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TRIPOD LEG

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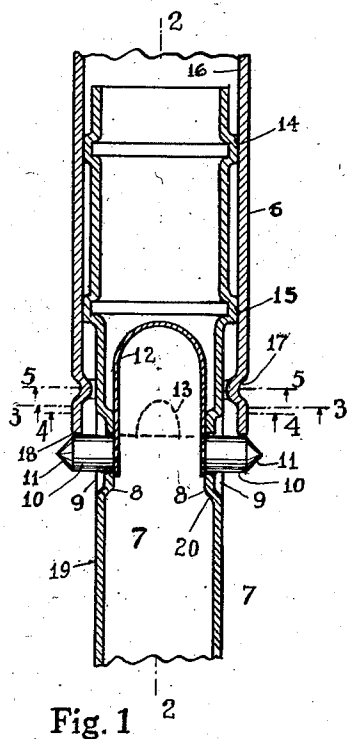


Fig. 1

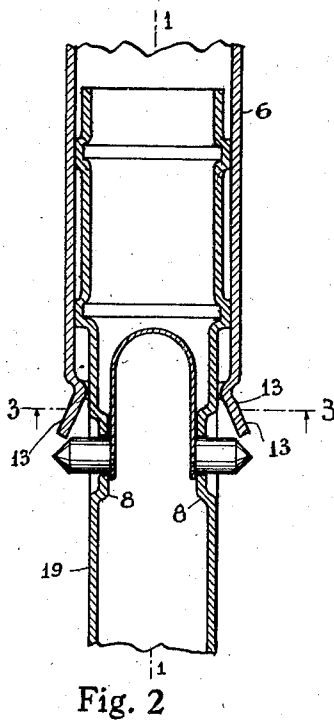


Fig. 2

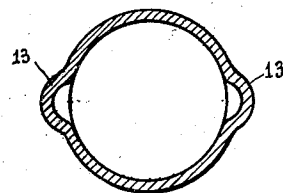


Fig. 3

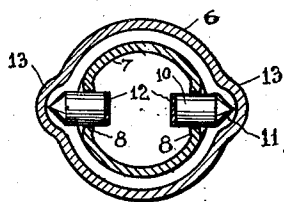


Fig. 4

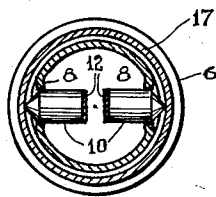


Fig. 5

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TRIPOD LEG

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2 Claims. (Cl. 248—191)

The object of the invention is a telescopic tripod leg consisting of tubular sections having a circular cross section for the greatest part of their length, and adapted to be secured in the extended position of use by one or more locking pins urged outwardly by yielding means, and abutting against the lower front end of the larger upper tubular section in said position of use.

Said lower end usually is depended upon as an aid in guiding the lower or narrower tubular section engaged thereby at the outer surface.

This causes several inconveniences and drawbacks.

E. g. to disengage said pins for shortening the leg for transportation or storage purposes it is necessary to depress directly with the fingers the pins and to simultaneously exert a longitudinal pressure upon the leg. Thereby not seldom the skin of the fingers is pinched and cut by and between the tubular sections particularly after the front edges of the latter have become rough and uneven by careless use.

Furthermore said front edges, guiding the outer surface of the narrower tube section, have a very undesirable tendency to scratch and destroy said surface.

This necessitates the use of relatively hard, heavy and oxidisable expensive material like brass.

It is an object of the invention to eliminate these inconveniences and drawbacks.

With this object in view the invention provides the lower end of the upper or larger tube section with at least one disengagement pocket which, upon relative rotation of the tube sections with simultaneous exertion of longitudinal pressure upon them, catches said locking pin and presses it inwardly by cam action.

With the same object in view the inner surfaces of the tubular sections are used exclusively for guiding purposes thereby eliminating the possibility of scratching the outer surfaces. In this way the use of soft ordinary commercial aluminum is made possible with great advantage.

Moreover it is a well known disadvantage of the known constructions that the locking pins, the conical points of which are flush with the tube surface in the disengaged position of the pins, tend to become dislodged necessitating tire-some dismantling.

It is among the objects of the invention to eliminate this further drawback by arranging the opening for the reception of the locking pin in the bottom of an embossed socket, thereby se-

curing that the pin, being depressed inwardly flush with the cylindrical wall of the tube, nevertheless projects considerably through said bottom.

It is a further object of the invention to use this same socket as an abutment for protecting the pin against the impact of lower tubular sections in the event of inadequate rough use.

This purpose is particularly well fulfilled if, in accordance with a feature of this invention, the said socket is given a considerable length and, therefore, a corresponding longitudinal stiffness.

The invention is shown by the accompanying drawing by way of example, but not with the intent of limitation; only so much is shown as is necessary for understanding the invention.

Fig. 1 is a longitudinal diametrical section through the lower end of the uppermost or largest tubular section and through the upper end of the lower or narrower section cooperating therewith; the section being on the line 1—1 of Fig. 2 but with the tubular sections rotated through an angle of 90° relative to each other compared with Fig. 2;

Fig. 2 is a section on the line 2—2 of Fig. 1 with the just explained change in relative position;

Fig. 3 is a section on the line 3—3 of Figs. 1 and 2 through the larger tubular section;

Fig. 4 is a section on the line 4—4 of Fig. 1 with the lower tubular section slightly pushed upward into the upper tubular section for bringing the locking pins into the disengagement pockets;

Fig. 5 is a section on the line 5—5 of Fig. 1 with the lower tubular section lifted slightly further to bring the locking pins up to the level of the stop fold of the upper tubular section.

Within the upper or larger tubular section 6 of the leg is slidable the lower or narrower tubular section 7. The parts 6 and 7 are ordinary cylindrical pipes for most part of their length as distinguished from constructions necessitating the use of expensive and inconvenient specially profiled tubes.

The tube 7 is provided with two diametrically opposite longitudinal trough shaped embossed sockets or depressions 8 traversed by round holes 9. Through these holes 9 extend prismatic and preferably cylindrical locking pins 10 having tapered and preferably conical ends 11. The pins 10 are urged outwardly by a spring which is here shown as a leaf spring 12 of inverted U-shape which, however, may be replaced by any other spring or yielding means.

The lower end of the tube 6 is provided with two outwardly tapered nose shaped disengagement pockets 13.

The upper end of the tube 7 is provided with two outwardly projecting annular folds or crimps 14 and 15 guiding the tube 7 on and along the inner wall 16 of the outer tube 6.

An annular inward crimp 17 of the tube 6 acts as an abutment or stop for the fold 15 for preventing separation of the tubes 6 and 7.

In the extended position or position of use of the leg the cylindrical bodies of the locking pins 10 abut against the circular flat front surface 18 of the outer tube 6 thereby preventing undesirable telescopic shortening or collapsing of the leg.

To shorten the leg for transportation or storage purposes the parts 6 and 7 are rotated relative to each other with exertion of slight longitudinal pressure upon them.

As soon as by the rotation the pins 10 are brought into a position opposite the pockets 13 they are moved into said pockets by said longitudinal pressure. During this movement the upwardly tapering inner surfaces of the pockets 13 cooperate with the conical ends 11 of the pins 10 in a cam like manner whereby the pins 10 are pushed inward progressively into the tube 7 as shown in Fig. 4.

During the further longitudinal movement of the tube 7 relative to the tube 6 the conical ends 11 of the pins 10 contact with the inward fold 17 and cooperate therewith again in a cam like manner whereby the pins are inwardly depressed still more as shown in Fig. 5.

Of course further and narrower tubular sections may be connected and may cooperate with the tubular section 7.

From the above description it will be clear that the tubes 6 and 7 are guided relative to each other exclusively by the inner wall i. e. the inner surface 16 of the tube 6 and that the outer surface 19 of the narrower tube 7 is not used for guiding purposes. It will be seen particularly that the front surface 18 of the outer tube 6 has a considerable distance from the surface 19 so that the latter surface cannot be scratched and damaged by the edges of the surface 18 even if the lower end of the tube 6 should become indented, roughened or deformed by inadequate use. This makes it possible to use for the leg relatively inexpensive light and oxidation proof ordinary commercial aluminum, as distinguished from brass or the like mostly used now for the purpose.

It will be seen that even in the most retracted position of the pins 10 they project considerably through the bottoms of the troughs 8 whereby accidental displacement of the pins relative to the tube 7 is prevented as distinguished from the usual construction in which the pins project through the cylindrical wall of the tube.

Instead of two pins, as shown, one pin or more than two pins may be used.

Instead of the circular folds 14, 15, 17 individual smaller protuberances or bosses may be used, three point like protuberances being sufficient instead of a circular fold in accordance with well known laws of mathematics.

The lower end of the tube 6 may be crimped or reinforced in any desirable manner provided it keeps sufficient distance from the surface 19 for preventing scratching of the latter.

The lower end 20 of the troughs 8 acts as an embodiment for the upper end of any tube section continuing the section 7 downwardly and guided on the inner surface exclusively of the tube 7 in a similar manner as the latter is guided in the tube 6.

Thus the troughs 8 serve a double function for preventing dislodgement of the pins 10. The length of the troughs, considerably exceeding the length of the diameter of the pins 10, give the troughs an adequate longitudinal stiffness for the explained stop or abutment function.

Of course after pulling out the leg to the position of use care should be taken that the pins stand in the position of Fig. 1 and not in the position of Fig. 2 which may cause collapsing of the leg. If found necessary the tube 7 is to be rotated correspondingly. For making it easier to reach the position of Fig. 1 the lower end of the tube 6 may be provided with a stop or stops for the rotary adjustment of the pins 10.

The simple conical form of the ends 11 of the pins 10 is of advantage for not requiring a certain definite peripheral position of the pins in the holes 9 or a certain definite peripheral position of the pins relative to the spring means 12 thereby eliminating the need for special care in riveting or welding the pins to the spring.

What I claim is:

1. A telescope tripod leg comprising, in combination, an outer cylindrical tubular section, at least one smaller cylindrical tubular section slidable therein, said sections being rotatably adjustable to different angular positions relative to each other, at least one locking pin adapted to project outwards under spring pressure through an opening in the wall of one of said sections and thus, by abutting against a part of the end portion of the associated section in one of said angular positions, to positively secure said sections in extended condition, and a portion of the end of the outer section being flared outwardly to provide means immovable relative to said outer section, and adapted to push said pin inwardly to an unlocking position upon a longitudinal force being exerted upon one of said sections in another of said angular positions.

2. A telescopic tripod leg comprising, in combination, an upper tubular section, at least one lower tubular section, both of said sections having a circular cross section for the greatest part of their length and being rotatable relative to each other, at least one locking pin, yielding means adapted to urge said pin outwardly through an opening in the wall of said lower section to a position for positively securing said sections in extended condition by abutment of said pin against the end portion of said upper section, and an inwardly embossed socket, in said lower section, having said opening and pin extending through its bottom for preventing accidental dislodging of the pin beyond its operative position.

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