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ADJUSTABLE SUPPORT

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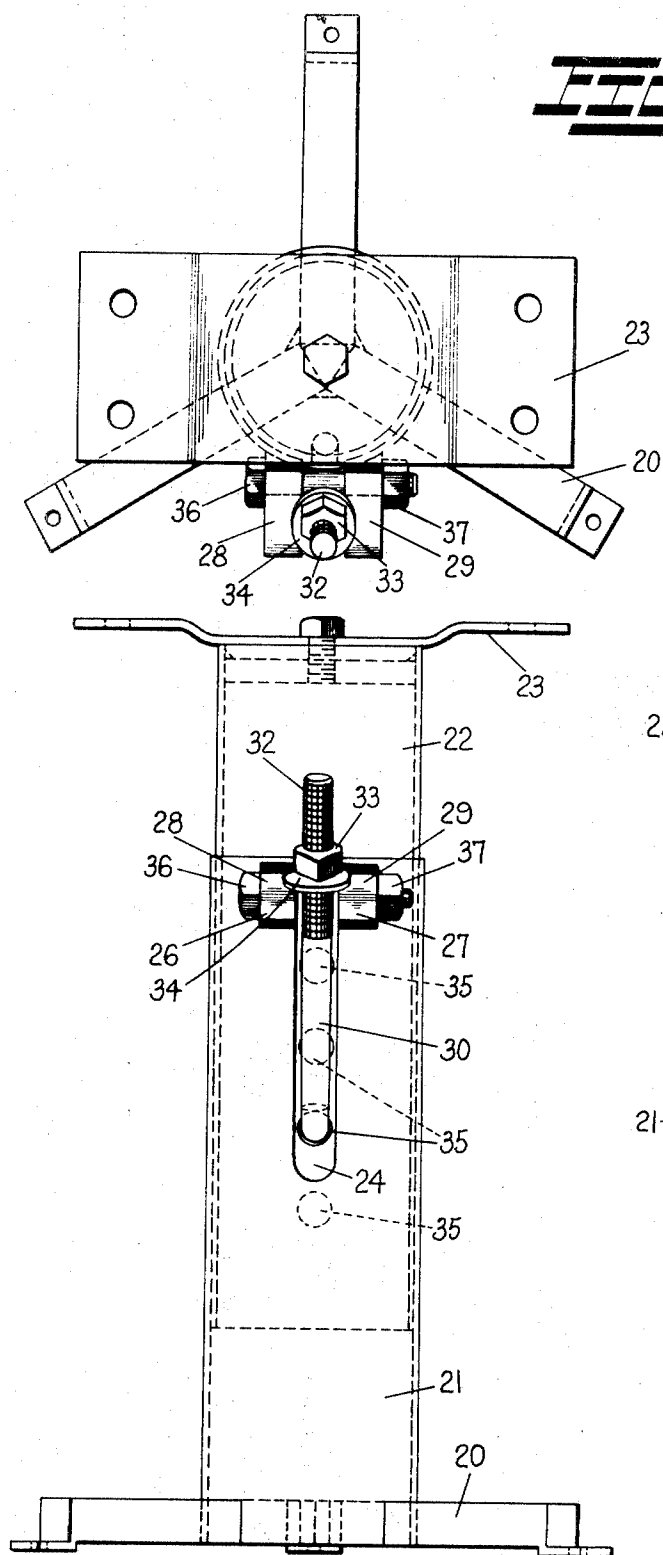


FIG. 1

FIG. 3

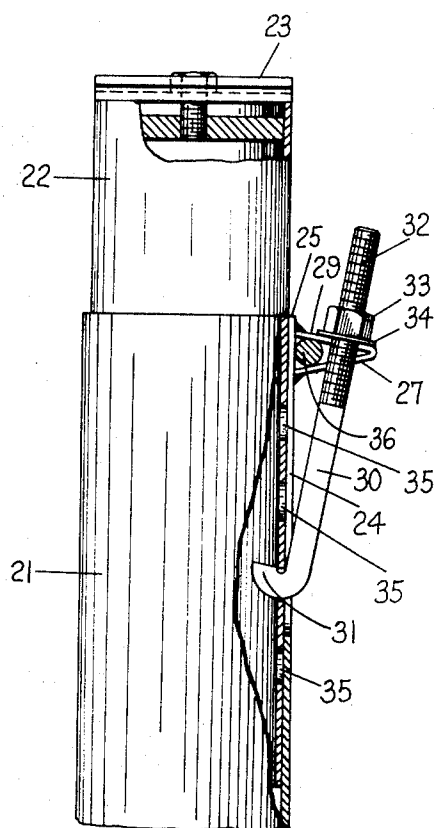


FIG. 2

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ADJUSTABLE SUPPORT

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2 Claims

ABSTRACT OF THE DISCLOSURE

A supporting device for a vertically extensible standard which allows rough and fine height adjustments by providing a hook-like member, for insertion into a series of openings, with a threaded shank movably held by a take-up nut. A locking action at any position is effected by tightening the outer sleeve against the telescoping inner sleeve at a downwardly extending slot.

BACKGROUND OF THE INVENTION

This invention relates to adjustable columnar standards and more particularly to the telescoping tubular type where a slidable inner tube is supported at various heights by a fixed outer sleeve.

Tubular supporting stands are used for numerous purposes such as the support of machinery or conveyors, and in scaffolding and framework of various types. For making adjustments in height it is known to provide a series of spaced openings on the inner slidable member which index with an opening in the fixed sleeve, having some form of dowel to maintain the two in a set position. Changes in position could not be easily made under loaded conditions and fine adjustments could be made only with much more complicated devices.

SUMMARY OF THE INVENTION

The adjustable support of the invention provides a downwardly suspended hook-like member for inserting through an opening in the outer sleeve and through any one of a series of openings in the inner sleeve. The inner sleeve is maintained at a particular height depending upon the inner opening selected. The hook-like member is held between two brackets, positioned on opposite sides of the outer sleeve opening in the form of a vertical slot extending through the upper edge of the sleeve. A locking bolt between the two brackets will draw them toward each other and will effectively lock the sleeves in any relative position by binding action.

The upper shank of the hook-like member is threaded for receipt of an adjusting nut which supports the member between the two brackets. Fine adjustments for raising or lowering the inner sleeve may be made quite simply with the adjusting nut.

It is therefore the general object of the invention to devise a support for an extensible standard whereby both rough and fine height adjustments may be easily made.

It is a further object of the invention to devise a simplified means for making height adjustments to an extensible standard while in a loaded condition.

It is another object of this invention to provide simple locking means for holding the standard firmly in any chosen position.

These and other objects of the invention will become apparent as further details are disclosed.

BRIEF DESCRIPTION OF THE DRAWING

A specific embodiment of the invention will be described by referring to the accompanying figures of drawing, wherein:

FIG. 1 is a view in front elevation of an extensible standard with the adjustable support affixed thereto;

FIG. 2 is a side elevation of the support seen in FIG. 1 shown partly in section; and

FIG. 3 is a plan view of that shown in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Now referring to the drawing, a base 20, which may be of any suitable type, is shown maintaining a tubular base 21 in an upright position. An inner tube 22 is slidably contained within the base 20 and carries upon its top a fastening plate 23 suitable for the use to which the extensible standard is to be placed.

In the sidewall of the base 21 is a vertical slot 24 having an open top, in that it extends to the upper edge 25 of the base 21 (FIG. 2). On opposite sides of the slot 24 near its top are two similar angular brackets 26 and 27, having two legs as seen in FIG. 2 fastened to the tubular base 21 as by welding. The upper surfaces 28 and 29 of the brackets 26 and 27 respectively are separated from each other, but cooperate in forming an upwardly directed buttressing bracket (FIGS. 2 and 3) to be further explained.

A supporting rod 30 has an offset end 31 formed as a hook-like member which is adapted to extend through the slot 24. The upper end of the rod 30 is a threaded shank 32 for receiving an adjusting nut 33. A washer 34 beneath the nut 33 rests upon the bearing surfaces 28 and 29 and permits the nut 33 to raise and lower the rod 30 when taken up or let off. The offset end 31 can be hooked into any one of a series of aligned holes 35 through the wall of the inner tube 22, which holes are separated to allow rough height adjusting by changing from one hole 35 to another. Intermediate adjustments can be made with the nut 33 to place the inner tube 22 at any chosen height.

The tubular members 21 and 22 can be of various sized cylindrical stock as shown or a number of flat sided formations could be used as well. To lock the two tubular members into a rigid standard after a proper height has been determined, a locking bolt 36 with a nut 37 is inserted between the brackets 26 and 27. Tightening the nut 37 will draw the brackets 26 and 27 together by narrowing the slot 24. This locking action forms a binding effect upon the inner tube 22 which is easily applied and released.

Changes in height are readily made by locking the device with the bolt 36 and nut 37 and transferring the rod end 31 to another hole 35, then after releasing the lock, the inner tube 22 may be raised or lowered. This may be repeated with the number of holes 35 available.

The instant invention provides a simplified and highly effective adjusting and locking device for a tubular support. In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive concept may be carried out in a number of ways. This invention is, therefore, not to be limited to the precise details described, but is intended to embrace all variations and modifications thereof falling within the spirit of the invention.

We claim:

1. For an extensible standard having a tubular base member with a side opening therein defining a vertically disposed slot extending upwardly through the top edge of the base member, an inner tubular member longitudinally slidable within said base member, an adjustable support for moving and maintaining said inner tubular member at various heights relative to said base member, said support comprising:

(a) a rough adjustment means comprising a support-

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ing rod having an offset-end for insertion through said side opening for supporting said inner tubular member, and a threaded shank portion,

(b) said inner tubular member having a series of longitudinally aligned openings therethrough adapted to index with said side opening for selectively receiving said offset-end,

(c) a fine adjustment means comprising an adjusting member rotatably movable upon said threaded shank portion,

(d) buttressing means for providing bearing surface for said adjusting member, said buttressing means including a pair of angular two-legged brackets securely fixed upon opposing sides of said slot near its upper extremity, and

(e) a frictional locking member interconnecting said pair of brackets for restraining said inner tubular member at any height relative to said base member.

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2. The mechanism as set forth in claim 1, wherein said restraining member includes a bolt and nut for drawing said pair of brackets together to introduce a locking effect by binding said base member against said inner tubular member.

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ROY D. FRAZIER, Primary Examiner

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