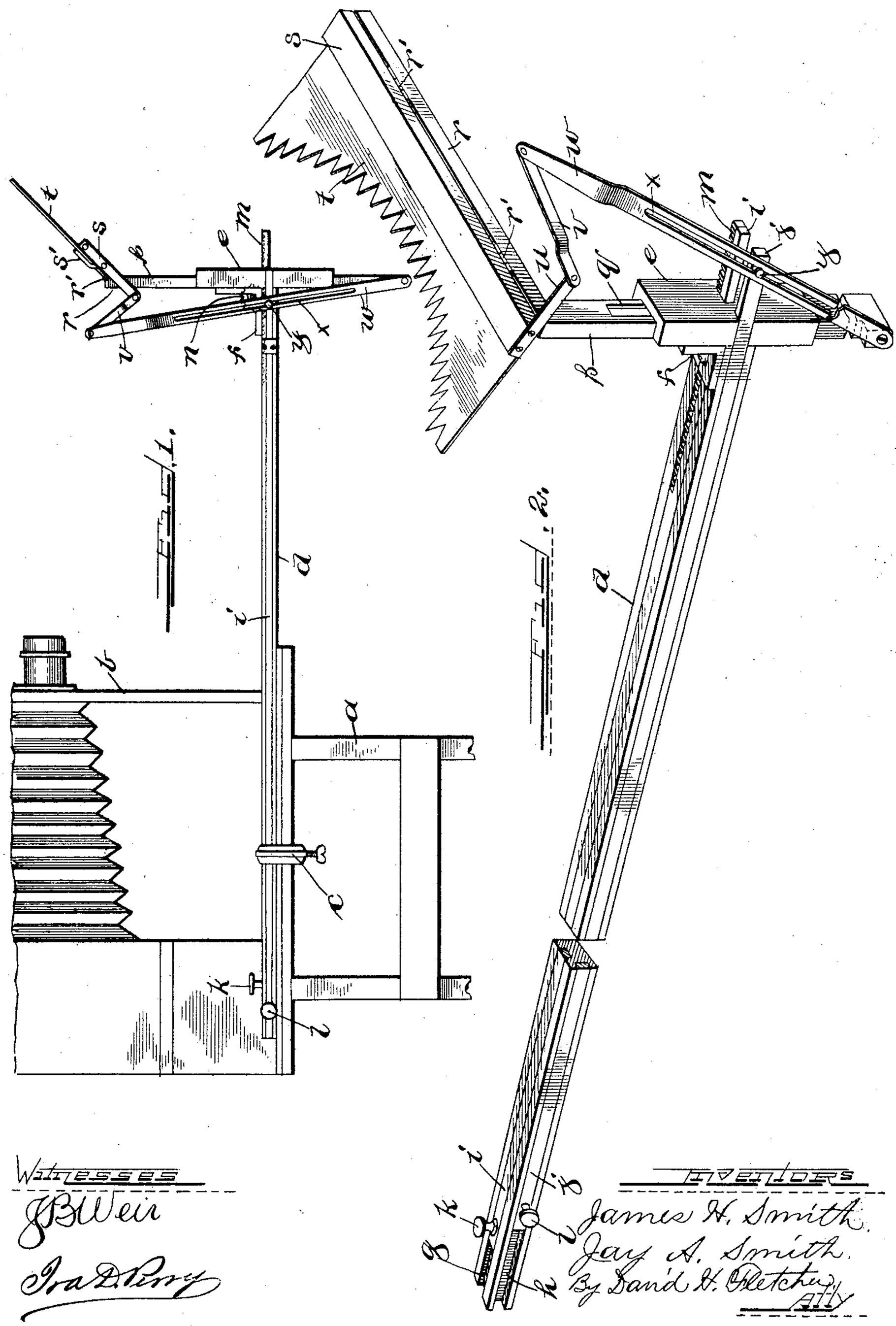
No. 688,036. Patented Dec. 3, 1901.

J. H. & J. A. SMITH.

VIGNETTER FOR PHOTOGRAPHIC CAMERAS.

(Application filed July 13, 1901.)

(No Model.) 2 Sheets—Sheet 1.



Witnesses
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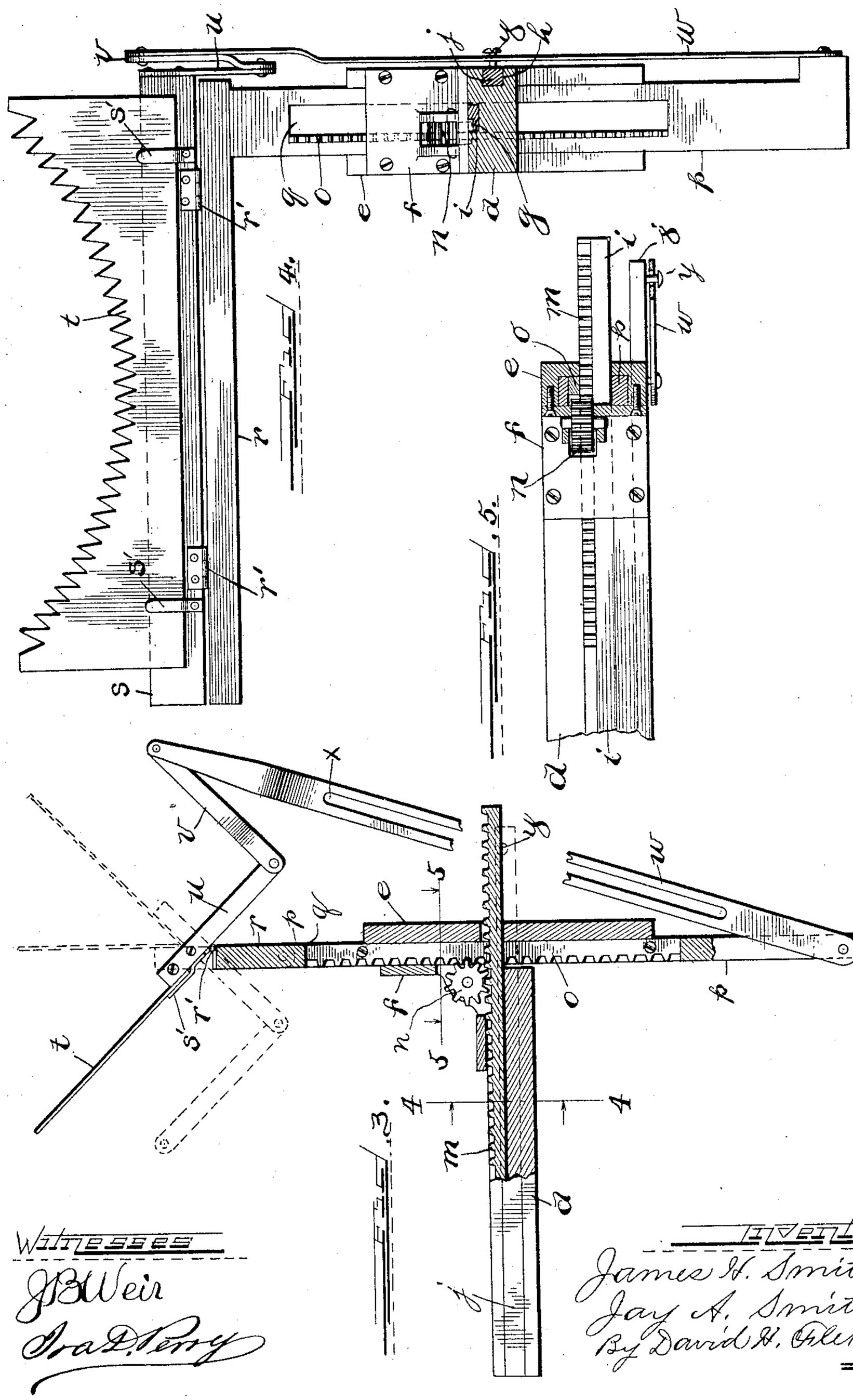

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UNITED STATES PATENT OFFICE.

JAMES H. SMITH AND JAY A. SMITH, OF CHICAGO, ILLINOIS.

VIGNETTER FOR PHOTOGRAPHIC CAMERAS.

SPECIFICATION forming part of Letters Patent No. 688,036, dated December 3, 1901.

Application filed July 13, 1901. Serial No. 68,189. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. SMITH and JAY A. SMITH, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Vignetter for Photographic Cameras, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a photographic camera, showing our improved device applied thereto. Fig. 2 is an enlarged perspective view of the vignetting device. Fig. 3 is a side view of a portion thereof, partly in section. Fig. 4 is an enlarged vertical sectional view taken upon the line 4 4, Fig. 3, viewed in the direction of the arrow there shown; and Fig. 5 is a sectional view in plan, taken upon the line 5 5, Fig. 3.

Similar letters of reference in the different figures designate corresponding parts.

The object of our invention is to provide an adjustable vignetting device to be applied to photographic cameras which shall be so constructed and arranged that the operator can from a single standpoint and while in position to view the effect upon the ground glass manipulate the vignetter by raising or lowering the same or tilting it to any desired angle either toward or from the camera. To these ends our invention consists in the combination of elements hereinafter more particularly described and claimed.

Referring to the drawings, *a*, Fig. 1, represents a frame or table upon which is mounted the usual photographic camera *b*. Attached to the horizontal portion of the table, preferably by means of a screw-clamp *c*, is a supporting-bar *d*, to the outer end of which and at right angles thereto is rigidly attached a vertical head *e*, said head being secured and reinforced by means of a metal corner piece or bracket *f*, the further function of which will be hereinafter specified.

Formed in the bar *d*, preferably in the upper and side faces thereof, are longitudinal grooves *g h*, into which, respectively, are loosely fitted sliding bars *i j*, extending throughout the length of the supporting-bar *d* and through suitable openings in the head *e*, as clearly shown in the drawings. Said sliding bars are provided, respectively, with knobs *k l* for manipulating the same. Upon the opposite or outer end of the bar *i* and upon the upper face thereof is attached a rack *m*, which is adapted to engage with a gear-wheel *n*, the axis of which is journaled in bearings formed in the bracket *f*. Said gear-wheel is also in engagement with a vertical rack *o*, attached to a sliding bar *p*, loosely mounted in a guideway in the head *e*. A slot *q* is formed in the bar *p*, through which the bar *i* is loosely projected, said slot permitting the bar *p* to be moved up and down a distance corresponding to the length of the rack *o* for the purpose hereinafter stated.

Rigidly attached to the upper end of the part *p* and extending laterally therefrom is a bar *r*, to which is hinged at *r' r'* a similar bar *s*, having spring-clips *s' s'* thereon, which are adapted to receive and hold the usual vignetting card or screen *t*. A depending arm *u* is rigidly attached to the bar *s*, and its lower end is jointedly connected by means of a link *v* with a lever-arm *w*, the lower end of which is pivotally connected, as shown, to the lower end of the part *p*. A slot *x* is formed in the lever *w*, the length of which corresponds substantially to that of the rack *o*. A stud *y* upon the end of the bar *j* is adapted to engage said slot in such a manner that the longitudinal movement of the sliding bar *j* will actuate said lever.

The operation of our improved device is as follows: Assuming the bar *d* to be clamped to the horizontal portion of the camera-frame, as shown, the operator after having adjusted his camera to the desired position grasps the knob *k* and by moving the sliding bar *i* through the action of the racks *m o* and gear-wheel *n* raises or lowers the part *p* until the vignetting-screen shows at the proper height upon the ground glass. This adjustment being made the knob *l* is grasped and the slide *j* moved until through the action of the pin or stud *y*, lever *w*, link *v*, and arm *u* the bar *s* is tilted to the required angle to produce the desired effect upon the ground glass. By reference to Fig. 3 it will be seen that any required angle may be obtained either forward or back in either direction, or by lowering the slide *p* and tilting the screen it may be

thrown entirely out of range of the lens when necessary, it being understood that the length of the bar *d*, the height of the lens above the same, and the extent of vertical movement of the slide *p* are all taken into account in accomplishing this result.

By means of our improved device it will be seen that we are enabled to procure all the adjustments necessary to accomplish any of the various results desired and that without changing the position of the operator.

An important advantage of the structure described is that it may be secured at one side of the frame of the camera, thereby enabling the operator to manipulate it in a most natural way while viewing the effect upon the ground glass.

Having thus described our invention, we claim—

1. In an apparatus of the class described, the combination of a supporting-frame having a vertically-movable member, a vignetting-screen pivotally mounted thereon, a sliding bar in operative connection with said vertically-movable member for raising and lowering the same, a lever and intermediate connections for tilting said screen in either direction at any desired height, and a secondary sliding bar for actuating said lever, substantially as described.

2. In an apparatus of the class described, the combination of a main horizontal supporting-bar having a rigid vertical head mounted upon one end, a vertically-movable member fitted loosely in said head, a vignetting-screen supported by said vertically-movable member and pivoted upon a horizontal axis in a plane at right angles to that of said main supporting-bar, a sliding bar supported by said horizontal supporting-bar, racks upon said sliding bar and upon said vertically-movable member, respectively, an interposed pinion adapted to engage both of said racks, a secondary sliding bar upon said main supporting-bar, and means in operative connection with said secondary supporting-bar for tilting said vignetting-screen at varying heights, substantially as described.

3. In an apparatus of the class described, the combination of a supporting-frame, consisting of a horizontal bar having a vertical head upon one end, a sliding bar extending lengthwise of said horizontal bar, a vertically-sliding bar mounted in said head, racks upon said horizontally and vertically sliding bars, respectively, an interposed gear arranged to engage both of said racks, a laterally-extended supporting-bar attached to said vertically-sliding bar, a vignetting-screen hinged to said lateral supporting-bar, an arm connected with said vignetting-screen, a lever-arm pivotally attached to the lower end of said vertically-sliding bar, a link for connecting said arm with the free end of said lever, a sliding horizontal bar mounted in said supporting-frame, and means for operatively connecting the same with said lever-arm, substantially as described.

4. In an apparatus of the class described, the combination of a supporting-frame having a vertically-movable member, a vignetting-screen pivotally mounted thereon, a sliding bar in operative connection with said vertically-movable member for raising and lowering the same, a lever having its lower end pivotally attached at or near the lower end of said vertically-movable member, intermediate connections between the upper end of said lever and screen for tilting the latter in either direction at any desired height, and a secondary sliding bar for actuating said lever, whereby a maximum movement may be given to said screen as a result of a minimum movement of the lever-actuating sliding bar.

In testimony whereof we have signed this specification, in the presence of two subscribing witnesses, this 10th day of July, 1901.

JAMES H. SMITH.
JAY A. SMITH.

Witnesses:
F. W. BOAKE,
CHAS. B. DORR.