Oct. 8, 1940. W. F. JENNENS 2,217,055

SCAFFOLD

Filed Dec. 15, 1938 2 Sheets-Sheet 1

Fig. 1.

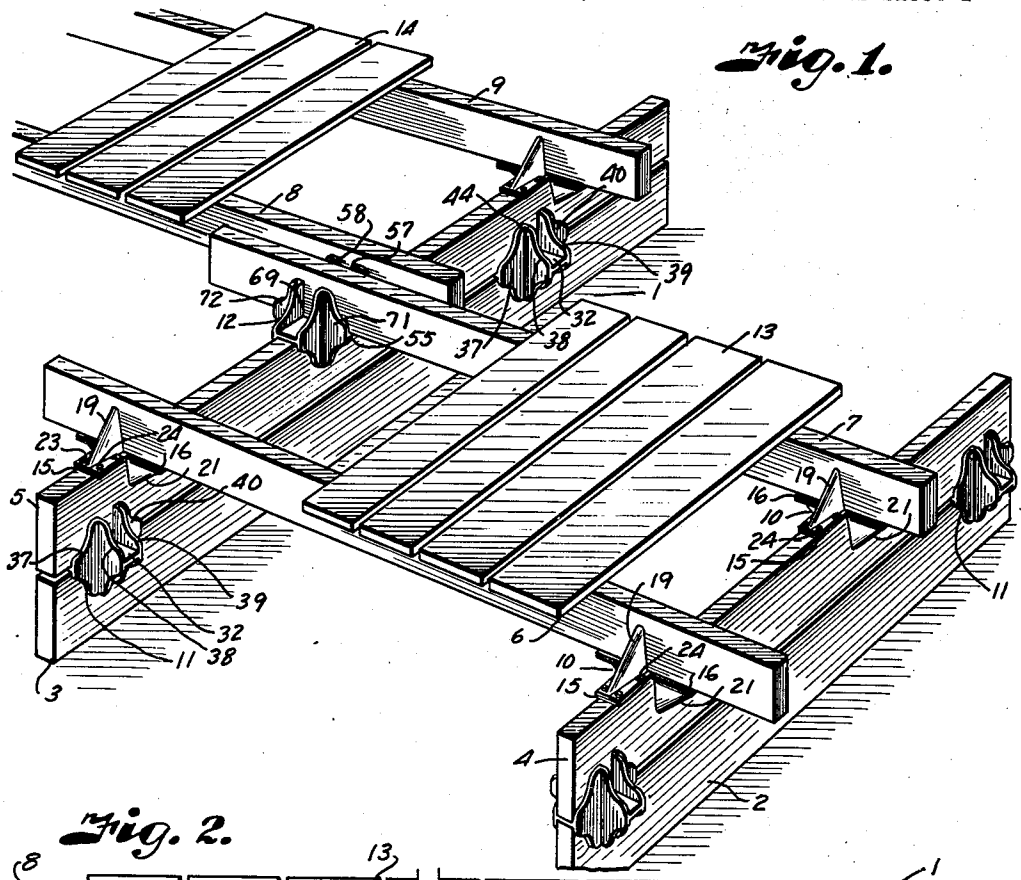


Fig. 2.

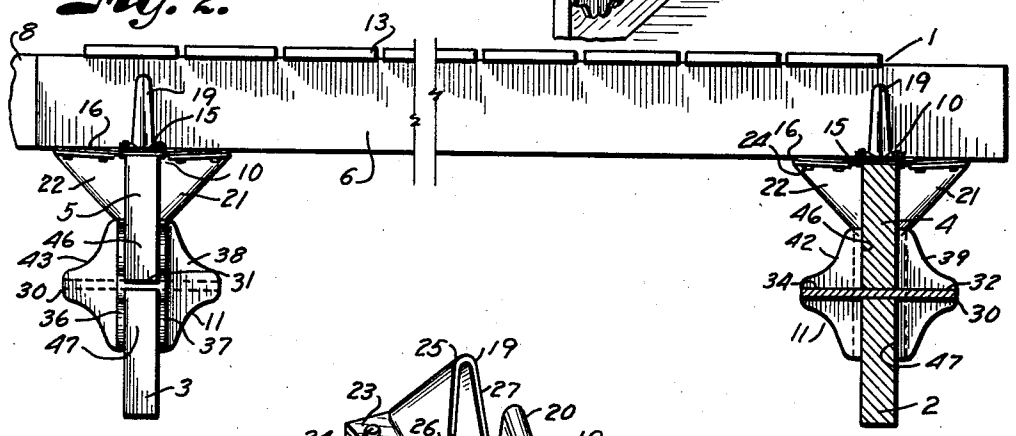
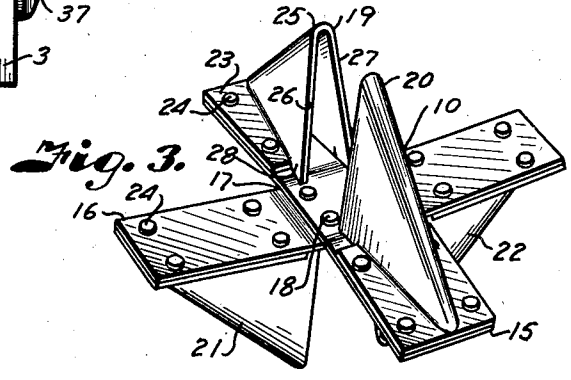


Fig. 3.



INVENTOR
William F. Jennens.
BY
ATTORNEY

Oct. 8, 1940. W. F. JENNENS 2,217,055

SCAFFOLD

Filed Dec. 15, 1938 2 Sheets-Sheet 2

Fig. 4.

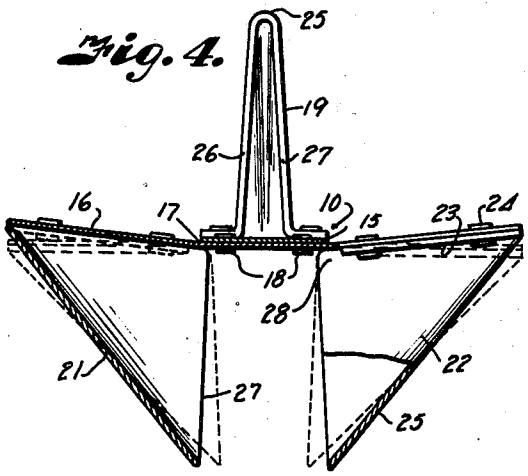


Fig. 5.

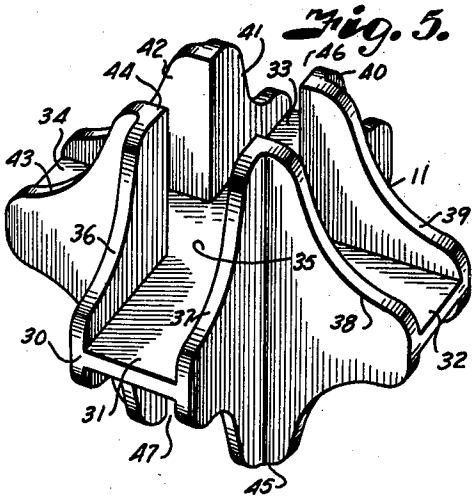


Fig. 6.

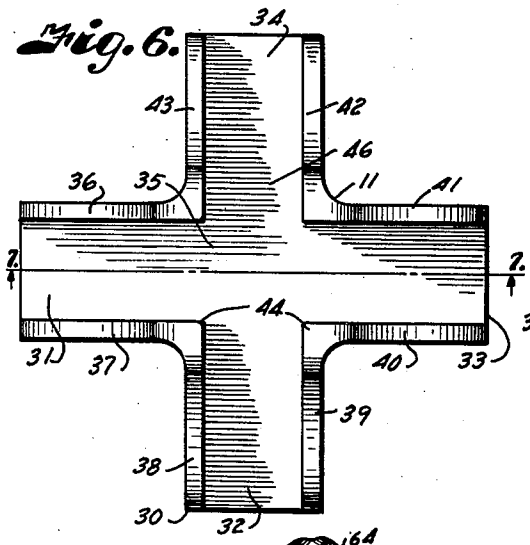


Fig. 7.

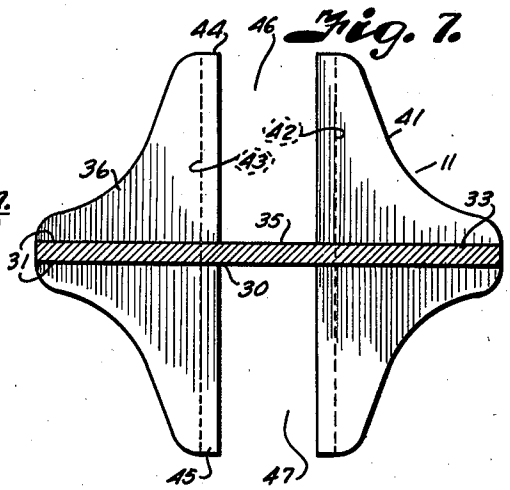


Fig. 8.

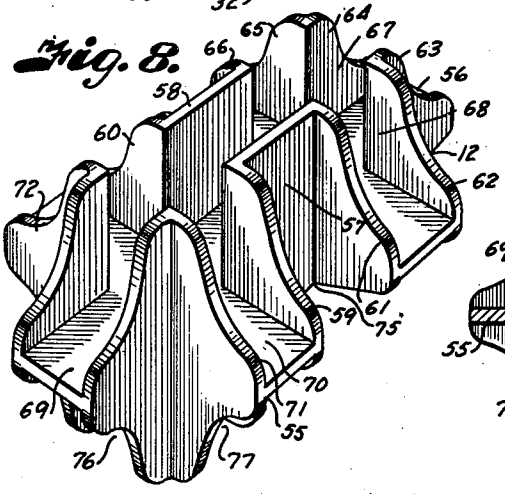
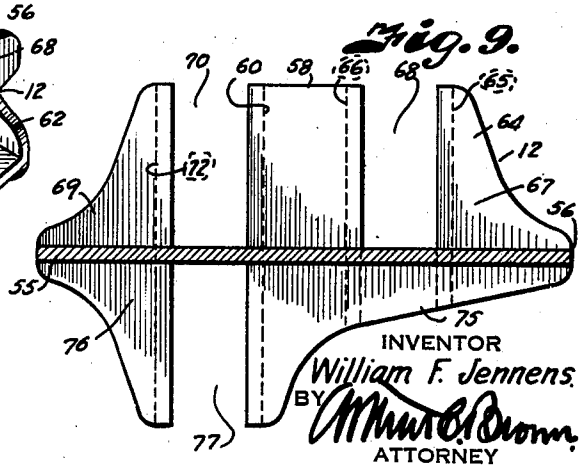


Fig. 9.



INVENTOR
William F. Jennens
BY
Merritt B. Brown
ATTORNEY

Patented Oct. 8, 1940

2,217,055

UNITED STATES PATENT OFFICE

2,217,055

SCAFFOLD

William F. Jennens, Kansas City, Mo.

Application December 15, 1938, Serial No. 245,901

10 Claims. (Cl. 304—40)

This invention relates to scaffolds, and more particularly to scaffolds of elevated platform type for supporting workmen and materials in building operations.

In building and building repair operations workmen encounter many difficult working conditions. For example, comparatively low ceilings just out of reach of workmen standing on the floor, sloping ceilings that progress upwardly toward a dome or other superstructure, unusually high walls and the like all make more difficult the operations of workmen on such structures.

The principal object of the present invention is, therefore, to facilitate the work of workmen in building and building repair operations.

Other important objects of the present invention are to provide for easily, quickly and efficiently interconnecting structural members of scaffolds; to provide for extending portions of a scaffold in various directions and to various elevations depending upon the work to be done in building operations; to provide for clamping scaffold structural members relative to each other in response to interconnecting the same; to provide improved forms of saddles for interconnecting the scaffold structural members; to provide extended bearing portions or seats on the saddles effecting a hinged or movable leverage action and being capable of taking advantage of the weight of structural members engaged therewith to hold the structural members in erected position; to incorporate novel supporting and clamping features into the saddles; to provide improved arrangements of the saddles relative to the scaffold structural members; and to provide durable, economical and interchangeable saddles for carrying out the objects for which they were designed.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a scaffold constructed in accordance with the present invention and having my novel saddles incorporated therein.

Fig. 2 is an elevation taken from one end of a series of spaced ledgers, one pair of ledgers being shown in cross-section to more clearly illustrate the construction of one of the saddles and its relation to the ledgers.

Fig. 3 is a detail perspective view of my preferred form of saddle.

Fig. 4 is an elevation partly in section and partly broken away to clearly illustrate the construction of my preferred form of saddle.

Fig. 5 is a detail perspective view of a modified form of saddle embodying the features of the present invention.

Fig. 6 is a plan view of the saddle illustrated in Fig. 5.

Fig. 7 is a section through the saddle illustrated in Fig. 6 on the line 7—7 thereof.

Fig. 8 is a detail perspective view of a further modified form of saddle embodying the present invention.

Fig. 9 is a central longitudinal section through the saddle illustrated in Fig. 8.

Referring more in detail to the drawings:

1 designates a scaffold embodying the features of the present invention which preferably includes ledgers 2—3 and 4—5 which support sills 6 and 7 in transverse relation thereto and form a support for one end of extension sills 8 and 9 in transverse relation to the ledgers 2, 4 by means of saddles 10, 11 and 12.

The ledgers, sills and boards 13 and 14 mounted on the sills are conventional and form structural members for the scaffold.

In Fig. 3, my preferred form of saddle 10 is illustrated, which preferably consists of a body member comprising extended bearing portions 15 and 16. In this instance, the bearing portions are preferably in the form of diverging elongated metal plates which are arranged preferably in right angular relation to each other, and cross at a common central point 17 where they are secured together in a suitable manner as by rivets or the like 18. The outer ends or wings of the plates 15 and 16 extend outwardly from the common point 17 at a distance sufficient to engage a substantial area of a ledger or sill to be interconnected with another ledger or sill in such a manner as to allow the weight of the structural member engaged therewith to bind the saddle to the structural member to which the first-named structural member is to be connected.

Mounted on the plates 15 and 16 at the ends and at opposite sides of the plates respectively, are jaws or clamping members 19—20 and 21—22, the clamping members preferably being formed of sheet or like metal and provided with base flanges 23 secured to the plates in a suitable manner, as by rivets 24. Extending from the flanges in centrally disposed relation thereto are hollow duplicate projections having top edges 25 which project upwardly and inwardly relative to each other from opposite ends of the plates and terminate in downwardly extending working

edges 26 and 27, the edges 26 and 27 being joined at their upper ends and being spaced at their lower ends. At the lower ends of the edges 26 and 27, the projections terminate in substantially triangular wings 28 which overlie the common central crossing point of the plates or crossing bearing portions of the body member of the saddle.

While it is apparent that a ledger or the like may be placed, for example, upon the plate between the clamping members 19 and 20 extending upwardly from the other plate 15 and, while the clamping members prevent tilting of the ledger so supported, it has been found desirable to provide for positively clamping the ledger in the saddle and, to this end, the plates 15 and 16 are movably arranged at opposite ends of the common center crossing point thereof to provide in effect a hinging action of the bearing portions, as particularly illustrated in Fig. 3.

In this instance, the ends of the plate 15 are preferably turned downwardly, and the ends of the plate 16 are turned upwardly. However, it is obvious that the same result may be obtained by forming the wings as separate pieces and connecting them to the crossing point by conventional hinges or the like.

Thus, when the saddle itself is placed on a ledger, the ledger being positioned in engagement with the under face of the plate 15 between the clamping members 21 and 22 on the plate 16, and when a ledger or sill is mounted on the plate 16 between the clamping members 19 and 20 on the plate 15, the weight of the upper sill straightens or flattens the bent or in effect hinged ends of the plate 16 to force the clamping members 21 and 22 inwardly into clamping or binding engagement with a ledger therebetween, the downturned ends of the plate 15 also being flattened to force the clamping members 19 and 20 thereon inwardly relative to each other into clamping or binding engagement with a sill or the like positioned therebetween. Such an arrangement is particularly illustrated in Fig. 1, wherein the ledger 4, for example, is positioned between the clamping members 21 and 22 on the plate 16 and wherein the sill 6 is positioned between the clamping members 19 and 20 on the plate 15 to interconnect and bind the same relative to each other.

Where it is desirable to raise the scaffold above a floor a relatively short distance, it is often sufficient to provide a scaffold of a height corresponding to a pair of superimposed ledgers. To this end, the modified form of saddle 11 illustrated in Fig. 5 is provided, which preferably consists of a body member 30 having top and bottom bearing portions 31, 32, 33, and 34 extending radially from a common center point 35 in the body member and on opposite sides thereof distances sufficient to engage with and upon sills or ledgers in such a manner as to take advantage of the weight of the supported structural member in overcoming any tendency of the members to tilt relative to each other.

Guideways are provided for the structural members by providing pairs of duplicate wing-like flanges 36—37, 38—39, 40—41, and 42—43 on each side of the radially extending bearing portions, which flanges preferably initiate at the outer ends of the bearing portions on opposite sides thereof and extend inwardly, upwardly and downwardly relative to each other to terminate at duplicate top and bottom junctures 44 and 45 forming spaced oppositely disposed corners which bound the common center point of the saddle and which are spaced uniformly relative to each other in such a manner as to allow passage or seating of a structural member between the corresponding pairs of wings.

Thus, upper guideways 46, Fig. 7, are provided by the saddle for seating a ledger or sill, the saddle itself being mounted on a ledger or sill by means of lower guideways 47, and sills or ledgers may also be applied to the saddle in perpendicular relation to the first-named ledgers and sills by turning the ledgers or sills in right angular relation to the guideways particularly described.

An arrangement in which the modified form of saddle may be utilized to advantage is illustrated in Fig. 1, wherein the saddle 11 is seated on a ledger 2, and the ledger 4 is seated on the saddle 11 in parallel relation to the ledger 2, it being apparent, however, that the saddle may just as easily form a support for a ledger or sill in transverse or perpendicular relation to the ledgers 2 and 4.

In Figs. 8 and 9, a further modified form of saddle 12 is illustrated, wherein a body member 55 is provided corresponding substantially to the form of body member illustrated in Fig. 5. In this instance, however, an extension 56 is provided on one end of the body member by extending flanges 57 and 58 laterally from the guide wings 59 and 60 of the body member 55. One side of the body member 55, preferably the upper side, is then substantially duplicated to provide outstanding wings 61, 62, 63, 64, 65, and 66 in diverging angularly related pairs spaced from each other to form guideways 67 and 68 therebetween, the guideway 67 being a continuation of the guideway 69 in the body member 55, and the guideway 68 extending in parallel spaced relation to the guideway 70 formed between the wings or walls 59, 72 and 60 of the body member 55 as distinguished from the extension 56.

An arrangement for utilizing a saddle of the modified form of invention illustrated in Figs. 8 and 9 is also shown in Fig. 1, wherein the saddle 12 is mounted on the upper edge of the ledger 5 in spaced relation to the saddle 10. The left hand end, Fig. 1 of the sill 7 is mounted on the saddle 12 in the guideway 70 in transverse or perpendicular relation to the ledger 5, and the right hand end, Fig. 1 of the sill 8 is mounted in the guideway 68, Fig. 8, of the saddle in parallel relation to the sill 7 and in perpendicular relation to the ledger 5.

Since the saddles of the character illustrated in Figs. 8 and 9 are normally employed to form elevated extensions for the scaffold, duplication of the upper side of the extension for the under side of the saddle has been found unnecessary. In order to save cost and weight of materials, it has been found desirable to omit a guideway in the bottom face of the extension transverse to the central guideway on the upper side of the saddle, and to this end, the wings 75 on the lower surface of the saddle are extended laterally to the end of the guideway 76 on opposite sides thereof to form a continuous guideway, broken only by the guideway 77 on the lower face of the saddle.

In assembling a scaffold of the character described, ledgers 2 and 3 may be placed on their edges in parallel relation, as shown in Fig. 1. Saddles 11 of the character illustrated in Fig. 5 may then be mounted on the ledgers, and ledgers 4 and 5 may be mounted, for example, in the guideways 46 of the saddles.

A sub-structure is thus provided having a height corresponding to the width of a pair of ledgers of any desirable size, and saddles constructed in accordance with the form of invention illustrated in Fig. 3 may then be placed on the upper edges of the ledgers 4 and 5. Sills 6 and 7 may then be placed in the guideways formed between the clamping members of the upper side of the saddles, the weight of which sills flatten out the plates to bring the clamping members toward each other to bind and secure the ledgers and sills together. Suitable boards 13 may then be applied to the sills to form a working surface upon which workmen may be supported with safety.

If the contours or shape of the room so require, an extension may be provided for the scaffold by applying a saddle of the character illustrated in Figs. 8 and 9 to the upper edge of the ledger 5, for example, the saddle 12 supporting one end of the sill 7. A sill 8 may then be applied to the guideway 68 of the saddle 12, and another saddle 10 may be applied to the ledger 5 in spaced relation to the saddle 12 for supporting and clamping a sill 9 to the ledger.

The other ends of the sills may be supported in a manner similar to the outer ends of the sills 6 and 7 and boards 14 may be applied to the sills 8 and 9 in a suitable manner to support workmen in safety.

It is thus apparent that a scaffold has been provided which may be elevated by mounting ledgers upon each other through the use of saddles in accordance with my invention, and that extensions for the scaffold in various directions, depending upon the requirements of a room or building in which work is to be done, may be easily made.

It is also apparent that the scaffold may be easily torn down without damage to the boards, sills or ledgers, and that the structural members of the scaffold may be used over and over again without damage thereto.

It is also apparent that the saddles constructed in accordance with my invention may be interchanged with each other; that they are durable, economical and efficient and easily adapted to many needs in scaffold structure to facilitate the work of workmen in building and building repair operations.

What I claim and desire to secure by Letters Patent is:

1. In a scaffold comprising supporting and supported structural members, a saddle including a body member having oppositely disposed bearing portions arranged to seat upon the supporting member and seat said supported member respectively, said bearing portions being oppositely bent and extending radially from a common point in the body member a distance sufficient to allow the weight of the supported structural member to bend and bind the saddle to the supporting structural member.

2. A saddle for a scaffold of the character described including a cross-like body member, said body member comprising a pair of crossed hingedly interconnected plates, and means on said member in oppositely disposed relation to each other and to said member forming guideways for receiving portions of scaffold structural members to tie said members together.

3. A saddle for a scaffold of the character described including a cross-like body member, and means on said member in oppositely disposed relation to each other and to said member forming guideways for receiving portions of scaffold structural members to tie said members together, said means comprising spaced clamping members engageable with said members in response to application of the saddle thereto and the members to the saddle.

4. A saddle for a scaffold of the character described including a cross-like body member comprising a pair of interconnected plates, and means on said member in oppositely disposed relation to each other and to said member forming guideways for receiving portions of scaffold structural members to tie said members together, said means comprising spaced clamping members engageable with said members in response to application of the saddle thereto, the ends of said plates being bent in oppositely disposed spaced relation to each other to respond to said application of the structural members thereto by becoming flattened to move the clamping members into clamping engagement with the structural members.

5. A saddle for a scaffold of the character described including a body member of cross-like configuration, wings extending from said body member on opposite sides thereof and in spaced relation to each other to form interconnecting guideways for structural members of the scaffold, and an extension on one end of the body member having substantially duplicate guideways relative to the guideways of said body member.

6. A saddle for a scaffold of the character described including a body member of cross-like configuration, wings extending from said body member on opposite sides thereof and in spaced relation to each other to form interconnecting guideways for structural members of the scaffold, and an extension on one end of the body member having substantially duplicate guideways relative to the guideways of said body member, the lower side of said extension having spaced wings extending to the outer end thereof and forming a continuation of one of said body member guideways.

7. In a saddle of the character described, a body member having diverging hingedly connected bearing portions, and clamping means on said bearing portions.

8. In a device of the character described, a clamp composed of a body member having oppositely directed wing portions hingedly connected to said body member, and jaws on the wing portions for clamping a structural member placed therebetween in response to the weight of said structural member.

9. In a device of the character described, a clamp composed of a body member having oppositely directed wing portions hingedly connected to said body member, and jaws on the wing portions on opposite sides of the body member for clamping a structural member placed therebetween in response to the weight of said structural member.

10. In a device of the character described, a clamp composed of a body member having hingedly connected wing portions, and jaws on the wing portions for clamping a structural member therebetween in response to the weight of the structural member on the body member.

WILLIAM F. JENNENS.