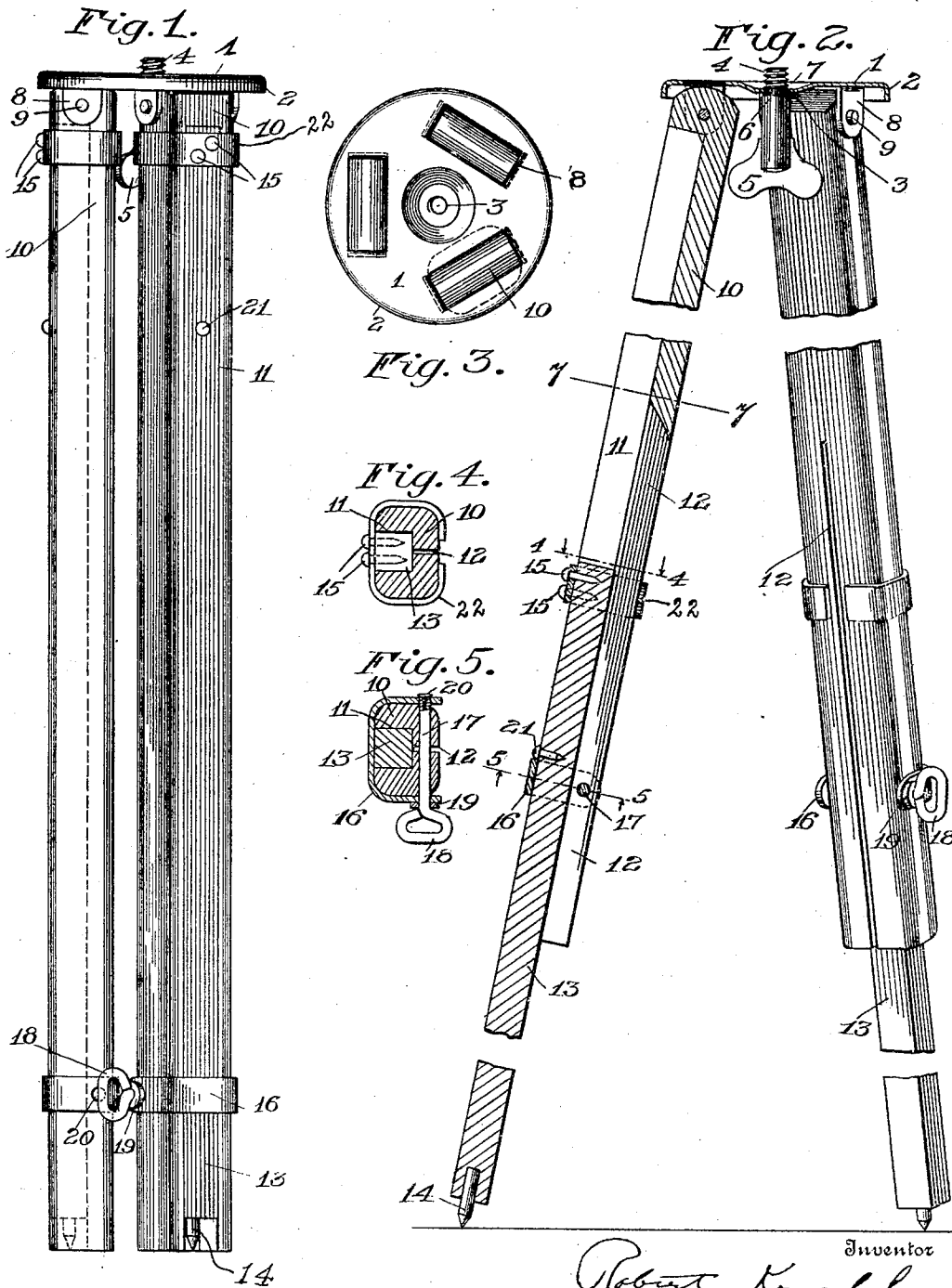


R. KROEDEL.
TRIPOD.

APPLICATION FILED FEB. 18, 1907.

Patented Aug. 24, 1909.
2 SHEETS—SHEET 1.

931,773.



Witnesses

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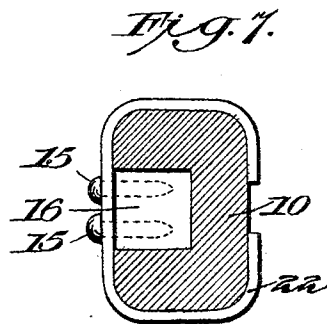
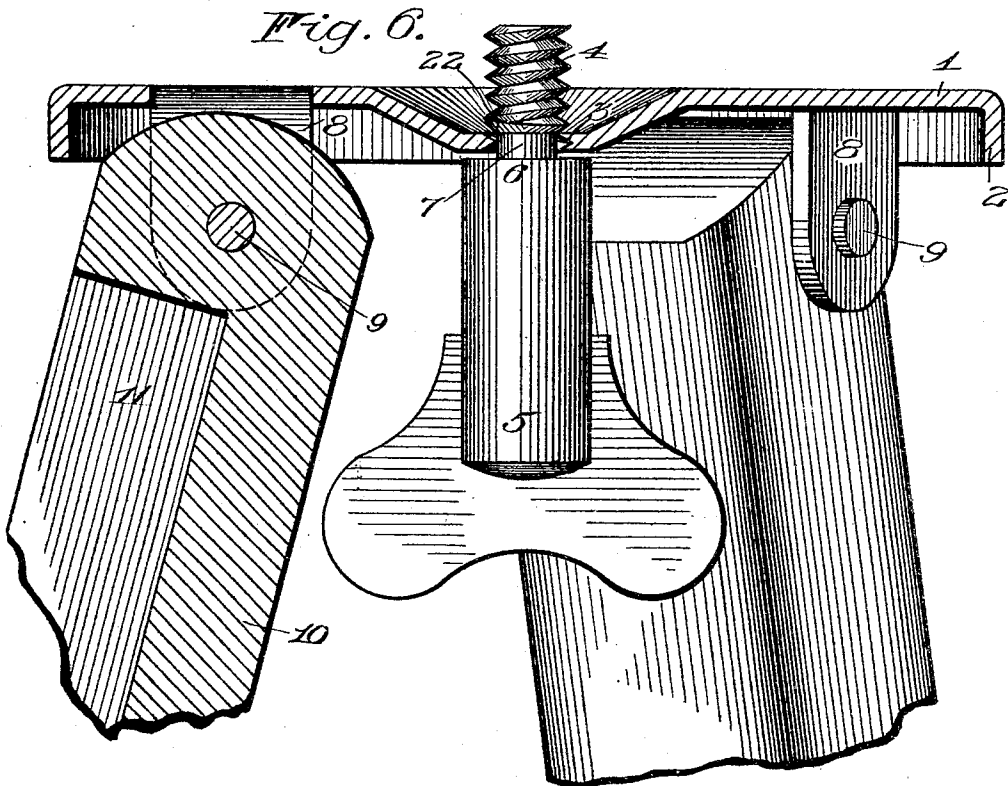
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Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT KROEDEL, OF ROCHESTER, NEW YORK, ASSIGNOR TO EASTMAN KODAK COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

TRIPOD.

931,773.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed February 18, 1907. Serial No. 357,831.

To all whom it may concern:

Be it known that I, ROBERT KROEDEL, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Tripods; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to collapsible and portable supports for cameras and similar instruments and it has for its object to provide a device of this character in the nature of a tripod which will be light and strong and which when folded into small compass, will have its parts so disposed as to best withstand such blows or pressures as it is likely to receive while being carried from place to place.

A further object of my invention is to provide convenient means for guiding the relatively movable portions of the legs and securing them in their different positions of adjustment and to generally simplify the construction whereby the cost of manufacture will be lessened.

To these and other ends the invention consists of certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a side elevation of a tripod shown in folded position and embodying my invention. Fig. 2 is a vertical section of the same, when spread and extended for use, taken centrally through one of the legs. Fig. 3 is a top plan view showing the top plate or table. Fig. 4 is a transverse section of one of the legs taken on the line 4—4 of Fig. 2. Fig. 5 is a view similar to that of Fig. 4 but on the line 5—5 of Fig. 2. Fig. 6 is an enlarged detail view of the attaching bolt and adjacent parts taken in vertical section through the top plate or table. Fig. 7 is a transverse section of one of the legs taken on the line 7—7 of Fig. 2.

Similar reference numerals in the several figures indicate similar parts.

Referring to the drawings, 1 indicates a preferably sheet metal top plate or table having a downwardly-turned strengthening flange 2 and provided centrally with a

threaded aperture 3 through which projects the threaded portion 4 of a wing-bolt 5 by means of which the instrument which has a corresponding threaded recess in its under side is secured to the table. Adjacent the threaded portion 4, the bolt is provided with a shoulder 6 forming an abutment on the underside of the plate while between the two is a reduced portion 7 of a width approximating the thickness of the metal to permit free rotation of the bolt during the detachment or attachment of the instrument, the end of the thread being preferably slightly mutilated as at 22 (Fig. 6) or a projection provided thereon forming an abutment to prevent the bolt from catching the threads on the plate and becoming disengaged therefrom. Because of this mutilation the central portion of the plate or table adjacent the aperture is depressed so that this portion of the thread is not permitted to enter the recess in the instrument and the latter rests flat and firmly on the table.

Punched from the plate 1 are a plurality of downwardly-projecting ears 8, arranged concentrically about the aperture in pairs, each pair supporting between them on a pivot pin 9, the upper end of the upper section 10 of one of the legs. These upper sections are each preferably made of a single piece of wood and are provided centrally on their outer sides with longitudinal grooves or open channels 11 comprising side and bottom walls extending from their lower ends to within a short distance of the pivot pin while the lower end is bifurcated by a slot 12 intersecting the bottom well of the channel whereby the side walls of the latter are permitted slight relative movement. Fitted within the channel 11 to conform substantially therewith and lie flush with the outer surface of the upper section is the lower section 13 provided with a hardened point or spur 14 at its lower end to prevent slipping and insure a firm engagement with the ground surface when extended and in use as shown in Fig. 2. This section is slightly shorter than the channel in the other, so that when extending coincident therewith, the spur is protected by the projecting end of the upper section as shown in Fig. 1. It slides freely therein and is prevented from lateral disengagement at its upper end by a band 22 shown in Fig. 4 which is attached to its outer face as by the pins 15 and ex-

tends about the upper section into engagement with its opposite or inner side, while it is kept in place throughout its extent below the band by a resilient yoke 16 extending upon three sides of the upper section at its slotted end, and also forming a clamp by means of which the different relative adjustments of the sections are obtained. The free ends of the yoke are provided with apertures, one of which is threaded, registering with an aperture extending transversely of the section below the channel, through which passes a bolt 17. One end of the bolt is threaded into the yoke while the other is provided with an eye or thumb piece 18 and a washer 19. The threaded end is upset or headed over as at 20 to prevent it from being unscrewed from the yoke. It will be readily seen that by tightening this bolt, the free ends of the yoke will be drawn together and exert a pressure that will cause the lower bifurcated end of the upper section to grip the lower section when the latter is at any predetermined point and thus the length of the legs may be regulated to support the instrument at any desired height. To prevent an increase of leverage on the part of the two sections that would tend to break their connections by reason of the yoke and band being drawn too close together, I provide a stop 21 on the lower one which engages the yoke 16 as shown in Fig. 2 when the sections are extended as far as safety will permit.

A tripod of this description may be made of wood and so as to possess very little weight while the parts are strongly connected at all times and in the folded position strengthen and reinforce each other to the greatest advantage, the integral nature of the upper section contributing in large measure to this result.

I claim as my invention:

1. In a tripod, the combination with a plurality of legs and a top plate or table supported thereon having a depression therein and a threaded aperture in the depression, of a bolt having a reduced portion located in said aperture and a threaded end adjacent thereto projecting above the table, the inner termination of the thread thereon being mutilated to prevent its catching the threads of the aperture when rotated.

2. In a tripod, the combination with a top plate or table and a leg section secured thereto having a longitudinal open channel therein comprising side and bottom walls, of a second section slidable longitudinally in said channel and inclosed on three sides by the first section, the remaining side being exposed on the open side of the channel, and means for locking the two sections in different relative positions.

3. In a tripod, the combination with a top plate or table and a leg section secured thereto having a longitudinal open channel therein comprising side and bottom walls, of a second section slidable longitudinally in said channel and inclosed on three sides by the first section, the remaining side being exposed on the open side of the channel and means for preventing lateral disengagement of the sections.

4. In a tripod, the combination with a top plate or table and a leg section secured thereto having a longitudinal open channel therein comprising side and bottom walls, said section being provided with a longitudinal slot or kerf dividing the bottom wall of the channel and the section longitudinally but narrower than said wall, of a second section slidable longitudinally in said channel and inclosed on three sides by the first section, the remaining side being exposed on the open side of the channel and means operating transversely of said slot for clamping the divided portions of the first section against the second to prevent relative movement of the two sections.

5. In a tripod, the combination with a top plate or table and a leg section connected thereto having a longitudinal channel therein and a slot intersecting the latter and dividing the section through an interval of its length, of a second section slidably mounted in said channel, a yoke extending across the outer face thereof and having portions arranged on opposite sides of the first section and a bolt extending between the opposed portions of the yoke and threaded into one of them for compressing the divided portions of the first section against the second to prevent relative movement of the two sections.

6. In a tripod, the combination with a top plate or table and a leg section connected thereto having a longitudinal channel therein and a slot intersecting the latter and dividing the section through an interval of its length, of a second section slidably mounted in said channel with its outer face flush with the corresponding surface of the other, a band secured to one end thereof and engaging the first section to prevent lateral disengagement of the sections, a yoke extending across the outer face of the second section and having portions arranged on opposite sides of the first section and a bolt extending through the latter and threaded into the yoke for compressing the divided portions of the first section against the second to prevent relative movement of the two sections.

ROBERT KROEDEL.

Witnesses:

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