

No. 731,879.

PATENTED JUNE 23, 1903.

W. F. FOLMER.

TRIPOD.

APPLICATION FILED MAY 8, 1903.

NO MODEL.

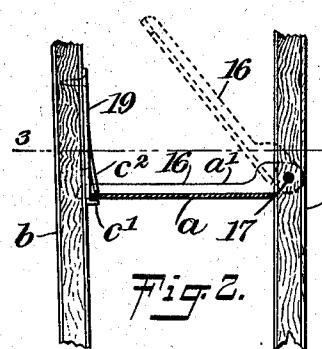


Fig. 2.

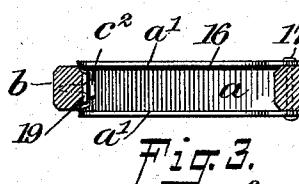


Fig. 3.

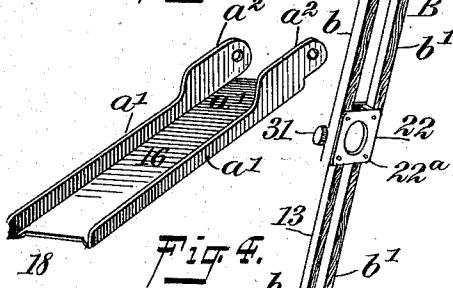


Fig. 4.

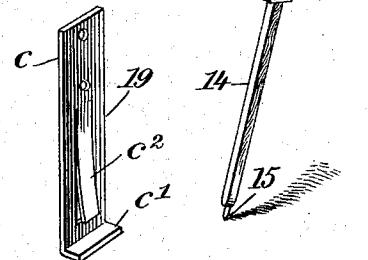


Fig. 5.

Fig. 1.

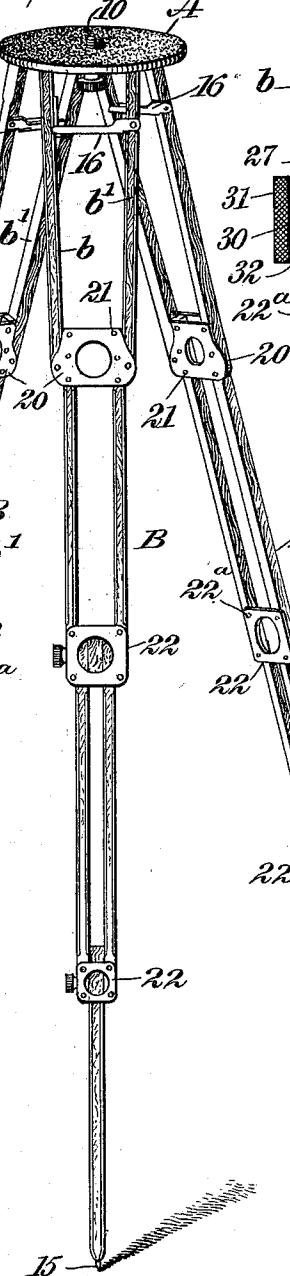


Fig. 6.

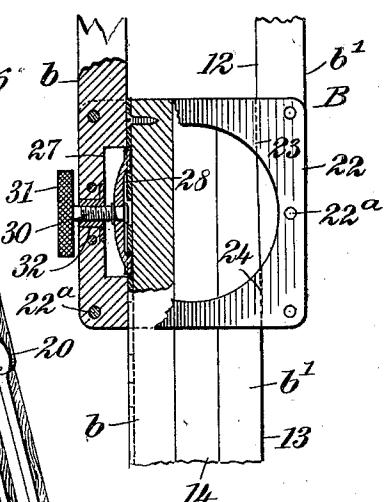
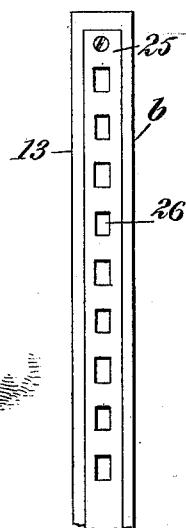
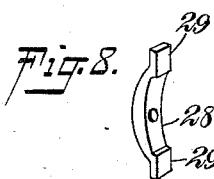


Fig. 7.



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TRIPOD.

SPECIFICATION forming part of Letters Patent No. 731,879, dated June 23, 1903.

Application filed May 8, 1903. Serial No. 156,179. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. FOLMER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, 5 in the county and State of New York, have invented a new and Improved Tripod, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a tripod especially designed for use in connection with cameras, but which may be advantageously employed wherever a tripod is necessary, and to so construct the tripod that the legs while pivotally connected with the head 15 in any suitable or approved manner, preferably in a detachable manner, can be quickly and readily spread apart and locked to the head, remaining in such locked position until purposely released.

Another purpose of the invention is to construct the legs, as usual, in any desired number of sections, mounted to slide one in the other, so that when the sections of the legs are telescopically adjusted one section within 25 the other the length of the legs will be materially reduced, and, further, to provide such construction of the telescopic sections, and particularly such simple exteriorly and readily operated locking devices for the telescopic 30 sections of the legs that should the locking devices from any cause be not firmly adjusted one section of the leg will so wedge itself with relation to the section within which it telescopes as to prevent the connecting sections 35 from moving from their adjusted position notwithstanding the laxity in the application of the locking or clamping device.

Another purpose of the invention is to reinforce the receiving-section of a leg in a manner to prevent the wood from splitting and to construct the entire tripod in a simple, durable, and economic manner and so that it may be quickly and conveniently set up, adjusted, and locked in adjusted position and as conveniently and expeditiously folded or reduced 45 in length for purposes of storage or transportation.

The invention consists in the novel construction and combination of the several 50 parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying

drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures. 55

Figure 1 is a perspective view of the improved tripod set up. Fig. 2 is a side elevation of the upper portion of one of the legs, showing the spreader-bar in section as locked in spreading position and in dotted lines in 60 releasing position. Fig. 3 is a transverse section taken practically on the line 3 3 of Fig. 2. Fig. 4 is a perspective view of a spreader-bar for a leg detached from the leg. Fig. 5 is a detail perspective view of a keeper for a 65 spreader-bar. Fig. 6 is a sectional side elevation of the connecting portions of two structural sections of a leg adapted to slide one within the other, illustrating the manner in which two such structural sections are ad- 70 justably held in locking relation to each other. Fig. 7 is an edge view of one member of a structural section of a leg and a front elevation of a keeper-plate applied thereto, and Fig. 8 is a perspective view of a latch or lock- 75 ing-button used in connection with the keeper-plate shown in Fig. 7.

A represents the head or cap plate of a tripod, provided with the usual camera-attaching screw 10 at its center, and this head or 80 cap-plate is provided with the usual brackets upon its under surface, in which pivots from the upper ends of the legs B are made to enter in a removable or detachable manner. The legs B are shown as constructed in four 85 sections—an upper section 11, intermediate sections 12 and 13, and a bottom section 14. The intermediate sections 12 and 13 are illustrated as slidably or telescopically connected, as are likewise the lower sections 14 of the 90 said legs shown telescopically or slidably connected with the lower intermediate sections 13 of the legs, and the extreme lower sections 14 of the legs are shown provided with the usual pins 15, adapted to enter the ground or 95 to enter more or less any surface upon which the tripod may be mounted. The lowermost sections 14 of the said legs 10 are in a single piece, whereas the other sections 11, 12, and 13 comprise two opposing side sections b and b'. 100

Although the upper intermediate sections 12 of the legs B may be made to slide more or less in the uppermost sections 11, in the drawings the uppermost sections 11 and the next

lower or upper intermediate sections 12 are shown as rigidly connected by means of suitably-opposing plates 20, attached by pins 21, which plates serve to prevent the wood from which said sections are made from splitting and enables the members of the sections to be made very slight or slender.

The upper portions of the upper sections 11 of the legs B are held spread apart, so that they cannot accidentally leave the brackets in which they are pivoted at their upper extremities by means of spreader-bars 16. These spreader-bars 16 are preferably constructed as is shown in Fig. 4, wherein it will be observed that a spreader-bar consists of a bottom member a, upwardly-extending side longitudinal flanged members a', and ears a², which extend beyond the bottom member a, and through the medium of the said ears a² a spreader-bar is pivoted, for example, to a side member b' of the upper section 11 of a leg, the pivot-pin for the spreader-bar being designated as 17, (shown in Fig. 3,) and at the opposite end of the body or bottom a of the spreader-bar a recess 18 is made, so as to accommodate the free end of the spreader-bar to the opposing side member b of the upper section 11 of a leg B.

While I am aware that spreader-bars 16 have been heretofore employed for the purpose set forth, I am not aware that any means have been employed for preventing a spreader-bar at its free end being brought directly in engagement with the member of a leg opposite that to which the bar is pivoted, and, furthermore, I am not aware of any construction that has been employed for automatically locking a spreader-bar in its spreading or distending position. Therefore I employ a keeper 19, which is attached to the member b of the upper section of a leg, and this keeper 19 consists of a body-plate c, having a bottom flange c', which limits the downward movement of the spreader-bar, and a spring-tongue c², which is preferably struck out from the body-plate c, as is shown in Fig. 5, and normally extends out beyond the inner face of the said body-plate and over the bottom flange c', so that when a spreader-bar is forced downward, so as to spread apart the upper portions of the upper section of a leg B, the moment that the spreader-bar is brought to an engagement with the flange c' of the keeper 19 the tongue c², after it is released from the pressure of the spreader-bar, will immediately fly outward over the upper surface of the free end of the spreader-bar, and thus prevent the spreader-bar from accidentally rising upward.

When it is desirable to detach a leg from the head A, it is simply necessary to press the tongue c² of the keeper 19 inward, thus permitting the free end of the spreader-bar 16 to be raised to the dotted position shown, for example, in Fig. 2.

The lower ends of the upper intermediate sections 12 of each leg B of the tripod are

connected by opposing plates 22, secured to one another and to the members b and b' of said sections by pins 22^a. These plates and pins serve the same purpose as the upper plates 20 and pins 21, heretofore referred to. The side members b and b' of the lower intermediate sections 13 of the legs have sliding movement between the plates 22 and between the corresponding members b and b' of the upper intermediate sections 12 of the legs, as is particularly shown in Fig. 6. The lower sections 14 of the legs B of the tripod have sliding or telescopic movement in the spaces between the side members b and b' of the lower intermediate sections 13 of the said legs. A wedge connection, however, is provided between the side members b and b' of the upper and lower intermediate sections 12 and 13 of a leg, as is also shown in Fig. 6. This wedge connection is made by giving the inner surface 23 of the member b' of an upper intermediate section 12 of a leg an inclined surface, which increases in width in an upward direction until it meets the plain inner surface of the said member b' of the upper intermediate section 12 of a leg at a point preferably just above the connecting-plates 22 for said members of said section 95 and by giving an oppositely-inclined surface 24 to the outer edge of the member b' of the lower intermediate section 13 of a leg corresponding in length to the inclined plane 23 of the corresponding member of the upper intermediate section of the leg, the inclined surface 24 for the member b' of the lower intermediate section 13 of the leg decreasing in width in an upward direction in proportion to the increase in width in a downward direction of the corresponding member b' of the upper intermediate section 12. These oppositely-inclined surfaces 23 and 24 of corresponding members of the telescopic sections 12 and 13 of a leg are therefore parallel, and in the event the locking device which is employed to secure these sections of a leg in their adjusted position is not properly manipulated—as, for example, by reason of cold fingers in cold weather—the meeting inclined planes 23 and 24 will form such a wedge connection as under ordinary circumstances to hold the said sections 12 and 13 of a leg in a comparatively secure adjusted position; but the adjusting device auxiliary to the said wedge action just described will undoubtedly under all conditions be brought into action to a greater or less extent and will therefore materially assist the wedge connection of the telescopic sections in their holding positions.

Where the opposing members b of the telescopic sections 12 and 13 connect, the opposing faces of the said members are straight, as is shown in Fig. 6; but in the inner face of the lower portion of the member b of the upper intermediate section 12 a longitudinal recess 27 is made, while in the outer or opposing surface of the corresponding member b

of the lower intermediate section 13 a keeper-plate 25 is countersunk. This keeper-plate 25, as is shown in Fig. 7, is provided with a series of apertures or openings 26, arranged at regular intervals apart. In the said recess 27 in the member *b* of the upper intermediate section 12 a latch or locking-button 28 is located, which, as is particularly shown in Fig. 8, is provided with offset feet 29 at its ends, and these feet are adapted to simultaneously enter predetermined openings 26 in the keeper-plate 25, as is shown in Fig. 6. The latch or locking-button 28 is attached at its center to a screw 30, having a suitable head 31 at the exterior of the member *b* of the leg-section 12, as is also best shown in Fig. 6. The said screw 30 is made to turn in a ferrule 32, interiorly threaded and secured in any suitable or approved manner in the said member *b* of the leg-section 12, one end of which ferrule enters the recess 27 of the said member *b*, as is also shown in Fig. 6. Thus it will be observed that by loosening the screw 30 the sections 13 may be moved up or down in the section 12 of a leg, and after suitable adjustment has been obtained the feet 29 of the latch or locking-button 28 may be made to enter convenient openings 26 in the keeper-plate 25, and thus hold these two sections in their adjusted position. A similar means of adjustment is provided between the lower sections 14 of the legs and the lower intermediate sections 13, the only difference being that the devices are accommodated to a single-membered section entering a double-membered section instead of one double-membered section entering another section of corresponding formation.

A tripod constructed as above set forth may be made very light and yet will be very strong. The adjustments of the sections may be expeditiously and conveniently accomplished, and the legs of the tripod may be locked to the head *A* without danger of the accidental displacement of the legs with reference to the head.

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

1. In a tripod, a leg having its upper portion in two opposing members, a spreader-bar pivoted to one of said members, a keeper attached to the opposing member and provided with a stop, and a spring retaining member 55 over the stop and adapted to hold the free end of the spreader-bar in engagement with the said stop, as described.

2. In a tripod, a leg having its upper section in two opposing members, a spreader-bar pivotally attached at one end to one of the said members, the spreader-bar comprising a bottom and longitudinal upwardly-extending side flanges, the spreader-bar at its free end

being provided with a recess in its bottom portion, a keeper secured to the member opposite that to which the spreader-bar is pivoted, which keeper consists of a plate having a flange at its bottom, forming a rest for the spreader-bar in its lower or spreading position, and a tongue at its lower end which is offset from the body of the keeper and extends over the bottom flange thereof, the body of the keeper being provided with an opening into which the said tongue may be forced when the spreader-bar is to be released from locking engagement with the keeper, as described.

3. In a tripod, a leg constructed in sections, slideable one in the other, each section at the same side being provided with oppositely-inclined surfaces adapted for wedge connection, a keeper-plate secured to the opposite side of one section, which keeper-plate has apertures produced therein, a screw carried by the other section, operated from the exterior of said section, and a latch or locking-button operated by the screw and having projections adapted to enter the apertures in the said keeper-plate, for the purpose set forth.

4. In a tripod, a leg constructed in sections, each section being constructed in opposing members, opposing plates connecting the lower ends of the members of one section, the upper ends of the members of the other section being adapted to slide between the said plates, the inner longitudinal edges of the plate-connected members at one side of the plate-carrying section being provided with an inclined plane, and the opposing edge of the corresponding member of the entering section being provided with a correspondingly oppositely inclined plane, the opposing connecting edges of corresponding members of the two sections being straight, a keeper-plate secured to the outer longitudinal face 95 of the straight member of the entering section, which keeper-plate has apertures produced therein, the opposing face of the corresponding member of the receiving-section having a recess produced therein between the connecting-plates, a threaded ferrule extending outward from the said recess, a screw mounted to turn in the said ferrule, and a latch or locking-button located within the said recess and carried by the said screw, 105 which latch or locking-button is provided with members adapted to enter recesses in the said keeper-plate, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of 110 of two subscribing witnesses.

WILLIAM F. FOLMER.

Witnesses:

JNO. M. RITTER,
J. FRED. ACKER.