

No. 769,447.

PATENTED SEPT. 6, 1904.

W. S. McKINNEY.

TRIPOD.

APPLICATION FILED JAN. 18, 1904.

NO MODEL.

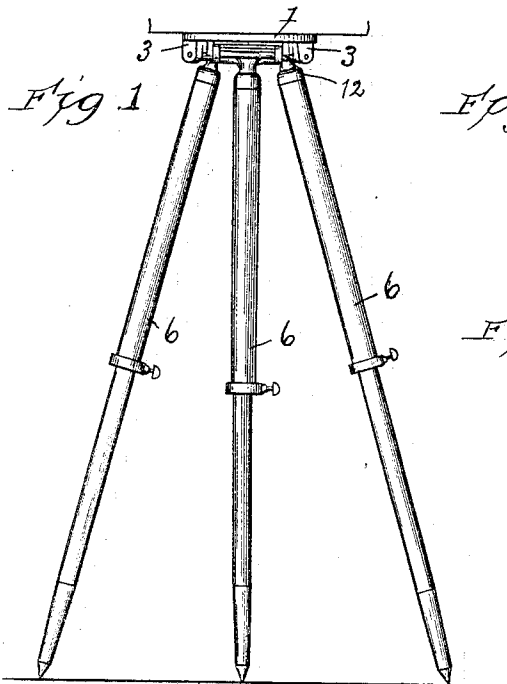
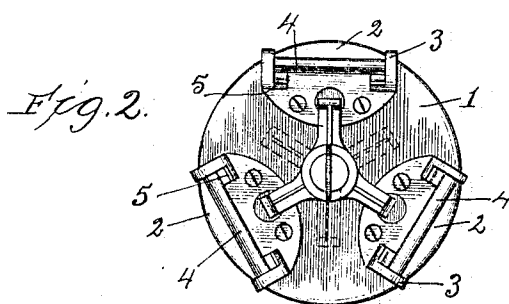


Fig. 5.

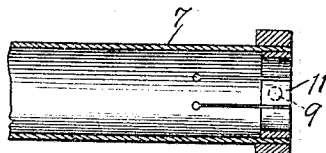


Fig. 6.

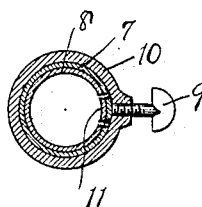


Fig. 3.

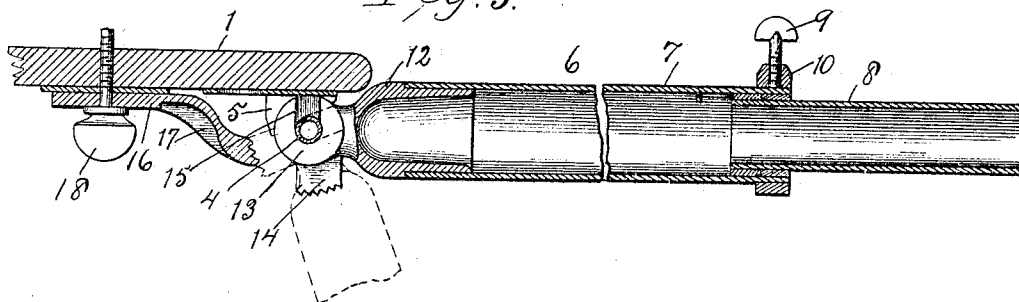
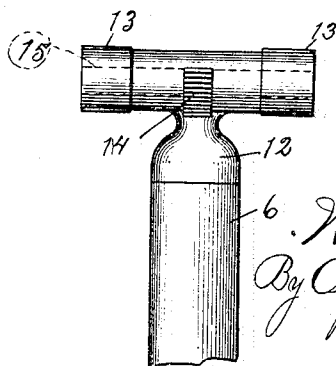


Fig. 4.



Witnesses:

Harry R. White
Ray White.

Inventor:

Walter Sabin McKinney
By Offield Towler in testimony,
Attys.

UNITED STATES PATENT OFFICE.

WALTER SABIN McKINNEY, OF CHICAGO, ILLINOIS.

TRIPOD.

SPECIFICATION forming part of Letters Patent No. 769,447, dated September 6, 1904.

Application filed January 18, 1904. Serial No. 189,593. (No model.)

To all whom it may concern:

Be it known that I, WALTER SABIN McKINNEY, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Tripods, of which the following is a specification.

My invention relates to tripods, and particularly to the construction and manner of assembling the parts of a collapsible three-legged support for a theodolite, compass, telescope, camera, and the like, though it is obvious that it might be applied to stands having any number of legs.

Among the salient objects of the present invention are to provide a construction in which the legs may be attached or detached without the use of screws, clamping devices, or the like, and when adjusted to position cannot become accidentally disengaged, to provide a construction in which the bearing connections between the tripod head and legs are of great length in a direction parallel with the plane of the head, thereby uniting the latter with the legs with great rigidity and preventing torsional movement of the upper part of the structure relative to the points of support when set up, to provide a construction in which the legs may be adjusted to various angles of divergence and after being so adjusted may all be simultaneously and by a single movement rigidly locked in fixed relation to each other, to provide a construction which may be quickly and conveniently collapsed as to its legs and dismembered, if desired, and in general to provide a simple, cheap, and rigid structure of the character referred to.

The invention will be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a tripod embodying my invention. Fig. 2 is a bottom plan view of a tripod-head. Fig. 3 is a sectional view taken through the head and one of the legs, showing the relative positions of the parts when assembled. Fig. 4 is a fragmentary side elevation of a leg. Fig. 5 is a fragmentary sectional view of a leg-section at the joint end, and Fig. 6 is a transverse sectional view through the leg-joint.

Referring to the drawings, 1 designates a head, preferably made of wood, and having mounted on the under side thereof three castings 2 2 2, each provided with a pair of ears or lugs 3 3, between each pair of which is rigidly mounted a pin 4, preferably hollow, and held a short distance from the casting 2 by the lugs. The lugs 3 are of a peculiar shape, being provided at their inner sides with guard portions 5 5, (see Figs. 2 and 3,) having curved inner surfaces concentric with the pin 4, the lower ends of said guards extending downwardly approximately even with the lower edge of the pin 4.

Referring to Figs. 3 and 4, 6 designates as a whole one of the legs, composed in the present instance of two tubular members 7 and 8, telescoping one upon the other and adapted to be locked in adjusted position by means of a thumb-screw 9, passing through a band 10 upon the end of the outer member 7 and into engagement with a tongue 11, Fig. 5, whereby the latter is pressed into engagement with the inner member 8 and the members locked against telescoping movement. Within the upper end of each leg is brazed or otherwise securely fastened a T-shaped fastening 12, provided in the present instance at the ends of the arms with shoulders or bands 13 13 and also in the middle of one side with a projecting segment or stud 14, having a curved and serrated end. Extending longitudinally throughout the length of the T portion of the casting 12 and into the casting in a direction at right angles to the leg is a slot or socket 15, terminating in the center of said casting and constituting a bearing into which fits the pin 4 when the leg is attached to the head. The position of the slot in the casting makes it necessary to lift the leg to a horizontal position or to a position parallel with the plane of the head in order to pass the slot over the pin 4, because of the downwardly-projecting guard 5. (Clearly indicated in Fig. 3.) It is obvious, therefore, that as soon as the outer end of the leg is lowered and the casting turns upon the pin 4 the leg cannot be removed until lifted to a horizontal position again.

16 designates a casting provided with three downwardly and outwardly deflected arms 17, 100

rotatably mounted on the under side of the head 1 by means of a thumb-screw 18, which passes through the casting and the head and is also adapted to pass into a tappet-hole in the instrument used upon the tripod. The arms 17 are provided with serrated ends, which are adapted to be turned to register and mesh with the ends of the stud-like projection 14 after the legs have been attached and adjusted to the desired angle, as shown in dotted lines in Fig. 3. The screw 18 is tightened to hold these arms rigidly in mesh with the stud 14 and at the same time tightens the instrument upon the head. It will thus be seen that the legs are held against a swinging movement out and in, and because of the length of the arms of the casting 12, forming the bearing for the legs, they are rigidly held against lateral or torsional movement, a very important feature when the tripod is used to support a camera having a large expansion or any instrument which must be rigidly and steadily supported when in use.

It is obvious that modification in the details of construction may be made without departing from the spirit of the invention, and I do not therefore limit my invention to the details shown except in so far as they are made the subject of specific claims.

I claim—

1. In a tripod, the combination with a head, of a transverse support upon said head and a leg adapted to be connected therewith, provided with a transversely-disposed socket fitting said support and having an opening at one side extending parallel with the pivotal axis of the socket through which said support may enter, the angular position of said opening being at an abrupt angle to the longitudinal axis of the leg, and means holding the parts against separation except when the leg is flexed to an abnormal position relative to the head.

2. In a tripod, the combination with a head, of a transverse support upon said head and a leg adapted to be connected therewith, provided with a transversely-disposed socket fitting said support and having an opening at one side extending parallel with the pivotal axis of the socket through which said support may enter, the angular position of said opening being at an abrupt angle to the longitudinal axis of the leg, said socket being provided with a circular exterior portion concentric with the axis thereof, and a part upon said head fitting said circular part and holding the parts against separation except when the leg is flexed to an abnormal position relative to the head, substantially as described.

3. In a tripod, the combination with a head, of an extended transverse support upon said head and a leg provided with a transversely-disposed socket portion at one end having therein a longitudinally-extending socket with a longitudinal opening into one side through

which said support may enter, the angular position of said opening being at an abrupt angle to the longitudinal axis of the leg, the exterior of said socket portion being circular and concentric with the axis of said socket, and a lug upon said head at each end of and adjacent said support and having curved surfaces concentric with the axis of said socket, holding the parts against separation except when the leg is flexed to an abnormal position relative to the head, substantially as described.

4. In a tripod, the combination with a head, of a plurality of legs, and means for attaching each of said legs to said head comprising a comparatively long bearing member secured to said head and a correspondingly long attaching member upon the end of said leg with a longitudinally-extending socket opening into the axis of said attaching member into which said bearing member fits, and means for holding said bearing member and said attaching member against separation.

5. A tripod comprising in combination, a head, a plurality of legs, and means for attaching each of said legs to said head, comprising a comparatively long bearing member secured to said head and a correspondingly long attaching member upon the end of said leg with a longitudinally-extending socket opening into the axis of said attaching member into which said bearing member fits, and means for simultaneously locking said legs in various angles of divergence, substantially as described.

6. A tripod comprising in combination a head, a plurality of legs, and means for pivotally and detachably mounting said legs upon said head, said means comprising a plurality of horizontally-extending bearing members secured to said head, a correspondingly-extending attaching member secured to each leg and provided with a longitudinally-extending socket opening therein adapted to be passed over one of said bearing members, and a guard member mounted adjacent each bearing member to prevent the unintentional separation of the parts, substantially as described.

7. A tripod comprising in combination a head, a plurality of legs, and means for pivotally and detachably mounting said legs upon said head, said means comprising a plurality of horizontally-extending bearing members secured to said head, a correspondingly-extending attaching member upon each leg and provided with a longitudinally-extending socket opening into the axis thereof adapted to be passed over one of said bearing members, a guard member mounted upon said head adjacent each bearing member to prevent the accidental separation of the leg from the head, and means for locking said legs in various angles of divergence, substantially as described.

8. A tripod, comprising a head, a plurality of extensible legs, and means for detachably

and adjustably mounting said legs upon said head, comprising a plurality of horizontally-extending bearings mounted upon said head, corresponding attaching members provided
5 with longitudinally-extending sockets opening into the axis thereof secured to each leg, a projecting segment mounted upon said attaching member, an armed member with segment ends rotatably mounted upon said head
10 and adapted to be turned so that the arms thereof register with and engage the project-

ing segments upon the attaching members to hold the latter in adjusted position, means for locking said armed member against movement, and a guard mounted adjacent each
15 bearing member to prevent the accidental disengagement of said attaching member therewith, substantially as described.

WALTER SABIN McKINNEY.

Witnesses:

ALBERT H. GRAVES,
L. F. McCREA.