

[54] **FORMWORK FITMENT FOR A PROP**

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[22] Filed: **June 24, 1974**

[21] Appl. No.: **482,007**

[30] **Foreign Application Priority Data**

June 29, 1973 United Kingdom..... 31212/73

[52] U.S. Cl. **249/210; 248/351; 249/18**

[51] Int. Cl.²..... **E04G 11/48**

[58] Field of Search 249/210, 211, 212, 19, 249/18, 24-26, 66-68; 248/351-352; 52/126

[56] **References Cited**

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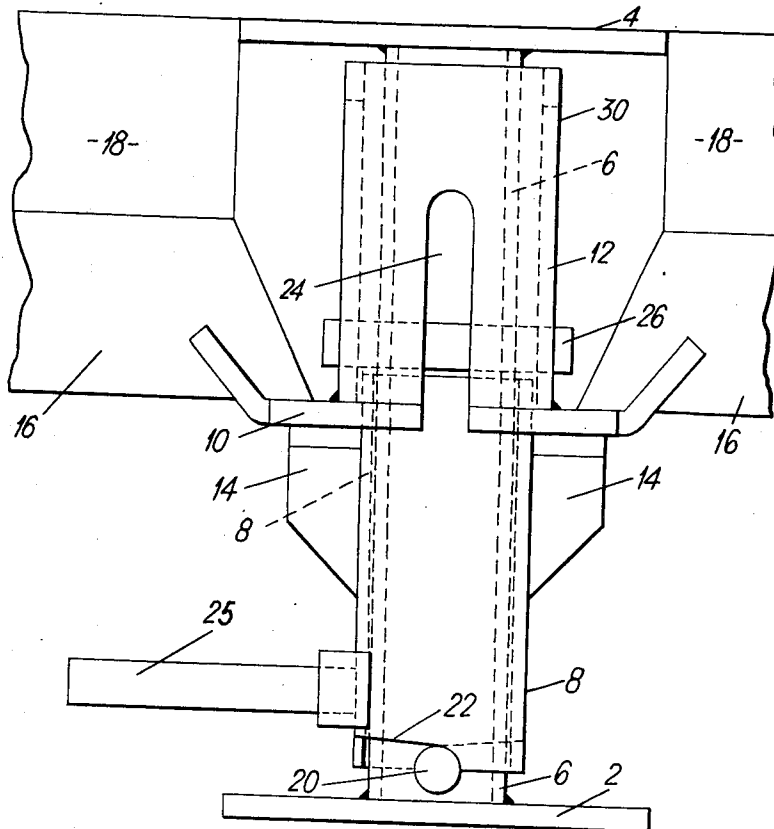
Primary Examiner—Robert D. Baldwin

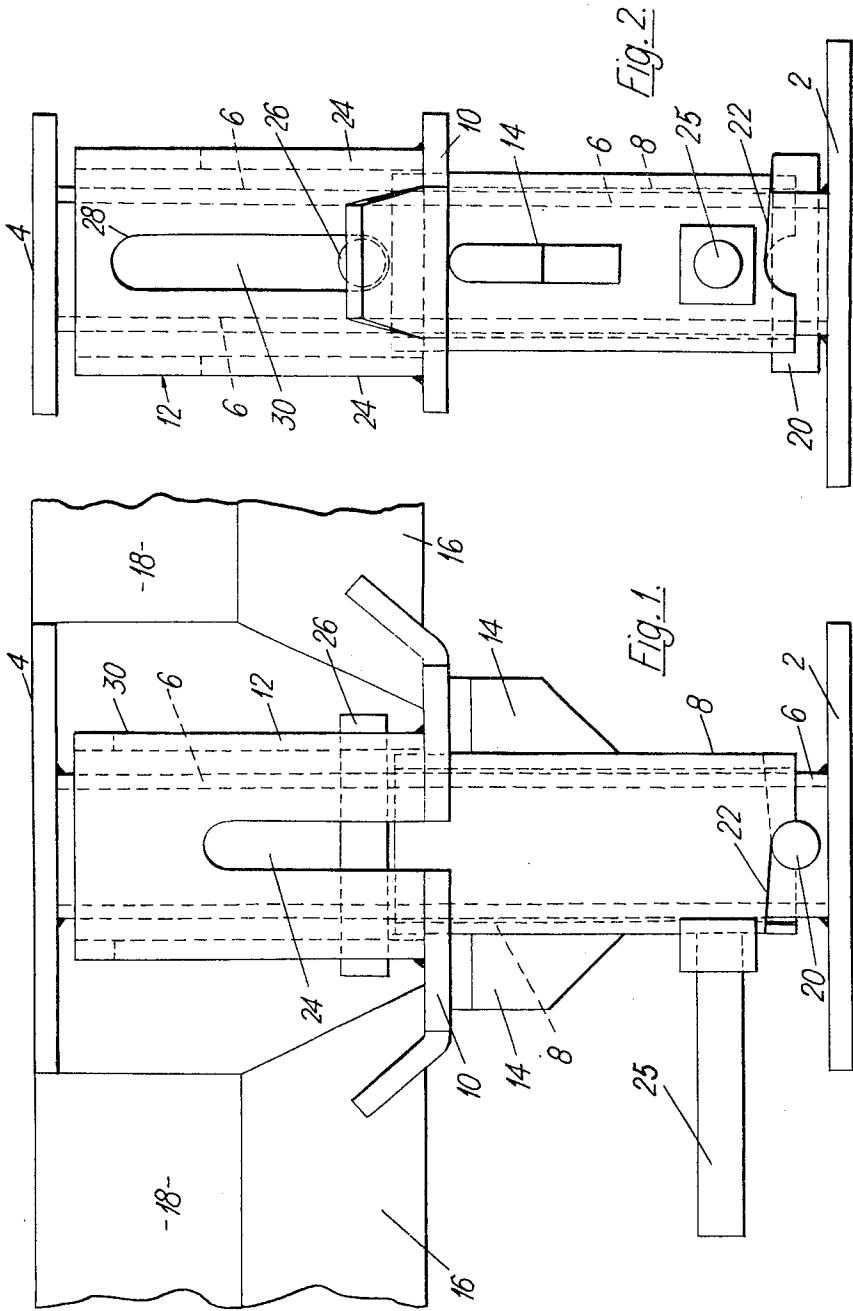
Attorney, Agent, or Firm—Wood, Herron & Evans

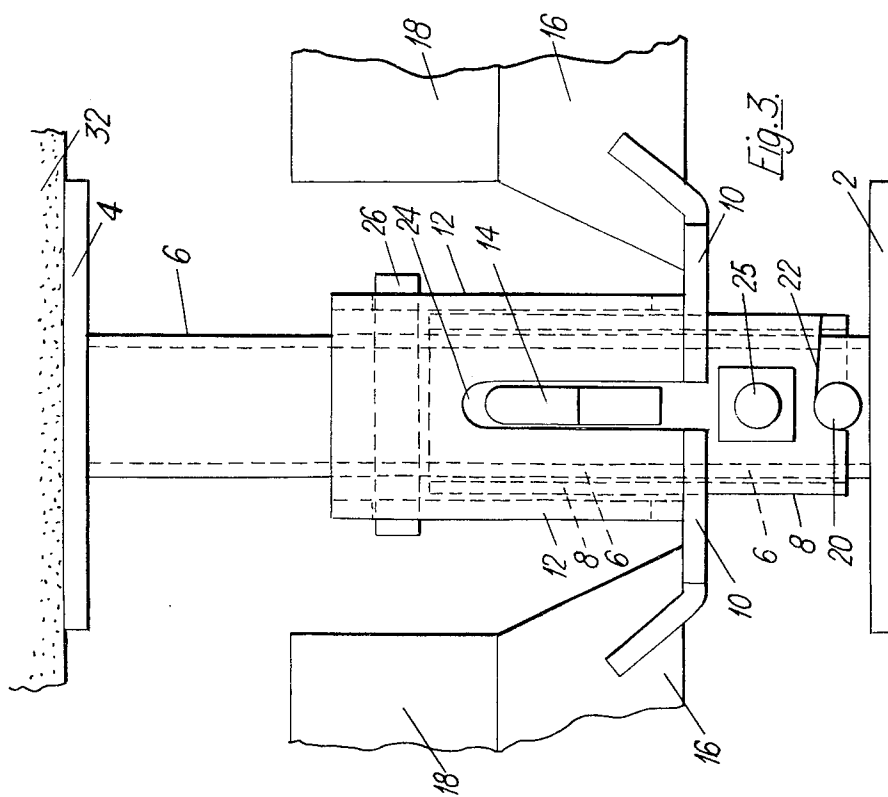
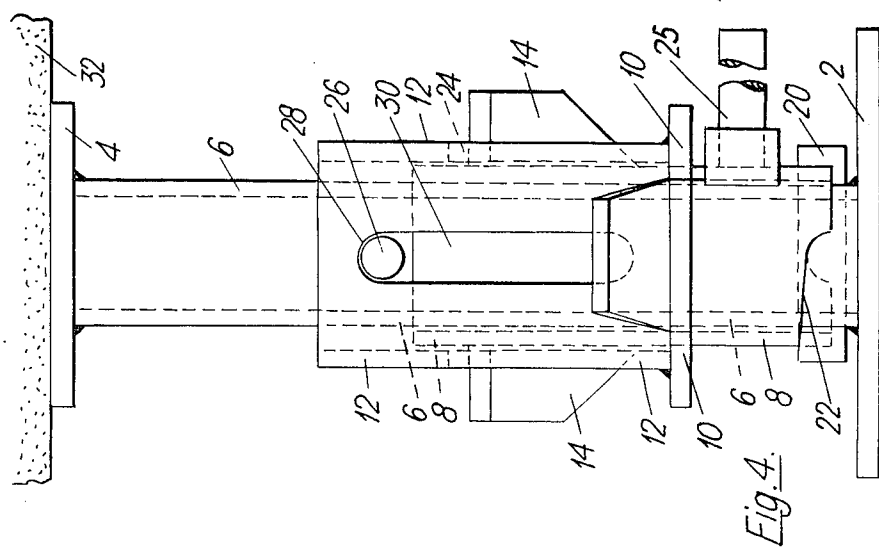
[57] **ABSTRACT**

A builders prop or a fitment for a prop comprising a head plate which is connected to the prop body, or to a base plate to be secured to a standard prop head plate by a shank, the shank carrying both a support tube which is slidably and rotatably engaged over the shank, and a shuttering element support member, the support tube or shank being formed with an angularly inclined surface to engage a member extending from the shank or tube respectively, the arrangement being such that rotation of the support tube around the shank raises or lowers the support tube relative to the head plate, the shuttering element support member being so shaped and arranged as to be supported by the support tube relative to the shank and in a second angular or "strip" position of the support tube around the shank, the shuttering element support member being free to slide down the shank away from the head plate.

7 Claims, 4 Drawing Figures







FORMWORK FITMENT FOR A PROP

This invention relates to supports for shuttering elements used during the construction of concrete (or the like) roofs, floors and ceilings or similar soffits.

Normally shuttering in the form of formwork panels onto which concrete and the like is cast, is supported by beams which extend between extensible props. When the concrete is set the props are removed and the beams and panels can be taken away for re-use. It is, however, desirable for at least the beams and panels to be re-used as quickly as possible and accordingly it is the general object of this invention to provide a prop construction for the support of formwork or shuttering elements which enables the beams and panels to be removed prior to complete setting of the concrete, the partially set concrete being directly supported by the props at spaced intervals.

This general object is achieved in accordance with this invention by a prop, or a fitment for a prop, comprising a head plate which is connected to the prop body or to a base plate to be secured to a standard prop head plate, by a shank preferably of circular cross-section, the shank carrying a support tube and a shuttering element support member, the support tube being rotatable around the shank and being formed with an angularly inclined surface engaging against and resting on a corresponding member fixed to and extending from the shank the arrangement being such that relative rotation of the support tube around the shank raises or lowers the support tube relative to the head plate, the shuttering element support member being positioned between the head plate and the support tube and being so formed and arranged as to be supported by the support tube in one angular position thereof and, in a second angular or "strip" position thereof, being free to slide over the support tube.

Thus, if in use, the shuttering element support member carries a beam on which concrete formwork panels rest then the dimensions of the various members will be such that in the erected or upper position of the shuttering element support member, the upper faces of the panels are aligned with the upper face of the main plate of the props or fitments therefor. On turning the support tube about the main shank, the support tube, and hence the shuttering element support member is firstly lowered gradually to strip the formwork panels from beneath the partially set concrete, the concrete remaining supported by the head of the prop or fitment; and on further turning of the support tube to the "stripped" position the shuttering element support member, and hence the beams and panels supported thereby fall down over the support tube rapidly, to complete the stripping of the shuttering to a position in which the beams and panels can be disengaged for re-use elsewhere.

Preferably the support tube is provided with outwardly extending lugs or ears on which the shuttering element support member rests in the casting position, the shuttering element support member being formed with a corresponding slot or slots so that when the lugs or ears are aligned with the slot or slots in the "stripped" position as a result of turning of the support tube about the shank, the shuttering element support member can fall down over the support tube to enable the formwork beam and panels to be removed.

The downward movement of the shuttering element support member over the support tube is preferably limited by a pin or pins or the like projecting from the underlying shank and engaging in a slot or slots in an upwardly extending tubular portion of the shuttering element support member.

The invention will now be further described by way of example with reference to the accompanying drawings in which:

FIG. 1 is an elevation of a fitment in accordance with the invention for attachment to the top of a standard extensible prop, showing the parts in the erected position;

FIG. 2 is a view similar to FIG. 1 showing the fitment as viewed from a position 90° from that of FIG. 1;

FIG. 3 is a view similar to FIG. 1 showing the parts in the stripped or disengaged position; and

FIG. 4 is a view similar to FIG. 2 but showing the parts in the stripped position.

The fitment shown in the drawings is intended for connection to the standard top plate of a standard extensible prop (not shown) the arrangement being such that the base plate 2 is bolted to the top plate of the prop.

The head plate 4 of the fitment is connected to the base plate 2 by means of a tubular shank 6 and a support tube 8 is mounted on the shank 6 and is free for limited rotation thereabout. A shuttering beam support member 10 having an upstanding tubular body 12 is located over the shank 6 adjacent the head plate 4 with the underside of the support member 10 resting on two ears 14 extending outwardly from the support tube 8.

A support beam diagrammatically illustrated at 16 rests on the plate 10 at each side thereof and carries concrete formwork panels 18 in known fashion, the upper surface of the panels 18 being aligned with the upper surface of the head plate 4 of the prop fitment. The other end of the beams are supported by other similar prop fitments and other beams may be similarly supported to form the desired area of supported formwork panels.

A pin 20 extends out from the shank 6 adjacent the base plate 2 and is engaged by an inclined or cam face 22 formed on the bottom edge of the support tube 8. When the parts are in the erected position as shown in FIGS. 1 and 2, the support tube is in a position in which it is held by the pin 20 above the base plate 2 to the maximum extent.

Concrete may then be cast onto the top surface of the formwork panels and over the head plates 4 of the prop fitments.

When it is desired to strip the formwork panels 18 and support beams 16 from concrete which has been cast and and partially set, a handle 25 projecting from the outer surface of the support tube 8 is used to turn the support tube through 90° around the shank 6 of each prop fitment. During this angular movement the support tube 8 due to the inclination of the cam face 22, is gradually lowered over the shank 6 causing a similar gradual lowering of the support member 10 and hence of the beams 16 and panels 18 relative to the head plate 4 and relative to the cast and semi-set concrete. This movement therefore achieves a gradual initial stripping of the panels and the support beams from the concrete leaving the concrete supported by the head plates 4 of the prop members.

At the end of the 90° movement the ears 14 are aligned with slots 24 extending upwardly through the tubular portion 12 of the shuttering element support member at each side thereof and the support member can then drop over the support tube with ears 14 passing up within the slots 24 as can be seen in FIGS. 3 and 4.

The extent of downward movement of the support member is limited by the engagement of a pin 26 extending out from the shank 6 with the top surface 28 of slots 30 formed in the tubular extension 12 of the support member 10, the slots 30 being positioned at 90° to the slots 24.

In the stripped or collapsed position of the parts shown in FIGS. 3 and 4 the beams 16 and panels 18 can be readily removed from the support 10 for re-use elsewhere leaving the partially set concrete 32 still supported by the head plate 4 of the various prop fitments.

It will, of course, be appreciated that the relative position of the ears 14 and slots 24 could be reversed in that the tube 8 could be provided with slots and the support member be provided with ears or lugs the important feature being that relative rotation of the support tube and support member achieves an initial gradual downward movement of the support member relative to the head plate 4 with a subsequent rapid downward movement of the support member to a collapsed or stripped position.

Equally, the cam face 22 and pin 20 could be located at a slot along the length of the tube 8.

The support member 10 may be secured to the tube 12 at any position along its length to fit the dimensions of beams and panels and need not be located at the bottom of the tubular portion.

It will also be appreciated that the tube 6 may form the upper member of an extensible prop and the base plate 2 will in such case be unnecessary.

I claim:

1. A fitment for a prop, said fitment being adapted to support at least one shuttering element of the type used with concrete formwork, said fitment being movable between a full support position, and preliminary and full strip positions, said fitment comprising
 - a shank having a headplate fixed to the top end thereof, said shank being connectable to said prop in fixed relation thereto,
 - a support tube slidably and rotatably disposed in coaxial relation with said shank,
 - a shuttering tube slidably disposed in coaxial relation with said shank and said support tube, said shuttering tube mounting at least one shuttering support member thereon,
 - at least one support ear mounted to one of said support tube and said shuttering tube and extending substantially radially therefrom, and the other of said support tube and said shuttering tube defining

at least one ear slot adapted to receive said support ear therein, said support ear cooperating with a contact surface on that tube to which said ear is not fixed to maintain said support and shuttering tubes in the full support position,

anti-rotation means interconnecting said shank and said shuttering tube, said anti-rotation means permitting sliding motion of said shuttering tube relative to said support tube, but preventing rotational motion of said shuttering tube relative to said support tube, and

cam means interconnecting said shank and said support tube, initial rotation of said support tube relative to said shank and said shuttering tube causing said cam means to lower slightly said shuttering tube away from said headplate to the preliminary strip position, and further rotation of said support tube relative to said shank causing said support tube's ear to move out of contact with said contact surface into alignment with said shuttering tube's ear slot causing said shuttering tube to drop further away from said headplate into the full strip position.

2. A fitment as set forth in claim 1, said anti-rotation means comprising

- an anti-rotation slot defined in one of said support and shuttering tubes, and
- an anti-rotation pin fixed to the other of said support and shuttering tubes, said anti-rotation pin being received in said anti-rotation slot.

3. A fitment as set forth in claim 1, said cam means comprising

- a cam surface defined in one of said support and shuttering tubes, and
- a cam pin fixed to the other of said support and shuttering tubes, said cam pin being in contact with said cam surface.

4. A fitment as set forth in claim 1, said fitment's full strip position being established by one of support ear-/ear slot structure and said anti-rotation means structure.

5. A fitment as set forth in claim 1 including a handle fixed to said support tube, said handle permitting manual rotation of said support tube relative to said shuttering tube.

6. A fitment as set forth in claim 1, said ear being positioned relative to said ear slot in said fitment's full support position so as to require rotation of said support tube through about 90° prior to achieving alignment of said ear with said ear slot.

7. A fitment as set forth in claim 6, there being at least two ears and at least two ear slots, said ears and ear slots being symmetrically disposed relative to said shank.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,915,423
DATED : October 28, 1975
INVENTOR(S) : Jack Raymond Tooley

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claim 2, in Column 4, Line 26, please delete "support" and substitute in its place --shank--.

Claim 2, in Column 4, Line 27, "tubes" should be --tube--.

Claim 2, in Column 4, Line 28, please delete "support" and substitute in its place --shank--.

Claim 2, in Column 4, Line 29, "tubes" should be --tube--.

Claim 3, in Column 4, Line 33, after the word "support" please insert --tube--. After the word "and" please insert --shank--.

Claim 3, in Column 4, Line 34, please delete "shuttering tubes"

Claim 3, in Column 4, Line 35, after the word "support" please insert --tube--. After the word "and" please insert --shank--.

Claim 3, in Column 4, end of Line 35 and beginning of Line 36, please delete "shuttering tubes".

Signed and Sealed this

First Day of March 1977

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

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Commissioner of Patents and Trademarks