June 14, 1960 C. A. HARLAN 2,940,716

SCAFFOLD BRACKET STRUCTURE

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FIG.2.

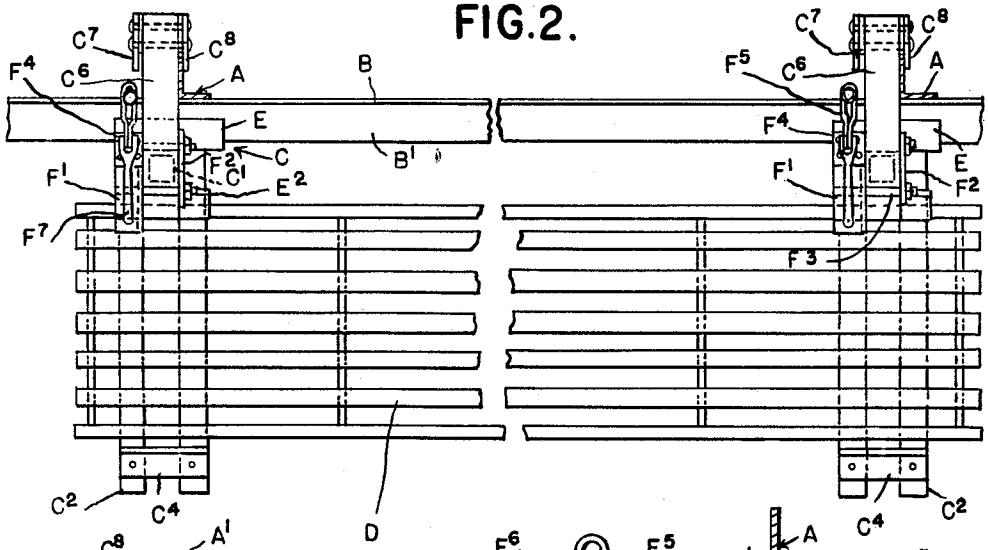


FIG.1.

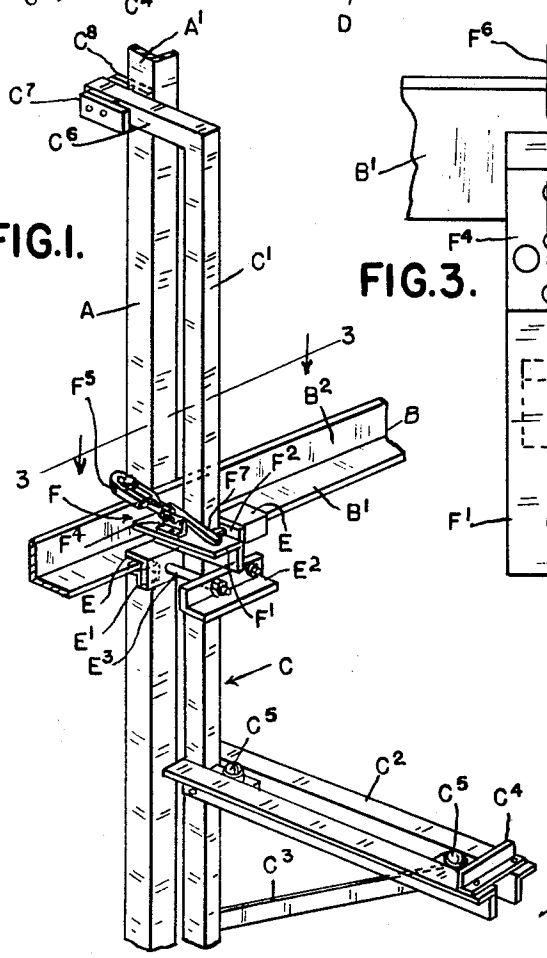
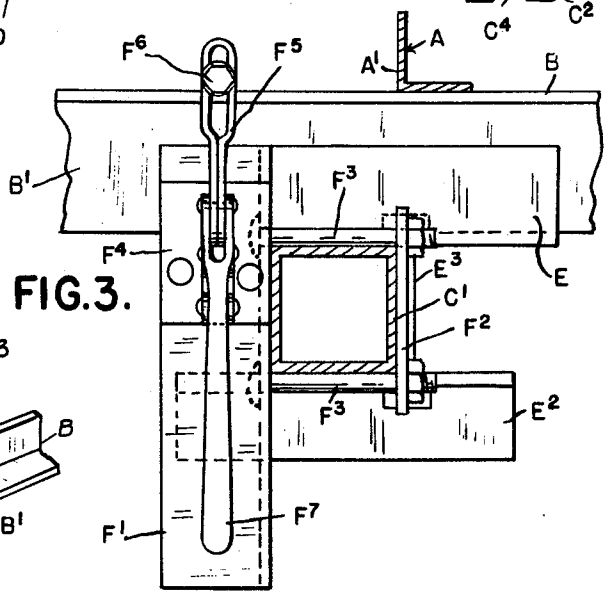


FIG.3.



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FIG.5.

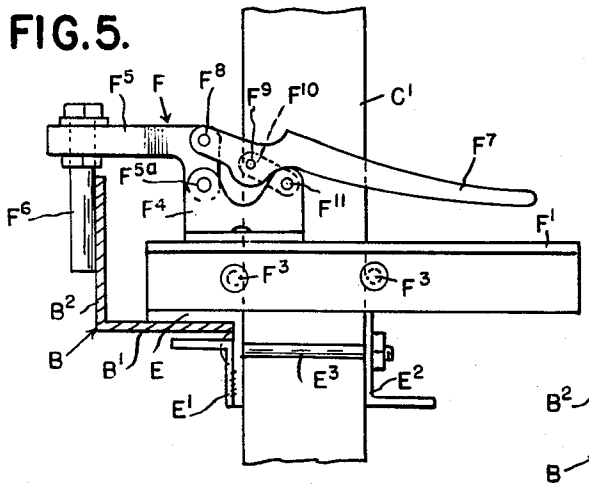
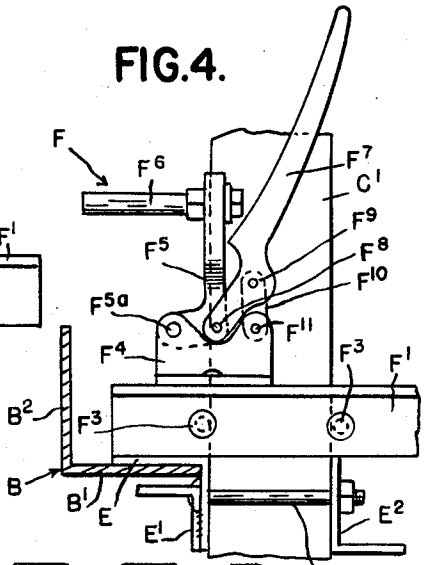


FIG.4.



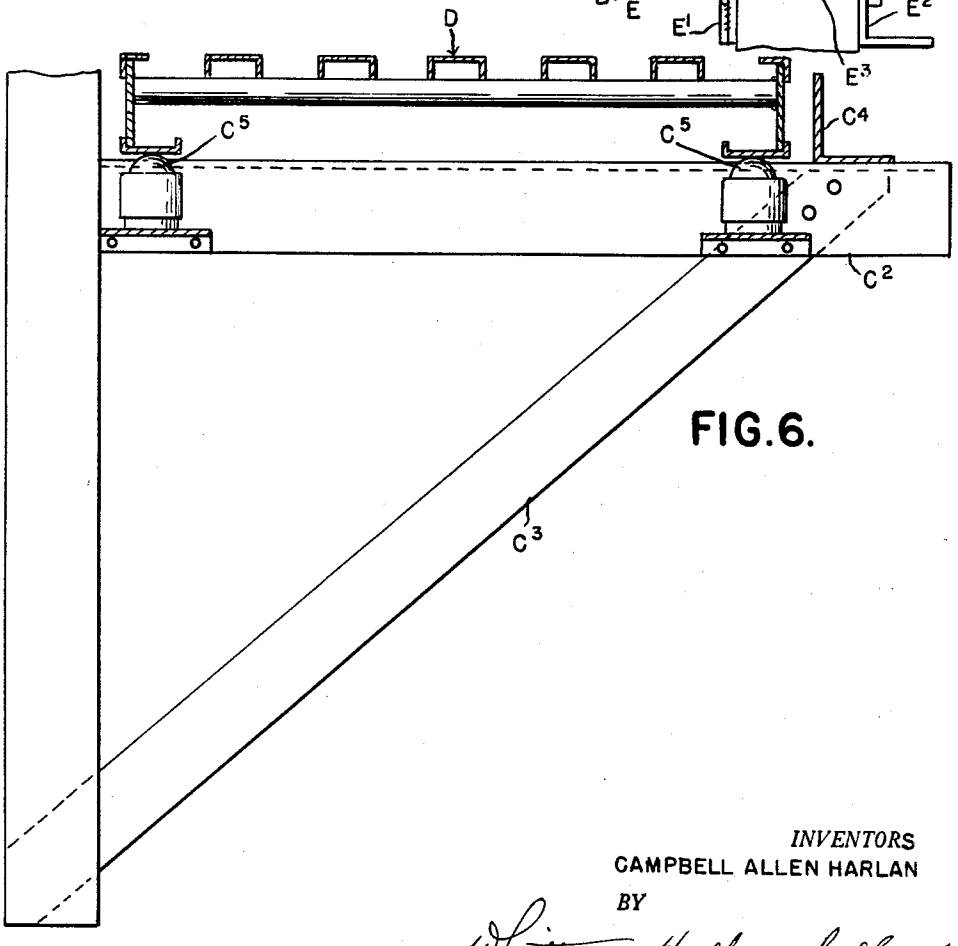


FIG.6.

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SCAFFOLD BRACKET STRUCTURE

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5 Claims. (Cl. 248—226)

This invention relates generally to scaffolds and refers more particularly to a scaffold structure capable of being mounted upon the skeleton framework of a building under construction.

In the erection of new buildings it is necessary to install electric wiring, conduits therefor, electric cables and fixtures upon the skeleton framework of such buildings. It is also necessary to provide a safe support for the workmen doing this work, especially if such installations are made at high elevations in the skeleton framework. Therefore, I have devised a scaffold construction which can be applied to and supported by the skeleton framework of the building at any desired elevation, especially where the skeleton framework includes vertically and horizontally extending frame members.

One of the essenial objects of the invention is to provide a scaffold structure that is sturdy in construction, economical to manufacture, easy to apply to the skeleton framework of a building, and efficient in use.

Another object is to provide a scaffold structure that includes an upright portion that may be readily interlocked with or hooked to an upright frame member, and that also includes a horizontal portion that may be supported upon a horizontal frame member.

Another object is to provide a scaffold structure wherein the upright portion mentioned carries a shelf portion upon which a platform for workmen may rest, and wherein the horizontal portion is adjustable lengthwise of the upright portion to position the shelf portion at various elevations relative to the horizontal frame member.

Another object is to provide a scaffold structure having means for clamping the upright portion to the horizontal frame member, whereby the horizontal portion mentioned cannot be accidentally displaced from its supporting horizontal frame member.

Another object is to provide a scaffold structure wherein the clamping means is also adjustable lengthwise of the upright portion relative to the adjustable horizontal portion.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings wherein:

Figure 1 is a perspective view of one of the supporting brackets for a platform and showing such bracket mounted on the skeleton framework of a building.

Figure 2 is a plan view showing a platform supported on a pair of such brackets.

Figure 3 is a horizontal section on line 3—3 of Figure 1.

Figures 4 and 5 are side elevational views of the clamping means and associated parts for securing the brackets to the framework, respectively before and after operation of the clamping means, and showing portions of the framework with a part thereof in section.

Figure 6 is a vertical sectional view through the platform and showing in elevation the lower portion of a supporting bracket, with parts broken away and in section.

In the drawings, A is one of the vertical frame members

or uprights of a skeleton framework of a building, and B is a horizontal frame member crossing and attached to the vertical frame member A.

Preferably my scaffold comprises a plurality of brackets C which may be temporarily or detachably secured to the frame members A and B to support a platform D.

Each bracket C is adjacent to a vertical frame member A of the skeleton framework and includes a vertically extending box beam member C^1, a horizontally extending shelf C^2 comprising a pair of angle bars secured to opposite sides of the upright member C^1, and an angular brace bar C^3 for the outer end of the shelf C^2. An angle bar abutment or stop member C^4 secured to the outer end of the member C^2 serves to retain the platform D on the shelf portion C^2 of the brackets C.

C^5 are anti-friction ball bearings supported between the angle bars of the shelf C^2 near the outer and inner ends thereof and projecting slightly above the upper surface thereof for supporting engagement with the platform D.

At the upper end of the upright member C^1 is a horizontally extending member or arm C^6 which is adapted to extend across and beyond the rear face of the upright frame member A and is adapted to be detachably connected thereto. As specifically shown, the vertical frame member A is an angle bar, and the arm C^6 has on opposite sides thereof forwardly opening hooks C^7 and C^8 which may be alternatively engaged or interlocked with the flange A^1 at the rear of the vertical frame member A, depending upon which side of said member A the arm C^6 is placed. Vertically adjustably secured to the upright member C^1 intermediate its ends is a horizontal angle bar rail E adapted to rest upon the horizontal frame member B to support the bracket C at the desired height for the platform D. The horizontal flange of the rail E rests upon the horizontal flange B^1 of the horizontal frame member B to carry the load of the bracket C. As specifically shown, one side of the vertical leg of the rail E is provided at opposite ends thereof with short angle bars E^1 that are located beneath and have their horizontal flanges substantially parallel to the horizontal flange B^1 of the horizontal member B. The rail E is upon one side of the upright member C^1 while another horizontal angle bar rail E^2 is upon the opposite side of the upright member C^1. Clamping bolts E^3 extend between and adjustably clamp the rails E and E^2 upon opposite sides of the upright member C^1.

Downward tipping of the bracket C by the weight of the shelf C^2 thereof is prevented by either the hook C^7 or the hook C^8 engaging the rear edge of the flange A^1 of the vertical frame member A, as previously described. However, it is desirable to hold the rail E against accidental displacement from the horizontal clamping members of bars F^1 and F^2 located upon opposite sides of the upright member C^1 and adjustably held by clamping bolts F^3.

On the clamping member F^1 is mounted a bracket or support F^4 to which an L-shaped arm F^5 is pivoted at F^{5a}. Such angle arm F^5 carries at its slotted free end a rod F^6 that is disposed at right angles thereto and is adapted to be engaged with the rear face of the vertical flange B^2 of the horizontal frame member B. A lever F^7 is connected at one end by a pivot F^8 to the angle arm F^5 at an intermediate point thereof. Also, a fulcrum pivot F^9 for the lever F^7 is connected to a link F^{10} that is pivoted at F^{11} to the bracket F^4. This forms a toggle joint, which in the position of Figure 4, holds the rod F^6 out of engagement with the horizontal frame member B, but in the position of Figure 5 holds the rod F^6 in clamping engagement with the horizontal frame member B.

With the construction as thus far described, the rail E and clamping means F may be adjusted on the upright member C^1 of each bracket C, as required, to support the

platform D in relation to the nearest horizontal frame member B. When so adjusted, either of the hooks C^7 or C^8 of the brackets may be engaged with adjacent upright frame members A. Then the rails E are placed upon the horizontal frame members B. The lever F^7 of the toggle joint is then employed to clamp the brackets C to the horizontal frame members B to thereby hold the rails E against displacement from the horizontal frame members B. The platform D is then placed on the shelves C^2 of the brackets to form a safe scaffold to be used by the workmen.

If the character of the work requires movement of the platform D along the same horizontal plane, then additional brackets C may be secured as described to other frame members A and B. The platform D may then be moved lengthwise along the same horizontal plane from the shelf portions C^2 of the brackets C on which it was originally supported onto the shelf portions C^2 of the newly erected brackets C adjacent thereto. Such adjustment is facilitated by the anti-friction bearings C^5 carried by the shelf portions C^2.

Change in level of the platform D may be accomplished by adjustment of the rails E and clamping means F on the upright member C^1, so that the scaffold may be located at any other point desired on the skeleton framework of the building.

What I claim as my invention is:

1. A scaffold bracket structure for use with a vertical structural element and a horizontal structural element of a skeleton framework of a building; comprising an upright beam adapted to extend above and below said horizontal structural element in substantially parallel relation to said vertical structural element, a horizontal arm carried by said upright beam and adapted to be detachably connected to said vertical structural element, said arm being secured to and projecting at a substantially right angle from said upright beam at the upper end thereof and having a free end, a horizontal shelf carried by said upright beam below said horizontal arm and adapted to support a platform, said shelf being secured to and projecting at a substantially right angle from said upright beam adjacent the lower end thereof, a horizontal rail mounted on said upright beam intermediate the ends thereof for vertical adjustment relative thereto and adapted to rest upon said horizontal structural element, a horizontal bar mounted on said upright beam for vertical adjustment relative thereto adjacent said horizontal rail, and means for holding said horizontal rail against accidental displacement relative to said horizontal structural element when weight is applied to said horizontal shelf, including lever operated means pivotally mounted on said horizontal bar and engageable with the rear of said horizontal structural element, and a forwardly opening hook secured to and carried by said horizontal arm adjacent the free end aforesaid thereof and adapted to be interlocked with a portion of said vertical structural element at the rear thereof.

2. The bracket structure described in claim 1 wherein the horizontal arm is rigidly secured to and projects rearwardly from said upright beam to extend across and rearwardly beyond said vertical structural element, and said horizontal shelf is rigidly secured to and projects forwardly from said upright beam to support a platform.

3. The bracket structure described in claim 1 wherein said lever operated means comprises a pivotally mounted arm, and an elongated rigid element disposed at substantially right angles and connected to said arm.

4. The bracket structure described in claim 1 wherein said lever operated means comprises a substantially L-shaped arm having one leg of the L pivotally mounted on said horizontal bar, an elongated rigid element disposed at substantially right angles and connected to the other leg of the L, and a connection between said L-shaped arm at the juncture of said legs operable to hold said elongated rigid element alternately in and out of engagement with the rear of said vertical structural element.

5. The bracket structure described in claim 3 wherein the elongated rigid element is adjustably connected to said pivotally mounted arm adjacent one end thereof.

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