Aug. 26, 1958 E. G. B. CROOK 2,849,258

CLAMPING CONNECTION FOR FRAMEWORK

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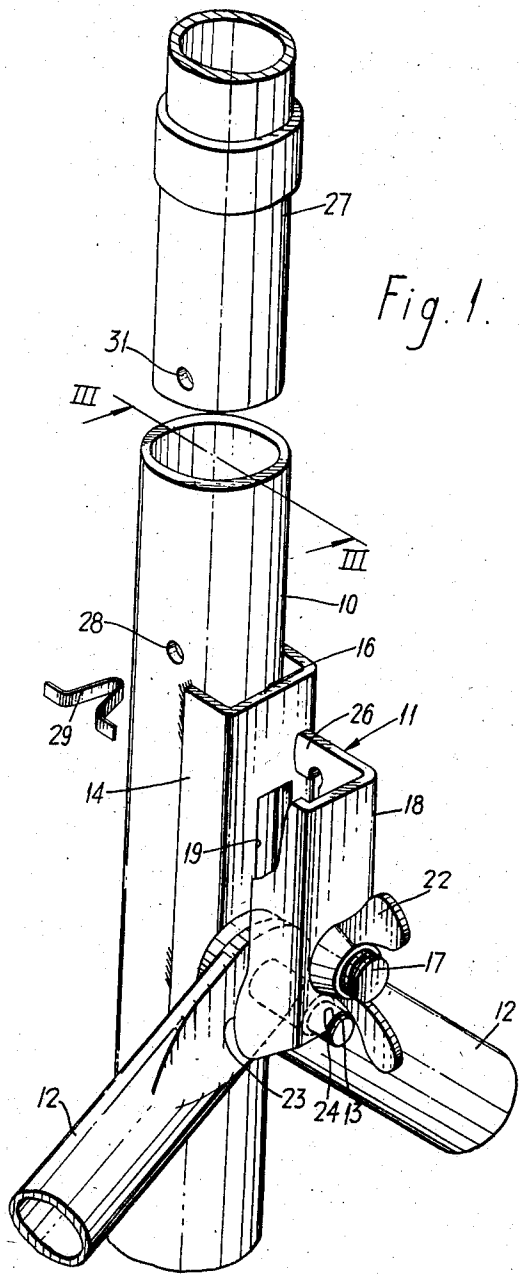


Fig. 1.

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Fig. 2.

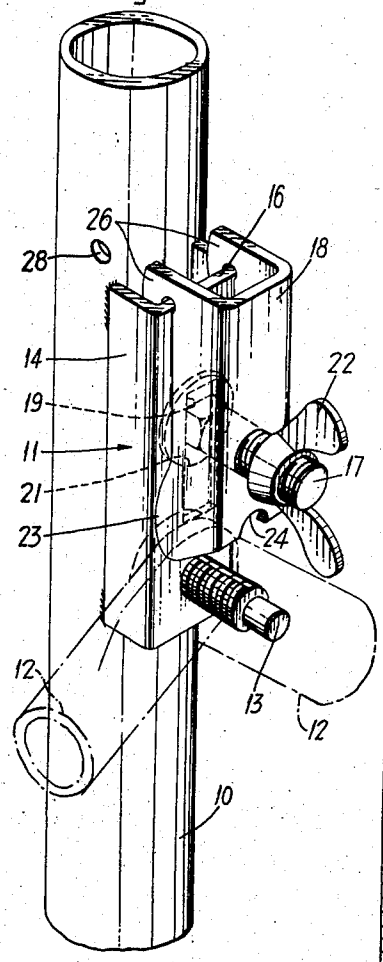
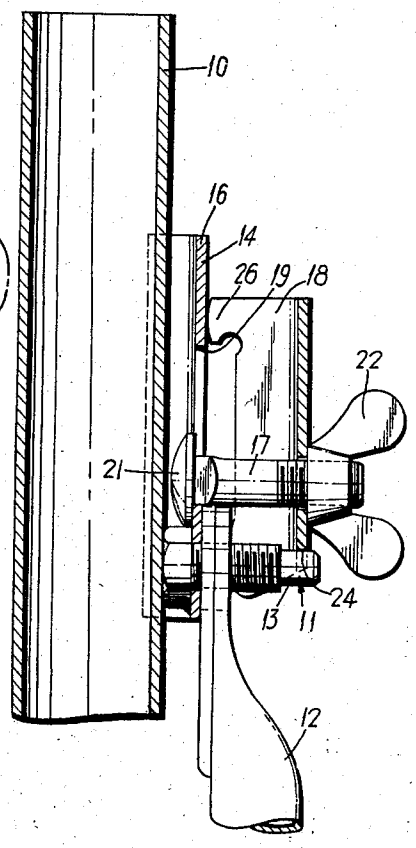


Fig. 3.



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CLAMPING CONNECTIONS FOR FRAMEWORK

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Claims priority, application Great Britain May 22, 1956

6 Claims. (Cl. 304—40)

This invention relates to scaffolding and particularly tubular scaffolding.

It frequently happens that a scaffold member, particularly an upright, needs to be braced, the braces being attached either by means of clamps or by being engaged on a screw-threaded pin projecting from the member and being held in position by means of a nut. The engagement of the braces in the required working position is not always simple and, for the rapid and secure erection of a scaffold, it is essential that the scaffolder's task be simplified as much as possible. Also, it is desirable that the number of loose fittings, such as clamps, be reduced to a minimum or at least constructed so that they do not become unintentionally separated from the main scaffold member.

It is with such considerations in mind that the present invention has been developed.

In accordance with the invention, a scaffold member is provided with means for securing bracing members to it, the said means comprising a fixed pin standing out from the scaffold member on which the ends of the bracing members can be impaled, a movable pin engaged in a longitudinally slotted part fixed to the scaffold member and having a head lying within the said part, and a cover plate or the like carried by the movable pin and adapted to be disposed in a position in which it at least partially covers the ends of the bracing members on the fixed pin so that the bracing members are squeezed between the said part and the cover plate when a nut on the outer end of the movable pin is tightened against the cover plate, the cover plate being formed so that it can be temporarily suspended from a projection on the scaffold member in a position in which, with the movable pin still engaged in the slot, it is well clear of the fixed pin and thus allows the bracing members to be readily engaged on that pin.

When using equipment in accordance with the invention the scaffolder is able, while having both hands free to do the essential work of placing the braces in position, to have the means which he requires for finally holding the braces in place in a convenient ready-to-hand position. Furthermore, such means can be constructed and arranged so that no loose parts are involved which may become separated and lost during transport or erection.

In order that the invention may be clearly understood, an example of it will now be described with reference to the accompanying drawings, in which:

Figure 1 is a fragmentary exploded perspective view showing the scaffold member with bracing members secured to it, a coupling member for it and a clip for attaching the coupling member to the scaffold member,

Figure 2 is a fragmentary perspective view of the scaffold member shown in Figure 1, the cover plate being suspended in a position in which it is clear of the fixed pin, and

Figure 3 is a part-sectional side elevation of the scaffold member taken on the line III—III in Figure 1.

The scaffold member shown in the drawings includes

an upright **10** and channel **14**, said tubular upright **10** having means **11** for securing bracing members **12** to it. The securing means comprise a pin **13** which stands out from the tube **10** and on which the flattened ends of the bracing members can be impaled. The pin **13** is fixed to the channel **14** welded to the tube **10** with its flanges extending generally parallel to the axis of the tube and its web spaced therefrom to form a projection **16**.

A movable pin **17** carrying a cover plate **18** is engaged in a longitudinal slot **19** in the channel **14** and has a head **21** lying within the slot **19**. The pin **17** is in the form of a coachbolt and the square portion of its shank can slide freely in the slot **19** but is prevented from rotating therein.

The cover plate **18** is adapted to be disposed in a position in which it at least partially covers the ends of the bracing members **12** on the pin **13** (as shown in Figures 1 and 3) so that the bracing members are squeezed between the channel **14** and the cover plate when a nut **22** on the outer end of the pin **17** is tightened against the cover plate **18**. The flanges of the cover plate terminate in toes **23** for bearing on the bracing members in this position whilst a notch **24** between the toes **23** permits the cover plate to be properly located against the fixed pin **13**.

The cover plate **18** is formed with two hook-shaped ears **26** so that it can be temporarily suspended from the projection **16** in a position in which, with the movable pin **17** still engaged in the slot **19**, it is well clear of the fixed pin **13** (Figure 2) and thus allows the bracing members **12** to be readily engaged on the pin **13**.

When it is desired to connect one or more bracing members **12** to the tubular upright **10**, the cover plate is first hooked to the upper edge of the channel **14**, that is to say to the projection **16**, by means of the ears **26**, as shown in Figure 2. To bring it into such a position, the cover plate is simply moved upwardly, the coach bolt or pin **17** being carried with it along the web of the channel whilst still confined in the slot **19**.

This leaves the fixed pin **13** unobstructed and the scaffolder can use both hands to impale the bracing members thereon instead of having to use one hand to keep the cover plate out of the way and manipulating the bracing members with his other hand.

Thereafter the cover plate **18** and its associated pin **17** are lowered so that the toes **23** rest upon the uppermost member **12** on the pin **13**, the ears **26** rest against the web of the channel **14** and the notch **24** is located over the fixed pin **13** (Figures 1 and 3).

The scaffold and bracing member assembly is then made rigid by tightening the nut **22** against the cover plate **18** to clamp the bracing members between it and the channel **14**, the bolt being prevented from turning as aforementioned and the cover plate **18** being unable to turn because the pin **13** engages in the notch **24**.

To dismantle the bracing members, such as in the case when a scaffold is being struck, the nut **22** is loosened and the cover plate **18** moved upwardly and hooked to the channel so that the bracing members can be removed from the pin **13** at will and without cumbersome manipulations.

On certain occasions it may be unnecessary to use the cover plate **18** for securing the bracing members to the tube **10**. For that reason it is advantageous to provide a screw thread on the fixed pin **13**. It is then possible to use the nut **22** on the pin **13** for clamping the bracing members to the channel **14**.

In most cases it is desired to connect bracing members to near the ends of an upright. In the preferred embodiment therefore, the means **11** for doing so are provided near one or both ends of the tube **10**. One or both

ends of the tube **10** are also provided with means for attaching a coupling member **27** (Figure 1) to it. The said attaching means comprise a hole **28** for receiving a spring clip **29** which can be passed through an aligned hole **31** in the coupling member. This enables the coupling member to be temporarily attached to the tubular upright **10** and prevents it from being lost.

I claim:

1. A scaffold member having means for securing bracing members to it, the said means comprising a fixed pin standing out from the scaffold member on which the ends of the bracing members can be impaled, said scaffold member having a longitudinally slotted part, a movable pin engaged in the said slotted part, a head on one end of the movable pin lying within the said slotted part, a nut screw threaded on the other end of the movable pin, a cover plate carried by the movable pin and adapted to be disposed in a position in which it at least partially covers the said ends of the said bracing members on the fixed pin so that the bracing members are squeezed between the said part and the cover plate when the nut is tightened against the latter, a projection on the scaffold member, and means on the cover plate for temporarily suspending it from the projection in a position in which, with the movable pin still engaged in the slotted part, it is well clear of the fixed pin and thus allows the bracing members to be readily engaged on the said pin.

2. A scaffold member according to claim 1, wherein the slotted part comprises a channel having a web with a slot in it, the channel being a part of the scaffold member; and the web constituting the said projection for suspending the said cover plate.

3. A scaffold member according to claim 2, wherein the said fixed pin is carried by the said channel.

4. A scaffold member according to claim 3, wherein the said cover plate comprises a flanged plate, and said suspending means comprising hook-shaped ears at one end of the flanges for suspending the cover plate from the said projection, and toes at the other end of the flanges for bearing on the bracing members.

5. A scaffold member according to claim 4, wherein the cover plate is notched between the toes for locating it against the fixed pin.

6. A scaffold member provided with means for securing the ends of bracing members to it, the said means comprising a channel having two flanges and a slotted web, the web extending between the outer longitudinal edges of said flanges, a fixed pin projecting laterally from the said channel and on which the bracing members can be impaled, a bolt slidingly engaged in the said channel with its head confined behind the said web, a nut on the end of the bolt, a cover plate slidable on said channel carried by the bolt and adapted to be disposed in a position in which it at least partially covers the ends of the bracing members on the pin so that the bracing members can be squeezed between the said web and the cover plate when the nut is tightened against the latter, means on the cover plate for locating it against the pin, and hook-shaped projections on the cover plate for temporarily suspending it from the said web in a position in which it is clear of the pin and thus allows the bracing members to be readily impaled on the said pin.

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