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A. N. HELSTROM.

SCAFFOLD.

(Application filed Dec. 23, 1899.)

(No Model.)

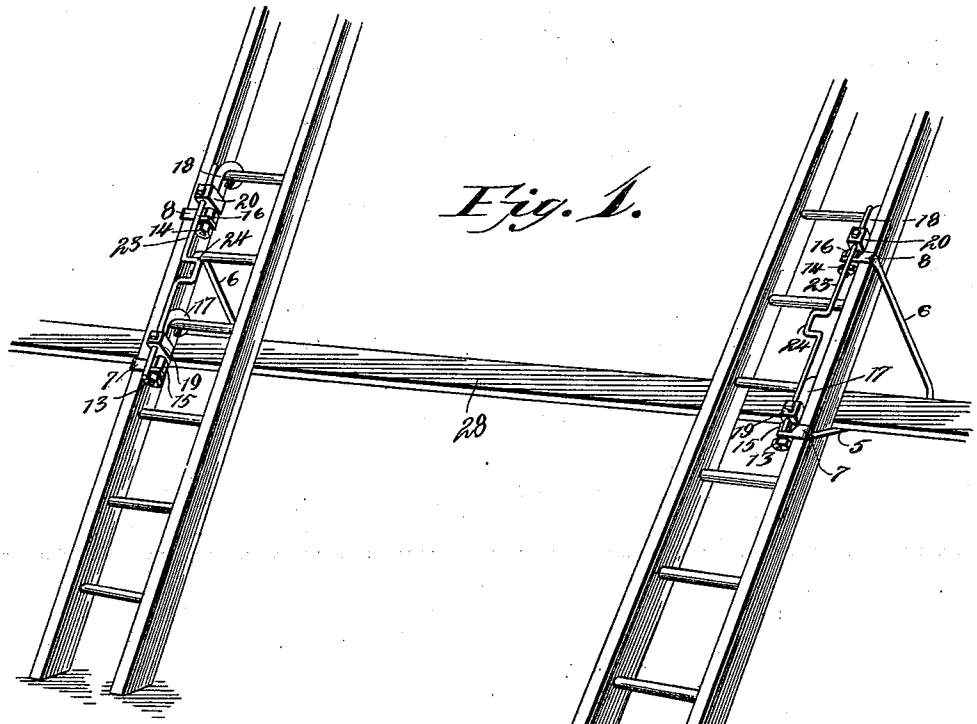


Fig. 1.

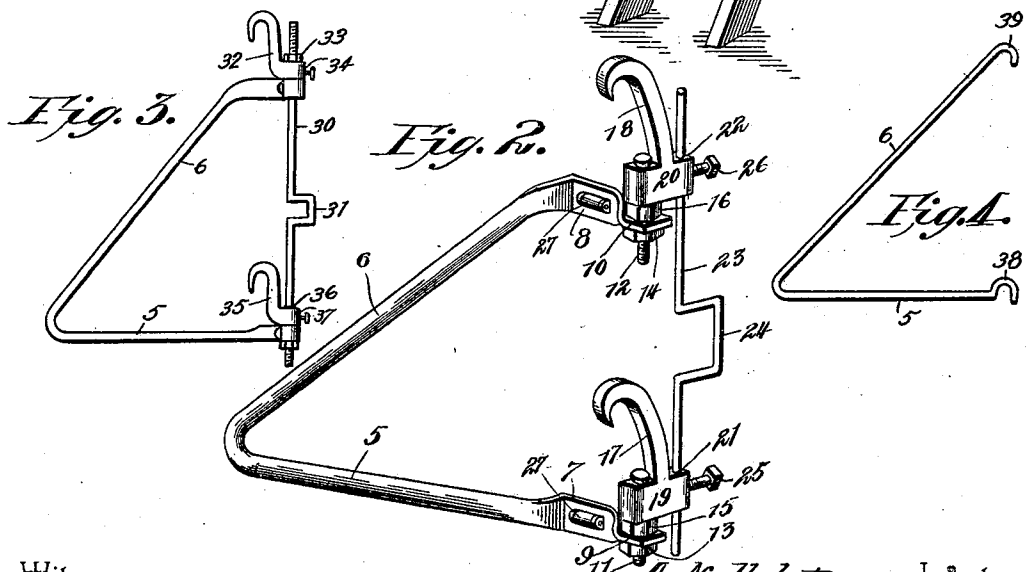


Fig. 3.

Fig. 2.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

AXEL N. HELSTROM, OF TOWER, MINNESOTA.

SCAFFOLD.

SPECIFICATION forming part of Letters Patent No. 645,666, dated March 20, 1900.

Application filed December 23, 1899. Serial No. 741,437. (No model.)

To all whom it may concern:

Be it known that I, AXEL N. HELSTROM, a citizen of the United States, residing at Tower, in the county of St. Louis and State of Minnesota, have invented a new and useful Scaffold, of which the following is a specification.

This invention relates to scaffolds in general, and has particular reference to scaffold attachments for ladders, the object of the invention being to provide a construction comprising brackets which may be attached to ladders in such a manner as to support a scaffold-plank in operative position, a further object of the invention being to provide means for readily applying and removing the bracket.

In the drawings forming a portion of this specification and in which similar numerals of reference designate like and corresponding parts in the several views, Figure 1 is a perspective view showing two inclined ladders having a scaffold attached thereto and held by brackets constructed in accordance with the present invention. Fig. 2 is a detail perspective view showing one of the brackets with its attaching-hooks and means for manipulating the latter. Fig. 3 is a side elevation showing a modification of the bracket. Fig. 4 is a side elevation showing a further modification.

Referring now to the drawings, the bracket of the present invention comprises a supporting-bar 5, the outer end of which is bent upwardly and rearwardly at an angle to the portion 5 to form a hanger 6. The inner ends of the portions 5 and 6 are bent at right angles and are flattened, as shown at 7 and 8, respectively, to form bearing-faces to engage the edge of the rail of the ladder, as will be presently described. The extremities of the end portions 7 and 8 are twisted to lie at right angles thereto, and these twisted portions 9 and 10, respectively, are provided with central perforations. Through these perforations 9 and 10 are passed threaded bolts 11 and 12, having set-nuts 13 and 14 below the portions 9 and 10, respectively, and additional set-nuts 15 and 16 above the portions 9 and 10. With the bolts 11 and 12 are engaged hooks 17 and 18, these hooks having enlarged bases 19 and 20, which project at one side to lie beneath the bills of the hooks, and through these projections are formed perforations, with which the bolts 10 and 11 are engaged. The hooks thus have pivotal connection with the portions 5 and 6 of the bracket.

In the enlarged bases 19 and 20 and at the opposite ends thereof from the bolts 11 and 12 are formed alining perforations 21 and 22, through which are passed a rod 23, the central portion of which is bent to form a crank 24, through the medium of which the rod may be oscillated. In order to insure oscillation of the hooks with the rod 23, set-screws 25 and 26 are engaged with threaded perforations in the bases 19 and 20, respectively, and are adapted to impinge the rod 23.

In practice the hooks are clamped to the rod 23 in mutual alinement and are disposed to project in the direction of the meeting-points of the parts 5 and 6, forming the support and the hanger. A bracket is then engaged with a ladder by disposing the bearing surfaces or faces 7 and 8 against one edge of one of the side rails of the ladder and with the hooks projecting between the rails, the hooks being engaged with the rungs of the ladder, as illustrated in Fig. 1. In the erection of the scaffold two ladders are thus equipped and are then leaned against a building in such a manner as to lie over the brackets or the supporting portions 5. A scaffold-plank 28 is then passed beneath the hangers 6 and disposed to lie upon the supports 5, the plank being preferably as wide as the projection of the support 5 beyond the ladder in order to hold the lowermost hook 17 from rearward movement and consequent disengagement. When it is desired to raise and lower the scaffold, the brackets may be raised slightly and the crank 24 then moved to throw the hooks outwardly. The brackets may be then moved to the desired positions and the crank operated to swing the hooks into a position to engage the proper rungs of the ladders.

With the foregoing construction it will be seen that not only is the structure simple and cheap of manufacture, but it permits the ready adjustment of the scaffold to the proper elevation and holds the parts firmly in position.

It will of course be understood that the spe-

cific structure shown may be varied and that any desired materials may be used, and it will be seen that by manipulation of the set-nuts and set-screws the hooks may be moved toward and away from each other to correspond to different degrees of separation of the rungs of the ladder. Also it will be seen upon reference to Fig. 2 of the drawings that the ends of the support 5 and the hanger 6 adjacent the laterally-turned portions 7 and 8, respectively, are provided with friction-rollers 27, which are adapted to engage the outer face of the adjacent side rail of the ladder and facilitate adjustment of the bracket with respect to the ladder.

In Fig. 3 of the drawings is shown a construction in which the support 5 and hanger 6 are similar to the corresponding portions of the form illustrated in Figs. 1 and 2 and in the ends of which support and hanger are formed bearings for the reception of a crank-rod 30, having a crank 31 at its central portion, the ends of the rod 30 being extended beyond their bearings and having threads upon these extended portions. Upon the rod 30, above the bearing in the hanger 6, is disposed a hook 32, which is prevented from movement upwardly of the rod 30 by a nut 33 engaging the threads upon the upper end of the rod. The hook 32 is prevented from rotation by means of a set-screw 34, passed through the base thereof and engaging the adjacent portion of the rod 30. A similar hook 35 is disposed upon the rod 30 and rests upon the upper face of the outer end of the support 5, this hook resting against the shoulders 36 upon the rod 30 to prevent upward movement and having a set-screw 37 to hold it against rotation. The operation of this form of the invention is the same as that described in connection with Figs. 1 and 2.

In Fig. 4 of the drawings the support 5 has a hook 38 formed integral therewith at its free end while the hanger 6 has a similar hook 39 formed integral with its free end, these hooks 38 and 39 being adapted to engage the rungs of a ladder in the manner above described in connection with the other structures.

What is claimed is—

1. A scaffold-bracket comprising a hanger and a support connected therewith and adapted to receive a clamp, hooks pivotally connected with the hanger and the support, said hooks lying in axial alinement for movement into and out of position to engage the rungs of a ladder.

2. A scaffold-bracket comprising a support, a hook pivotally and adjustably connected with the support, said support being adapted to receive a scaffold-plank, a hanger connected with the support, a second hook pivotally and adjustably connected with the hanger whereby said hooks may be moved toward and away from each other, and means connected with the hooks for moving them upon their pivots into and out of position to engage the rungs of a ladder.

3. A scaffold-bracket comprising a support, a hook pivotally and adjustably connected with the support, a hanger connected with the support, a second hook pivotally and adjustably connected with the hanger in axial alinement with the first-named hook, and means connected with both hooks for moving them pivotally into and out of position to engage the rungs of a ladder.

4. A scaffold-bracket comprising a support adapted to receive a plank, a hook pivotally connected to the support for engagement with a rung of a ladder, a hanger connected with the support, a hook pivoted to the hanger and adapted for engagement with a second rung of a ladder simultaneously with the engagement of the first hook, and a common means connected with the hooks for moving them upon their pivots into and out of said engagement.

5. A scaffold-bracket comprising a support adapted to receive a plank, a hook pivotally and adjustably connected to the support for engagement with a rung of a ladder, a hanger attached to the support, a hook pivotally and adjustably connected to the hanger and adapted for engagement with a second rung of a ladder simultaneously with the engagement of the first hook, and a rod adjustably connected with the hooks and adapted to move them upon their pivots into and out of said engagement.

6. A scaffold-bracket comprising a support and a hanger mutually connected and disposed at an angle to each other, coaxial perforations in the support and hanger, bolts adjustably engaged with said perforations, hooks mounted upon the bolts for adjustment therewith, and a crank-rod abjustably connected with the hooks for turning them upon their pivots into and out of operative position.

7. The combination with a ladder, of a bracket comprising a support and a hanger mutually connected, the extremities of the support and hanger being bent laterally to form bearing-surfaces engaging a rail of the ladder, and hooks carried by the bent portions and engaged with the rungs of the ladder.

8. A scaffold-bracket, comprising a support and a hanger mutually connected and disposed at an angle to each other, coaxial hooks carried by the support and hanger and adapted for engagement with the rungs of a ladder, and a crank-rod connected with both hooks for moving them simultaneously into and out of operative positions.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

AXEL N. HELSTROM.

Witnesses:
V. OSBERG,
DAN DANIELSON.