the clamp or set-screws *x*.

Instead of the screwed shaft *r* and *t* the camera-stand may be fitted with the rack *u* and pinions *v* *v*¹ *v*², and the distance between the boxes adjusted by the crank-handles shown. The camera may be fitted with either or both of these adjusting movements.

When the boxes are adjusted, the camera tilted to the angle required to suit the position of the sun, and fixed at that angle by the screw *i* working against the rib *k*, the camera and roof are then rotated to suit the direction of the sunlight, and the shutters arranged so

as to exclude all unnecessary rays of light, and the picture then exposed in the usual manner.

I do not claim broadly a camera-stand pivoted to a revolving support; but

Having thus described the construction and operation of my invention, to which I have given the name of "Leggo's Rotary Photographic Camera-Stand and Rotary Roof," what I claim is as follows:

1. The bed *e*, with grooves *m*, boxes *n*, *o*, and *p*, screwed shafts *r* and *t*, rings or collars *s*, in combination with camera *q* and object-stand *y*, substantially as and for the purposes set forth.

2. The bed *e*, with grooves *m*, boxes *n*, *o*, and *p*, rack *u*, pinions *v* *v*¹ *v*², and handles *W*, *W*¹, and *W*², in combination with camera *q*, and object-stand *y*, and clamps *x*, substantially as and for the purposes set forth.

3. The object-stand *y*, hinged to the box *p*, substantially as and for the purposes set forth.

Montreal, 16th day of July, A. D. 1872.

W. A. LEGGO.

Witnesses:

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R. A. KELLOND.