Aug. 3, 1948. W. C. JONES ET AL 2,446,372

METAL TUBULAR SCAFFOLDING

Filed Sept. 18, 1945 2 Sheets-Sheet 1

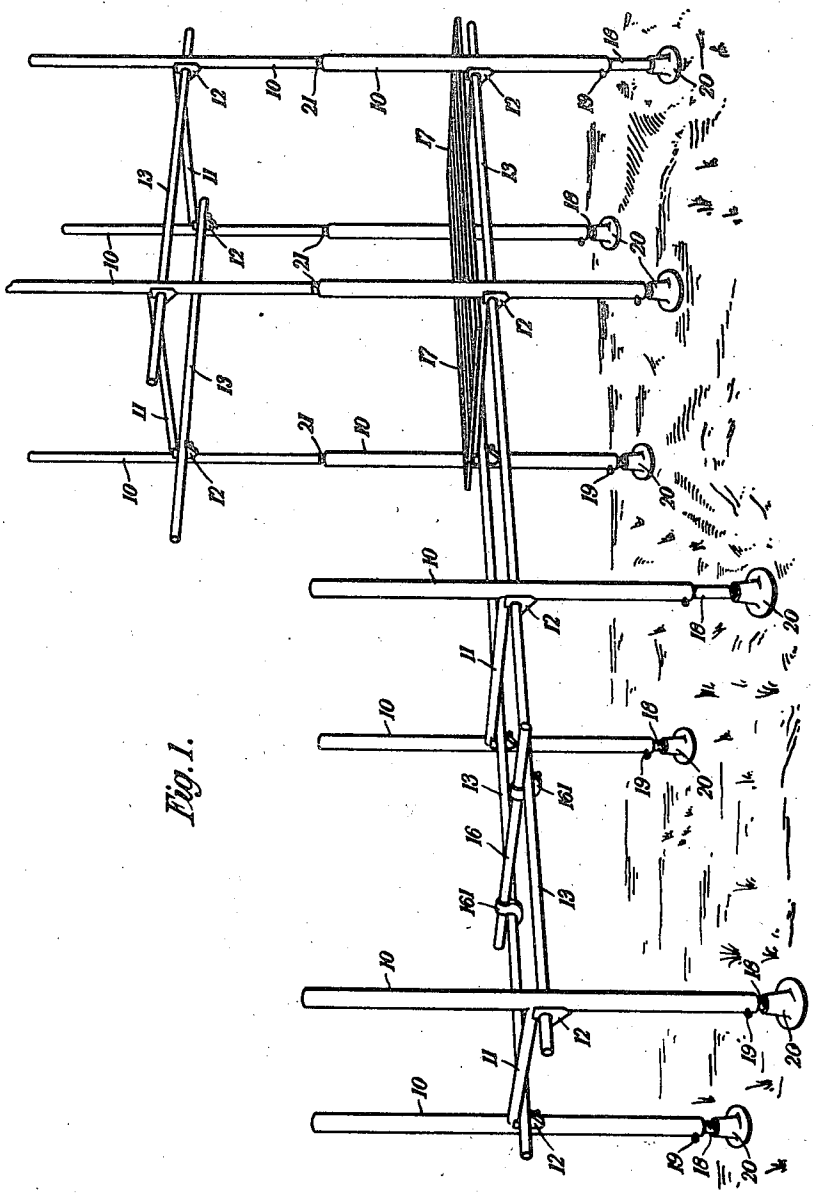


Fig. 1.

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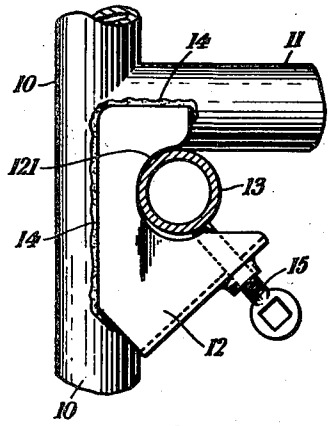


Fig. 2.

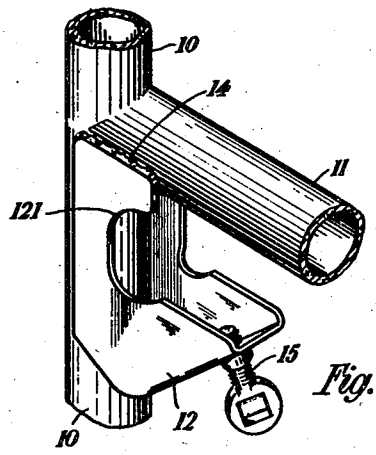


Fig. 3.

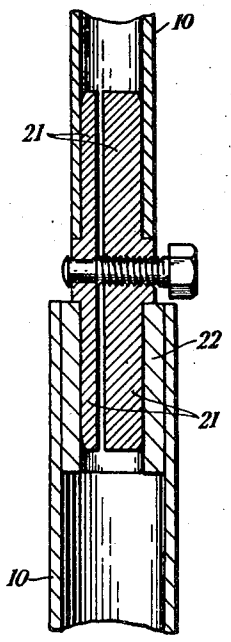


Fig. 4.

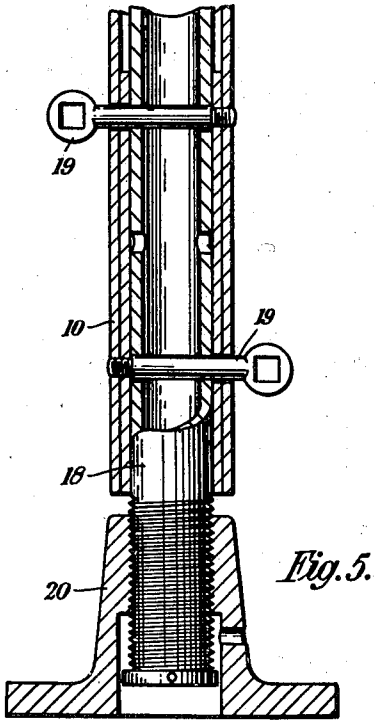


Fig. 5.

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METAL TUBULAR SCAFFOLDING

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4 Claims. (Cl. 304—2)

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Since the introduction of metal tubular scaffolding for use in the erection of buildings it has been customary to transport to the site a quantity of loose tubes of various lengths, together with a supply of inter-tube couplers and other ancillary fittings, and there to construct the requisite framework piecemeal from the individual members at hand. Each stanchion or column has had to be constituted the requisite length, e. g. by coupling an appropriate number of tubes end to end, and the position of each coupler connecting two intersection members has had to be ascertained by trial and error during the course of erection. It will readily be apparent that a very large proportion of the cost of erection of a scaffolding by the aforesaid existing technique has been represented by the disproportionate amount of time which is occupied by the performance of the work, an amount of time which is frequently quite unwarranted by the simplicity of the completed structure, and the present invention is concerned with proposing a novel and improved method of and means for erecting scaffolding of the class referred to, whereby a notable economy in labour costs may be effected, and which will in general be more efficient than the existing method of erection.

According to this invention a scaffold structure is composed of a series of prefabricated H-frames spaced apart in parallel relationship, so that each constitutes a pair of vertical columns tied by a cross-member, a pair of brackets incorporated in each H-frame, ledger members connecting adjacent H-frames and resting on and secured to said brackets, with or without putlogs carried across and fixed to the ledger members, the arrangement being such that the structure may be extended upwardly to form successive upper stages by erecting additional prefabricated H-frames with their uprights spigotted or similarly mounted in or on the upper extremities of the lower stage of H-frames.

The manner of erection of a scaffold, and the means employed therefor, in accordance with the said invention, are hereinafter more fully described with reference to the embodiments shown by way of example in the accompanying drawings. In said drawings, Fig. 1 is a general perspective view of a portion of a scaffold. Fig. 2 is a fragmentary side elevation, and Fig. 3 is a fragmentary perspective view, of a part of an H-frame, depicting the arrangement of the ledger bracket in relation thereto. Fig. 4 is a fragmentary section illustrating one method of mounting the upright of one H-frame in that of the corresponding H-frame of the next lower stage. Fig. 5 is a fragmentary section showing the adjustable foot of one of the uprights of an H-frame in the lowest stage.

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As will be seen by reference to Fig. 1, the scaffolding there shown is constituted by a plurality of superposed stages each of which is composed of a number of H-frames disposed at right angles to the building-line and connected in spaced relationship by the ledger members. Putlogs, laid across the ledger members, and the cross-members of the H-frames, collectively serve to support the planks of a working platform. After erection of one stage of the scaffolding, the next stage may be constructed immediately above it, the H-frames of the two stages lying in the same vertical plane and with the feet of the H-frames of the upper stage spigotted in the upper extremities of the H-frames of the lower stage.

Each H-frame is conveniently fabricated from high tensile steel tubing or other suitable tubular stock, the length of the upright 10 and of the cross-member 11 being standardized throughout. The uprights 10 and cross-member 11 may be attached by welding or, if desired, by hinged couplers (not shown) arranged so as to permit the frames to be collapsed into a small volume for ease of transport and economy of storage space. The H-frames are provided with integral brackets 12 by which the ledger members 13 are attached to the uprights of the H-frames and which are preferably welded in position as shown at 14 in Fig. 2. Said brackets 12 conveniently consist of a stamped plate bent and profiled to form a recessed support for a ledger member (Fig. 2), and a setscrew 15 carried in the plate is arranged so that when tightened (as by the aid of a tommy-bar) it cramps the ledger member 13 against the underside of the cross-member 11 and the profiled edges 121 of the bracket. The brackets 12 are located immediately below the cross-member 11 thereof, so that putlogs 16 laid across the ledgers 13 will be in the same horizontal plane as the cross-member 11, thus ensuring that the platform boards 17 supported upon the putlogs 16 and said cross-members 11 will be uniformly horizontal.

The ground surface upon which the scaffold is erected is rarely level. In order to take account of unevenness of the ground surface we may provide a separate set of H-frames for the lowermost stage. The tubular stock from which the uprights 10 of this particular set of frames is fabricated is preferably of greater diameter than the uprights 10 of the upper stage frames, and each

upright 10 of the lower stage frames houses a telescopic leg 18 (Fig. 5) capable of being slid endwise into or out of the lower end of the same. Means, e. g. pegs 19, are provided for adjustably fixing the sliding legs 18 in relation to the uprights 10 at any one of a wide range of alternative settings, at say three inches apart. A baseplate 20 screwed upon the foot of the telescopic leg 18 may be adapted for a fine adjustment in relation thereto.

The upper stage H-frame uprights are furnished with expanding spigots 21, preferably of the known type described in British Patent Specification No. 368,474, so that they may be mounted in the upper extremities of the lower stage H-frame uprights in the manner depicted in Figs. 1 and 4. The lower stage H-frame uprights are fitted with welded sockets 22 of a size appropriate to receive the shank of the spigot 21.

The putlogs 16 used to support the ledger members 13 are preferably provided with slidable brackets 161 which can be adjusted to suit the spacing of the members 13.

The dimensions of the H-frames and the weight of these and the other members of the structure are preferably such that each component unit can comfortably be lifted and handled by one man. For example, H-frames six feet high and four feet wide, made from two-inch tubing for the upper stages and two-and-a-half inch tubing for the lowest stage, are found to satisfy this condition, so that one man can erect a two-stage scaffold unaided.

What we claim as our invention and desire to secure by Letters Patent is:

1. A scaffold structure composed of a series of prefabricated H-frames arranged in alignment in spaced parallel planes, each H-frame constituting a pair of vertical columns of tubular metal tied by a single cross-member permanently connected therebetween, a pair of brackets incorporated in each H-frame, and ledger members connecting adjacent H-frames and resting on and

secured to said brackets, the arrangement being such that the structure may be extended upwardly to form successive upper stages by erecting additional prefabricated H-frames with their uprights mounted on the upper extremities of the lower stage of H-frames.

2. A scaffold structure as claimed in claim 1, comprising putlogs carried across and fixed to the ledger members.

3. For use in constructing a scaffold structure, a unit composed of two spaced parallel tubular metal uprights, a single cross-member of tubular metal integrally welded thereto to form an H-frame, and brackets integrally attached to the frame for attachment of ledger members.

4. A scaffold structure as claimed in claim 1, wherein the brackets of the H-frames are so located that putlogs laid across the ledgers will lie in the same horizontal plane as the cross-members of the H-frames.

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