July 27, 1948. E. J. LAMBERT 2,446,093

HOIST FRAME

Filed Feb. 10, 1947 2 Sheets-Sheet 1

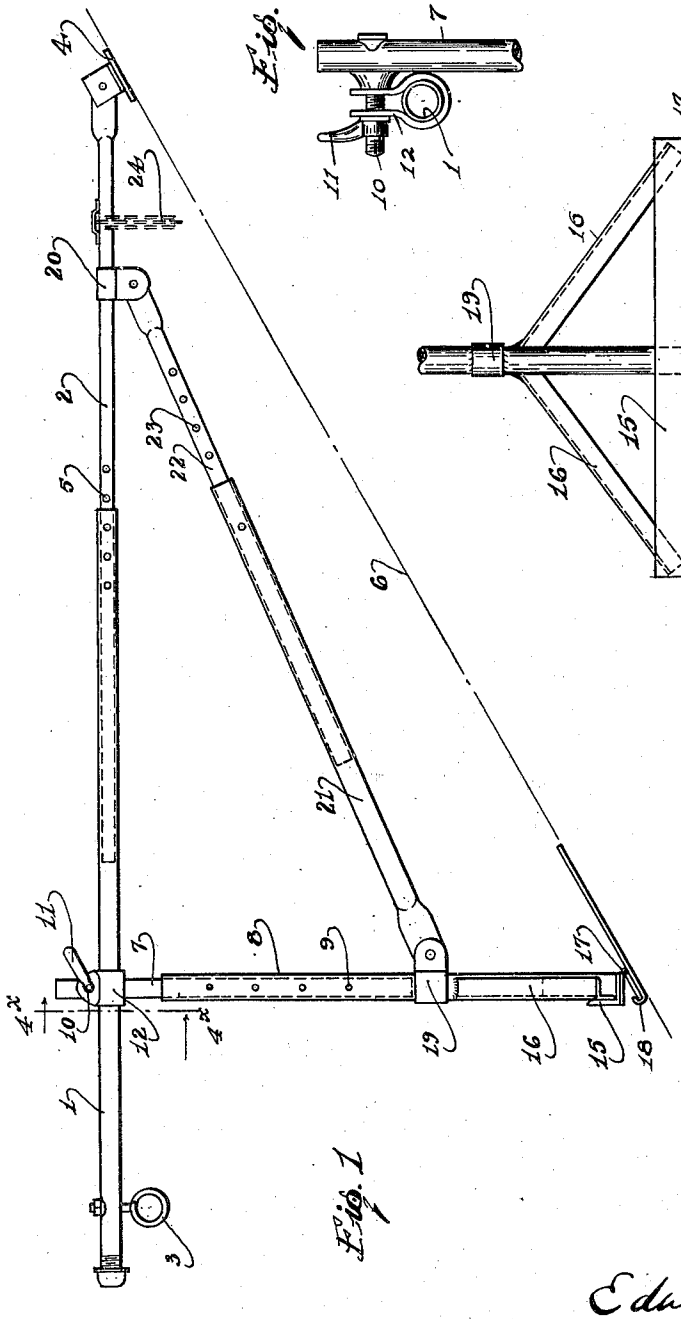


Fig. 1

Fig. 2

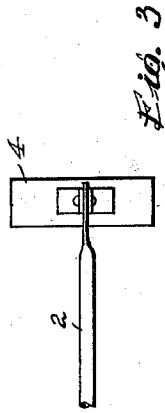


Fig. 3

Fig. 4

Inventor
Edward J. Lambert
By Mann, Liddy, Glascock & Dick
Attorneys

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HOIST FRAME

Filed Feb. 10, 1947 2 Sheets-Sheet 2

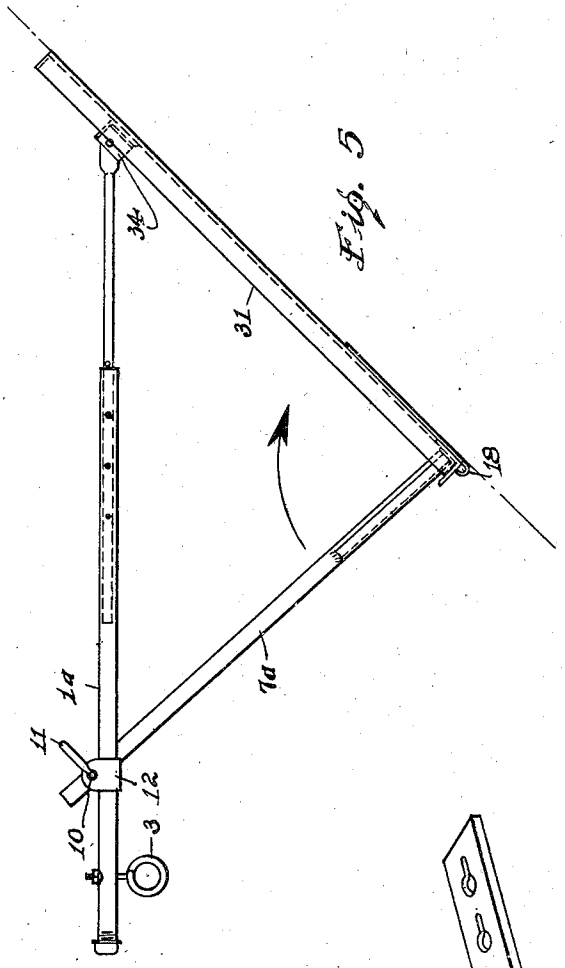


Fig. 5

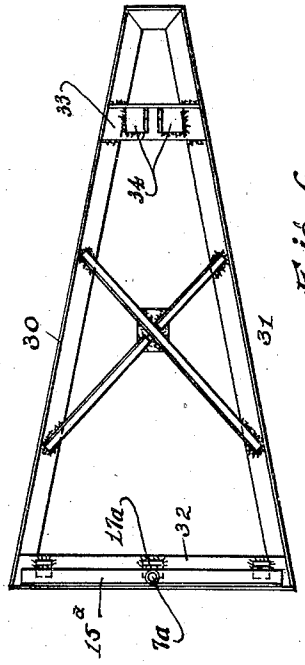


Fig. 6

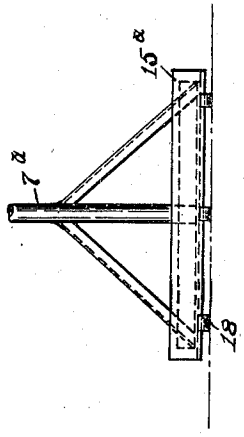


Fig. 7

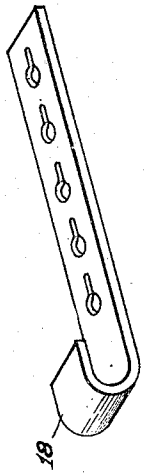


Fig. 8

Inventor

Edward J. Lambert

By Munn, Liddy, Glascock & Fish

Attorneys.

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HOIST FRAME

Edward J. Lambert, Quincy, Ill.

Application February 10, 1947, Serial No. 727,698

7 Claims. (Cl. 248—237)

1

My present invention has for its object to provide a frame for supporting hoisting apparatus which is particularly adapted for use upon the roofs of buildings for elevating building materials and other goods.

A further object of my invention is to provide a form of frame which is adjustable for use on roofs of different pitch and also adjustable to position the rigging boom advantageously both with reference to the location of its forward end relatively to the face of a building and as to its most convenient elevation with respect to the eaves of a roof or to a coping, a fire wall or other part of a building structure which may project above the edge of a roof.

To these and other ends my invention has for its object to provide further improvements in construction, all as will be fully described in the accompanying specification, the novel features thereof being set forth in the appended claims.

In the drawing:

Figure 1 is a side elevation of a hoist frame illustrating one embodiment of my invention.

Figure 2 is a front view of the foot portion of the forward supporting leg.

Figure 3 is a detail plan view of the ballast plate on the rear end of the boom.

Figure 4 is a sectional view on the line 4*x*—4*x* of Fig. 1 showing the stirrup clamp for the boom.

Figure 5 is a view similar to Fig. 1 showing the parts in a different position of adjustment and embodying a modification in which there is employed a framework which is upon the roof.

Figure 6 is a plan view of the bed frame incorporated in structure of Fig. 4.

Figure 7 is a front view, similar to Fig. 2, showing the foot piece which is attached to the forward end of the bed frame.

Figure 8 is a perspective view of a form of cleat and stop which is attached to a pitched roof either to anchor the foot piece shown in Fig. 2 or the forward end of the bed frame illustrated in Fig. 5.

Similar reference characters in the several figures indicate similar parts.

In the handling of roofing material and other goods which because of their bulk or weight require the use of a hoisting apparatus, it is the general practice to erect a temporary structure of heavy timbers at the site of each job. This was time consuming and expensive since successive jobs on which a roofer was required to work usually varied considerably due to the differences in structure encountered in different buildings.

To overcome these disadvantages I have provided a hoist frame which is universally adjust-

2

able and thus adaptable for use on buildings in which the roofs may be either flat or pitched and on which the copings and fire walls may vary both in height and thickness.

In carrying out my invention I provide an extensible boom made of telescoping tubular parts 1 and 2, the former being intended to extend beyond the edge of a roof where it is provided with an eye 3 for the attachment of a block and tackle, and the latter carrying at its rear end a ballast plate 4 pivoted thereto for automatically accommodating itself to the pitch of a roof.

The boom is made adjustable in length by providing its parts with a series of registering spaced apertures 5 through which a locking pin may be inserted.

In Fig. 1 I have shown the hoist frame in the position it will occupy on a pitch roof as indicated by the dot and dash line 6. The boom is supported in a substantially horizontal position on a forward leg which is also composed of telescoping members 7 and 8 having a series of spaced registering perforations 9 for the reception of a locking pin whereby the length of the leg may be extended or shortened as desired. An adjustable pivotal connection unites the boom and its supporting leg. In the present instance this is shown as mounted on the upper end of part 7 and comprising a laterally extending stud 10 threaded to receive a nut having an operating handle 11, and also pivoted on the stud are the ears of a stirrup 12 surrounding the part 1 of the boom which, when compressed by the nut, rigidly connects the boom to the leg. At its lower end the latter is supported by mounting the part 8 on a foot-piece comprising a horizontal rail 15 and diverging brace arms 16. These parts are preferably made of angle iron and in order to render the lower flange of the rail 15 conformable to underlying surfaces I attach thereto one of the leaves of each of several pairs of hinges 17. These are arranged with their pintles at the rear side of the rail, thus permitting the free leaves of the hinges to accommodate themselves to any angular surface upon which they may rest. As a convenient means of rigidly connecting the lower end of the leg in a selected position on a roof I provide straps or cleats (see Fig. 8) which are to be nailed thereto and have upwardly curved or hooked lower ends 18 in which the hinge leaves may be engaged.

A brace arm or strut extends from the lower portion of the leg to the rear end of the boom, and its ends have pivotal connections in brackets 19 and 20 which are secured to said parts. The strut is extensible to accommodate the relative

adjustments of the boom and its supporting leg and therefore is composed of the telescoping tubes 21 and 22 having a series of perforations 23 for the reception of a locking pin.

To the rear part 2 of the boom, between the clip 20 and the ballast plate I fix chains 24 of sufficient length to serve as a means for securing weighty objects, such as a bundle of shingles, rolls of roofing material, or bags of cement, which may be placed in engagement with the plate 4 and the end of the boom.

In Fig. 5 I have shown another adjustment which the parts may assume and therein I indicate a modification of the parts whereby the boom 1a is supported on a rigid leg 7a. The latter is supported at its lower end on a truss (see Fig. 7) similar to that shown in Fig. 2. In this structure I employ a bed frame (Fig. 6) which is adapted to rest upon the roof. It is of V-shape and comprises side rails 30—31 of angle iron which diverge to form a broad lower end formed by the connecting piece 32 to which the rail 15a of the boom supporting leg is connected by hinges 17a, whereby it may be collapsed against the bed when the apparatus is not in use. At its narrow upper end the bed frame has a cross-piece having upwardly extending ears 34 to which the rear end of the boom is pivoted. The extension of the bed frame beyond the point of connection for the boom provides a platform on which weighted objects may be placed to anchor the rear end of the boom.

I claim:

1. In an adjustable frame for supporting hoists, the combination with a boom composed of extensible parts, and a ballast plate at the inner end of the inner part, of a vertical extensible leg supporting the forward end of the forward part of the boom and an adjustable strut connecting the rear end of boom to the lower end of said leg.

2. An adjustable hoist frame comprising a boom having an inner end and outer end longitudinally adjustable thereon, a ballast plate on said inner end for anchoring it, a vertical leg having an upper extensible end, a clamp for adjustably securing the latter to the forward portion of the outer end of the boom and a longitudinally adjustable strut connecting the lower end of the leg with the rear end of the inner portion of the boom forward of the ballast plate.

3. In a frame for supporting hoists on pitched roofs, the combination with a boom composed of telescoping front and rear parts, a ballast plate pivoted at the end of the rear part which automatically adapts itself to the slope of the roof, and an upright leg for supporting the forward section of the boom comprising telescoping upper and lower members, of a horizontal rail carrying said lower member, cleats for attachment to a sloping roof having hook shaped ends for engagement with said rail, of a clamp adjustably connecting said upper member to the boom, a strut composed of longitudinally adjustable sections pivotally connected at their extremities to the lower member of the leg and the rear part of the boom and separate securing devices for locking the parts of the boom, the leg members and the strut sections in their relative positions of adjustment.

4. In a hoist frame for use on pitched roofs, the combination with a horizontal boom having a ballast plate at its inner end conforming to the slope of the roof, a cleat having a hooked end for attachment to the roof at a point below the plate and a foot member engaging said cleat, of an upright leg carried by the foot and supporting the forward end of the boom and a strut extending rearwardly from the lower end of the leg and connected to the rear end of the boom adjacent the ballast plate.

5. In a hoist frame for use on pitched roofs, the combination with a horizontal boom having a ballast plate at its inner end conforming to the slope of the roof, cleats having hooked ends for attachment to the roof at a point below the plate and a horizontal foot rail having hinge leaves engaging said cleats, and a strut extending rearwardly from the lower end of the leg and connected to the rear end of the boom adjacent the ballast plate.

6. In a frame for supporting hoists on roofs, the combination with a boom having a forward end for extending beyond the side wall of a building and a rear end for engagement with the roof of the building, an upright leg supporting the boom in rear of its forward end in rear of a building side wall, and a ballast plate pivoted to the rear end of the boom, of a strut connecting the lower end of the leg to the rear end of the boom at a point forward of said plate, said boom, leg and strut each comprising two telescoping members, means for locking the same in their relative positions of adjustment, and an adjustable clamping member for securing the upper end of said leg to the outer member of the boom.

7. In a frame for supporting hoists on pitched roofs, the combination with a boom composed of telescoping front and rear parts, the former for extending beyond the side wall of a building and the latter for engaging the roof at a point spaced rearwardly from the building wall, a ballast plate pivoted at the end of the rear part which automatically adapts itself to the slope of the roof, and an upright leg for supporting the forward section of the boom adjacent to and rearwardly of the building wall, said leg comprising telescoping upper and lower members, of a clamp adjustably connecting said upper member to the front part of the boom, a strut composed of longitudinally adjustable sections pivotally connected at their extremities to the lower member of the leg and the rear part of the boom and separate securing devices for locking the parts of the boom, the leg members and the strut sections in their relative position of adjustment.

EDWARD J. LAMBERT.

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