

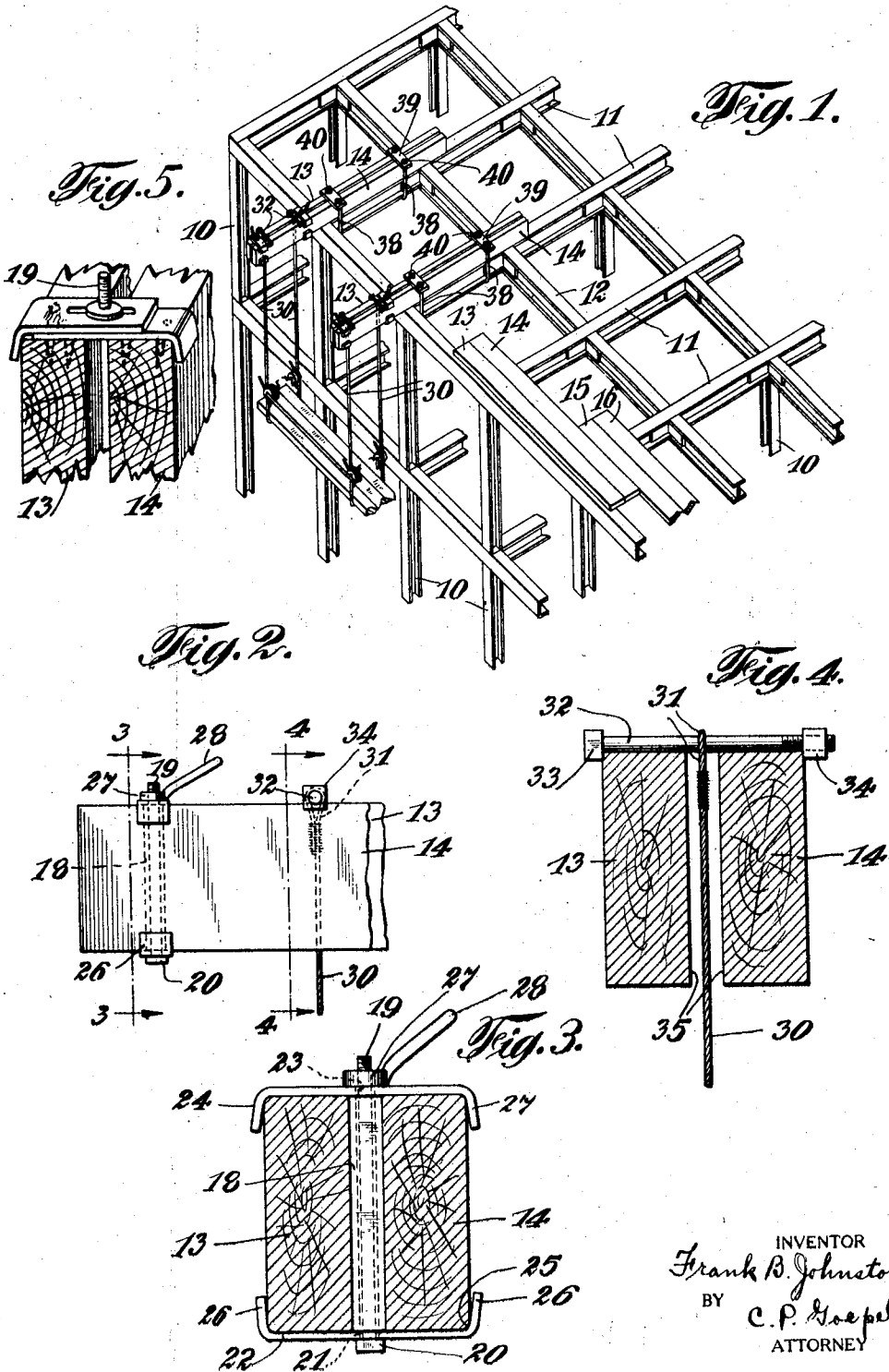
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CLAMP

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CLAMP.

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The invention more particularly has for its object to provide a very secure, simple and efficient outrigger clamp to be used in the scaffolding of steel skeleton buildings.

5 Heretofore in the construction of skeleton steel frame buildings scaffolding devices were used which were moved along the height of the building for the purpose of constructing the outer shell of the building

10 which shell was usually made of bricks or stone or the like, such shell enclosing the steel skeleton structure. Scaffold devices including outriggers and platforms are limited by the length of the cable and thus in higher

15 structures it is customary to raise the outriggers to a higher elevation, disconnect the platforms from the lower outriggers and connect them to the upper outriggers and then remove the lower outriggers whereby

20 the platforms can be used for this higher elevation until the platforms, and consequently the shell of the building reach the position of these higher outriggers. As the

25 installation of these higher outriggers is carried out at portions of the steel skeleton structure which are not provided with flooring and it has been customary to provide a temporary flooring in the form of several planks so as to enable the workmen installing the scaffolding devices to be supported by such temporary flooring and to make the installation of the higher outriggers. This necessitated the carrying up to

30 these higher points a considerable amount of planking which became useless after the outriggers had been attached. My invention consists in a new and improved clamp for uniting a plurality of wooden planks, so as to form a single strong girder, which arrangement therefor allows the utilization of

40 such temporary flooring planks and their conversion to outriggers. Thus the workmen preparing to install the scaffolding devices at the higher elevations first arrange

45 certain planks of definite size and shape along the horizontal cross-beams of the skeleton structure of the building and use such planks for the purpose of being supported thereon while they are moving the

50 apparatus of the scaffolding devices along the front or side of the building. These planks then having been used for the purpose of a temporary flooring are then converted into outriggers by arranging such

planks in pairs and binding them together 55 by the novel outrigger clamp which I propose and describe hereinafter. The method thus proposed is very convenient in that after the planks have been raised to their elevated position and have served the purpose of a temporary flooring they are removed as a flooring and converted to outriggers whereby it is not necessary to again lower these planks.

In the accompanying drawings

65 Fig. 1 is a perspective view of a part of the steel skeleton structure showing the application thereto of the temporary flooring planks and also the application thereto of such planks converted into outriggers for a scaffolding platform.

70 Fig. 2 is a side view of the ends of the outriggers showing them held together by my improved clamping device and supporting the cables which in turn support the platforms.

Fig. 3 is a cross section taken on line 3—3 of Fig. 2, with parts in elevation and

80 Fig. 4 is a cross section taken on line 4—4 of Fig. 2 with parts in elevation.

Fig. 5 shows another embodiment of a clamping member according to the present invention.

85 Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawings and more particularly to Fig. 1, the steel skeleton structure of a building is usually composed of vertical members 10 and horizontal cross-members 11 and 12. Assuming that the structure of the building has reached a height corresponding to the horizontal top cross-members 11 and 12, it becomes necessary to install scaffolding devices in order to enable the workmen to build up or construct the surrounding shell of brick, stone, mortar or the like.

90 In accordance with my invention the workmen place upon the top-most horizontal members 11 and 12 planks 13 and 14 across two parallel members 11 and planks 15 and 16 across two subsequent parallel members 11, the planks 15 and 16 being shown in the drawing as broken away. These planks 105 then serve for the workmen to walk thereon and to give a secure flooring to enable the workmen to carry the heavy platform mem-

bers, putlogs, winding drums and cables into position. Such devices rest upon the planks 13, 14, 15 and 16. Similar planks had already been placed in position forward of these planks 13 to 16. These forward planks in advance of these planks 13 to 16 are then taken up and arranged in pairs and clamped together and at the same time clamped to the horizontal cross-members 11 as shown in Fig. 1. For this purpose the planks 13 and 14 are placed side by side with their flat surfaces opposing and before the outriggers so to be formed are projected out of the building clamping members are applied to these pairs of planks. Clamping members of the type referred to are shown in Fig. 3 and they consist of a central spacing member 18 which determines the space between the parallel outrigger planks. This spacing member 18 is preferably in the form of a tube to permit the bolt 19 to pass therethrough which bolt at one end is screw threaded and at the other end is provided with a head 20. The bolt is passed through an opening 21 of a lower clamp member 22 and then is passed through the tube 18 and through the opening 23 of a clamp member 24 so that the screw threaded end 19 projects.

The clamping members 22 and 24 are substantially alike so as to be interchangeable and they have a length substantially equal to the width of the two parallel outrigger planks 13 and 14 together with the width or diameter of the tube 18. They are however so arranged as to be slightly smaller than this combined width and are provided with curved corners 25 and projecting members 26, whereby the angle between the ends 26 and the main part of the clamping member is a somewhat obtuse angle, so that by compressing the two clamping members a wedge-like compressing action is exerted on the wooden planks. When the parts are assembled as shown in Fig. 3 and as just described an interiorly threaded rotatable nut 27 having a handle 28 is then applied to the screw threaded end 19 of the bolt. The turning of this nut 27 by means of the handle 28 serves to force the extending members 26 against the corners of the outrigger planks 13 and 14 and the curved edges 25 and the inclination of the end pieces 26 of the members 22 and 24 serve to wedge the outrigger planks so that they are forced toward each other and tightly against the spacing member 18. It is this bevelled or curved or wedging portion 25 of the clamp members 22 and 24 which serves a very important function, namely, to first bring together towards each other and also hold together the outrigger planks. Thus by the turning of the handle 28 a very compact and securely held outrigger is provided. The spacing member 18 has the function however, notwithstanding

the tight clamping together of these outriggers, to maintain a space between the outrigger planks 13 and 14. This space is for the purpose of permitting the cable 30 to pass therethrough. This cable is provided with an eye portion 31 through which a bolt 32 passes which bolt has a head 33 and a screw threaded nut 34. The bolt 32 is placed transversely of the two outrigger planks 13 and 14 permitting the cable 30 to pass between these planks in the space 35 therebetween.

Thus after the planks 13 and 14 for instance have been used as a temporary flooring they are brought together in position and are clamped together by the means shown in Figs. 2 and 3 and as just described. The outriggers having thus been made on the job, from these planks 13 and 14, and planks 15 and 16 respectively, they are then secured to the steel members of the steel skeleton structure. This is done by binding members indicated in Fig. 1 by the character 38 which are U-shaped stirrups passing around the horizontal cross-beams 11 and around these outriggers as formed by these two planks and then engaging horizontal plates 39 having holes therein through which the legs of the stirrups pass, which legs have their ends screw threaded and on these screw threaded ends nuts 40 are arranged so as to hold the plates 39 to the stirrup ends, whereby the stirrups 38 and plates 39 completely surround and embrace the horizontal cross-members 11 and the pairs of outrigger planks as shown in Fig. 1. These stirrup members are well known though only used for other purposes and by themselves they do not form any part of this invention. When the outrigger planks having first been used as temporary flooring have been converted to outriggers as described and are held in position by the stirrups 38 with a cable 30 depending therefrom as described, then the platform can be built up to be used for the further completion of the building. This suspended workmen's platform may be of any suitable construction and it does not belong to the invention, so that a detailed description of it may be dispensed with. It may be mentioned only that for the stepwise raising of the platform according to the progress of the work any suitable winding device must be provided either in the form of a handjack with a crank on the platform itself, or in the form of a pulley tackle with a windlass standing on the ground.

The formation of strong girderlike outriggers by the planks first used as a temporary flooring, saves a great deal of time in the installation of scaffolding devices, and further the standardizing of the planks into a certain type which serves both purposes, first to be used as a gangway or flooring, and

thereafter to build up an outrigger, will diminish the number of implements which are necessary in the erection of the scaffolds and of the building itself; it will further reduce considerably the amount of labour which is needed for transportation of the different parts, and all those effects together will cut down the overall building expenses.

There is no need for building the outrigger clamp exactly as has been detailed above with reference to the Figure 3. For instance the tube 18, serving as a distancing member, may be dispensed with, so that the bolts 19 themselves may serve as distancing members. Further, this bolt may be forged together with the lower clamping member 22 as a single T-shaped piece, although such construction would be less recommendable.

On the other side the outrigger clamp may consist of two pieces of flat iron extending across the planks to be united and being clamped together by threaded bolts and nuts at both sides of these planks. The clamping members may even be made of variable grip, as shown in Figure 5 by building up each of them out of two parts which are fixed to each other in an adjustable manner. Instead of the shown ring formed nuts 27 with handles 28, ordinary hexagonal nuts and counternuts may be used. The clamping members may be barbed or provided with

indentations to improve their gripping action on the planks.

If the adjustable platform used in erecting the side wall of the building has to carry particularly heavy loads, or if the planks used for the construction of the outrigger are rather thin, then more than two planks may be used.

It is understood that the clamp according to my present invention may be advantageously used not only in the building of scaffolding outriggers, but likewise in all other cases, where several wooden planks are to be united so as to form a single, strong girder, strut or beam.

I claim:

A clamp of the character described, comprising a threaded bolt, a sleeve thereon, adjustable plate assemblies having the outer ends thereof bent at obtuse angles to straddle the edges of spaced parallel planks engaging opposite sides of said sleeve, perforations in the said plate assemblies and the aforesaid bolt passing therethrough, and a nut on the said bolt to securely bind the plate assemblies together and to wedge the planks against the sleeve.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

FRANK B. JOHNSTON.