

March 4, 1924.

1,485,972

B. F. FITCH

MEANS FOR CONNECTING A LOAD TO LOAD LIFTING MECHANISM

Filed March 22, 1922

2 Sheets-Sheet 1

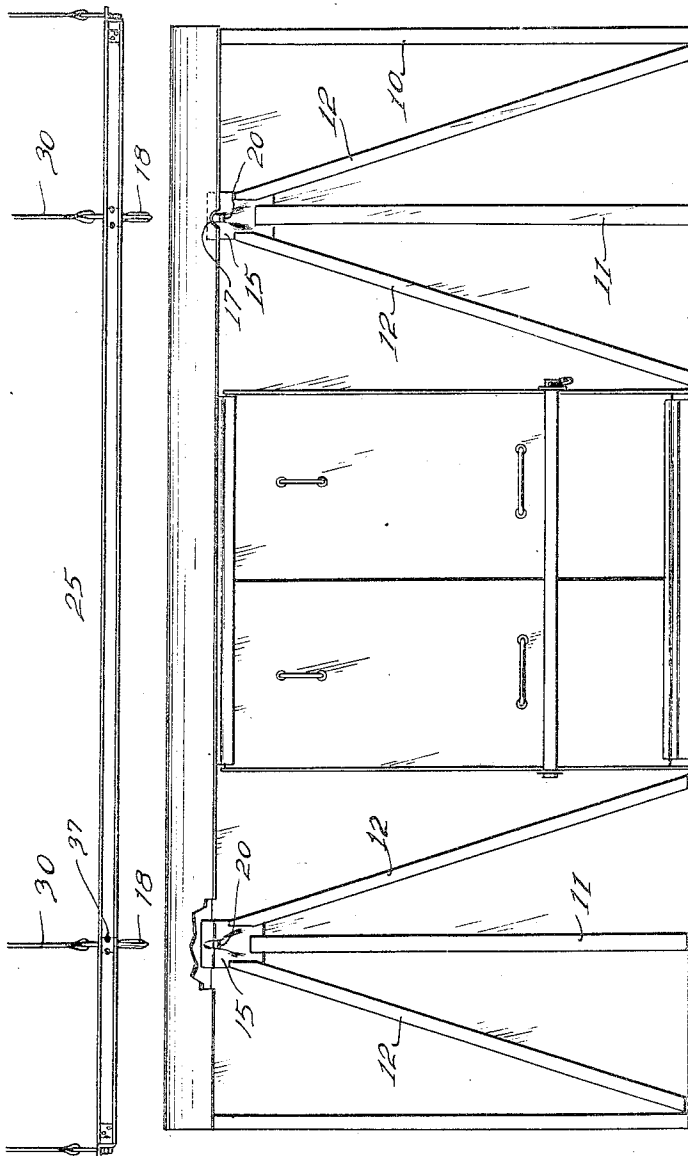


FIG. 1

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2 Sheets-Sheet 2

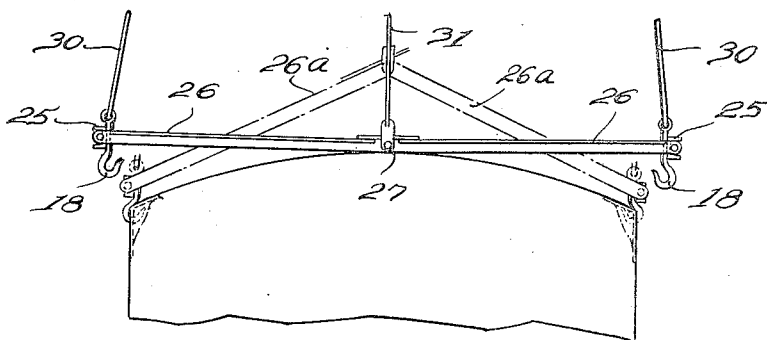


Fig.-2

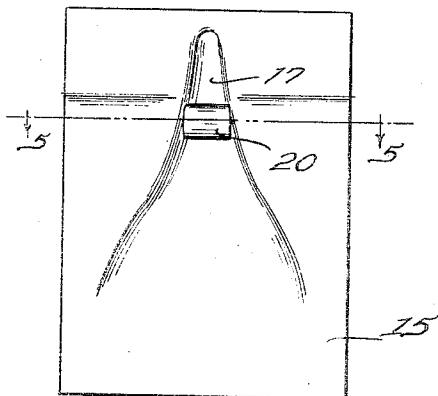


Fig.-4

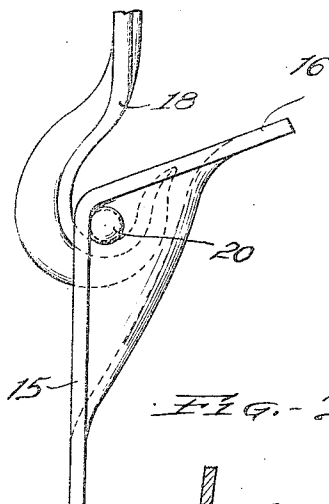


Fig.-3

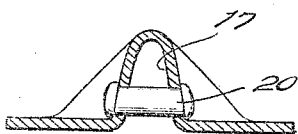


Fig.-5

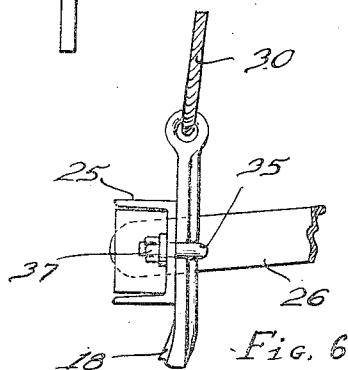


Fig. 6

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UNITED STATES PATENT OFFICE.

BENJAMIN F. FITCH, OF EVANSTON, ILLINOIS.

MEANS FOR CONNECTING A LOAD TO LOAD-LIFTING MECHANISM.

Application filed March 22, 1922. Serial No. 545,668.

To all whom it may concern:

Be it known that I, BENJAMIN F. FITCH, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Means for Connecting a Load to Load-Lifting Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to supporting elements adapted to be carried by a load, and to cooperating hoisting mechanism for engaging said elements. Such elements and mechanism are useful in connection with the handling of freight in automobile bodies or containers, wherein the load is suspended at four points from an overhead hoisting mechanism.

One of the objects of my invention is the provision of a load supporting element which may be readily incorporated in a container, so as not to project beyond the top thereof, and at the same time to possess sufficient strength to support a loaded container when suspended from an overhead hoisting mechanism. In this connection, my invention contemplates the provision of a device which is simple in construction, light in weight, and capable of centering the load engaging members carried by the hoisting mechanism.

In the construction of a hoisting mechanism, my invention provides for load engaging elements which may be directly connected to hoisting cables, whereby a positioning cradle of light construction may be used, without any of the load stresses being placed upon the beams of which the cradle is formed.

The means for carrying out my invention will be hereinafter described in connection with the drawings forming a part thereof, and the essential characteristics will be summarized in the claims.

In the drawings, Fig. 1 is a side elevation of a container having a load supporting device constructed according to my invention and having a hoisting element shown above the container; Fig. 2 is an end view of the hoisting element and container as shown in Fig. 1; Fig. 3 is an end view of a supporting element constructed according to my invention but removed from the container, and showing one of the load engaging elements in the form of a hook; Fig. 4 is a front ele-

vation of the device shown in Fig. 3 with the hook removed; Fig. 5 is a section on the line 5—5 in Fig. 4; and Fig. 6 is a fragmentary view of an enlarged scale showing one of the load supporting hooks.

One of the uses of my invention is illustrated in Fig. 1, wherein 10 indicates a container in the form of a removable body having provision adjacent the upper corners thereof for receiving a load supporting element, which is adapted to be engaged by the hoisting mechanism for raising and transporting the container.

In handling freight by the use of such containers, the usual practice is to engage the container at the top. Accordingly, to transmit the lifting stresses to the floor of the container, I have shown a vertical reinforcing strip 11 and inclined strips 12, all of which may be attached to a plate 15 embodying part of my invention. These plates are attached to the container near the eaves of the roof, and in the form illustrated are provided with a flange 16 which extends beneath the roof covering, whereby the covering constitutes a flashing for preventing seepage of rain water into the walls of the container.

The plate 15 may be a heavy stamping or forging, dependent of course, upon the load to be carried, but in any case the plate is provided with a recess 17 which is sufficient to admit a supporting hook 18. Extending across this recess I provide a load supporting member 20, the ends of which are upset beyond that portion of the plate turned inwardly to form the recess. The shape of the recess as shown in Figs. 3 and 4 is such as to automatically center the load engaging hook, thus obviating the necessity for a workman to effect an engagement manually between each hook and the cooperating engaging element on the load.

A convenient means for obtaining an accurate engagement automatically by a plurality of hooks is illustrated in Figs. 1 and 2, wherein the hooks are carried on longitudinal beams 25 of a cradle. These beams are adapted to extend beyond the ends of the load and to be connected at the central portion of the cradle by hinged end beams 26, at a common connection 27. When the cradle is not supporting a load, as illustrated in Figs. 1 and 2, the hinged connections 27 are substantially in a plane with the longitudinal beams 25, in which position

the hooks 18 clear the sides of the container so that the cradle may be lowered over the load by lowering the load supporting cables 30.

5 When the hooks are beneath the supports 20 the cradle may be buckled by drawing upwardly on cables 31 attached to the hinged connections 27, and this automatically draws the hooks 18 inwardly and upwardly to engage beneath the supports. 10 The inter-engagement is materially aided by the shape of the recess 17 which converges toward the top so as to automatically center the hooks as they are moved 15 inwardly and upwardly. After the hooks are brought into engagement with the members 20, the hoisting cables 30 may be raised, whereupon the load is lifted and the hinged members 26 are automatically held in the 20 position indicated by the broken lines 26^a in Fig. 2.

By attaching the load engaging elements to the ends of the supporting cables and by positioning such elements on the beams 25 25 so as to automatically register with the various supporting members 20, it is obvious that all load stresses are transmitted directly through the elements or the hooks to the hoisting cables. Accordingly, the beams 30 25 and 26 may be of very light construction and sufficient only to hold the hooks in proper position for registration with the supporting members on the load. A convenient means of attaching the hooks to 35 the beams 25 is shown in Fig. 6 as comprising U-bolts 35 which extend around the shanks of the hooks, occupying recesses therein, and have their ends passing through the webs of the beams 25 and secured by suitable nuts 37. The outer face 40 of the hook shank is preferably flattened to prevent turning.

The claims presented in this application are concerned particularly with the pocket 45 construction. The claims on the cradle construction, will be found in my co-pending application Serial No. 632,239, filed April 16, 1923.

From the foregoing description it will 50 be seen that my invention provides a recessed load supporting element which possesses sufficient strength to support a load without requiring the use of exterior projecting members. In addition, my invention 55 provides a means for centering the hoisting mechanism, thus enabling the load to be engaged and raised by one man, and obviating the necessity of individual attention to each load engaging member. Further, the cradle construction permits a load 60 to be suspended without any of the load stresses being transmitted through the cradle beams.

Having thus described my invention, I claim:

1. In a device of the character described, 65 a one piece member having bearing surfaces thereon lying in two intersecting planes, and having a pocket formed by a portion struck up from said member, so as to in- 70 terrupt the line formed by the intersection of said surfaces.

2. The combination with a one piece member having two surfaces lying in intersecting planes, and having a pocket extending 75 across the intersection of said surfaces, of a load supporting element carried by said member and extending transversely of said pocket.

3. In a device of the character described, 80 the combination with a one piece member having a pocket formed therein, of a load supporting element carried thereby and extending across said pocket, said pocket being flared outwardly adjacent said element 85 for admitting a load engaging member.

4. In a device of the character described, the combination with a one piece member having a pocket therein, said pocket being 90 wider at the bottom than at the top, of a load supporting element carried by said member and extending transversely of the pocket.

5. In a device of the character described, the combination with a one piece member 95 having two surfaces thereof lying in intersecting planes, and having a portion thereof turned inwardly to form a pocket, said pocket extending from one of said surfaces to the other, and a load supporting element 100 associated with said member.

6. In a device of the character described, the combination with an angle plate having one face thereof inclined to another, and having portions thereof adjacent the inter- 105 section of said faces turned inwardly, and a load supporting element associated with the inwardly turned portions.

7. In a device of the character described, the combination with a one piece member 110 having a tapered depression therein and a load supporting element carried by the member and extending across said depression.

8. In a device of the character described, 115 the combination of a one piece member having two surfaces thereof lying in intersecting planes, and having a portion of each surface turned inwardly to form a pocket which converges from one surface to the 120 other, and a load supporting element extending across the pocket adjacent the intersection of said surfaces.

In testimony whereof, I hereunto affix my signature.

BENJAMIN F. FITCH.