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(71) Applicants:

- **Iraolagoitia Ugalde, Sixto**
48230 Elorrio (Vizcaya) (ES)

- **Uribarri Furundarena, Jose Maria**
48230 Elorrio (Vizcaya) (ES)

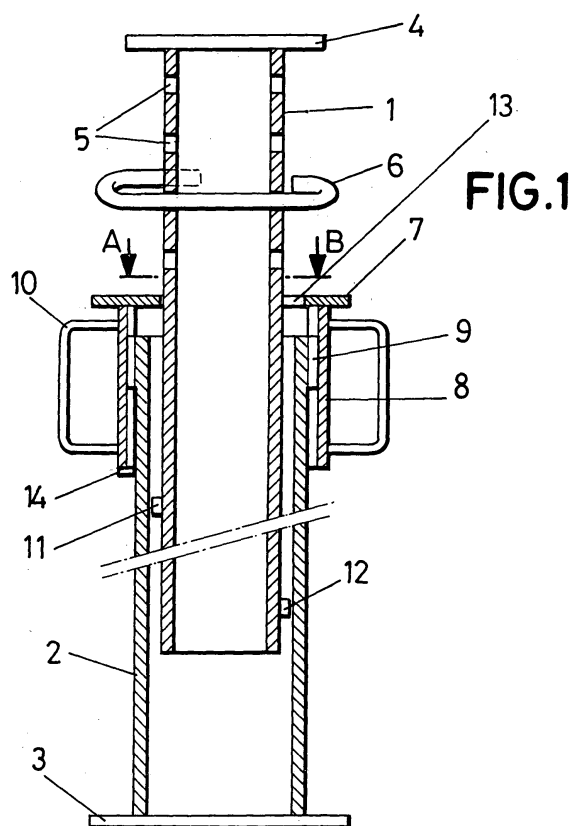
(72) Inventors:

- **Iraolagoitia Ugalde, Sixto**
48230 Elorrio (Vizcaya) (ES)
- **Uribarri Furundarena, Jose Maria**
48230 Elorrio (Vizcaya) (ES)

(74) Representative: **Ungria Lopez, Javier et al**
Avda. Ramon y Cajal, 78
28043 Madrid (ES)

(54) **Improved strut for construction**

(57) This concerns a prop consisting in principle of a lower tube inside which is an upper tube coupled telescopically with pairs of facing holes through which a pin is introduced resting on a collar integral with an adjusting nut coupled in a threaded section located in the highest part of the lower tube. It is characterised in that it incorporates certain particular means preventing accidental separation of the two tubes where certain lugs (11,12) participate integral with the lower tube (2) and a radial notch located in a collar of the upper tube (1). A further characteristic of the invention is certain means for preventing displacement of the adjusting nut (8) to a position in which the coupling between nut (8) and lower tube consists merely of a small threaded section (9). The maximum upper position of the nut (8) is also limited.



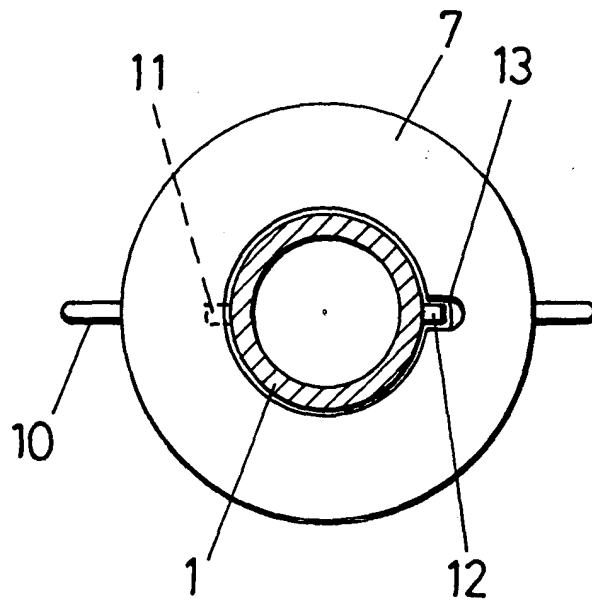


FIG. 2
A-B

Description

[0001] As stated in the title of this specification, this invention refers to an improved prop for construction, intended for securing formwork panels and other elements.

[0002] It is of the type that comprises two tubes telescopically coupled via one of their end sections, while the free ends include certain widened bases for resting on the ground and for providing a seating for formwork panels and similar.

[0003] The object of the invention concerns certain means for preventing accidental or involuntary separation of the tubes when they are not being used. A further object of the invention concerns other means for preventing the separation of the adjusting nut and keeping it at all times coupled along the entire threaded section of the lower tube.

BACKGROUND OF THE INVENTION

[0004] Props for construction are used for the shoring up of works, for securing formwork panels, beams, etc. These props generally consist of two telescopic tubes.

[0005] The upper tube is provided with a series of holes arranged a certain distance apart where a pin is secured. In its upper part, provision is made for a plate which is what provides the corresponding support for the formwork panel, beam, or similar to be shored up.

[0006] The lower tube likewise presents a support plate at its lower end for resting on the ground. At its opposite end it presents a threaded area for the coupling of a nut with an interior thread, which is provided with certain handles facilitating the rotation of that nut and with a collar likewise existing in its upper part.

[0007] The adjustment and fastening of the securing position is done by means of the nut where the pin rests which has been introduced into the corresponding hole of the upper tube.

[0008] In this type of prop, there exists the problem of separation between the upper tube and the telescopic lower tube giving rise to problems of losses and damage, in other words, when the prop has been removed from its shoring up position the upper tube can become separated from the lower tube.

[0009] In order to prevent these disadvantages, means have been provided which avoid the separation between the two telescopic tubes.

[0010] So, for example, Invention Patent No. P-9700061 provides for a spring piece fitted internally in the lower tubular element, said piece being provided with two arms with end extensions which project along individual diametrically opposed openings of the lower tubular element and which exert a buffer action against the upper collar fixed to the adjusting nut.

[0011] Likewise, French Utility Certificate No. 7221681 provides for a similar system and in this case the buffer device on the upper collar of the adjusting nut

consists of a locking catch which projects from the interior tube via the corresponding spring.

[0012] Utility Model No. U-200400794 refers to a prop which also comprises two telescopically coupled tubes in which the upper tube possesses in its lower part a countersink adjusted to the interior diameter of the lower tube; furthermore including a retaining element integral with the adjusting nut, said retaining element being where the exterior diameter of the upper tube is adjusted, and at the same time the countersink will rest on that element in order to prevent the tubes from separating.

[0013] This arrangement described in the above paragraph presents certain problems in construction and also in assembly.

DESCRIPTION OF THE INVENTION

[0014] With the aim of achieving the objectives and avoiding the disadvantages mentioned in the above sections, the invention proposes a prop which in principle consists of an upper tube telescopically coupled within a lower tube which possesses at its free end a support base on the ground, while the free end of the upper tube also includes another support base for the surface to be shored up, such as formwork panels for example.

[0015] The upper tube possesses pairs of facing holes in which a pin is introduced for adjusting the height of the prop. Nevertheless, in order to adjust that height in a precise manner, there exists a nut with handles coupled to an upper threaded section of the lower tube. Said nut includes a collar where the upper tube is adjusted, and at the same time the said pin will rest on that collar.

[0016] It includes means for preventing accidental separation of the two tubes which are characterised in that they comprise at least two lugs integral with the upper tube provided at different heights, at the same time as being found at different generatrices of the tube; being essentially located in individual diametrically opposed generatrices.

[0017] These lugs are complemented with a small radial open notch in the collar integral with the adjusting nut, with said collar being what prevents the accidental exit of the upper tube with respect to the lower one, since one of those lugs acts as a buffer on that collar. Said notch is arranged in correspondence with the edge of the interior diameter of the collar.

[0018] In order to carry out the assembly, first one of the lugs (the one closer to the corresponding free end of the upper tube) is introduced onto that notch; then it is rotated until the second lug is made to coincide in said open notch.

[0019] In order to carry out a voluntary dismantling, one proceeds in the same way, though first introducing the lug that is further away from the free end of the upper tube and then the one that is closer, having previously rotated that tube.

[0020] Another feature of the invention is certain

means for preventing displacement of the adjusting nut to a position in which the coupling between nut and lower tube consists merely of a small threaded section. For this, the bottom of the nut incorporates a projecting element which, when the nut is rotated in the upward direction, will come up against the lower edge of the thread of the lower tube where the adjusting nut is coupled. This thread projects with respect to the exterior diameter of the lower tube.

[0021] Below, in order to facilitate a better understanding of this specification and forming an integral part thereof, some figures are attached representing the object of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022]

Figure 1.- Shows a sectioned elevation view of the improved prop for construction, forming the object of the invention.

Figure 2.- Shows a plan view of the prop.

DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

[0023] Considering the numbering adopted in the figures, the improved prop for construction is created on the basis of an upper tube 1 telescopically coupled within a second lower tube 2, the latter having at its free end a support base 3 on the ground, as occurs with the upper tube 1 which includes another base 4 at its free end.

[0024] The upper tube 1 in turn incorporates various pairs of facing holes 5 where a pin 6 will be introduced in order to adjust the height of the prop. For this, the pin 6 will rest on a collar 7 integral with an adjusting nut 8 coupled in a projecting threaded section 9 located in the highest part of the lower tube 2. The nut 8 includes some handles 10 which facilitate its rotation in order to make fine adjustments to the height of the prop. The exterior diameter of the tube 1 is adjusted to the interior diameter of the collar 7.

[0025] The lower part of the upper tube 1 includes two opposite lugs 11 and 12 at different heights which are located inside the lower tube 2, in such a way that the distance between them as seen in plan view corresponds to a diametric distance approximately coincident with the interior diameter of the lower tube 2.

[0026] Thanks to these lugs 11 and 12, when the two tubes are displaced relative to each other in the axial direction, the upper lug 11 further away from the end of the upper tube 1 will in principle come up against the collar 7, thereby preventing accidental separation of said tubes 1 and 2.

[0027] Moreover, the collar 7 includes a small radial notch 13 located in the edge of the interior diameter of said collar 7, said notch being intended for being able to assemble the two tubes and also for being able to

dismantle them voluntarily. To do this, the lugs will be made to coincide independently with that radial notch, first one lug and then the other, after having made the necessary rotation.

[0028] The lower edge of the adjusting nut 8 incorporates a projecting portion 14, such as a screw, rivet or similar, in such a way that when this nut is rotated in the upward direction, a moment will be reached when said projecting portion 14 acts as a buffer against the lower edge of the threaded section 9. In this way, it is ensured that the stresses of the prop will at all times be borne by the entire threaded section 9 and not just by a part of it.

15 Claims

1. **IMPROVED PROP FOR CONSTRUCTION**, comprising a lower tube, whose interior is telescopically coupled to an upper tube with pairs of facing holes in which a pin is introduced which rests on a collar integral to an adjusting nut coupled to a threaded section located in a highest part of the lower tube, including first means preventing accidental separation of the lower and upper tubes, the upper tube being adjusted to an interior diameter of the collar; **characterised in that** said means are determined on the basis of at least two lugs (11 and 12) integral to the upper tube (1), said lugs being at different heights and being in different generatrices within the lower tube (2); the collar (7) including in an edge of its interior diameter a radial notch (13) corresponding to said lugs (11 and 12); in order to prevent accidental separation of the tubes and to enable assembly and disassembly of said tubes voluntarily.

2. **IMPROVED PROP FOR CONSTRUCTION**, according to claim 1; **characterised in that** it incorporates second means limiting an extreme upper position of the adjusting nut (8), third means comprising an inwards projecting portion (14) integral of the lower edge of the adjusting nut (8), said portion being complemented with a lower edge of the upper projecting threaded section (9) of the lower tube (2), the projecting portion (14) serving as a stop in said lower edge of the projected threaded section (9) in the highest position of the adjusting nut (8).

