

Nov. 27, 1962

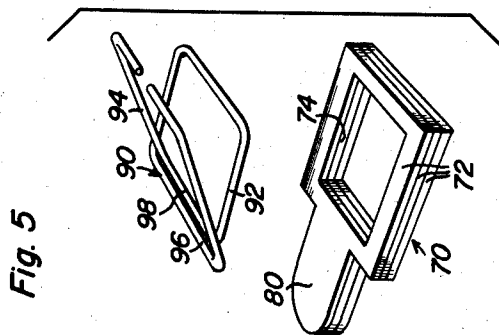
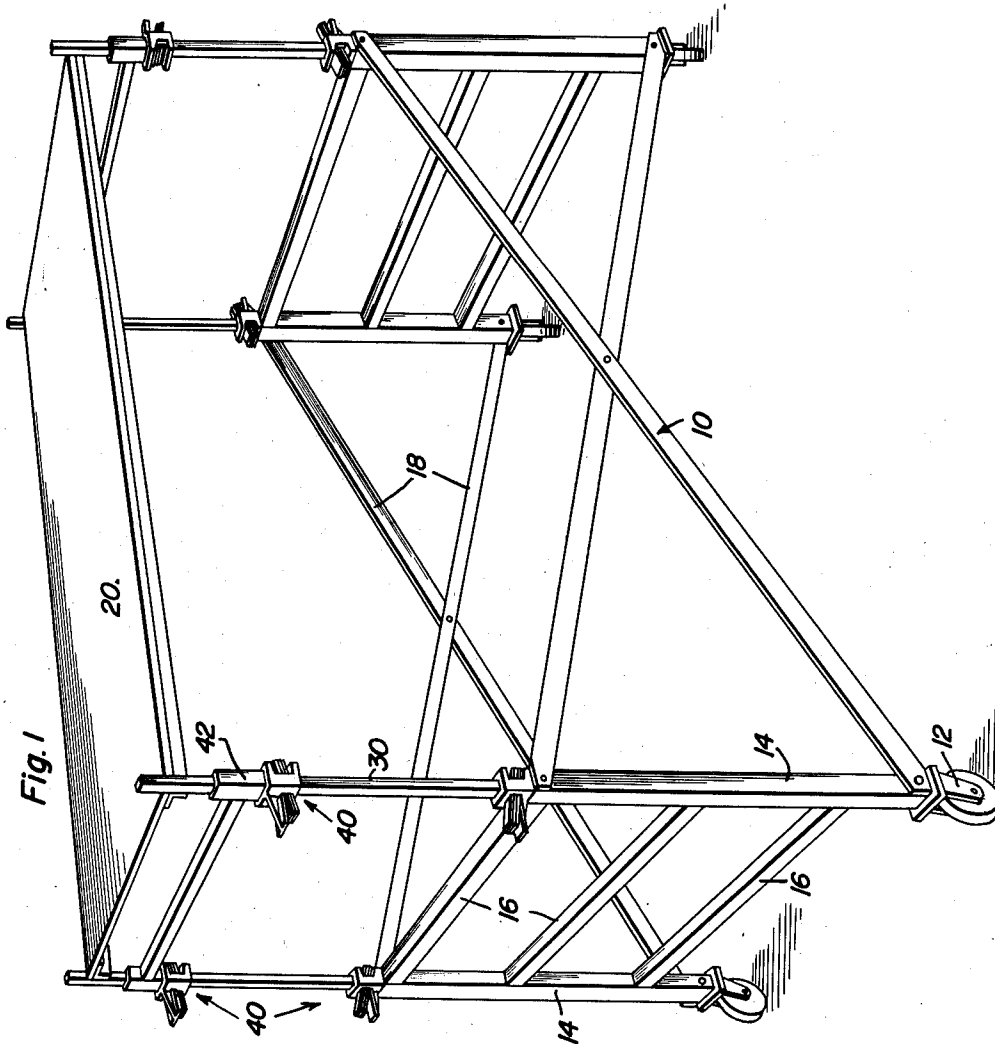
R. M. DODD

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ADJUSTABLE SCAFFOLD STOP

Filed May 5, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig.2

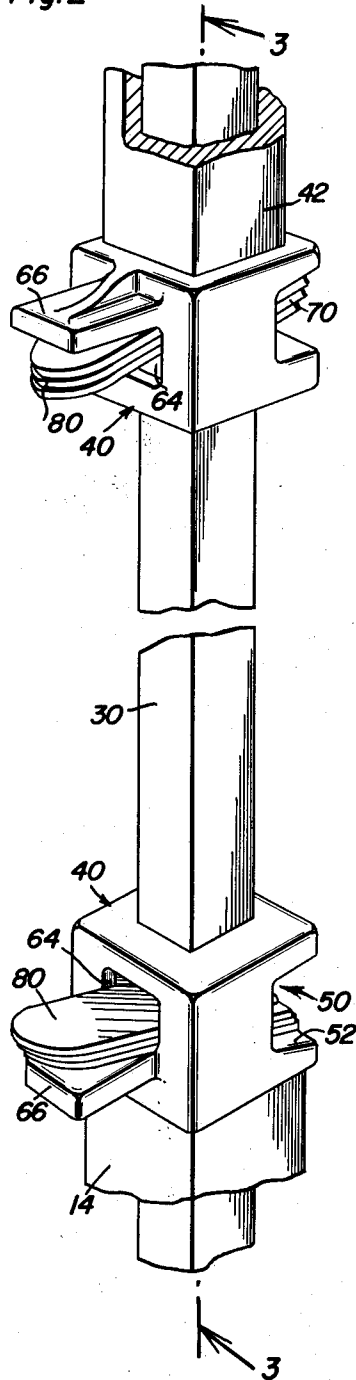


Fig. 3

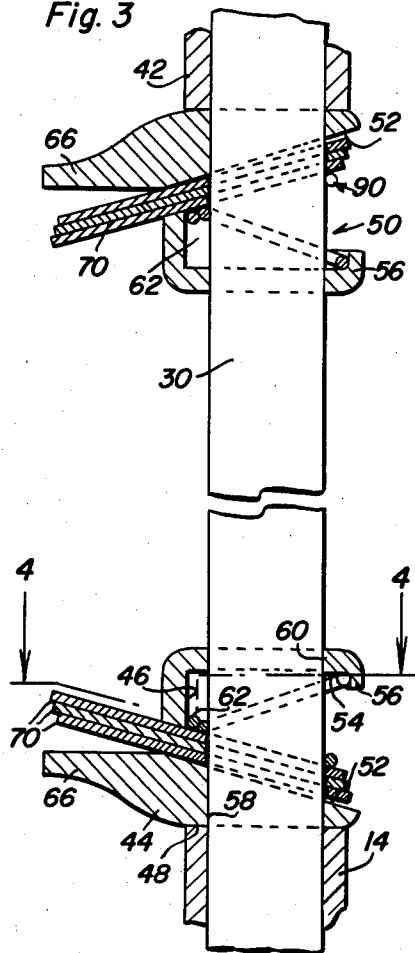
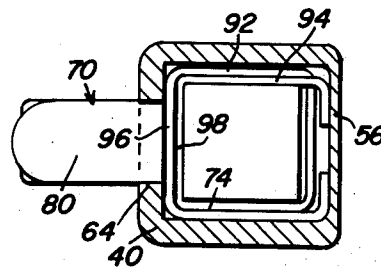


Fig. 4



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1

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ADJUSTABLE SCAFFOLD STOP

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2 Claims. (Cl. 287—58)

This invention comprises a novel and useful adjustable scaffold stop and more particularly relates to an adjustable scaffolding having simple but effective stop means for securely retaining telescoping vertical members of the scaffolding in vertically adjusted positions.

In the use of scaffolding it is essential that various sections of the same shall be capable of considerable ranges of vertical adjustment in order to position the platforms and other structural members at different desired elevations. In the interest of safety to the workmen and to avoid damage to materials and property in the event of accidental dropping of the vertically extended members, it is a prime requisite that means be provided which will with certainty firmly and securely hold the vertically telescoping sections of the scaffolding in secure adjustment.

It is therefore a very important object of this invention to provide a stop means which will dependably perform the above-mentioned desideratum and will also facilitate ease of vertical adjustment when desired.

Yet another object of the invention is to provide an adjustable scaffold fastening means of a relatively simple and inexpensive construction and yet one which will continue to render safe dependable and sturdy action for a long period of life and despite wear of the various parts of the scaffolding.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view showing a typical scaffolding installation having vertically adjustable components and including the application of the adjustable scaffold stop of this invention thereto;

FIGURE 2 is a detail view in perspective, parts being broken away, and showing upon an enlarged scale the manner in which the scaffold stops of this invention are applied to vertically adjustable members of the scaffold construction;

FIGURE 3 is a vertical central sectional view taken substantially upon the plane indicated by the section line 3—3 of FIGURE 2 and showing the internal construction and operation of the scaffold stops of this invention;

FIGURE 4 is a horizontal sectional detail view taken substantially upon the plane indicated by the broken section line 4—4 of FIGURE 3; and

FIGURE 5 is an exploded perspective view of the blades and spring utilized in one of the scaffold stops.

In FIGURE 1 is shown a suitable type of vertically adjustable scaffolding employed for various purposes and to which the principles of this invention have been applied. The scaffolding includes the usual support frame 10 which may be mounted upon suitable casters 12 to impart mobility thereto, and as illustrated further includes a plurality of vertically extending corner posts or standards 14 rigidly connected at the ends of the scaffolding by suitable cross braces as at 16 and with the two end assemblies being in turn rigidly connected together as by suitable diagonal rigidifying cross braces 18. Vertically adjustably mounted upon the support structure 10 is a platform or other load bearing mem-

2

ber 20. It is the vertically adjustable support means by which the load bearing member is mounted upon the supporting framework 10 with which the present invention is concerned.

In its broadest sense, the present invention relates not only to means for adjustably securing vertically movable sections of scaffolding in adjusted position, but is concerned in general with the securing of telescoping tubular sections in longitudinally adjusted positions with respect to each other, it being noted that the corner posts of the scaffolding of FIGURE 1 and the support surface 20 thereon embody and constitute such longitudinally adjustable telescoping sections.

As shown in FIGURE 1 and the detail views of FIGURE 2, it will be observed that each corner post constitutes part of a longitudinally adjustable telescoping section tube assembly. As indicated, the post 14 constitutes the outer member while the numeral 30 designates the inner member telescopically received within the outer member. In accordance with the present invention, an adjustable and releasable stop or locking member designated generally by the numeral 40 is adjustably received upon the inner telescoping section 30. The stop member 40 when secured to the inner section 30 in longitudinally adjusted position thereon is adapted to abut against the adjacent end of the outer telescoping tubular member 14 to thereby prevent further telescoping movement of the inner member into the outer member. Thus, the inner member and outer members are locked together against telescoping movement in one direction.

It is of course evident that the stop member 40 may be disposed in a reverse direction upon the inner member 30, as shown in FIGURES 2 and 3, to in turn support a second outer telescoping member 42. Thus, in the arrangement shown in FIGURES 1, 2 and 3, a pair of stops on each inner member 30 will selectively lock the inner member against further contracting or downward sliding movement with respect to the lower outer member 14, and in turn will lock the superimposed outer telescoping member 42 against further downward movement upon the member 30. By this means a plurality of sections may be assembled together to produce a scaffolding or a tubular member of any desired height or length.

It is the particular construction of the stop means 40 which constitutes the essence of the invention claimed herein.

Turning again more specifically to FIGURES 2 and 3 it will be noted that each of the stop members 40 comprises a one-piece of unitary hollow metallic body 44 which is preferably of a cast construction. This body has a longitudinally extending opening 46 therethrough comprising a longitudinal passage in which is slidably disposed and received the inner tubular section 30. At one end, upon what may be termed the bottom surface of the body 44, there is provided a surface 48 comprising an abutment portion which is adapted to abut against the adjacent outer tubular telescoping section 14 or 42.

Extending transversely into the hollow body and intersecting the longitudinal passage 46 therethrough is a transverse slot 50. It will be observed that this slot has an inclined wall 52, which provides an inclined stop surface. Upon its other side, the slot has a flat wall 54 which is substantially perpendicular to the longitudinal axis of the passage 46, and the opening of the slot has an inwardly turned flange or lip as at 56 which projects towards the stop surface 52 for a purpose to be subsequently apparent.

It will be further noted from FIGURE 3 that the

passage 46 at its opposite ends has guiding surfaces as at 58 and 60 which guidingly receive and slidingly engage the wall of the inner section 30, while the passage 46 between these guide surfaces is laterally enlarged to provide at one side of the inner section 30 an enlarged laterally disposed chamber 62 for a purpose to be subsequently set forth.

The body opposite the opening of the slot 50 is provided with a passage 64 open to the exterior thereof and an integral lateral projection 66 of the body is disposed adjacent to this passage.

In the type of tubing illustrated, it will be observed that the inner section 30 at least is of rectangular cross section while the outer sections 40 and 42 are illustrated as being of similar configuration although this contour is not essential to the purposes of this invention.

Operatively disposed in the body 40 is a clutch or lock means by which the device may be lockingly or releasably secured to and mounted upon the section 30. This lock means consists of one or more lock plates 70 of the configuration shown best in FIGURES 4 and 5. Thus, each lock plate consists of a rectangular portion 72 of the frame-like contour having a central opening 74 therethrough of the same cross sectional shape and contour as that of the inner section 30 to loosely slidably receive the latter. Although a single plate may be used in some instances, it is preferred to provide a plurality of plates since by such construction there is obtained an increased or multiple gripping action of the plates upon the inner section 30, as well as greater strength and durability of the plates against bending or breakage under excessive loads. In any event, the opening 74 through the plates is such that when the plates are disposed perpendicular to the longitudinal axis of the section 30, the latter may loosely slide therethrough, while if the plates are sufficiently tilted relative to the longitudinal axis of the inner section, the edges of the openings in the plates will frictionally grip and engage the inner section and prevent relative sliding movement of the latter through the body.

The shape and size of the openings in the lock plates is so proportioned to the size of the inner section 30, and is so related to the inclination of the stop surface 52 of the transverse slot that the plates when tilted in opposite directions will selectively disengage from or lock themselves to the inner section. Thus, the surface 52 of the slot constitutes a stop surface which positions the plates in their locking position, while the opposite surface of the slot constitutes a stop surface which would limit opposite movement of the plates if they were not hindered in such move by a means to be subsequently described.

The plates further include elongated laterally projecting finger grip portions 80 which project through the passage 64 and are disposed adjacent to the lateral projection 66. This lateral projection thus serves the combined functions of providing a protective shield for the finger grip portions 80 thereby preventing accidental engagement of the latter, and also provides a complementary grip means so that the user may by gripping the projection 66 and the finger grip portions 80, bias the lock plates to their unlocking position.

Spring means are provided housed within the slot of the body to yieldingly urge the lock plates into their locking position. Thus spring means, shown best in FIGURE 5, consists preferably of a single piece of resilient wire, being designated generally by the numeral 90. This piece of wire

is formed into two rectangular or frame-like portions there being a closed rectangle as at 92 and an opened rectangle at 94. The two extremities of the piece of wire thus provide the opening in the open rectangle 94. The two rectangles are disposed in relatively inclined planes and the resiliency of the material at the two bight portions 96 and 98 resiliently prevent tilting of the rectangles towards each other. The arrangement is such that the rectangles with their central opening can loosely embrace the inner section 30, with one rectangle 92 bearing against the adjacent surface of one of the lock plates 70, while the other rectangle is received inside the retaining lip 56 which thus positions the spring means in place, with the two bight portions 96 and 98 being received in the chamber 62 previously mentioned.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An adjustable stop for telescoping tubes comprising a body having a longitudinal passage therethrough for slidable positioning on a first section of tubing and a locking slot extending transversely of said body and intersecting said longitudinal passage, said body having an abutment portion for freely engaging the end of a second tubing section in which said first section is slidably received, a lock plate movably received in said slot and having an opening receiving said first section, said body having on opposite sides of said slot relatively inclined surfaces engageable by said plate and limiting the tilting of the latter in said slot whereby to position said plate in locking and unlocking positions relative to said first section, spring means in said slot engaging said plate and yieldingly urging the latter towards its locking position, a second passage formed in the body wall opposite the opening of the slot and forming a continuation of and opening into said slot, said plate having a finger grip portion extending through said second passage to the exterior of said body, and said body being provided with a laterally extending projection adjacent said finger grip portion constituting a protective shield and complementary grip therefor.

2. The combination of claim 1 wherein said body is of one-piece construction.

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