(No Model.) 2 Sheets—Sheet 1.

J. E. BLACKMORE.

PHOTOGRAPHIC CAMERA.

No. 392,003. Patented Oct. 30, 1888.

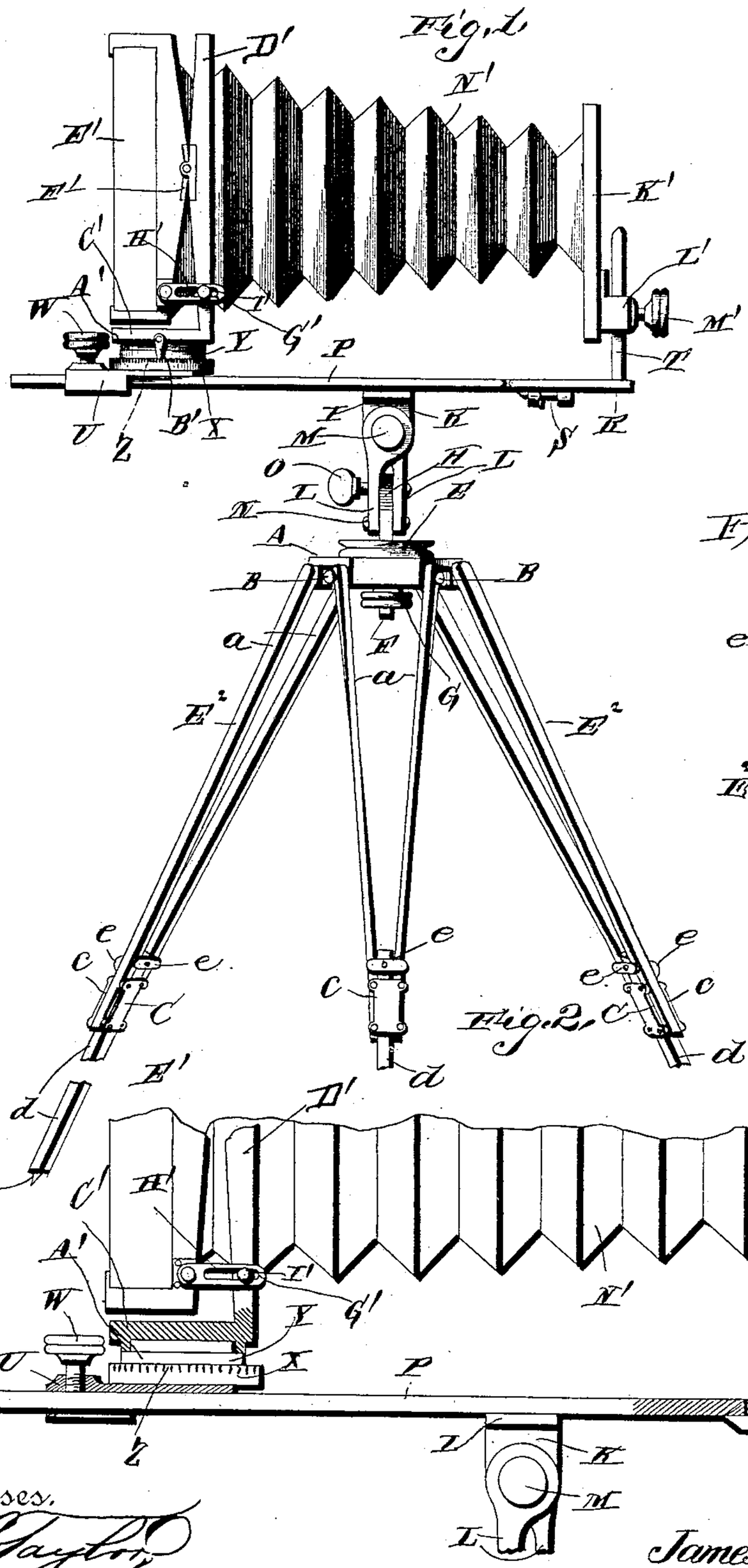

Fig. 1.

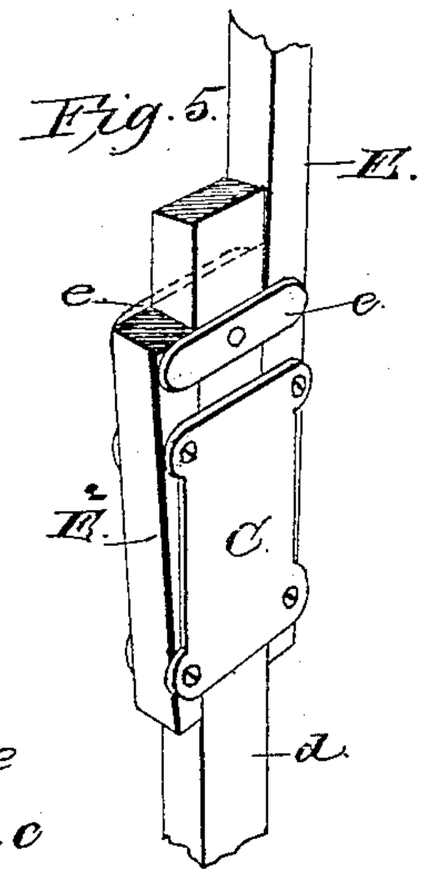

Fig. 5.

Fig. 2.

Witnesses.

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Inventor,

James E. Blackmore,

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C. L. Crow & Co.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

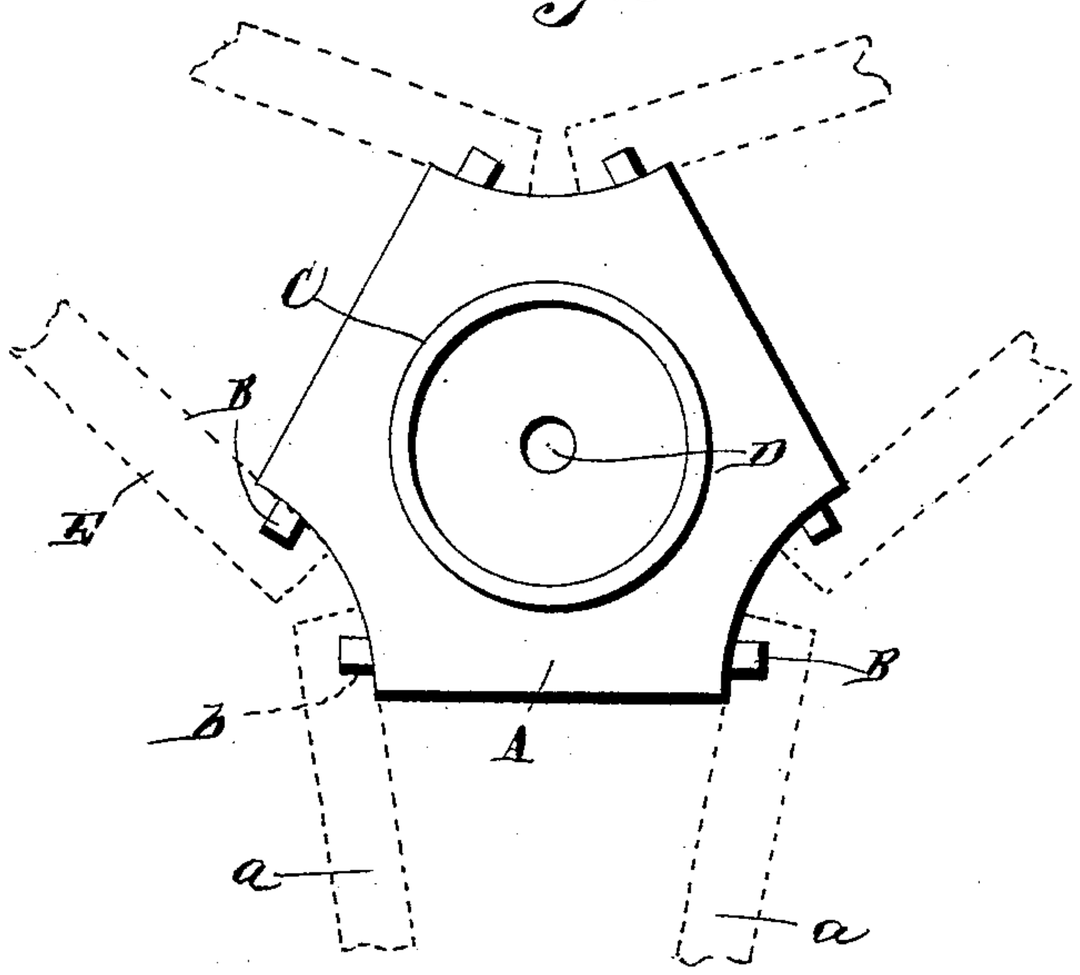
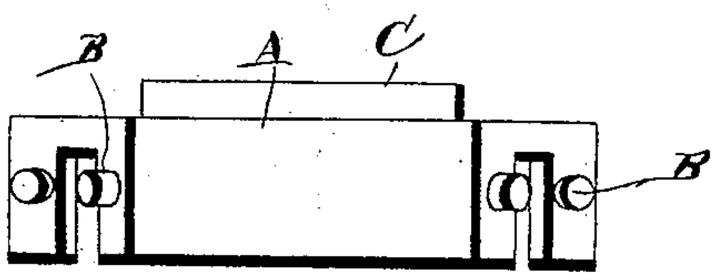


Fig. 4.



Witnesses,
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E. L. Briggs.

Inventor,
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UNITED STATES PATENT OFFICE.

JAMES EDWARD BLACKMORE, OF GRAND RAPIDS, MICHIGAN.

PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 392,003, dated October 30, 1888.

Application filed April 25, 1888. Serial No. 271,767. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD BLACKMORE, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Improvement in Photographic Cameras, of which the following is a specification.

My invention relates to an improvement in photographic cameras; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a photographic camera embodying my improvements. Fig. 2 is a similar view partly in section. Fig. 3 is a top plan view of the supporting-tripod. Fig. 4 is a side elevation of the same. Fig. 5 is a detail view.

A represents the cap of the tripod, which is in the form of an equilateral triangle, having its vertices truncated and provided with reentering curves and having projecting trunnions B. On the upper side of the said cap is a circular offset, C, and in the center of the cap is a vertical opening, D.

E^2 represents the legs of the tripod, the construction of each of which is as follows: *a* represents a pair of parallel rods, which are arranged at a suitable distance apart and are provided at their upper ends with openings *b*, adapted to receive the projecting studs B on one side of the tripod-cap. The lower ends of the said rods are connected by a pair of plates, *c*, which are secured to the said rods on opposite sides. *d* represents an extensible rod which is arranged between the rods *a* and is guided between the plates *c*. The said rod *d* is provided at its upper end on opposite sides with transverse plates *e*, which bear on opposite sides of rod *a*.

From the foregoing description it will be readily understood that the supporting-legs of the tripod may be lengthened or shortened at will, so as to secure the cap A at any desired elevation from the ground. The lower end of each arm *d* is provided with a projecting spur or point, *f*, which is adapted to engage the ground, and thereby prevent the legs of the tripod from slipping.

E represents a circular disk or plate which is arranged on the upper side of the cap A and is provided with a central depending stem, F, that passes through the opening D, serves as a pivot for the plate E, and has its lower end screw-threaded. A thumb-nut, G, is screwed to the lower end of the thread-stem and is adapted to clamp the plate E to the tripod-cap, as will be readily understood. On the upper side of the plate E, and arranged transversely on the center thereof, is a vertical semicircular plate, H.

I represents a casting which is provided with a depending arm or plate, K.

L represents a pair of clamping-arms which have their upper ends bearing on opposite sides of the depending plate K, and secured thereto by a thumb-screw, M, which passes through aligned openings in the clamping-arms and in the plate K. The lower portions of the clamping-arms bear against opposite sides of the segment-plate H, and have their lower ends pivoted to the center of the latter by means of a bolt, N, and a thumb-screw, O, connects the clamping-arms, travels in a curved opening in the plate H, and is adapted to secure the arms to the said plate at any desired adjustment.

The pivotal thumb-screw M is arranged at right angles to the pivotal bolt N, and thereby the casting I is adapted to be swung and secured at any desired angle at right angles to the path in which the clamping-arms L are adapted to swing.

P represents a supporting-bar which is riveted near its center to the upper side of the casting I. The said bar is provided at its rear end with a hinged section, R, which is adapted to be swung under the bar, so as to reduce the length thereof, and said hinged section is provided with a spring-actuated bolt, S, which is adapted to extend across the hinge-joint, and thereby secure the hinge-section in line with the bar P. From the outer end of the hinged section, on the upper side of the same, projects a vertical rod, T.

U represents a clip which is arranged on the bar P and is adapted to slide longitudinally on the outer portion thereof, the said clip being provided with depending side flanges that bear against the opposite edges of the bar P and have their lower ends turned inward and

caused to bear against the lower side of the said bar. A set-screw, W, engages the threaded opening in the upper side of the clip and is adapted to impinge on the bar P, so as to secure the clip thereto at any desired longitudinal adjustment.

On the upper side of the clip U is secured a plate, X, which has a circular disk, Y, on its upper side, and is further provided with a series of teeth or notches, Z, which are concentric with the said disks.

A′ represents a similar plate which has the central opening to receive the disk Y, and thereby said plate A′ is pivoted on the plate X. A detent, B′, is secured to the plate A′ and is adapted to engage the teeth or notches Z, so as to secure the plate A′ at any desired point of its rotation.

C′ represents a base which is arranged on the upper side of the plate A′, and is secured thereto by a pivotal bolt which passes through said base, the plate A′, and the plate X. From the ends of the said base C′, at the rear corners of the same, project vertical arms D′, the front edges of which are inclined in opposite directions from their centers.

E′ represents a holder for the plate, the said holder being rectangular in shape and of suitable size, and having its sides provided on their rear edges with bevels or inclines corresponding with the inclined front edges of the arms D′ and diverging therefrom. The said holder has its sides connected to the front edges of the arms D′ by means of hinges F′, the members of which are secured to said arms D′ and to the sides of the holder E′, respectively.

G′ represents a link which is pivoted to one side of the holder E′ and extends to and passes over the adjacent arm D′. The said link is provided with a longitudinal slot, H′, and a set-screw, I′, works in the said slot and engages an opening in the arm.

K′ represents a holder for the eye-lens, which is provided on its outer side with a casting, L′, that is provided with a vertical opening through which the rod T extends. A set-screw, M′, engages a threaded opening in the casting and is adapted to clamp the rod T, so as to secure the holder K′ thereto at any desired vertical adjustment.

N′ represents the bellows, which is of the usual construction and connects the holders E′ and K′.

A camera thus constructed is adapted to be turned to any desired angle, adjusted to any desired height, and trained on any object within its field.

Having thus described my invention, I claim—

1. The combination of the parallel bars *a*, the plates *c*, connecting their lower ends and arranged on opposite sides of the bars, the longitudinally-movable bars *d*, arranged between the bars *a*, and the transverse plates *e*, secured to the upper ends of bars *d* and bearing on opposite sides of bars *a*, substantially as described.

2. The combination of the tripod-cap, the plate E, centrally pivoted thereon and revoluble in a horizontal plane, the clamping-arms L, pivoted to the plate E and adapted to swing in a vertical plane, and the camera-supporting bar having the depending plate K, pivoted to the upper ends of clamping-bars L and adapted to swing in a plane at right angles to the path of said bars, substantially as described.

3. The combination of the tripod-cap, the plate E, pivoted thereon and having the vertical plate H on its upper side, the arms L, having their lower ends pivoted to the center of plate H and provided with the screw O to clamp them to said plate, the camera-supporting bar, and the plate I, secured under the same and having the depending plate K, the latter being clamped between the upper ends of the clamping-arms and adapted to turn in a plane at right angles to the path of said clamping-arms, substantially as described.

4. The combination of the supporting-bar P, having the rod T at one end, the clip U, clamped to the opposite end of said bar and adjustable longitudinally thereon, the arms D′, supported and carried by the said clip, the holder E′, hinged to the said arms, the holder K′, attached to and vertically adjustable on the rods T, and the bellows connecting the holders E′ and K′, substantially as described.

5. In a camera, the combination of the supporting-bar, the clip adjustable longitudinally thereon, the plate X, arranged on the clip, the plate A′, centrally pivoted on plate X, the arms D′, supported on plate A′, and the holder E′, hinged or flexibly connected to the said arms, substantially as described.

6. The combination of the plate E, the arms L, pivoted to said plate and adapted to swing in a vertical plane, and the camera-supporting bar having the depending plate K, pivoted to the arms L and adapted to swing in a plane at right angles to the path of said arms, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES EDWARD BLACKMORE.

Witnesses:

PETER O. VOORHEIS,

W. C. VOORHEIS.