Feb. 7, 1950 A. J. NELSON 2,496,556

SCAFFOLD SUPPORTING BRACKET

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Fig. 1.

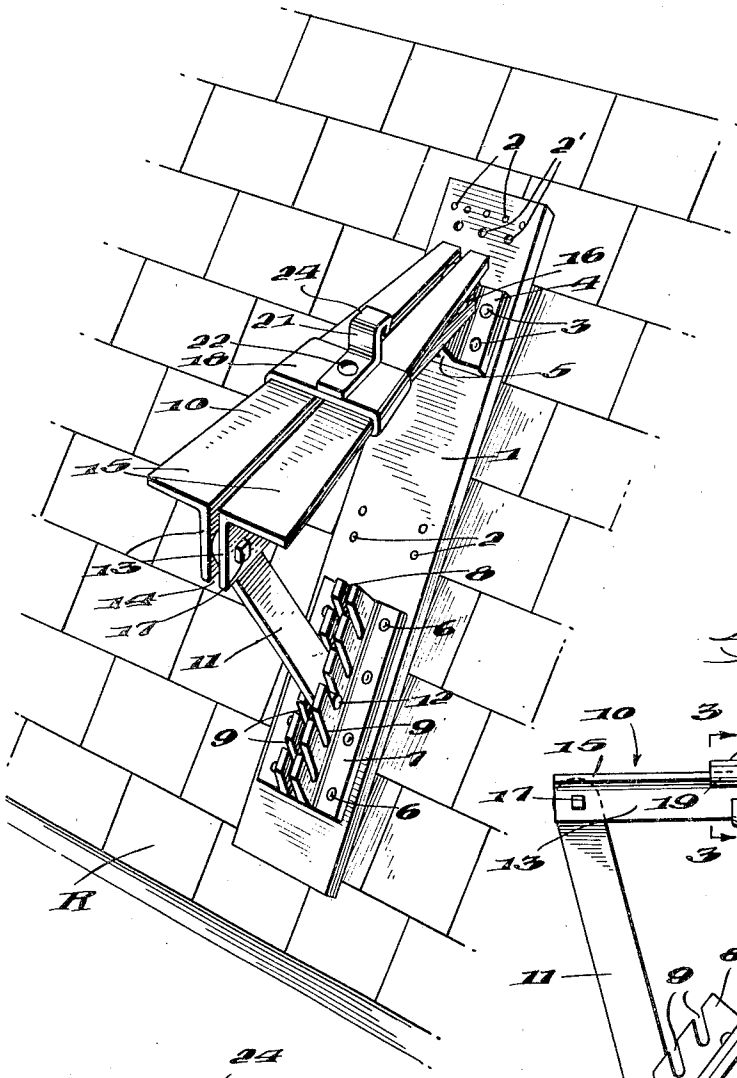
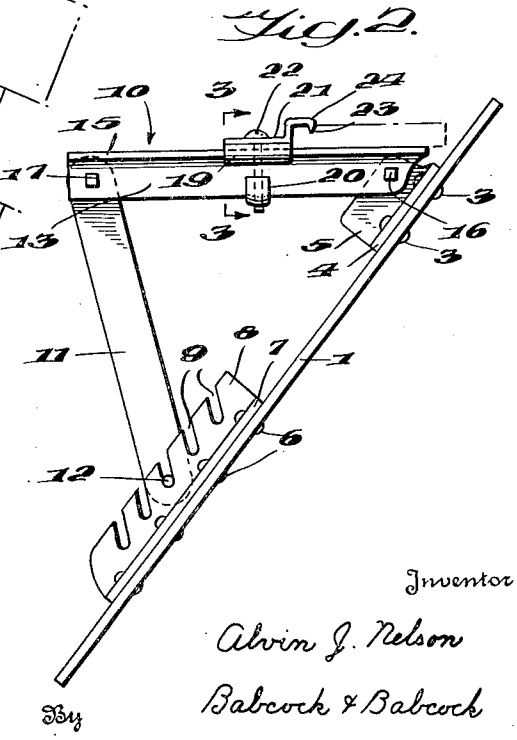


Fig. 2.



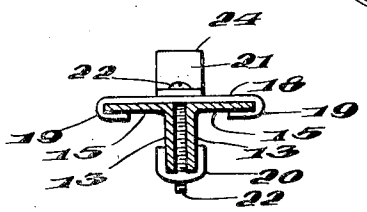


Fig. 3

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SCAFFOLD SUPPORTING BRACKET

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5 Claims. (Cl. 248—237)

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This invention relates to scaffold supporting brackets for supporting scaffold boards or members on sloping roofs or surfaces, and comprises in its construction a scaffold supporting arm on which is linearly slidably disposed a clamp assembly including an adjustable jaw for engaging and firmly retaining the scaffold board or other element in position on said arm.

The broad primary object of the invention is to provide such a device which is extremely strong in construction, unusually safe, simple and reliable in operation, and which may be economically manufactured largely from usual commercially available structural steel or iron elements or parts.

Other more specific objects are: to provide in such a device a novel clamp construction and association thereof with the scaffold supporting arm whereby a single adjusting element may be actuated to simultaneously lock the clamp in any desired position of adjustment on the arm and urge the adjustable jaw thereof into operative clamping engagement with a scaffold board or member resting on said arm; and to provide such a device wherein the clamp in addition to supporting the clamp jaw and guiding same in its linear adjustment will serve to maintain the various component parts of the supporting arm in properly assembled relation in the event the elements normally relied upon for this function give way.

Further objects and advantages will be apparent from the following detailed description of a preferred embodiment of the invention, together with the accompanying drawings thereof, in which:

Figure 1 represents a perspective view of a scaffold supporting bracket embodying the invention, as same appears when applied to a shingle roof, prior to application of a scaffold or staging board thereto;

Figure 2, a side elevation of the scaffold supporting bracket shown in Figure 1, showing same in operative position and, in broken lines, a scaffold board positioned thereon; and

Figure 3, a cross section on the line 3—3 of Figure 2, looking in the direction of the arrows.

Referring now in detail to the accompanying drawings, the numeral 1 therein designates a base which is preferably formed of metal such as steel, though it may be of other suitable rigid material. In the preferred embodiment illustrated, the base 1 is adapted to be secured to a roof or other sloping surface by means of nails 2 disposed through holes formed therein as in Figure 1, wherein my invention is shown as it appears when applied to a shingle roof. Preferably an additional relatively larger set of nail holes 2' is provided to receive the comparatively larger size nails customarily employed in connection with roll or sheet roofing, to adapt the

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base for securing to a roof on which such roofing is being applied.

Secured in suitable fashion, as by rivets 3 near the upper or inner end of the base 1 is a hinge bracket 4, preferably in the form of a short T-iron section, having an upwardly projecting hinge element or vertical fin 5 extending in a medial longitudinal vertical plane relative to the base 1.

Fixedly secured to the lower end portion of the base 1, preferably by rivets 6, is a brace adjusting bracket which preferably comprises a pair of transversely spaced linearly extending angle irons 7, having their vertical walls or flanges disposed adjacent each other to define a linear slot 8 therebetween, preferably in linear alignment with the upstanding fin or hinge element 5.

A series of relatively linearly spaced pairs of respectively transversely opposed adjusting notches 9 is formed in the vertical flanges of the brace adjusting bracket 7 to cooperate with a brace or support in the manner hereinafter described.

A scaffold supporting platform or arm designated 10 in its entirety, is pivotally associated with the base 1, for swinging movement relative thereto in a vertical linear plane, preferably being pivotally secured to the hinge element or fin 5. The structural details of said arm 10 will be described specifically hereinafter.

An adjustable rigid brace or support 11, of metal or other suitable material, has its upper end pivotally secured to the arm 10 adjacent the outer end thereof for relative swinging movement or adjustment in a vertical linear plane. The lower end of said brace 11 is adapted to be received between the transversely spaced members 7 of the brace adjusting bracket, as shown in Figures 1 and 2, and is provided with a transverse pin 12 fixedly disposed therethrough in suitable fashion to be received in any of the various linearly spaced pairs of notches 9, thus permitting adjustment of the brace 11 to support the arm 10 in any of various selected angular positions relative to the base 1.

The broad general association of the supporting arm 10, brace 11, base 1 and bracket 7, or equivalents thereto, is old, as shown for instance by the Patzold Patent Number 667,992. Hence this broad combination or association of parts is not claimed as my invention, but has been generally described merely in order to promote a rapid and intelligent understanding of my invention, which is directly primarily to the structural details of the scaffold supporting arm 10, and the cooperation of these details or features with the other component parts of the scaffold bracket, and to the combination with said arm of a novel sliding clamp and associated parts.

Referring specifically to the said supporting arm or platform 10, it will be seen that same comprises a pair of transversely spaced parallel

rigid members preferably consisting of suitable lengths of usual commercially available angle irons, which are assembled with their relatively adjacent vertical flanges 13 depending or directed downwardly to define a linear guide slot 14 therebetween. Their lateral flanges 15 are directed away from each other and lie in a common plane to provide an upwardly presented horizontal scaffold supporting surface.

It will be noted that the arm 10 thus formed has parallel upper and lower surfaces consisting of the upper surfaces of the lateral flanges 15 and the lower linear edges of the depending flanges 13 respectively. Also it will be noted that the outwardly presented edge surfaces of the lateral flanges 15 are parallel, and that the laterally outwardly presented surfaces of the depending flanges 13 are parallel. Thus the arm is provided with upwardly and downwardly presented surfaces respectively in parallel lateral planes, and relatively remotely presented vertical side surfaces in parallel planes, to accommodate a sliding clamp in the manner hereinafter set forth.

The inner end portions of the depending flanges 13 in the preferred embodiment are disposed on opposite lateral sides of the hinge bracket fin or element 5 and pivotally secured thereto by the pivot pin or bolt 16 passed transversely through registering bores in said flanges 13 and fin 5, thus providing the aforementioned pivotal connection between the base 1 and the arm 10.

Similarly the outer end portions of the flanges 13 are disposed on opposite sides of the brace 11 at the upper end thereof, and pivotally secured thereto by the transverse pivot pin 17 which may consist of a usual bolt disposed through registering bores in said flanges 13 and brace 11 to provide the aforementioned pivotal connection between said brace and the arm 10.

It will be noted that the brace 11 and the fin or element 5 are of equal thickness in the preferred embodiment and thus maintain the two angle irons of the arm 10 in relatively spaced parallel relation as heretofore described.

A linearly adjustable sliding clamp is mounted on the arm 10 to fixedly position scaffold boards or members of varying dimensions thereon. Said clamp comprises vertically opposed linearly adjustable guides 18 and 20 respectively spanning the slot 14 and slidably engaging the upper and lower vertically presented surfaces of the arm 10, portions of these guides being in sliding engagement with the relatively laterally remote vertical side surfaces of the respective flanges 13 and 15 to guide the clamp in its linear movement and also to prevent relative lateral spreading of the two angle iron members comprised in the arm 10, in the event of failure of either of the bolts 16 or 17.

In the preferred embodiment illustrated, the upper plate or guide 18 extends across the entire upper surface of the arm 10 and is formed with integral laterally opposed channeled portions or runners 19 opening toward each other and extending around and beneath the relatively remote linear edges of the lateral flanges 15. The lower plate or guide 20 consists of an upwardly opening channeled member extending across the lower edges of the depending flanges 13 and slidably engaging the laterally remote vertical sides thereof. Both of the plates or guides 18 and 20 are preferably formed as heavy gauge sheet metal stampings.

Carried by the upper plate or guide 18 for vertical adjustment relative thereto and to the scaffold supporting arm 10, is a clamp jaw 21, which projects linearly inwardly or forwardly from the guide 18 to be disposed in vertical registry with and engage the upper surface of a scaffold board or staging element supported on the upper surface of the arm 10, such a board being shown in broken lines in Figure 2. Preferably the jaw 21 is provided with one or more downwardly projecting sharpened teeth or studs 23 to bite into the plank or board and firmly retain same against lateral movement.

It is desirable to form the jaw 21 so that the projecting portion 24 thereof is upwardly offset from the remainder or shank thereof which normally rests on the guide 18 when the jaw is in operative engagement with a staging or scaffolding member.

The aforementioned members are all secured in operative assembled relation and rendered adjustable as aforementioned by a common connecting and adjusting means such as the threaded member or bolt 22 freely slidably disposed through the shank of the clamp jaw 21 and the upper guide 18, with the head of said bolt 22 abutting against the upper surface of the clamp jaw shank. Said bolt is disposed downwardly vertically through the slot 14 and passes through the lower guide 18 which is formed with a threaded medial bore to operatively receive same. Thus it will be seen that the bolt 22 may be rotated, as by means of a screwdriver operatively engaging the slotted head of the bolt 22, to urge the guides 18 and 20 toward each other and into frictional locking engagement with the arm 10. At the same time the jaw member 21 will be urged downwardly toward the upper scaffold supporting surface of the arm 10.

The bolt or threaded means 22 is linearly movable along the slot 14 and is maintained centered therein and out of possible harmful contact with the arm 10 by the guides 18 and 20.

In the operation of the invention, which is believed to be apparent from the foregoing, the brackets of my invention will normally be employed in pairs, in the usual manner, to support opposite ends or portions of a scaffold board or member. The base 1 of each said bracket will be securely fastened to the roof, as shown in Figure 1 and heretofore described, with the linear axis of the base sloping in the same direction as the roof. The brace 11 of each bracket will then be adjusted to such position as will support the arm 10 in a substantially horizontal plane. With the bolt 22 loosened to permit adjustment of the clamp members or guides 18 and 20, and the jaw 21, in the manner aforementioned, the clamp or clamp assembly is moved toward the outer end of the arm 10 while a scaffold board is laid across the upper surface of the arm 10. Then the clamp or clamp assembly is adjusted to the position shown in Figure 2, wherein the upper guide 18 thereof abuts against the outer edge of the scaffold board. At this time the clamp jaw 21 is raised slightly and positioned over the board, whereupon tightening of the threaded means or bolt 22 will serve to urge the clamp jaw 21 toward the arm 10 and to imbed the teeth 23 thereof in the board. At the same time the guides 18 and 20 will be urged into tight frictional engagement with the arm 10 to lock themselves in this adjusted position.

When it is desired to remove or reposition the scaffold board, the bolt 22 is loosened to permit the jaw 21 to be raised and disengaged from the board,

at the same time releasing the frictional engagement between the guides 18, 20, and the arm 10, to permit linear movement of said guides and jaw clear of the board.

It will be apparent from the foregoing that I have provided an improved scaffold supporting bracket which is adapted for economical production and fabrication from usual commercially available structural steel material; which is exceedingly strong and safe in construction and operation; and which is quite simple in operation.

In particular, it will be noted that the guides or clamp members of the invention will serve to maintain the angle iron members of the arm 10 in their assembled spaced relation, in case of failure of either pivot bolt 16 or 17, thus providing an important safety factor. Also, these guides 18 and 20 serve to: guide the clamp jaw 21 in its linear movement, and to maintain the connecting bolt 22 center in the slot 14 to prevent interference with or damage to said bolt by contact with the arm 10. Further it will be noted that the common connecting means or bolt 22 simultaneously adjusts the guides 18 and 20 and the clamp jaw 21.

In this application I have shown and described only the preferred embodiment of my invention, simply by way of illustration of the practice thereof, as by law required. However, I recognize that my invention is capable of other and different embodiments; and that the various details thereof may be modified, without departing from my said invention. Accordingly, the drawings and description herein are to be considered as merely illustrative and not as exclusive.

I claim:

1. A scaffold supporting bracket comprising a scaffold supporting arm and linearly spaced supporting means for same, said arm comprising linearly extending parallel angle irons having relatively adjacent depending flanges extending between and connected to said respective spaced supporting means on opposite sides thereof, said supporting means serving to maintain said angle irons in relatively spaced relation to define a linear slot therebetween, and lateral flanges directed away from each other in a common plane to provide a scaffold supporting surface, in combination with a clamp comprising vertically opposed linearly slidable guides spanning said slot above and below said angle irons respectively for linear adjustment between said linearly spaced supporting means, said upper guide extending across the upper surfaces of said lateral flanges and around and beneath the relatively remote linear edges thereof, said lower guide extending across the lower edges of said depending flanges and slidably engaging the relatively remote sides of said flanges, said guides maintaining said angle irons against relative spreading, threaded adjusting means extending through said slot and connecting said guides for adjustment toward each other into frictional engagement with said angle irons, and a clamp jaw mounted for relative vertical adjustment on said upper guide, said jaw being connected to said threaded adjusting means to be urged downwardly thereby into operative clamping engagement with a scaffold member supported on said arm.

2. In a scaffold supporting bracket, a scaffold supporting arm comprising a pair of linearly extending parallel angle irons having relatively adjacent depending vertical flanges in spaced vertical planes to define a linear slot therebetween, and lateral flanges directed away from each other in a common plane on opposite sides of said slot, in combination with vertically opposed linearly adjustable guides spanning said slot and slidably abutting against said arm on opposite vertical sides thereof, threaded adjusting means operatively connecting said guides through said slot for adjustment toward each other, and a clamp jaw carried by one of said guides for relative vertical adjustment, said jaw being connected to said threaded adjusting means to receive vertical movement therefrom, said threaded means being operable to urge said respective guides toward each other into tight frictional engagement with said arm and to simultaneously urge said jaw member vertically into operative clamping engagement with a scaffold member supported on said arm.

3. In a scaffold supporting bracket, a supporting arm comprising a pair of rigid arm members having upwardly and downwardly presented surfaces respectively in parallel lateral planes, and relatively remotely presented vertical side surfaces, said members being relatively laterally spaced to define a linear slot therebetween, in combination with vertically opposed guides respectively extending across said slot in sliding engagement with said upwardly and downwardly presented surfaces and having portions in sliding engagement with said opposed side surfaces, threaded means disposed through said slot for linear movement therein and connecting said guides for adjustment toward each other into tight frictional engagement with said arm, and a clamp jaw carried by one of said guides for vertical adjustment toward said arm.

4. In a scaffold supporting bracket, a supporting arm comprising a pair of rigid arm members having upwardly presented lateral scaffold supporting surfaces, said members being relatively laterally spaced to define a linear slot therebetween, in combination with vertically opposed guides respectively disposed above and below said arm in sliding engagement therewith and spanning said slot, threaded means extending through said slot and connecting said guides for adjustment toward each other into tight frictional engagement with said arm, and a clamp jaw carried by said upper guide for adjustment therewith toward the scaffold supporting surface of said arm.

5. In a scaffold supporting bracket, a linearly slotted scaffold supporting arm, guides slidably associated with said arm on opposite sides of said slot, a clamp jaw carried by one of said guides for adjustment toward said arm, and a common adjusting means disposed through said slot and connecting said guides and said clamp jaw for simultaneous adjustment toward said arm.

ALVIN J. NELSON.

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