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C. C. PIMM

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SCAFFOLDING

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2 Sheets-Sheet 2

Fig. 3.

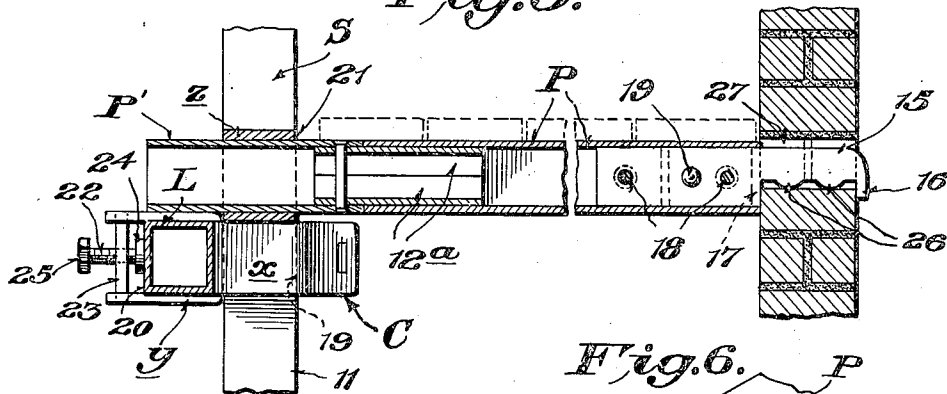


Fig. 6.

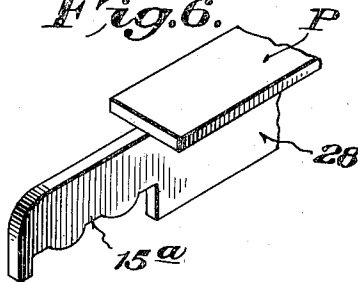


Fig. 7.

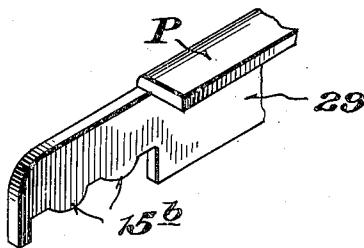
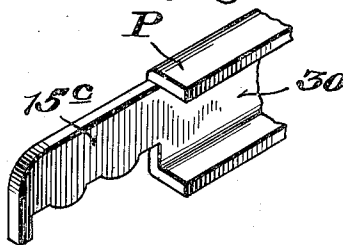


Fig. 8.



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SCAFFOLDING

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8 Claims. (Cl. 304—10)

The present invention relates to scaffolding used particularly in the construction and repair of buildings and the like.

It is well known in the art to provide a scaffolding construction comprising parts which may be assembled or dismantled for reuse and which parts may be stored and then selected to meet particular requirements or conditions, thus permitting a degree of ease in erection, economies in materials and in handling, and providing a minimum of obstruction to light, air and view over the old method of building scaffolding from lumber to suit only one requirement or use.

The objects of the present invention are to improve and further simplify the construction of scaffold elements or parts so as to further reduce the time and expense incident to their production, assembly, and disassembly; to provide elements or parts which may interlock to extend the length of said parts and which may be interchanged for different purposes in the scaffold construction, thus reducing the number of parts required to be stocked for meeting different conditions of use or scaffolding; to provide putlogs which may be extensible, thus reducing the number of putlogs needed to be stocked for different conditions of use; to provide putlogs with clincher plates of greater strength and durability, the clincher plate being improved to provide rocking surfaces enabling the easy removal of the clincher plate from between brick joints without marking the bricks; to provide a unitary adjustable holding means for attaching the putlogs and ledgers to the supporting poles or standards; to provide such parts of such strength and durability as to insure their safety and longevity for use.

With the above and other objects in view which will appear from the following detailed description, the invention resides in the sundry details, combination, and arrangement of parts hereinafter more fully described and pointed out in the appended claims.

In the drawings, which show the embodiment of the invention as at present devised:

Fig. 1 is a perspective view of a scaffolding constructed and assembled in accordance with the present invention with parts broken away to show the detail of construction;

Fig. 2 is a horizontal sectional view taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken substantially on line 3—3 of Fig. 2 in showing the clincher plate in position in a wall construction;

Fig. 4 is a top plan view of the putlog and ledger plate holding means;

Fig. 5 is a side view of the holding means shown in Fig. 4; and

Figs. 6, 7, and 8 illustrate modified forms of putlogs having the clincher plate integral therewith.

Fig. 9 is a fragmentary view illustrating the assembly of the spring detent means.

The scaffolding of the present invention is an all-metal scaffolding, made up of hollow material (preferably rectangular in cross-section) of sectional lengths which are placed end to end and interlock to provide the lengths that may be required for standards or upright poles S, ledger boards L, and putlogs P. The hollow elements may be, and preferably are, of the same cross sectional dimension so that they may be used for the various purposes of scaffolding, such as uprights or ledger boards, and in some instances has extensions for putlogs, thus reducing the number of parts needed to be stocked for different purposes and of different lengths. The invention contemplates double poled scaffolds as well as single poled scaffolds using putlogs, the latter having been selected for purposes of illustration.

The scaffolding consists of a plurality of base blocks 10 of such dimensions as provide a relatively broad base support upon which rest the standards or upright poles S. Each of these base blocks has a socket 10^a therein in which there may be inserted the first upright section 11, known as a "starter pole." The uprights S are built up to the height required by superimposing end-to-end sections 11, similar to the starter pole, the adjacent ends of the sections 11 being interengaged by a telescoping joint. This joint is, preferably, afforded by providing one end of each section 11 with a reduced portion 12 complementary with the interior of the sections 11 so as to have a snug sliding fit into the other end of an adjacent section 11. In this manner, the edge of one section abuts against the edge of an adjacent section having the reduced projection 12 extending therefrom, the projection 12 extending into the end of its adjacent section 11 sufficient to give the built-up pole or upright rigidity and support against bending or lateral displacement. In practice it is intended that the projection 12 be between 12 and 15 inches long, in order to give the required reinforcement and rigidity to the parts.

These projections 12 are, preferably, provided by employing two channel members a and b, having their side edges abutting as shown particularly in Fig. 1 so as to form a hollow section having substantially the inside measurements of the hollow sections 11, an end portion of the extension 12 (built-up as above stated) being inserted in one end of a section member 11 and held in place by one or more transversely extending rods or bolts 13. It is preferred that these members 13 be rods whose ends are up-set, peened, or riveted and lie flush with the surface of the sections 11 or the surface of the projection 12, as the case may be.

To lock the interengaging ends of the sections 11 together against possible disengagement, the

members *a* and *b* of the extension 12 may have, disposed within the area defined by their channels, a spring pressed detent 14 which extends through an aligned opening in the wall of the extension 12 as well as in the wall of the inter-engaging end of an adjacent section 11. As one form of detent, a leaf spring *L* is secured at one end within the projection 12 and has on its other end the locking pin or detent 14.

As my poles or standards *S*, with their bases 10, are arranged at spaced distances apart as required in any given case, and are tied together by horizontally extending ledger boards *L* to which they are clamped so as to give rigidity and lateral support to the standards *S*. The ledger boards *L* are built up from sections 11 in the same manner as the standards *S*, but also may be of long lengths, but this is not preferred for the reasons above stated.

In the drawings there is shown putlogs *P*, each having one end anchored on the standards *S* and ledgers *L* and their other end provided with a clincher plate 15, which is of dimensions such as enable it to be inserted into a dry vertical joint between adjacent bricks or blocks forming the walls. As shown in Fig. 3, the free end of the clincher plate 15 is provided with a downwardly projection 16, which forms a hook extending downwardly in back of a brick and thereby locks the putlog and scaffolding in position with the clincher plate resting on top of the brick. The dry joints for the insertion of the clincher plate are provided in the wall by the mason as the construction proceeds.

The putlogs *P*, in addition to serving as a brace for the standards or poles *S*, are the bearers for supporting the scaffold planks (shown in dotted lines, Fig. 3) which provide the walks, platforms, and runways of the scaffolding. Since the walks, platforms, and runways required for different constructions need to be of varying widths, it is necessary to stock a great number of putlogs of different lengths. The present invention contemplates the provision of putlogs of the minimum standard length and of extensions for the putlogs, similarly as in connection with the standards *S*.

These putlogs *P* each comprise a metal hollow member 15, preferably square or rectangular (as are the sections 11 and the ledgers *L*) having a flat top surface so as to give substantial support to planks placed thereon and to reduce their tendency to slide thereon.

The clincher plate 15 extends for a desirable distance into one end of a putlog *P* and is tightly held in position therein by filler blocks or plates 17 which fill the spaces between the opposite sides of the clincher plate and the interior walls of the hollow putlog *P*, one or more securing bolts or rods 18 extending through the sides of the putlog and said filler plates to secure the assembly of the putlog. The fillers 17 may be initially secured to the opposite sides of the clincher plate by rivet or bolt 19 and inserted in position, the rods 18 then being inserted. The other end of the putlog is left open, as in the case of the standards *S*, to receive the reduced projection 12^a or a putlog extension section *P'*. The extension section *P'* is of the same material and of the same cross-sectional dimensions as the putlog *P*; and the extension 12^a is the same as the extension 12 of the standards *S*. While the putlog extension section *P'* is shown as of one length in Figs. 1, 2, and 3, it is contemplated by the invention to provide other extensions of dif-

ferent lengths for meeting various requirements in scaffolding set-ups as set forth above.

The standards or poles *S*, the ledger boards *L*, and the putlogs *P* are adjustably clamped together by a unitary compact clamping device *C*, which eliminates a number of loose clamping parts more readily susceptible of being lost and which, due to its construction, clamps the three elements of the scaffolding (the poles *S*, ledgers *L*, and putlogs *P*) together at approximately the same point, thus affording rigidity and stability, where such rigidity and bracing is most desirable.

The clamp *C* of the present invention broadly consists of a member having three sockets, jaws or openings therein 19, 20, and 21 through which may extend the standard *S*, the ledger *L*, and the putlog *P*, respectively, and clamped therein by suitable means, such as binding screws 22, one for each of said sockets. Specifically, the clamp *C* comprises three members *x*, *y*, and *z*, each having an opening therethrough and arranged so that the member *x*, which engages about the standards *S*, is in the same horizontal plane with the member *y* which is to embrace or receive the ledger *L*, the member *z* lying either above or below the member *x*. These members may be cast together in an integral piece and may be formed of sheet material. When formed of sheet material these members are of substantially U-shaped form, the closed or loop ends of the members *x* and *y* linking each other and secured together at their loop ends by a rivet or other suitable means, while the member *z* has its closed or loop end secured to a plate or strap *t* secured to one of the arms of the member *x*. Cross heads 23 are rigidly secured and connected to the opposite arms of the members *x*, *y*, and *z*, respectively, and each cross head has a threaded opening therein through which the bolt 22 is threaded.

Each of the bolts 22 preferably has an enlarged bearing surface 24 on its binding end and an angular head 25 on its opposite end to receive a suitable wrench or tool for rotating the same. The member *x* is so formed as to provide four bearing surfaces to substantially embrace all sides of a standard *S* which extend therethrough and the arms of the member *x* are formed as shown particularly in Fig. 4 so that the binding member 24 on the screw 22 thereof will lie opposite an edge or corner of the standard *S* and is provided with a V-shaped binding surface 24^a so as to embrace and extend around the opposing corner of the standard *S* to increase the binding surface area.

The clincher plate 15 is provided on its under-surface between the hook end 16 thereof and the putlog *P* with two spaced apart convex projections 26. These projections provide rockers enabling the putlog and its clincher plate to move up and down for a slight distance by alternately fulcruming on the projections 26 and thereby loosening the clincher plate from any mortar or any other material which may bind it in the slot or opening 27 usually provided therefor at the joints of building blocks or bricks. The provision of two of said rocking surfaces enables such rocking movement on different points of fulcrum, so as to readily enable the loosening of the clincher plate in the slot 27 and its removal therefrom without defacing the edges of the adjacent bricks and, further, gives two points of bearing surface for supporting the load on the putlog and thereby lessening the liability of cracking the brick upon which the clincher plate rests.

The putlogs may be modified, as shown in Figs. 75

6, 7, and 8, to provide the clincher plates integral therewith. For instance, in Fig. 6 the putlog is shown as being constructed of T-iron 28 with the vertical leg of the T at one end of the putlog providing the clincher plate 15^a. In Fig. 7 the putlog is formed of an angle iron 29, the clincher plate 15^b forming an integral extension from the end of one of the angular surfaces of the putlog. In Fig. 8 the putlog P is shown as comprising a channel iron 30, one surface of the channel iron having its end extended to form the integral clincher plate 15c.

The scaffolding as provided by the present invention is a material improvement in the art in that it simplifies the erection of scaffolding; provides fewer connecting parts to be handled or manipulated by eliminating splicing clamps and the multiplicity of other clamps incident to separately holding the ledges, putlogs, and other braces to the standards or poles; is more rigid and durable than other types of scaffolding and requires the stocking of less parts for meeting different requirements of scaffolding set ups.

Having thus described the invention in its preferred form and the manner in which it is to be performed, it is to be understood that the invention is not to be limited to the exact details shown and described, because variations may be made therein as are embraced within the scope of the appended claims.

I claim:

1. In a scaffolding, sectional extensions of hollow metal rectangular in cross-section for forming poles, and ledgers of the scaffolding, each of said extension lengths having one end opened and the other end formed with a reduced projection adapted to be inserted with a sliding fit into the said opened end of an adjacent extension, said projection being of a length to extend for a distance within the adjacent extension to form a rigid joint therewith and permitting the edges of adjacent extensions to abut each other, said projections being composed of a pair of channeled members arranged to have their channeled surfaces opposing and their adjacent edges abutting, and stay rods connecting the channel members and to their sectional extension.

2. In a scaffolding, a putlog comprising a hollow metallic section rectangular in cross-section adapted to be connected at one end with a part of the scaffold, a metallic clincher plate having one end extending for a distance into and filling one end of said section and having its other end extending from said section to be insertable in an opening in a wall, whereby the clincher plate is held in position against twisting and splitting of the end of said putlog.

3. In a scaffolding, a putlog comprising a hollow metallic section rectangular in cross section adapted to be connected at one end with a part of the scaffold, a metallic clincher plate extending from the other end of the putlog and whose dimensional width normally lies in a substantially vertical plane to be inserted in a temporary opening in a wall, said clincher plate extending into said tubular putlog for a distance, filler blocks between the interior wall of the putlog and the clincher plate, and stay rods extending through the clincher plate, filler blocks and the walls of the section, whereby the clincher plate is permanently fastened in position against turning in the end of said putlog.

4. A scaffold structure comprising poles, ledger

boards or braces and putlogs or platform supports which are built up or assembled from preformed units, substantially all of said units consisting of hollow metal elongated sections of uniform length and rectangular in cross-section; clincher plates secured to one end of certain of said sections to provide putlog units; means enabling all of said sections to be placed end to end and providing an interchangeable non-rotatable rigid slip joint, said joint means consisting of an opening, angular in cross section, in one end of all unit sections and a reduced projection extending from the other ends of all sections, except the putlog units, and complementary to said openings in the ends of said sections to have a sliding fit thereinto including the putlog units whereby the poles, putlogs, ledger boards or braces may be extended and built-up by end to end arrangement of said unit sections to form a conventional scaffold, thus eliminating the necessity for a large number of different scaffold elements of different lengths and sizes; and clamping units adapted to receive and secure the poles, putlogs and ledger boards together at their juncture in proper relation one with respect to the other.

5. In a scaffold structure as set forth in claim 4, there being yieldable detent means for latching the interengaging ends of said unit sections together and carried by one end of a unit section to interengage and latch in an opening in the end of an adjacent section, when the sections are fitted together, for preventing relative endwise movement of interengaged sections.

6. In a scaffolding, a putlog comprising hollow metallic sections rectangular in cross section and adapted to be connected end to end to increase the length of the putlog and disconnected and removed to diminish the length of the putlog, adjacent ends of said sections being formed one with an axial opening therein angular in cross section and the other with a complementary projection dimensioned to have a sliding fit in said opening, a clincher or anchor plate mounted on one end of one of the sections to engage the wall of a building structure.

7. In a scaffold structure as set forth in claim 6, yieldable detent means for latching the interengaging ends of the putlog sections for preventing relative endwise movement of the interengaged sections, said detent means being carried on the end of one section to interengage and latch in an opening in one end of an adjacent section when the sections are fitted together.

8. In a scaffolding, a unitary clamp unit having openings therein to receive and embrace scaffolding members such as a pole, ledger, and putlog; said clamp unit comprising a pair of substantially U-shaped elements arranged back to back and rigidly secured together at their looped ends and each closed at its free ends by a cross-bar affixed to said free end of said element, one of said elements being arranged to embrace a vertical pole section, another being arranged to embrace a ledger member, the third being offset laterally and vertically with respect to said first and second mentioned U-shaped elements to lie above the same and to receive and embrace one end of a putlog, and binding screws threaded respectively in each cross-bar to engage a scaffolding member embraced by its U-shaped element.

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