March 27, 1962 V. J. WILKIE 3,026,963

LADDER BRACKET CONSTRUCTION

Filed Feb. 26, 1959 2 Sheets-Sheet 1

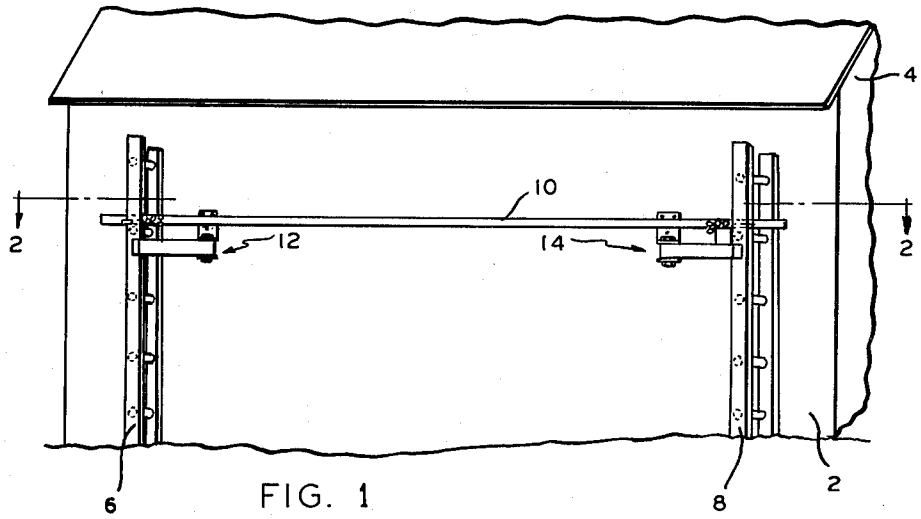


FIG. 1

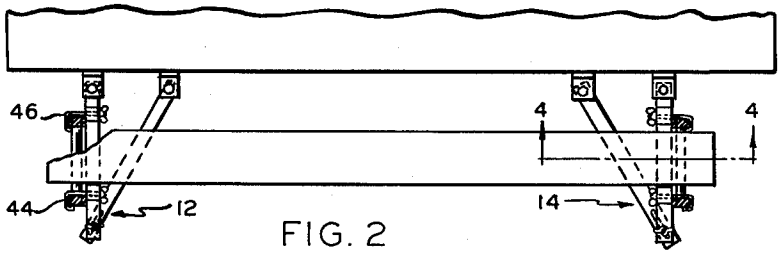


FIG. 2

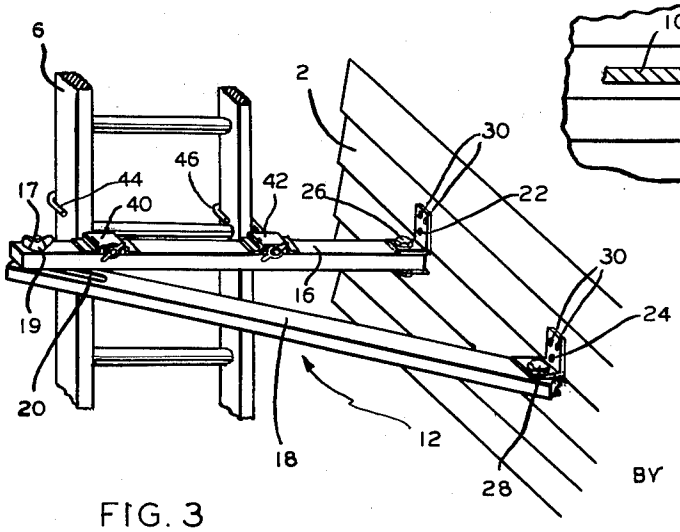


FIG. 3

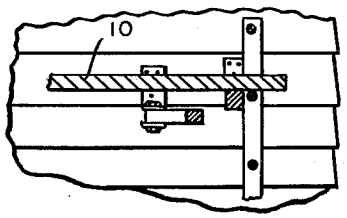


FIG. 4

INVENTOR

Vernon J. Wilkie

BY Munroe D. Smith

ATTORNEY

March 27, 1962 V. J. WILKIE 3,026,963

LADDER BRACKET CONSTRUCTION

Filed Feb. 26, 1959 2 Sheets-Sheet 2

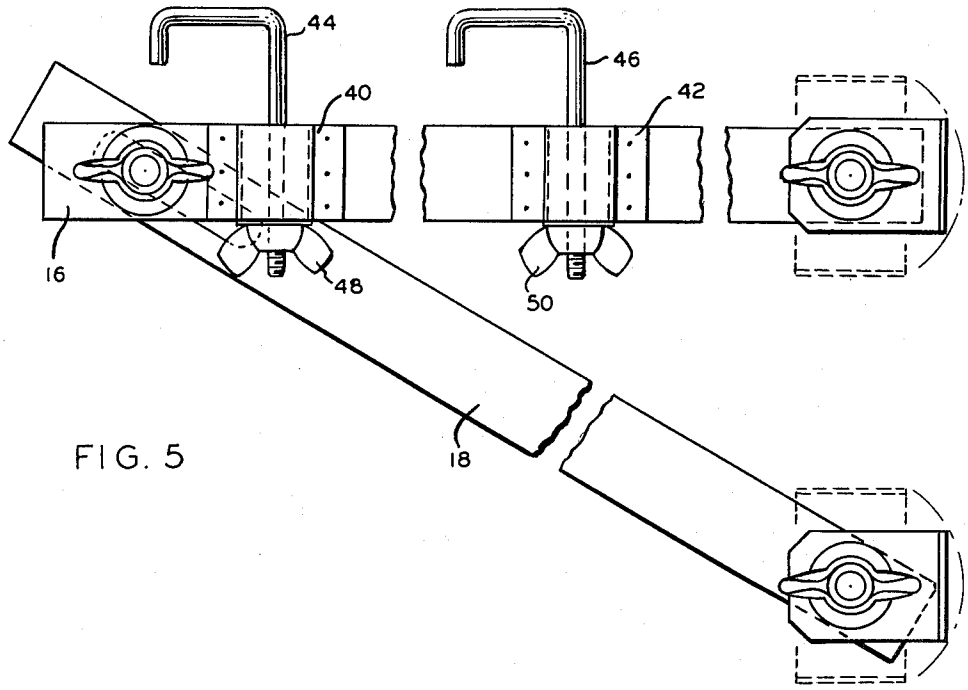


FIG. 5

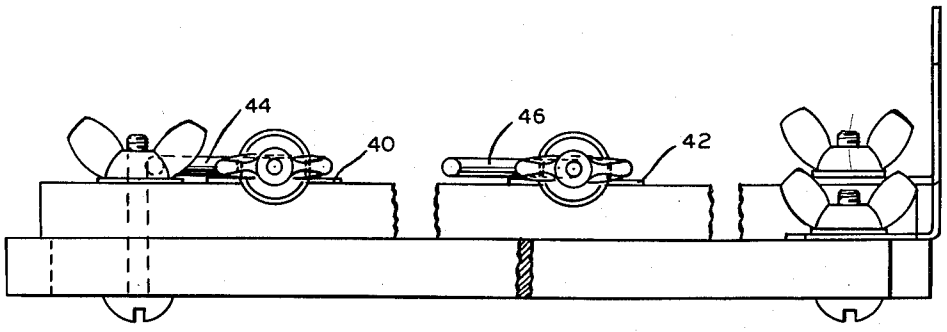


FIG. 6

INVENTOR

Vernon J. Wilkie

BY Monroe A. Hamilton

ATTORNEY

United States Patent Office

3,026,963
Patented Mar. 27, 1962

3,026,963

LADDER BRACKET CONSTRUCTION

Vernon J. Wilkie, 5 Spring St., Lexington, Mass.

Filed Feb. 26, 1959, Ser. No. 795,832
1 Claim. (Cl. 182—93)

This invention relates to holding brackets for staging construction and more particularly to ladder brackets for use in utilizing ladders as staging components and in locating ladders in upright spaced relationship to an exterior wall of a building. In one preferred form of the invention, the bracket means are employed to secure a pair of ladders in fixed relation to a vertical wall such as the exterior wall of a building. The ladders, in their upright positions, are separated from one another and positioned so as to constitute portions of a staging structure wherein the ladder rungs of the respective ladders are parallel to one another. In this position, the rungs are adapted to receive and support horizontal staging planks or similar members in a convenient position to comprise a work platform and to facilitate operations such as house painting, repairs and the like.

It is a chief object of the present invention to provide an improved bracket construction and to devise a ladder bracket assembly which, when used in pairs, may be quickly and conveniently engaged and disengaged about the sides of a ladder member and which may also be detachably secured to the exterior wall of a building to support the ladder in any desired position.

Another object of the invention is to devise a bracket arrangement which, when combined with the ladder in an operative position, serves to reinforce the holding strength of the ladder rungs in a manner to prevent accidental breaking of rungs and consequent injury to a workman.

Still another object is to provide a ladder bracket which is of simplified construction and inexpensive to manufacture.

These and other objects of the invention will be more fully understood and appreciated from the following description of a preferred embodiment of the invention selected for purposes of illustration and shown in the accompanying drawings, in which:

FIG. 1 is a perspective view showing fragmentarily a building exterior and illustrating a ladder and bracket assembly of the invention attached to the building in a working position to support a horizontal staging plank;

FIG. 2 is a plan view taken on the line 2—2 of FIG. 1;

FIG. 3 is an enlarged fragmentary perspective view illustrating further details of the bracket of the invention;

FIG. 4 is a detailed cross sectional view taken on the line 4—4 of FIG. 2;

FIG. 5 is an enlarged plan view of a bracket member removed from the ladder; and

FIG. 6 is a side elevational view of the bracket structure shown in FIG. 5.

The bracket assemblies of the invention are assigned to be used in pairs. The principal parts of one bracket assembly include a pair of pivoted retaining arms, angle plate means for detachably securing the retaining arms to the exterior wall of a building, and a pair of ladder engaging hooks which are supported on one of the pivoted retaining arms in a novel manner.

Referring to the drawings in greater detail, attention is directed to FIG. 1 wherein numeral 2 denotes the exterior wall of a building 4. It may be assumed, for purposes of illustrating one typical application of the invention, that the wall 2 is desired to be painted and that, for purposes of furnishing access to the upper sections of the wall, a painter's staging is desired to be erected. For such a purpose, I may combine one or more pairs of my improved ladder bracket assemblies with two ladders 6 and

8. The ladders are of the same size and rung spacing so that when the respective ladders are upright, rungs line in the same horizontal planes and are in a position to receive and support a staging plank 10.

In accordance with the invention, I secure the ladders in the positions noted by means of a pair of bracket assemblies generally denoted by the arrows 12 and 14 in FIGS. 1 and 2. One of these bracket assemblies 12 is illustrated in greater detail in FIG. 3 and as shown therein includes a pair of retaining arms 16 and 18 which are pivotally attached to one another by means of a bolt 17 and wing nut 19. When supporting a ladder the arm 16 occurs in an uppermost position while the arm 18 is in a lowered position. This arrangement is designed to provide for the upper arm 16 functioning as a ladder rung reinforcing component, while the lower arm comprises a brace component. The arm 18 is further formed with an elongated slot 20 which provides for adjusting the arm 18 into desired position of angularity with respect to the arms 16.

Each of arms 16 and 18 are provided at their free ends with metal angle plates 22 and 24 which are pivoted on pins so that the plates may be swung into varying positions of adjustment to fit against the building exterior in any desired position of angularity of the arms.

In addition, the plates are formed with holes which are adapted to receive therethrough nails, screws or other fastening means which are driven into the exterior wall 2 of the building 4. It is pointed out that by adjusting the arms 16 and 18 into a desired position of angularity and by turning the angle plates correspondingly, the two arms can be secured in a wide range of positions of adjustment to provide a very rigidly braced structure which is highly effective in securing the ladder 6 in an upright position. It is further pointed out that the braced arrangement described operates to resist any displacement or sideways movement of the ladder 6 when properly attached to these side arms 16 and 18. It will also be observed that the pivoted arm arrangement together with the pivoted holding plate accessories make it possible to attach the arms against angularly intersecting surfaces of a building as at a corner or any other angular conformation of a building surface.

An important feature of the bracket assembly of the invention is a pair of adjustable hook elements which are supported at the upper side of the rung reinforcing arm 16 and which are adapted to solidly engage with two side rail portions of a ladder as illustrated in FIG. 3, and at the same time to be interlocked with an intervening rung portion. The adjustable hook elements are slidably received through a pair of hooked retaining elements 40 and 42 which are fastened at the upper surface of arm 16 in spaced apart relationship as shown in FIGS. 3, 5 and 6. Each of these retaining elements is formed with a raised intermediate body portion which occurs in spaced relation to an adjacent surface of the ladder to define a slideway. Through the two slideways thus formed by the retaining elements are supported hook members 44 and 46, in a position such that they extend in the plane of the upper surface of arm 16.

These hook elements 44 and 46 are formed with U-shaped extremities which are preferably designed to fit snugly around the side rails of ladder 6 and to engage over a rung as shown in FIG. 3 and at their opposite ends, the hook elements are provided with threaded ends for receiving wing nuts 48 and 50. When tightened, the wing nuts solidly lock the hook elements against the arm 16. As a result of this interlocking action and the bracing effect derived from the angled arms 18, the use of conventional diagonal bracing may be largely eliminated.

Another important feature of the invention is the protection against ladder rung failure obtained by combin-

ing the arm **16** and the U-shaped hook extremities with a ladder rung as shown. It is pointed out that when the hook element engages over a ladder rung, the upper surface of arm **16** is automatically located in a horizontal plane which passes through the uppermost surface of that particular rung. As a result, the two opposite ends of a staging plank **10** are each supported along two spaced apart bearing points. Thus, the arms **16** at opposite ends of the plank **10** take a great part of a load disposed on intermediate portions of the plank **10** and to reinforce the ladder rungs so that accidents are avoided. Moreover, the carrying strength of the plank **10** is increased by having two spaced apart bearings at each end instead of one bearing, and less buckling of the plank will take place. It will be observed that the spacing between the bearings and either end of the plank is determined by the width of the arm **16** which may be varied as desired.

It will also be observed that additional sections of staging may be built up by clamping together additional ladder sections, one above another and then utilizing additional pairs of ladder brackets of the invention.

From the foregoing description it will be apparent that I have disclosed a simplified efficient means of standing a ladder in an upright position to constitute a staging component and the ladder is held so as to receive a staging plank in a highly effective manner.

While I have shown a preferred embodiment of the invention, changes and modifications may be resorted to in keeping with the scope of the appended claim.

I claim:

A house painter's staging construction for use with an exterior vertical wall surface of a building comprising in combination a pair of ladders, each including spaced rail portions and spaced connecting rungs, a pair of transversely disposed ladder brackets located between the two said ladders and arranged substantially at right angles to the vertical wall surface of said building for supporting the ladders upright in spaced relation to one another and to the vertical wall surface and in a position such that the rungs of one of said ladders occurs in parallel relationship to the rungs of the other ladder, each of said ladder brackets including an upper supporting arm extending parallel with the rungs of the adjacent ladder and beyond the outer rail of the adjacent ladder, a lower supporting arm extending diagonally between the outer end of said upper arm at a point beyond the outer rail of the ladder and the vertical wall surface, said lower diagonal supporting arm lying immediately below the upper supporting arm and being formed with elongated slots at its outer end portions, means for solidly securing the inner extremities of the arms to the vertical wall surface, means adjustably securing the outer extremities of the respective lower supporting arms to the upper supporting arms outwardly beyond the outer rail of the ladders, a pair of spaced outwardly facing hook means adjustably secured to each of said upper supporting arms, each of said hook means engaging about the adjacent rail portions of the respective ladders immediately above the adjacent rungs of the ladders, said hook means being constructed and arranged to rigidly maintain the upper surface of said upper supporting arm in a common horizontal plane which passes through the uppermost surface of the adjacent ladder rungs of the two ladders, a horizontally disposed staging plank having opposite ends thereof resting upon the ladder rung surfaces which lie in said common horizontal plane and upon the upper surfaces of the upper supporting arms to provide an elongated work-supporting platform, whereby said supporting arms engaging against the undersurface of the staging plank at points between said ladders provide inner auxiliary supporting means therefor, and additional bearing supports are provided for the staging plank by said diagonal supports which engage said plank when the latter sags under load conditions to limit sagging of the plank.

References Cited in the file of this patent

UNITED STATES PATENTS

437,934	O'Brien	Oct. 7, 1890
1,115,559	Mills	Nov. 3, 1914
1,830,017	Dahlberg	Nov. 3, 1931
1,937,608	Tobin	Dec. 5, 1933
2,308,142	Alloway	Jan. 12, 1943
2,503,137	Sloss	Apr. 4, 1950
2,663,484	MacPherson	Dec. 22, 1953