

(No Model.)

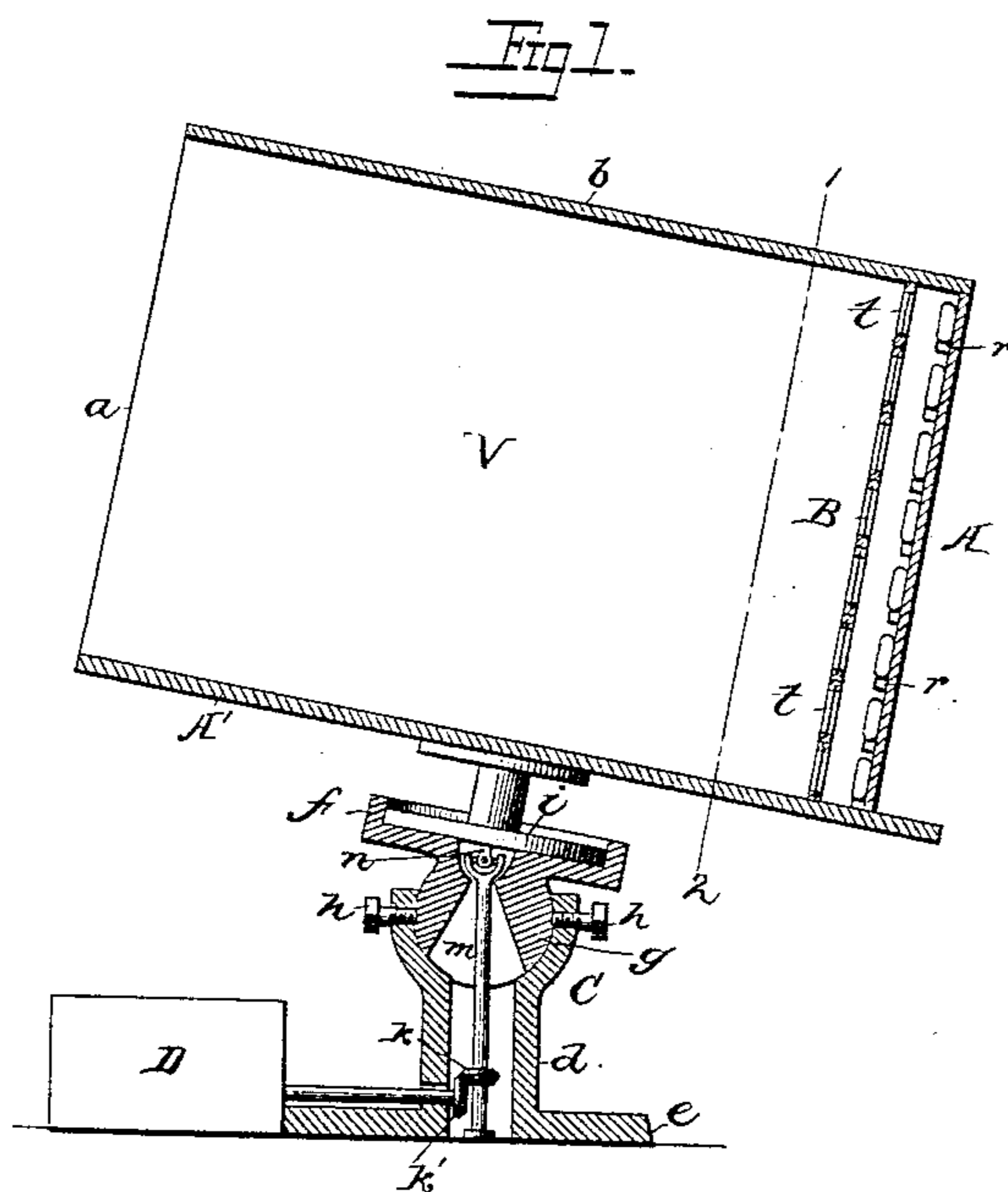
2 Sheets—Sheet 1.

J. BAYNES.

PHOTOGRAPHIC APPARATUS.

No. 389,868.

Patented Sept. 25, 1888.



Attests:

John G. Hinkle & Co.

A. E. Farnham.

John Baynes,

Inventor:

37 Foster & Leonard

at 440.

(No Model.)

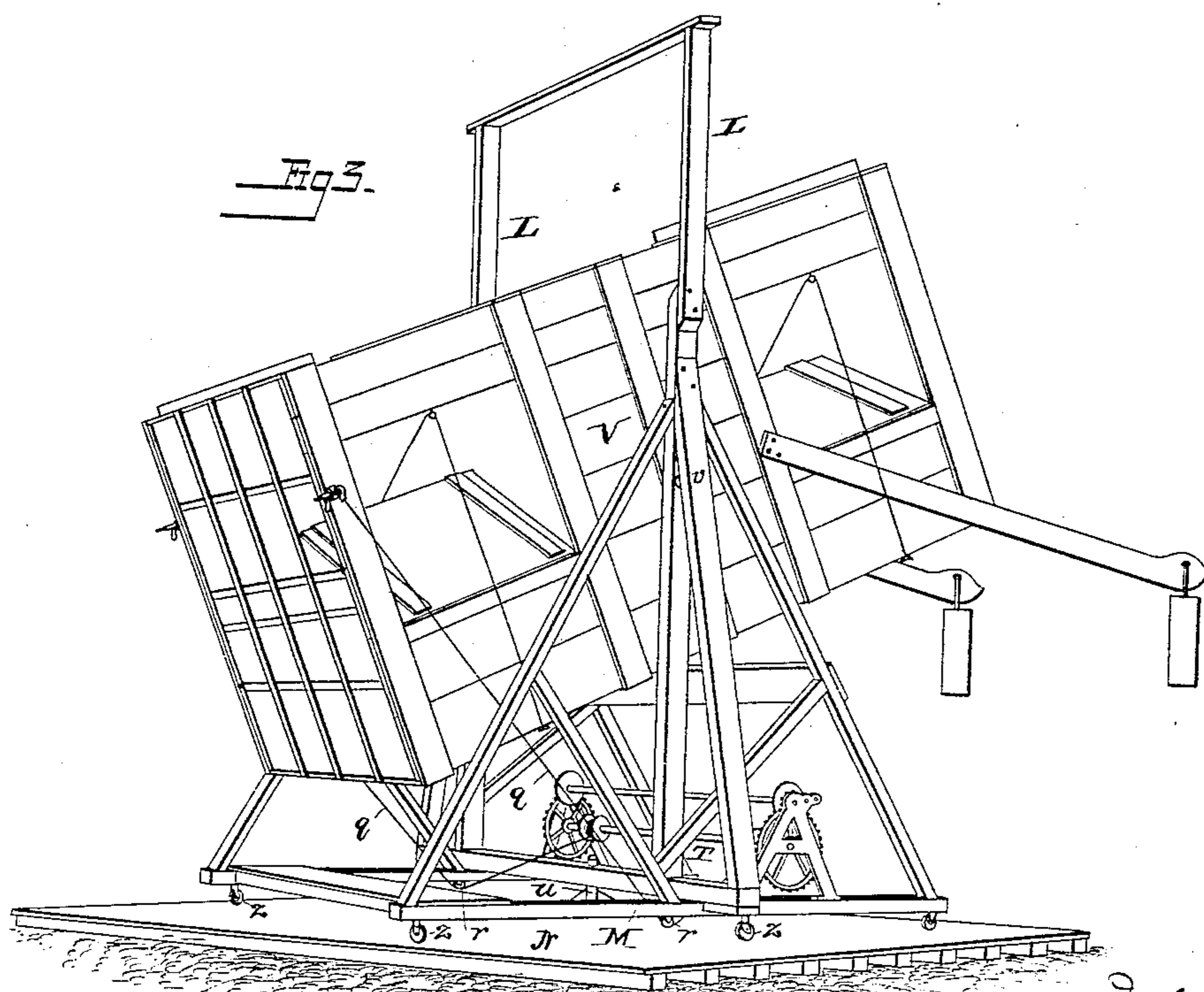
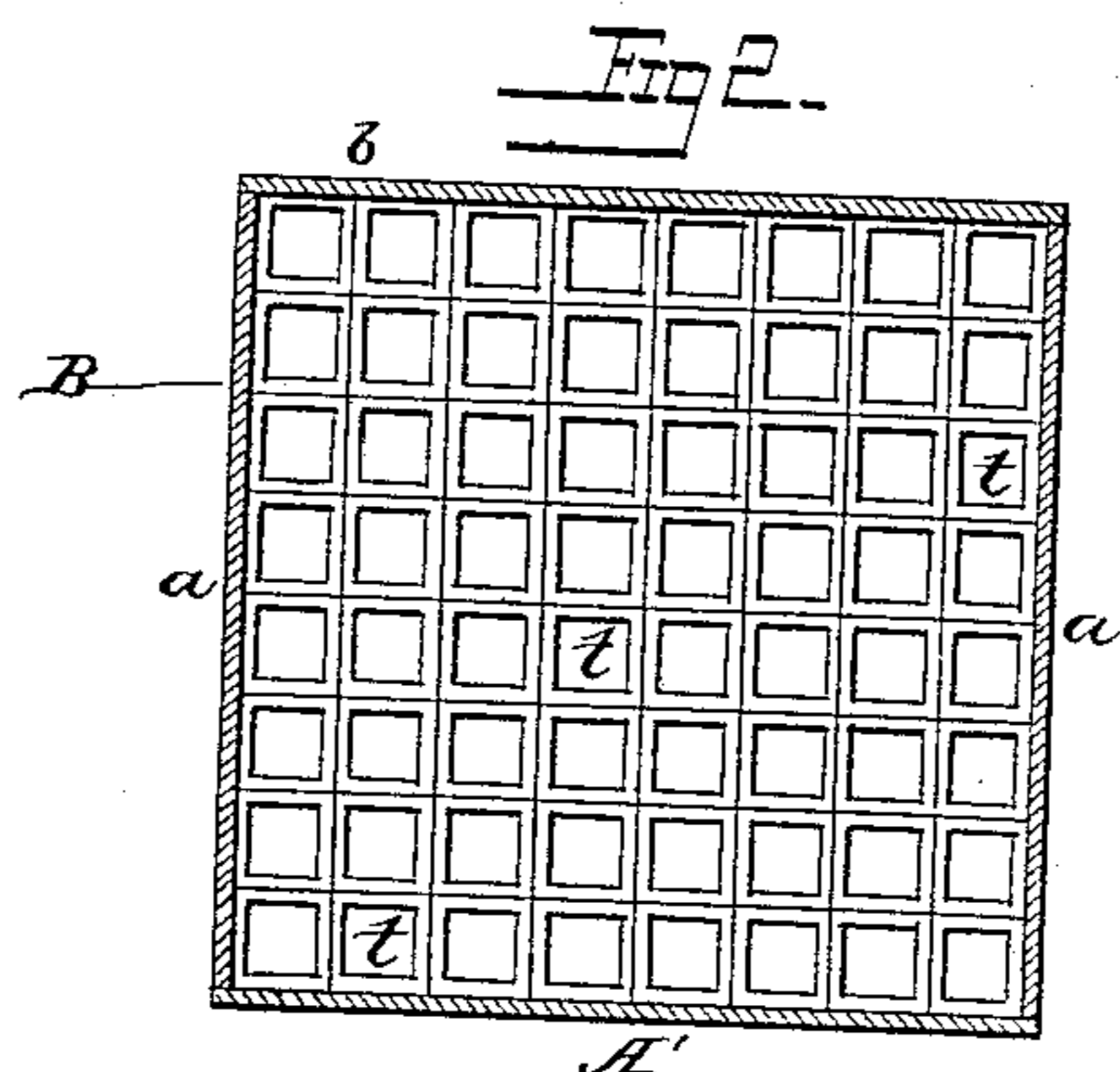
2 Sheets—Sheet 2.

J. BAYNES.

PHOTOGRAPHIC APPARATUS.

No. 389,868.

Patented Sept. 25, 1888.



Attests:  
John G. Hinkel, Jr.  
A. E. Fausmann.

John Baynes,  
Inventor:  
By Foster & Freeman  
attys.

# UNITED STATES PATENT OFFICE.

JOHN BAYNES, OF BRONXDALE, ASSIGNOR OF ONE-FOURTH TO LOCKWOOD DE FOREST, OF OYSTER BAY, NEW YORK.

## PHOTOGRAPHIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 389,868, dated September 25, 1888.

Application filed January 2, 1886. Serial No. 187,459. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BAYNES, a subject of the Queen of Great Britain, residing at Bronx-  
dale, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Photographic Apparatus, of which the following is a specification.

It has heretofore been the practice in preparing photographic prints to apply the paper or other object to be acted on by the rays of light to the face of the negative, and to expose the latter to the sun, either in the open air or within a suitable case. When the article to be acted on is of such a character—as, for instance, prepared paper—that it can be brought into close contact with the negative plate, the angle which the latter occupies in relation to the sun's rays is not very material; but in those cases where the article to be operated upon is rigid or irregular in form—as, for instance, the case of a watch or the face of a plaque, and it cannot be applied directly to the negative—it is not only necessary to set the latter absolutely at right angles to the rays of light, but it is further essential to move both the negative and the object behind it, so as to maintain the position of these parts with respect to the rays of light during the movement of the earth in respect to the sun; and my invention consists in a means of effecting this result so as to act upon a large number of separate objects simultaneously.

The apparatus consists, essentially, of a table or plate, A, of a size to support upon its outer face all the articles to be subjected to the sun's action; a suitable frame or support, B, constructed to carry the negatives or pattern-plates and adapted to be secured to the table in proper position in respect to the articles carried by the said table; a stand or support, C, adapted to hold the plate on the table in a position at right angles to the sun's rays, and with adjusting means and guides whereby the various parts may be moved to maintain this position. The table may be adjusted by hand when but slight exposures are needed, or it may be moved regularly upon its support by a suitable motor, D, constructed and regulated to impart to the plate such a movement as

will maintain its desired relation to the sun's rays.

The parts above described may be differently constructed and arranged to secure the results specified, the drawings illustrating different means of effecting my purpose, Figure 1 showing an automatic device; and Fig. 2, a section on the line 1 2, Fig. 1; and Fig. 3, a device capable of hand adjustment.

In the construction shown in Fig. 1 the plate or table A is secured at right angles to the end of a platform, A', and side pieces, *a a*, and a cover-piece, *b*, serve to guard the face of the table against direct light and cross-rays of reflected light, thereby forming a box, V, open at one end and closed at the other by the plate or table A.

The stand or support C consists of a standard, *d*, upon a suitable base, *e*, and a flanged disk, *f*, provided with a rounded projection, *g*, fitting a corresponding socket in the standard *d* and forming a ball-and-socket joint which permits the disk *f* to be set at any desired angle, after which it may be firmly secured by means of set-screws *h*. Within the flange of the disk *f* fits a circular projection, *i*, upon the bottom of the platform A'. By fixing the disk *f* so that its upper face shall be parallel to the line of the apparent movement of the sun, the table A will be held in such position that by simply turning the table and platform upon the supporting-disk at a rate corresponding to the sun's movement the negatives or pattern-plates will be maintained at right angles to the rays of light.

As one means of moving the plate and its supports I have indicated a spring-motor, D, geared through the medium of double gears *k k'*, with a shaft, *m*, extending through the standard *d* and coupled by a universal joint with a projection, *n*, extending from the center of the projection *i*.

In the construction shown in Fig. 3 the box V is balanced to swing on trunnions *v*, having their bearings in an upright frame, L, supported by a base, M, provided with friction-wheels *z*, resting on a foundation-plate, N, the base M turning on a central pivot, *u*. The base is turned by hand and the angle of the box is varied by turning a drum-shaft, T, from the

drums of which cords *g* pass round guide-pulleys *r* to the box. This apparatus may be used when but a very short exposure is required.

5 It will be apparent that by the means above described I am enabled to preserve the parts in their desired relation to the sun's rays and to operate simultaneously upon a very large number of objects, securing impressions with  
10 sharp outlines, but without the necessity of placing the said objects in intimate contact with the negatives or pattern-plates.

While I have shown the negative plates *t* as all arranged upon a single frame, B, it will  
15 be apparent that each may be supported by a separate frame.

I have shown the table A as provided with ribs *r* for supporting the objects to be acted upon. Any other supporting means may,  
20 however, be employed, and the frame B may be provided with supports for the objects.

The art in which the apparatus hereinbefore described is employed differs from the ordinary photographic art in several respects,  
25 among which may be mentioned the length of time of exposure, the necessity for placing the negative or pattern-plate away from the object or objects to be acted upon, and the desirability of an air-space between the negative or  
30 pattern-plate and the object, in order that the vapors or fumes which are frequently passed off during the photographic operation may be carried away, so as not to condense upon and obscure the transparent portion of the nega-  
35 tive. To construct an apparatus which will combine these features, so desirable and necessary in the art wherein it is used, has been the object of this invention; hence I have devised a case adapted to hold the negative and  
40 object to be acted upon, and to receive parallel rays of light, and to be held in a fixed position relatively to the sun's rays, the negative or pattern and the objects being supported at some distance apart, whereby there is left  
45 an air-space between them.

I am aware that a number of the features which enter into my invention to make a successful apparatus for the purpose to which it is applied have been separately employed or  
50 used in combination with other elements or features; hence I do not desire to be understood as claiming any single feature or device except as appearing in the claims hereof; but none of the earlier devices of which I have  
55 knowledge are adapted for or capable of be-

ing used in the art of ornamenting articles having curved or irregular surfaces by photography, the art in which this invention is employed.

I do not herein claim the improvements in 60 the art set forth and illustrated in this case, as they form the subject-matter of my application Serial No. 226,068.

Without limiting myself to the precise construction and arrangement of parts described, 65 I claim—

1. In a photographic apparatus adapted to be used in ornamenting articles, the combination of a case consisting of an open-ended tube adapted to receive parallel rays of sunlight, 70 a holder for the negative or pattern, a holder for the object to be acted upon situated at a distance from the negative, and means whereby the case may be held in a fixed relation to the sun's rays, substantially as described. 75

2. In a photographic apparatus, the combination of an open-ended case, V, a pattern-plate supported therein, and a support for the object to be acted upon, said pattern-plate and object being separated by an air-space, sub- 80 stantially as and for the purpose set forth.

3. The combination of a case adapted to receive the pattern-plate and an object to be acted upon, a hollow support therefor having a universal adjustment, and means, substan- 85 tially such as described, passing through said hollow support and connecting with the case, whereby it may be made to follow the apparent movement of the sun, substantially as described. 90

4. In a photographic apparatus, the combination of a case adapted to receive a pattern-plate and an object to be acted upon, a hollow standard provided with an expanded socket, a support in which the case is seated and hav- 95 ing a rounded projection fitting in said socket and adjustable therein, means for securing the support and standard after adjustment, and a turning-shaft extending through said hollow standard and connected with the case, where- 100 by the latter may be made to follow the apparent movement of the sun, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two sub- 105 scribing witnesses.

JOHN BAYNES.

Witnesses:

GEO. H. LOWERRE,  
FREDERIC THONNARD.