The present invention concerns a prop or shore such as used in making ceiling boardings in building.

Props or shores are known having an inner tube or pipe mounted upon the inner plate, and over which fits, in telescopic manner, an outer tube provided with holes for passing through a pin or bolt. Props or shores of this kind have the disadvantage that, on tightening up by means of suitable screwing means, many rotations of the outer pipe may have to be effected with the help of the inserted bolt because in an unfavourable case the full distance between two holes in the vertical direction has to be traversed by screwing the bolt carrying the ceiling plate out of the nut.

According to the present invention, a prop or shore of the kind described is characterised in that the inner tube or pipe at its upper end supports a pile of discs displaceable axially within the outer tube so that the pin when inserted through the next insertion hole above the upper end of the inside tube may be passed between two adjacent discs. The total height of these superimposed discs will correspond approximately to the distance between two vertically separated insertion holes. This makes it possible to raise the outer tube to directly below the surface to be supported and thereupon the insertion pin or bolt can be pushed through the first pair of holes lying above the inner tube or pipe between two discs or in an extreme case over the top disc or under the bottom disc and is then at once supported against the top side of the next underlying disc or the cover of the inner tube, so that only a few turns of the outer tube are needed to lock the support.

Further, according to the invention, rigidly connected with the top end of the inner tube is a sleeve acting as a container for the discs and having two longitudinal slots lying opposite for passing through the pin or bar.

By this means the discs lying on the cover part of the inside tube are prevented from dropping out when the support is being dismantled.

The invention will be further described with reference to the accompanying drawings which illustrate embodiments of the invention.

Figure 1 shows an axial section of an embodiment. Figures 2 and 3 each show an alternative cross-sectional form for the discs.

Figure 4 is an axial section through a further embodiment of the invention.

An inner tube 3 is placed on the ground 1 by means of a stand plate 2. This inner tube is closed off by means of a cover disc 4 at its top end. An outer tube 5 fits in telescopic manner over the top of the inner tube 3; this outer tube being furnished with holes 6 for passing through a bolt or pin 7. The top end of the outer tube 5 is closed by means of a nut part 8, into the central screw-threaded hole of which is screwed a threaded bolt 9. This bolt is provided at its top end with a support plate 10 intended to be locked against a ceiling boarding 11. The supporting plate 10 is provided with a protecting neck or collar 12, the inside diameter of which is greater than the external diameter of the outer tube 5 and whose height corresponds approximately to the length of the screw-threaded bolt 9. The function of this protecting collar is to prevent the dirtying of bolt 9 with mortar, dust and the like. A pile of discs 13 is placed on the covering disc 4 of the inside tube 3; the outer diameter of these discs being somewhat less than the internal diameter of outer tube 5 so that these discs can easily be displaced axially inside tube 5. The discs have individually the shape of a truncated cone and they are placed upon one another in such a manner that their larger round surface always lies at the top. The total height of these discs corresponds approximately to the distance between two vertically separated holes 6.

It can easily be seen that, when the outer tube 5 is lifted so high that the supporting plate is applied against the ceiling boarding 11, the pin 7 can be inserted into the first pair of holes 6 situated above the disc 4 between two superimposed discs, the upper discs being moved away from the lower ones by the pin owing to their conical shape. The outer tube 5 can, after the insertion of the pin or bolt, drop back at most the amount of the height of one of discs 13, so that afterwards this small distance has to be traversed by screwing out the bolt 9, and hence the support plate 10, before engagement is produced. The end 71 of bolt 7 is tapered in order to facilitate insertion.

The discs 13 may also, as indicated in Figures 2 and 3, have the form of a double truncated cone or of a lens, so that they still act even when one of the discs turns over inside the outer tube 5.

These discs 13 are preferably ordinary cast or turned members.

In order that the distance through which the threaded bolt 9 has to be screwed out of the nut 8 may remain within reasonable limits, the disc members 13 are preferably so dimensioned that their height is less than 2 cm.

In the example of construction which is shown in Figure 4, the reference numeral 1' designates the floor upon which is resting a stand plate 2' of the same tube or pipe 3'. The top closure member 4' of the inner tube is reinforced and possesses an axial screw-threaded bore. An outer tube or pipe 5' with holes 6' through which a pin or bar 7' may be passed, is pushed under the inner tube 3' in telescopic manner. In the cover 8' of the outer tube a pin 19' is capable of rotating, said pin belonging to a supporting plate 10' intended to be pressed against a ceiling surface 11'.

A screw-threaded bolt 20' is screwed into the bore of the cover of the inside tube, the top plane 21' of the bolt forming the bottom of the cylindrical sleeve 22' and being rigidly connected thereto. Said sleeve which is inserted into the outer tube possesses two oppositely lying slots 23' to allow of the pin or bar 7' being inserted in any position as regards height of sleeve 22'. The sleeve forms a closed container for the lens-shaped discs 13' so that they cannot drop out when the whole support is being dismantled. In the example of construction which is shown, a pressure or compression spring 24' is also inserted into the sleeve bearing on the topmost disc and against the inside part of the sleeve cover part 25'. Cover 25' can be screwed out of the sleeve 22' so as to allow the discs 13' and the spring 24' to be inserted. In this way the discs always remain in the position which is shown and cannot get lost. The manner of using the ceiling support shown and described is as follows:

With bar 7' removed the support, that is its stand plate 2', is placed at the required position on the ceiling 1'.

The outer tube 5' is raised up to such an extent that the supporting plate 10' abuts against the ceiling surface 11'.

The bar 7' is then passed through a suitable hole 6' and
to do this it may be necessary to move the outer tube 5' round a bit before the bar can pass through slots 23' in the sleeve and pass out at the opposite hole 6'. When passing through, the bolt 7' slips in between two discs 13'. When the outer tube 5' is turned in relation to the inside tube by means of the bar 7', bolt 20' is likewise turned on account of the rigid connection between sleeve 22' and said bolt and it is screwed upwards out of the stand pipe cover 4' and it forces through the medium of discs 13' lying under the bar and the bar itself the outer tube 5' upwards, while the support plate 10' remains in position. After sufficiently strong locking the support is in the position of use, as shown, from which it may be removed by turning back outer tube 5' and withdrawing the bar.

What is claimed is:
1. A prop or shore comprising an inner tube, an outer tube fitting telescopically thereover and provided with vertically spaced holes, screw means for expanding or shortening the length of the prop or shore, a pile of discs having bevelled edges supported on the upper end of the inner tube and individually displaceable in the axial direction inside the outer tube and of total height corresponding approximately to the distance between two adjacent holes of said spaced holes in the outer tube, and a pin adapted to be selectively inserted through one of the holes in the outer member and disc pile, after extending the prop or shore telescopically to a desired separation.

2. Prop or shore as claimed in claim 1, in which each of the discs is formed as a truncated cone the larger circular surface of which lies at the top and corresponds in its diameter to the inside diameter of the outer tube.

3. Prop or shore as claimed in claim 1, in which each of the discs is formed as a symmetrical double truncated cone the largest diameter of which is smaller than the inside diameter of the outer tube.

4. Prop or shore as claimed in claim 1, in which each of the discs is formed as in a lens shape the largest diameter of which is slightly smaller than the inside diameter of the outer tube.

5. Prop or shore as claimed in claim 1, in which rigidly connected with the top end of the inner tube is a sleeve acting as a container for the discs and having two longitudinal slots lying opposite for passing through the pin or bar, a compression spring being inserted between the topmost disc and the top of the sleeve.

6. Prop or shore as claimed in claim 5, characterised in that a screw-threaded bolt is screwed into an axially extending bore in the top of the inside tube, the head part of said bolt projecting into the outer tube being rigidly connected with the sleeve.

References Cited in the file of this patent

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