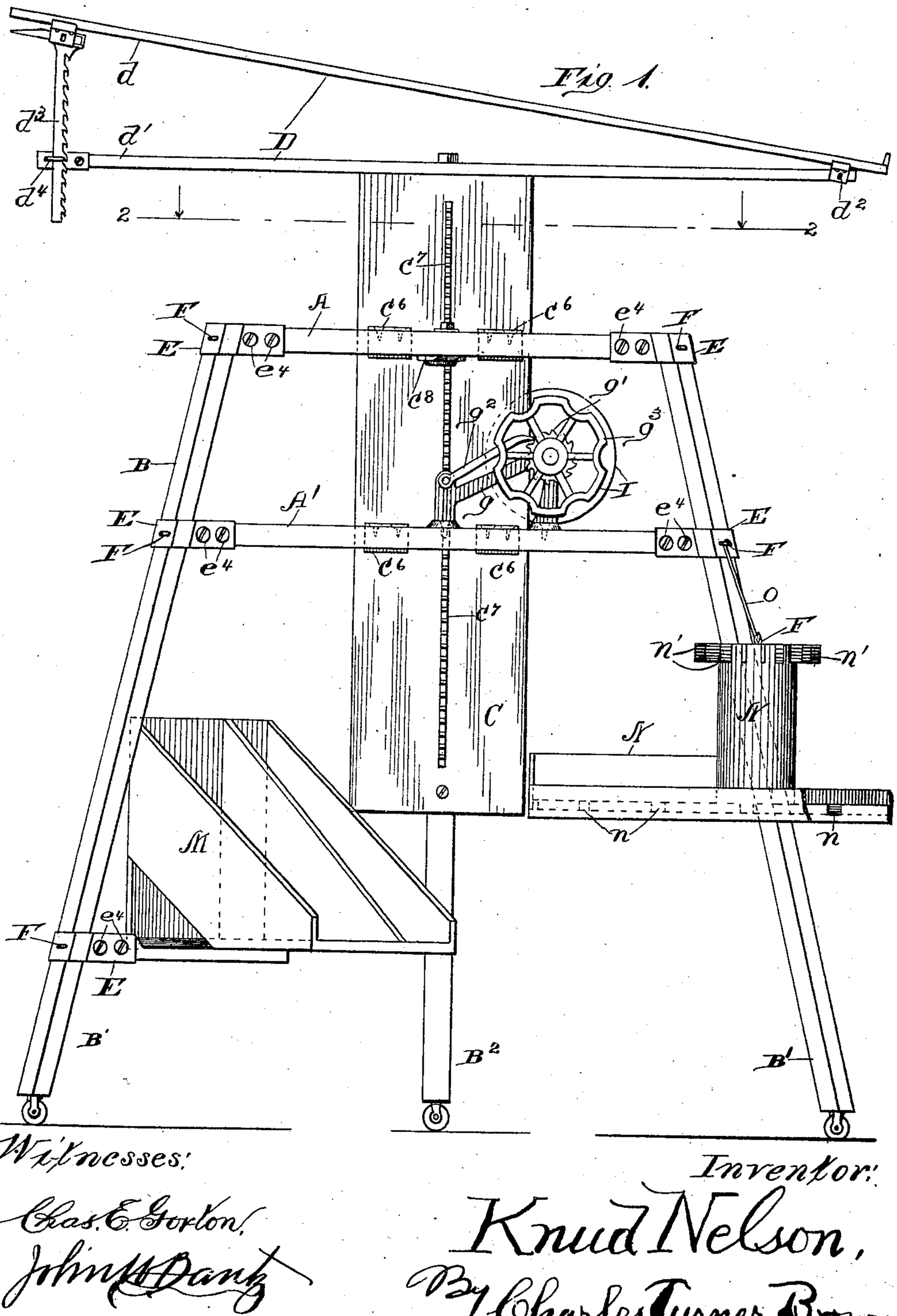
No. 682,809. Patented Sept. 17, 1901.

K. NELSON.

PHOTOGRAPHIC CAMERA STAND.

(Application filed Apr. 8, 1901.)

(No Model.) 2 Sheets—Sheet 1.



Witnesses:

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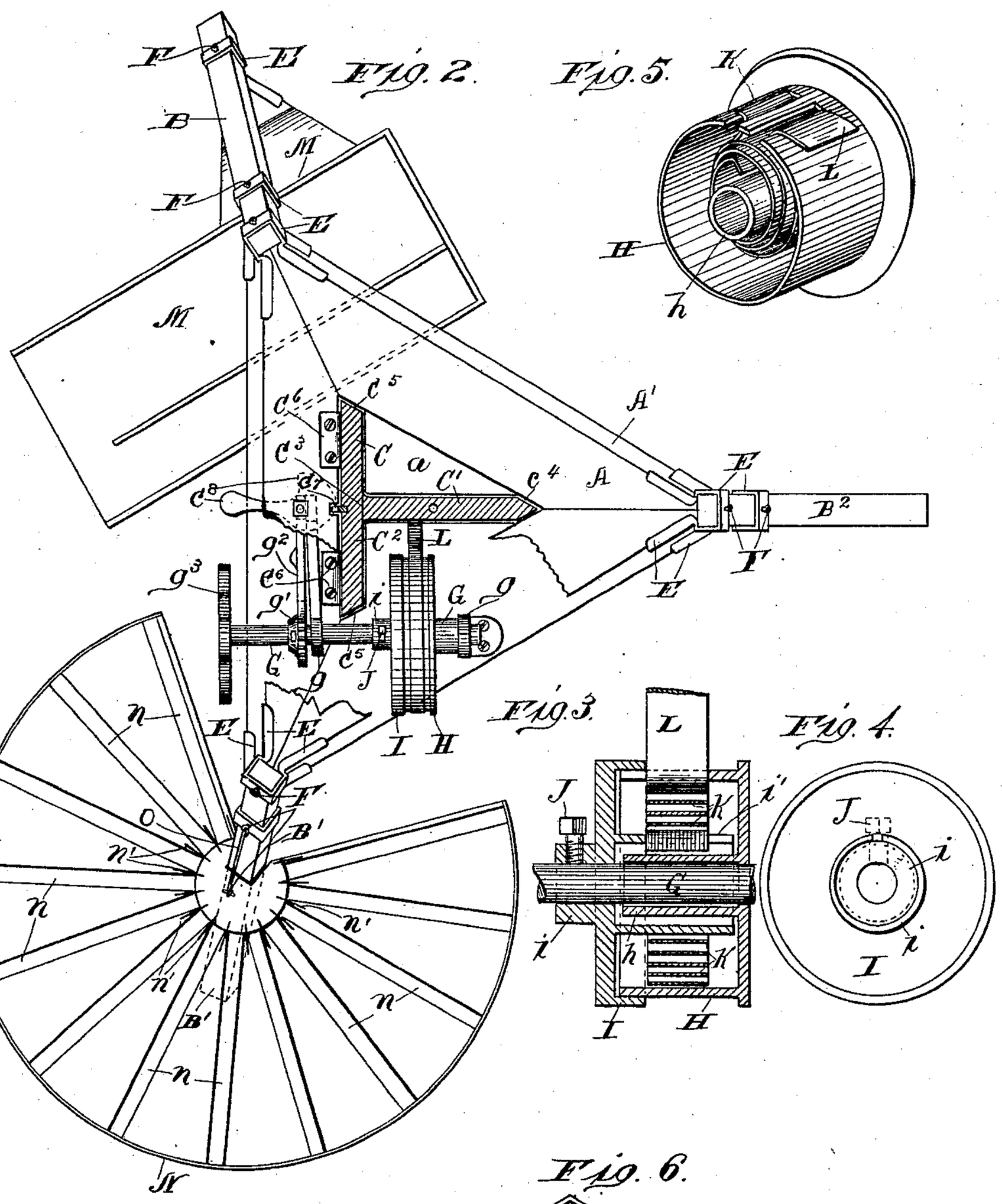


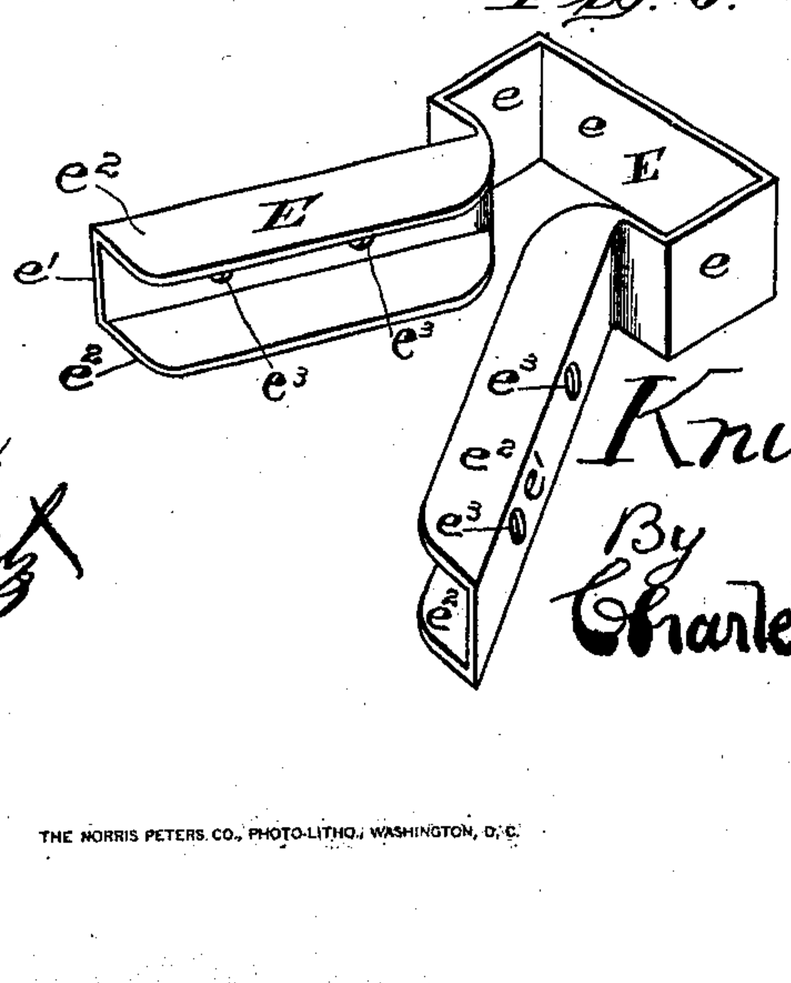
Fig. 2.

Fig. 5.

Fig. 3.

Fig. 4.

Fig. 6.



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UNITED STATES PATENT OFFICE.

KNUD NELSON, OF CHICAGO, ILLINOIS.

PHOTOGRAPHIC-CAMERA STAND.

SPECIFICATION forming part of Letters Patent No. 682,809, dated September 17, 1901.

Application filed April 8, 1901. Serial No. 54,860. (No model.)

To all whom it may concern:

Be it known that I, KNUD NELSON, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Photographic-Camera Stands, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

One object of my invention is to obtain a photographic-camera stand which is firm and durable and which can be readily taken apart, as for shipment, and easily put together again for use, which will be sightly in appearance and not liable to get out of order, and, further, to obtain a photographic-camera stand the table whereof (on which a camera may be placed) can be easily raised and lowered by the person adjusting and focusing such camera.

Another object of this invention is to obtain a photographic-camera stand of the kind named which can be adjusted to operate in the manner named with photographic cameras thereon of differing weights.

In the drawings referred to and wherein a reference-letter applied to designate a given part is used to indicate such part throughout the several views, Figure 1 is a side elevation of an apparatus embodying this invention. Fig. 2 is a horizontal sectional view thereof on line 2 2 of Fig. 1, viewed in the direction indicated by the arrows. Fig. 3 is a vertical sectional view of a spring and drum constituting elements in the apparatus embodying the invention with a portion of the shaft on which such spring and drum are mounted. Fig. 4 is an end elevation of the drum illustrated in Fig. 3; and Fig. 5 is a perspective view thereof with one end of such drum removed. Fig. 6 is a perspective view of a clamp or clasp or clip constituting an element in the apparatus embodying the invention.

A A′ are substantially horizontal tables, and B B′ B^2 are legs attached thereto in the manner about to be described, supporting such tables A A′. Tables A A′ are substantially alike, table A′ being, however, slightly larger than is table A, as is readily observed by an inspection of Figs. 1 and 2 of the drawings. Such tables are preferably formed substantially triangular in shape, the legs B, B′, and B^2 being positioned at the three corners thereof, respectively, and with a triangular aperture therein, through which aperture the standard C of table D extends and in which it moves freely upward and downward. Standard C is preferably made of uprights C′ C^2, attached together, as at C^3, Fig. 2, with the edges C^4 C^5 beveled to fit the apertures *a a* in tables A A′, respectively.

C^6 C^6 are flat sheet-metal springs interposed between the edges of the apertures *a a*, respectively, and the standard C to furnish a take-up insuring substantially similar working of the standard in its vertical movement in wet and dry weather.

C^7 is a rack secured on the standard C, and C^8, Figs. 1 and 2, is a pivotal lever on table A, which may be engaged with or disengaged from the rack C^7. When the pivoted lever C^8 is engaged with the rack C^7, the standard C is firmly latched in a stationary position on the frame, comprising tables A A′ and legs B, B′, and B^2. Legs B B′ B^2, respectively, are secured or attached to the tables A A′ in a manner permitting the removal thereof, when desired, by means of the clips E E E, firmly attached to the tables, respectively, at the corners thereof, and the pins F F F passing through the clips E E E, respectively, and into the respective legs B, B′, and B^2. Clip E is made of sheet metal bent up into shape to correspond with the shape of the legs B B′ B^2 in the part thereof coming in contact with such legs, respectively, and to correspond with the edges of the tables A A′, respectively, in the parts of such clips coming in contact with such edges, and with the parts e^2 e^2 bent over to inclose such table between them. The clip shown in perspective in Fig. 6 is designed to be used with legs which are rectangular in cross-section, and hence the part *e* thereof, with which part the legs come in contact, is made rectangular in shape, and in all cases the part *e* of the clip E should be made to correspond in shape with the shape of the legs in contact therewith, so as to fit reasonably close to such legs.

e′ e′ are the parts of clip E which are in

contact with and rigidly secured to the edges of the tables A A′, e^2 e^2 are bent-over edges of parts e' e', and e^3 e^3 are holes through which screws or bolts e^4 (see Fig. 1) extend into the tables A A′, respectively. To attach legs B B′ B², respectively, to the tables A A′, such legs are passed through the clips E E corresponding therewith, and the pins or bolts F F are inserted securely in place through the clips and into the legs, respectively. (See Figs. 1 and 2.) To render vertical movement of the standards C and table D (with camera thereon) uniform and to balance such standard, table, and camera, I mount a spiral spring on one of the tables A A′ within a drum and attach a flexible ribbon (preferably of sheet-brass) to such drum and to the standard C; and to provide for varying the tension of such spring to correspond with the varying weight of cameras on the table D, I provide means to wind one end of the spring and maintain it in an adjustably-wound position.

G is a shaft rotatably mounted in standards g g on table A′.

g' is a ratchet-wheel on the shaft G and rigidly attached thereto, and g^2 is a dog mounted on frame A′ and engageable with the teeth of the ratchet-wheel g'.

g^3 is a hand-wheel by means of which the shaft G is turned.

H is a drum mounted on the shaft G. I prefer to construct the drum H so as to rotate loosely on the shaft G and to fit into corresponding part I, which is rigidly secured (after any desired adjustment thereof is obtained) to the shaft G, as by means of the set-screw J.

h is the hub of drum H, turning freely on the shaft G.

i is the hub of the part I, and such hub is secured firmly to the shaft G, as by the set-screw J.

i' is a cylindrical portion of the part I, to which the inner end of the spring K is attached. The outer end of the spring K is attached to the drum H.

L is a flexible strap, as of soft brass, copper, or other ductile metal, such strap being attached at one end thereof to the drum H and at the other end thereof to the standard C.

M is a holder attached to one of the legs of the camera-stand embodying my invention, as by means of a clip E and pin F.

N is a plate-holder provided with the divisions n n n, which is attached to one of the legs of the stand, and with the partitions n' n' n' corresponding with such divisions n n n. Plate-holder N may be attached to the legs B B′ B² desired, as by the hook O.

Table D is made in the ordinary way with lower horizontal board d' and the upper board d, pivotally secured to board d', as by the hinge d^2, and provided with adjustable rack d^3 at the other end thereof, engaging with the abutment d^4.

It will be observed that by the construction hereinbefore described the standard C and table D are suspended in the frame obtained by tables A A′ and legs B B′ B², and that by means of the hand-wheel g^3 the tension of the spring on which such standard and table are suspended may be increased or decreased from a given point, while any adjusted tension of such spring is maintained by means of the dog or pawl g^2. To raise or lower the standard C and table D, lever C^8 is disengaged from the rack C^7, and (spring K being adjusted to balance such standard and table, together with the load carried on the table,) thereupon such standard and table may be raised or lowered with but little effort. After the standard C and table D are adjusted the lever C^8 is again brought into contact with the teeth of rack C^7 and such standard and table secured in such adjusted position.

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

1. In a photographic-camera stand, the combination of an upper and a lower horizontal table, clips secured to the tables, legs passing through the clips, respectively, such clips formed respectively of a sheet-metal blank formed to fit the front, the sides, and a part of the back of the legs, and also to fit the edge of the table, and provided with turned flanges fitting the horizontal faces of the table, and means for securing such legs in the corresponding clips; substantially as described.

2. In a photographic-camera stand, the combination of an upper and a lower triangular-shaped table, clips secured to the respective corners of the tables, legs passing through the respective clips, such clips formed, respectively, of a sheet-metal blank formed to fit the front, the sides and a part of the back of the legs, and also to fit the edges of the table, and provided with turned-over flanges to fit the horizontal faces of the table, and means to secure the legs to corresponding clips; a camera-platform, a standard, triangular in cross-section, and the tables provided with triangular openings therethrough, in which openings the standard loosely fits, substantially as described.

3. In a photographic-camera stand, the combination of an upper table, a lower table, clips secured to the tables, respectively, legs corresponding in cross-section to the portion of the clips extending beyond the edges of the tables respectively and arranged to pass through such portion of such clips, means to secure the legs in place in such clips, a vertically-movable standard provided with a table at the upper end thereof, such standard extending through the tables, and means to secure such standard in an adjusted position to such table; substantially as described.

4. In a camera-stand, the combination of a frame consisting of tables and legs removably attached thereto, a standard also provided with a table movably mounted in the

frame, a rotatable shaft adjustably mounted on the frame, a drum loosely mounted on the shaft, a spring interposed between the drum and the shaft, such spring secured at one end to turn with the drum and at the other end to turn with the shaft, a hand-wheel and a ratchet-wheel rigidly secured on the shaft, a pawl to engage with the ratchet-wheel to hold such wheel in an adjusted position, and a flexible connection between the loosely-mounted drum and the movably-mounted standard; substantially as described.

Signed at Chicago, Cook county, Illinois, April 6, 1901.

KNUD NELSON.

In presence of—
CHARLES TURNER BROWN,
CHAS. E. GORTON.