

No. 702,018.

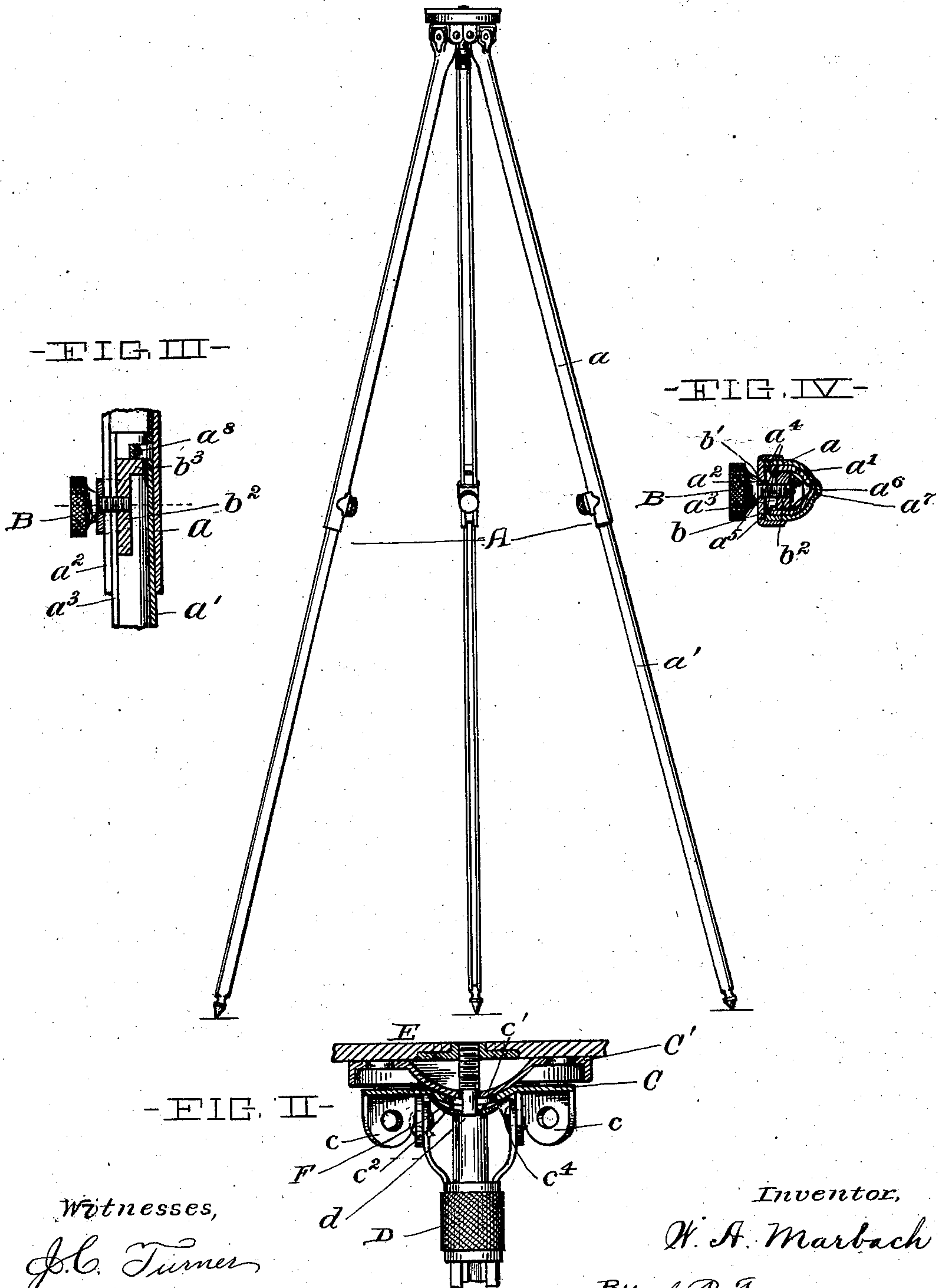
Patented June 10, 1902.

W. A. MARBACH.  
CAMERA SUPPORT.

(Application filed Mar. 2, 1901.)

(No Model.)

-FIG. I-



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# UNITED STATES PATENT OFFICE.

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## CAMERA-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 702,018, dated June 10, 1902.

Application filed March 2, 1901. Serial No. 49,573. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MARBACH, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Camera-Supports, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to supports, and particularly to tripods for supporting cameras, its object being to provide a tripod of the most economical construction combined with lightness and compactness.

Said invention consists of means hereinafter fully described, and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain means embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a front elevation of a tripod embodying my invention. Fig. II represents an enlarged vertical axial cross-section of the tripod-head, showing parts connected therewith in elevation. Fig. III represents a longitudinal cross-section of a portion of one tripod-leg on an enlarged scale; and Fig. IV represents a transverse section of such leg on the same scale, showing the thumb-screw in elevation therein.

Each leg A of the tripod is formed of two members  $a$  and  $a'$ , formed with registering longitudinal slots  $a^2$  and  $a^3$ , respectively, the one being slidable within the other, so as to form a telescoping structure. Each such slot is flanked by lateral longitudinal flanges  $a^4$  and  $a^5$ , respectively, the outer surfaces of the flanges  $a^5$  of the inner member  $a'$  contacting the inner surfaces of the flanges  $a^4$  of the outer member, as shown in Fig. IV. Opposite slot  $a^3$  in member  $a'$  and upon the outside thereof is formed a longitudinal bead  $a^6$ , which is located and slides in a longitudinal groove  $a^7$ , formed upon the inner surface of member  $a'$ , thereby maintaining the correct relative positions of the two members during

the movement of one within the other, preventing binding of such members, and forming strengthening-ribs for stiffening the structure by increasing the cross-section in the direction of flexure. These members are preferably formed by pressing, during which process the bead  $a^6$  may be formed by pressing a groove upon the inside of member  $a'$  and a bead upon the outside of member  $a$ , as shown. The cross-section of such members is preferably made U-shaped, as shown, such form being especially devoid of liability to binding and being readily formed by such pressing process.

Upon the lower end of each outer member  $a$  is secured, by brazing or riveting, a bridge  $b$ , provided with a central opening  $b'$ , through which freely passes a thumb-screw B, whose inner extremity engages a nut  $b^2$ , the lateral portions of whose upper surface engage a portion of the lower surface of the flanges  $a^5$  of the inner member. Such structure constitutes a clamp for fixing the inner and outer members and preventing longitudinal movement relatively to each other, which is effected by drawing the nut up against the flanges  $a^5$ , thereby effecting frictional engagement between such two members sufficient to prevent such longitudinal movement. Said nut is provided with an inwardly-extending lug  $b^3$ , which is located in the line of the path of movement of an outwardly-extending lug  $a^8$ , formed in the upper end of the inner member  $a'$ , as shown in Fig. III. The contact of the two lugs limits the outward movement of such inner member and prevents the two members from becoming detached from each other.

The head of the tripod is formed with a member C, formed with lugs  $c$ , to which the legs are suitably hinged, the upper central surface  $c'$  being concave, as shown in Fig. II, forming one member of a universal joint. The middle of such surface is intersected by an enlarged opening  $c^2$ , through which extends a thumb-screw D, whose upper end engages a thread formed in the bottom E of the camera. Said screw is formed intermediately of its head and threaded portion with a turned portion, which rests loosely in a threaded opening formed in a second member C', such female thread being made to receive the male



thread on the thumb-screw. This construction is well known and permits the screw to be loose in the head, is prevented from dropping out, and may be detached. Said member C' is formed with a convex surface  $c^1$ , seated in the concave surface  $c'$ . Intermediately of a shoulder  $d$  formed upon said screw D and the contiguous head-surface is located a spring-disk F, which normally presses against both head and shoulder and maintains sufficient frictional contact in the joint to prevent undue movement of the camera upon the head when the thumb-screw is not tightly fastened. Such frictional contact permits of the adjustment of the camera's position upon the tripod before the camera is finally and fixedly secured thereon.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a support, a leg comprising in its construction two telescoping members slidable one within the other and each provided with

a longitudinal slot, such slots being located upon the same side of the leg, and means for adjustably securing such members to each other.

2. In a camera-support, a leg comprising in its construction two telescoping members slidable one within the other and each provided with a longitudinal slot, such slots being located upon the same side of the leg, each member of said leg having a longitudinal bead, and means for adjustably securing such members together.

3. A camera-support comprising a plurality of legs each of which consists of two members slidable one within the other and each provided with a longitudinal slot, such slots being located upon the same side of the leg, a bridge secured to the lower end of each outer member, a thumb-screw passing through the bridge, a nut provided with a lug, a lug on the inner member of each leg, said thumb-screw engaging the nut, substantially as described.

Signed by me this 21st day of February, 1901.

WM. A. MARBACH.

Attest:

D. T. DAVIES,  
A. E. MERKEL.