March 8, 1932. A. HALL 1,848,476

ADJUSTABLE SHORING

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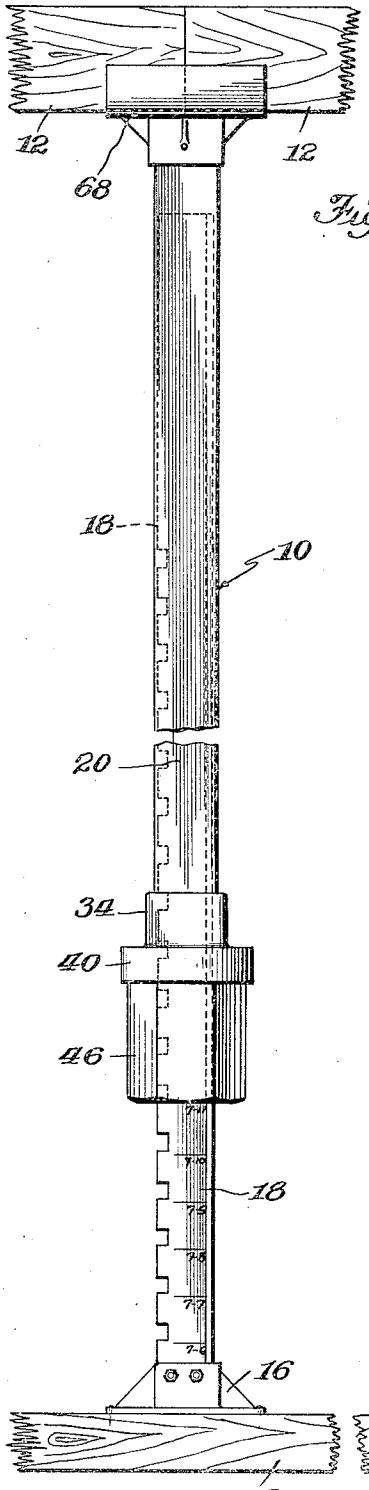
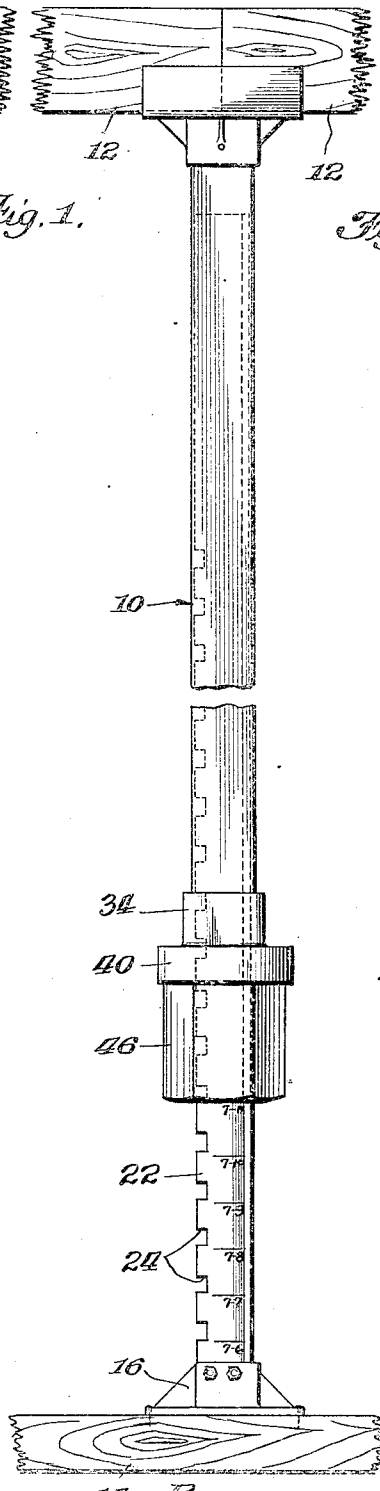


Fig. 1.



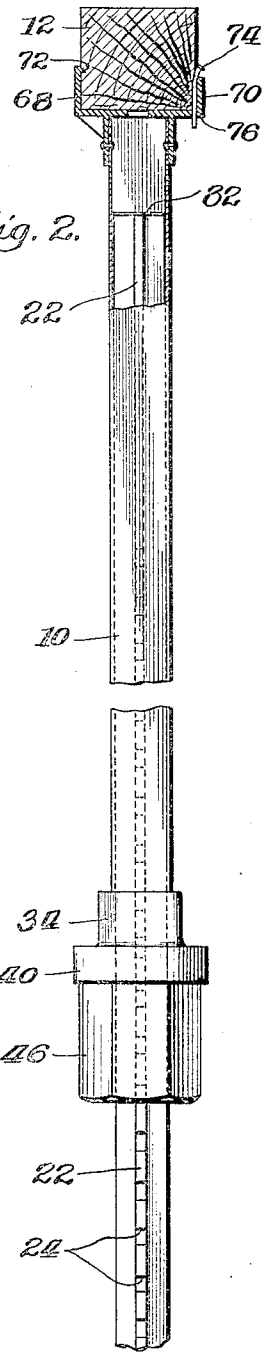


Fig. 2.

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Fig. 3.

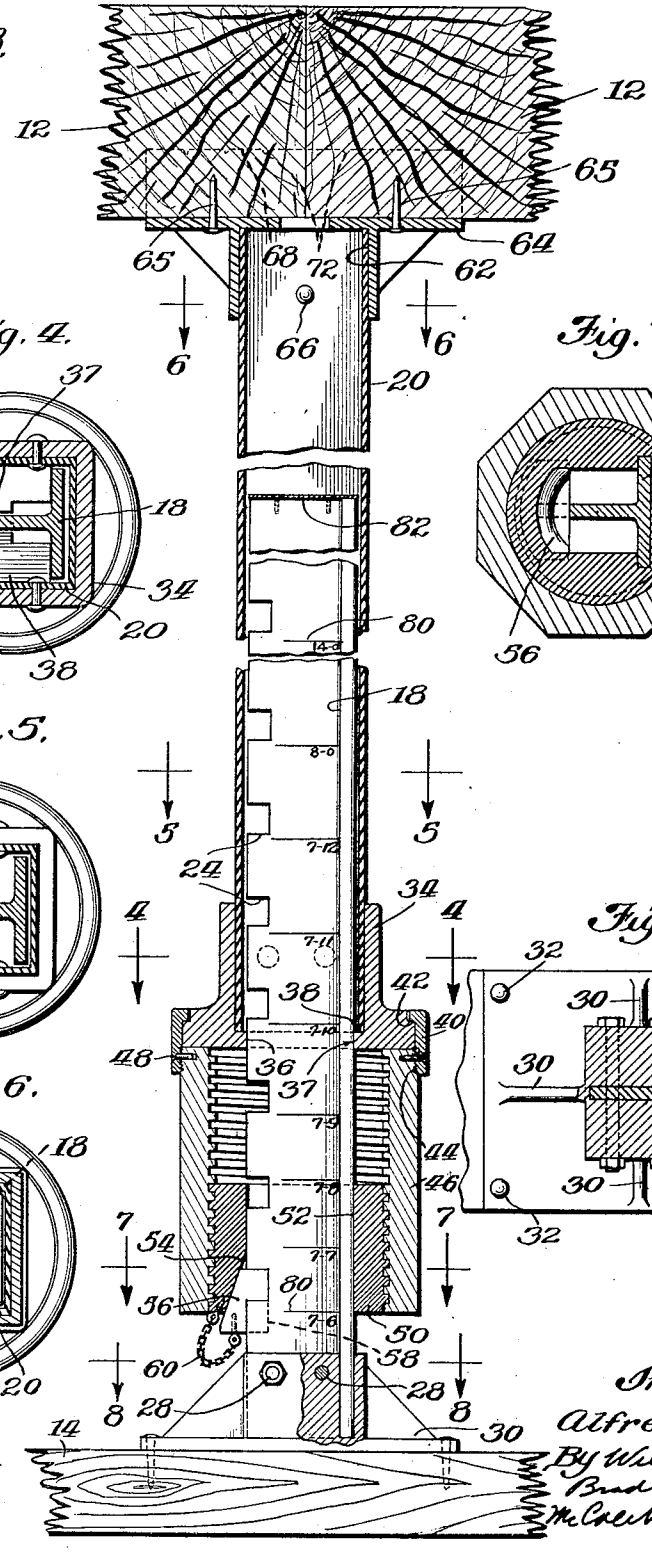


Fig. 4.

Fig. 7.

Fig. 5.

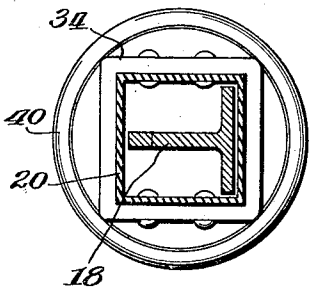
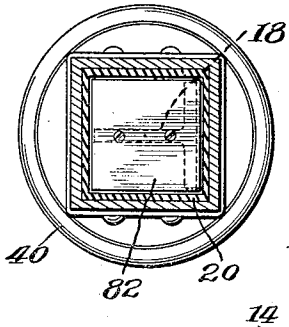


Fig. 8.

Fig. 6.



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Patented Mar. 8, 1932

1,848,476

UNITED STATES PATENT OFFICE

ALFRED HALL, OF CHICAGO, ILLINOIS

ADJUSTABLE SHORING

Application filed March 26, 1930. Serial No. 438,931.

My invention relates to improvements in adjustable shoring for supporting temporary form work for concrete construction.

One of the principal objects of my invention is to provide shoring adaptable to being connected with the stringers and base supporting planks while the shoring is still lying on the ground, thus insuring form work accurately positioned and easily set up, with a minimum expenditure of time and equipment.

Another object of my invention is the provision of an improved shore that may be easily and quickly moved to approximately the desired length and then accurately adjusted by a screw thread adjustment to the actual desired length.

A further object of my invention is to provide a telescoping adjustable shore having improved interlocking means for connecting the telescoping parts to form a rigid structure.

A further object of my invention is to provide an improved shore having visible means thereon for determining the approximate desired length thereof.

A further object of the invention is the provision of improved means for quickly and easily disconnecting the interengaging parts of the telescoping members of a shore to remove the shoring in a minimum amount of time.

Other objects and advantages will be more apparent from the following description, reference being had to the drawings, in which

Fig. 1 is a side elevational view of the shoring in position for supporting temporary form work for concrete construction;

Fig. 2 is a fragmentary end view and partial section of the parts shown in Fig. 1;

Fig. 3 is an enlarged vertical sectional view of my improved shore;

Fig. 4 is a plan sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a similar view taken on the line 5—5 of Fig. 3;

Fig. 6 is also a plan sectional view taken on the line 6—6 of Fig. 3;

Fig. 7 is a plan sectional view of the interlocking means and is taken on line 7—7 of Fig. 3; and

Fig. 8 is a plan sectional view of one of the telescoping members taken on the line 8—8 of Fig. 3 and showing the base member in elevation.

Referring to Figs. 1 and 2, 10 indicates in its entirety my adjustable shore which is shown supporting stringers 12 and attached to the customary supporting plank 14 by means of base members 16.

The adjustable shore 10 comprises a pair of extensible or telescoping members 18 and 20, one of which is slidably received within the other. The lower member 18 is preferably of a T cross-section, having a medial flange 22 provided with a plurality of notches or teeth 24 for a purpose to be hereinafter described.

Member 18 is mounted in a base or foot 16, being fixedly secured thereto by means of a pair of bolts 28 which pass through suitable apertures in flange 22. Base member 16 is provided with strengthening ribs 30 and is fastened to supporting plank 14 by a plurality of fastening means such as the nails 32. A square plate 82 is fastened to the top of member 18 as a guide member in sliding up and down in member 20.

Upper member 20 is preferably of a squared tubular cross-section and has fixedly secured thereto at its lower end a collar 34. Collar 34 may be of cast iron and has a lower flange 36 having an opening 37 therein through which lower member 18 may freely pass. The lower edge of the upper member 20 rests upon a shoulder 38 on flange 36. A ring member 40 is rotatably supported upon an external shoulder 42 of collar 34 and has its lower end threaded as at 44 to engage the upper end of an operating nut 46. In assembling the above-described unit, ring member 40 is lowered from above, into engagement with collar 34 until the inturned flange thereof rests upon shoulder 42. Operating nut 46 is brought up from below and threaded into ring 40 until only sufficient space is left between the upper surface of nut 46 and the lower surface of collar 34 to provide a running fit between them. Lock screws 48

are provided to fasten ring 40 and nut 46 together in this position, allowing them to rotate freely on collar 34.

Operating nut 46 is internally threaded, having in the embodiment shown a typical jack-screw or square thread engaging a complementary inner sleeve or bolt portion 50. The bolt portion 50 has a vertical T-shaped opening 52 therein through which lower member 18 passes.

A tapered slot 54 extends from a point near the outer edge of bolt 50 into the opening 52 and a dog or tooth engaging member 56 provided with a similarly tapered upper surface is shown engaging one of the notches 24. Tooth-engaging member 56 may be of a hardened steel material having a pair of shoulders 58 which engage either side of flange 22 to position the member 56 and prevent accidental displacement thereof. Member 56 may be attached to bolt 50 by a chain 60 to prevent its accidental loss when not in use.

The upper end of member 20 is positioned in a flanged socket 62 of a head member 64 which is attached to stringers 12 by means of nails 65. Member 20 may be rigidly secured to the head member 64 by rivets 66. Head member 64 is provided with a pair of upturned side walls 68 and 70. Side wall 68 is formed with a row of prongs or teeth 72 adapted to press into a stringer 12 when the head member is attached thereto. The stringers are further fastened to the head member by means of cut nails 74 driven down along the side of the stringers, entering the wood slightly and passing through nail holes 76 in member 64. With the arrangement provided it is a comparatively simple matter to detach the head member 64 from the stringer. The nails 65 are withdrawn, the nails 74 are driven or knocked out by blows from below, the head member is moved to the left (Fig. 2) and the stringer is freed from the prongs 72.

The preferred embodiment of my invention contemplates a shore adaptable to use in building most of the concrete construction work use in present day buildings. Shoring for this type of work requires a minimum height of 7′—6″ and a maximum height of 14′—0″. To compensate for this, upper member 20 is of such a length so that when dog 56 is engaged in lower tooth 24 of lower member 18 the shore has an approximate working length of 6′—6″, and also to provide visible indicia of the height of the shore, the lower member 18 has a scale 80 marked along a side of flange 22.

The scale extends to the uppermost tooth 24 which will give an approximate height of 14′—0″ to the shore. It will be understood, of course, that through the bolt and nut connection between 52 and 46 an accurate final adjustment may be obtained.

In using the shoring of the present invention the lower member 18 of the individual shore is fastened to plank 14 and the upper member 20 is fastened to stringers 12. Member 18 is then telescoped within member 20 to the desired height, dog 56 is inserted in slot 24, and members 18 and 20 are telescoped together until the tapered wall of dog 56 rests against the slot 54 in nut 50. All this is done while in a horizontal position on the ground. The assembly is now raised to a vertical position in the desired location and if necessary a final adjustment is made to the actual height desired by means of bolt 52 and nut 56.

The extreme simplicity of operation of the present shore will readily be apparent in contrast to the complicated devices of the prior art. It should also be noted that no other cumbersome measuring devices are required in order to ascertain the proper desired length of the shore.

Having thus described my invention, what I claim and desire to secure by United States Letters Patent is:

1. An adjustable shore including a pair of telescoping members, one of said members being of a T cross-section, a foot portion rigidly secured to the lower end of said member, a plurality of regularly spaced stop engaging portions on the web of said member, a visible scale positioned on the side of said web, the other of said members being of a square tubular cross-section, a header unit secured to the upper end of said member, a collar attached to the lower end of said member, an adjusting nut rotatably secured below said collar, means for interconnecting said first and second mentioned telescoping members including a tooth engaging member, and an internal collar within said adjusting nut member adapted to cooperate with said tooth engaging portion to rigidly support said telescoping members in an extended position.

2. An adjustable shore comprising a pair of telescoping members, a threaded collar freely rotatable on one member, a threaded element slidably and non-rotatably mounted on the other member, said threaded element operatively engaging the threaded collar, and means for preventing longitudinal movement of said element upon the last said member.

3. An adjustable shore comprising a pair of telescoping members, an internally threaded collar freely rotatable on one member, an exteriorly threaded element slidably and non-rotatably mounted on the other member, said threaded element operatively engaging the threaded collar, the last said member being provided with notches at various positions along its length, and the slidable element being provided with a recess adapted to be brought adjacent the notches, and a dog adapted to be located in said recess and one of said notches to maintain the members in desired relation.

4. An adjustable shore comprising an outer

and an inner telescoping member, means adapted to be rigidly mounted on the inner member in adjustable positions, means mounted on the outer member having a threaded engagement with the first said means.

5. An adjustable shore comprising a pair of telescoping members, the inner telescoping member being of T cross section, the outer telescoping member being of tubular form, a plate mounted on the inner end of the outer telescoping member adapted to engage the inner telescoping member which passes therethrough, and a plate at the inner end of the inner telescoping member adapted to engage the inside of the outer member.

6. An adjustable shore comprising a pair of telescoping members, the outer telescoping member being hollow and the inner telescoping member being of T cross section, one web of which is provided with a series of notches, an internally threaded collar freely rotatably mounted on the inner end of the outer telescoping member, an exteriorly threaded element slidably and non-rotatably mounted on the inner telescoping member, said collar and element being adapted to be brought into threaded connection, said element being provided with a recess adjacent the edge of the notched web of the inner telescoping member, and a dog adapted to be located in the recess and in one of the notches to adjust the shore roughly to desired length, fine adjustment being provided by relative rotation between the collar and threaded element.

In witness whereof, I hereunto subscribe my name this 20th day of March, 1930.

ALFRED HALL.