Oct. 5, 1954 G. R. BETZ 2,690,926

LOAD HOOK

Filed June 18, 1952 2 Sheets-Sheet 1

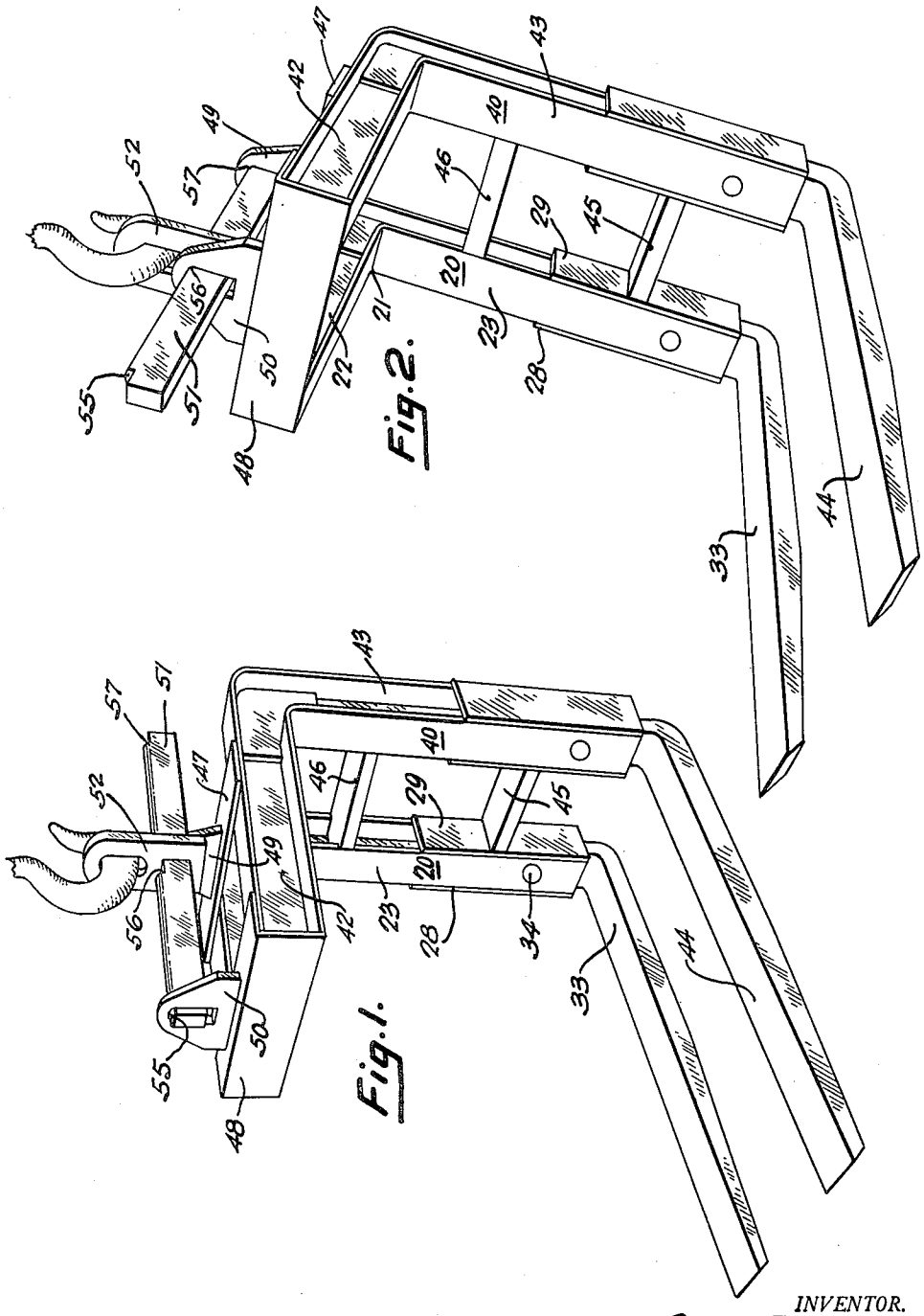



Fig. 2.




Fig. 1.

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Fig. 5.

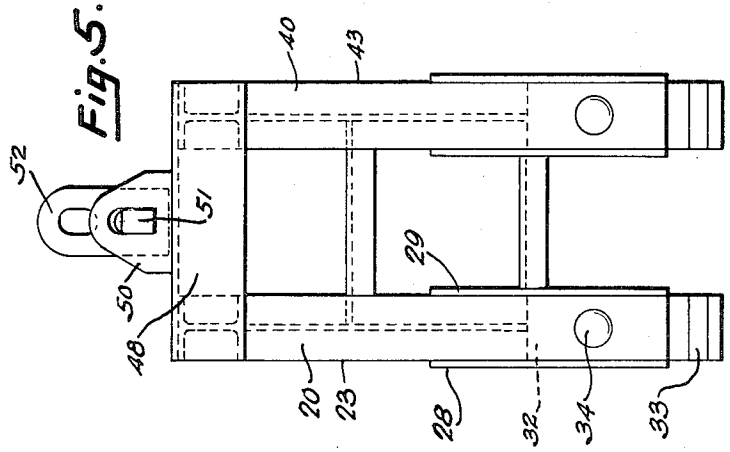



Fig. 3.

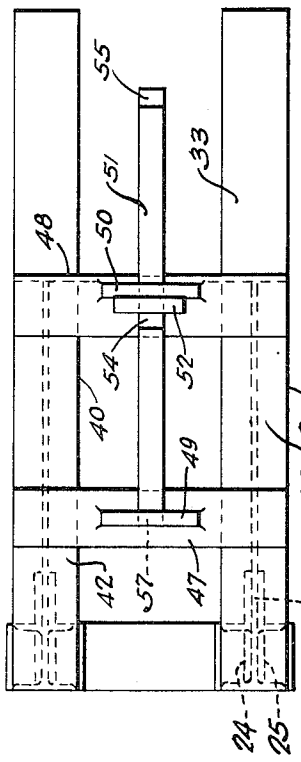
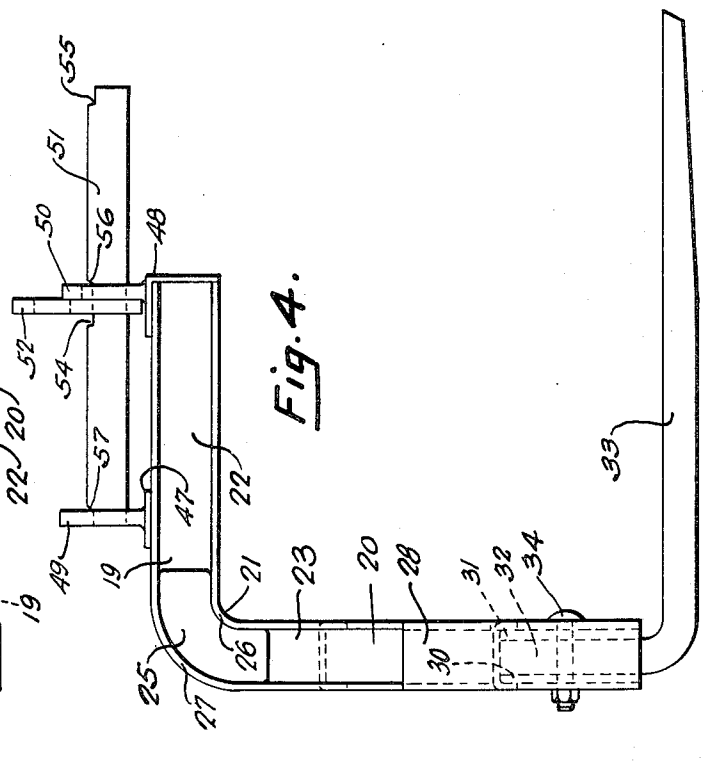



Fig. 4.




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# UNITED STATES PATENT OFFICE

2,690,926

## LOAD HOOK

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Application June 18, 1952, Serial No. 294,232

3 Claims. (Cl. 294—82)

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This invention relates to an improved stock lifting hook.

The stock lifting hook of the present invention is adapted to be attached to a hoist and inserted into a coil of wire, roll of metal or slid under a stack of bars or rods for the purpose of lifting and transporting them from one location to another.

It is among the objects of the present invention to provide such a stock lifting hook with adjustable means by which it is attachable to a hoist so that the center of gravity of the unloaded or the loaded hook may be varied to maintain balance.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a perspective view of the lifting hook in one position of adjustment;

Fig. 2 is a similar perspective view showing the hook in another position of adjustment;

Fig. 3 is a plan view of the hook;

Fig. 4 is a side view of the hook; and

Fig. 5 is a front view of the hook.

The stock lifting hook of the present invention may be constructed in several ways. As illustrated, the hook consists of two C-shaped beams each having a vertical body portion and two horizontal, substantially parallel arms rigidly held in side by side spaced relation by rigid spacing ribs anchored to both beams. In the present construction both beams are identical and for the sake of brevity only one will detailedly be described. Beam 20 is made of an I-beam bar bent at 21 to form a horizontal arm 22 and a vertical body portion 23. As shown, arm 22 is about three-fourths the length of the body portion. However, these lengths may vary with the type of hook desired. The web 19 of the beam at the bend 21, is reenforced by two plates 24 and 25 contoured to fit between the inner and outer flanges 26 and 27 of the beam and against the web, said plates being welded to the beam and thus providing a stiffening support at this bent area of said beam 20. The end of the body portion 23 of beam 20 is also stiffened and reenforced by plates 28 and 29 welded to the corresponding inner and outer edges of the flanges 26 and 27.

At the end of the body portion 23 of the beam, the web 19 is cut away for substantially one-half the length of the reenforcing plates 28 and

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29 in order to permit comparatively heavy mounting blocks 30 and 31 to be welded to the inside of flanges 27 and 26 respectively. Aligned holes are provided in the flanges 26 and 27 and their attached blocks 31 and 30. The angular end 32 of an arm having a portion 33 substantially parallel with arm 22 of beam 20, fits between blocks 30 and 31 and is immovably attached to the body portion 23 of beam 20 by a bolt 34. The arm portion 33 is longer than arm 22 of beam 20, the upper and lower surfaces of said portion 33 converging to form a tapered end on said portion 33.

The other beam 40 is identical with beam 20 and has a horizontal arm 42, a body portion 43 and a second arm 44. Beams 20 and 40 are rigidly held in side by side spaced relation by a plurality of rigid spacer ribs 45, 46, 47 and 48, the ends of which are welded to the respective beams. Ribs 45 and 46, as shown in Figs. 1 and 2 are welded between the body portions of beams 20 and 40 and ribs 47 and 48 are welded between the horizontal arm portions 22 and 42 of beams 20 and 40 respectively. Rib 47 is welded to arms 22 and 42 adjacent the ends of reenforcing plates 24 and 25 while rib 48 is welded to arms 22 and 42 at their outer ends. Centrally apertured brackets 49 and 50 are attached to ribs 47 and 48 respectively for receiving a balancing attachment bar 51 which is slidable in said brackets so as to be movable longitudinally of arms 22 and 42 in order to adjust the loop element 52 attached to bar 51 in accordance with the center of gravity of the hook or the load supported by the hook. The loop element 52 may be integral with bar 51 or, as illustrated, it may be an apertured plate welded to said bar.

Bar 51 has two pairs of notches 54—55 and 56—57 spaced the same as brackets 49 and 50 so that when the bar is moved as in Fig. 1, bracket 49 engages notch 54, bracket 50 will engage notch 55 and when bar 51 is adjusted so that notch 56 is engaged by bracket 50, the notch 57 will be engaged by bracket 49. This locks bar 51 against longitudinal movement, in one instance with the loop member 52 adjacent bracket 49 and in the other instance with the loop member 52 adjacent the bracket 50. Thus the bar 51 is selectively adjustable into different positions relatively to the hook to compensate for shifting of the center of gravity due to loading of the hook. If necessary more pairs of notches may be provided in bar 51 offering a greater number of selective positions into which bar 51 may be moved relatively to the hook.

Fig. 1 shows the hook in the normal, no load balanced position. Here the bar **51** is so positioned that the loop member **52** thereof is adjacent the bracket **49** so that the greater portion of the arms **22** and **33** are to one side of the center of gravity while the smaller portions of said arms and the body portion **23** of the hook are to the other side of the center of gravity. Thus the hook when suspended from the hoist has its arms **22** and **33** substantially horizontal and its body portion **23** vertical.

As shown in Fig. 2, the hook, when suspended with the loop member **52** adjacent the bracket **50**, will assume a tilted position. This is desirable when the hook is loaded for in this position of adjustment the load on the hook will be urged toward the body portion **23** and thus the tendency of the load to roll or shift off the hook is substantially reduced due to this shifting of the center of gravity.

Thus the present invention provides a simply constructed and sturdy load lifting hook easily adjusted for initial application to the load preparatory to lifting thereof and readjusted just as easily for shifting the center of gravity whereby the load is urged into the hook to prevent dropping of the load during lifting and transporting.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted.

What is claimed is as follows:

1. A stock lifting hook for engaging and transferring loads, consisting of two C-shaped beams held side by side in spaced relation by rigid ribs attached to the horizontal and vertical arms of said beams; and a balance bar longitudinally, shiftably supported between two of the rigid ribs secured between the upper two horizontal arms of said beams, said bar having a hoist-hook receiving loop and a plurality of pairs of spaced notches engageable with notch receiving edges on said ribs for locking the bar thereby in a selected position against longitudinal movement relatively to said ribs.

2. A stock lifting hook for engaging and transferring loads, consisting of two C-shaped beams held side by side in spaced relation by rigid ribs attached to the horizontal and vertical arms of said beams; two adjacent ribs being positioned between the upper two horizontal arms of said beams, said adjacent ribs having openings midway between said horizontal arms to which the said ribs are attached; a balance bar extending through said openings of said ribs and being longitudinally movable in said openings, said bar having pairs of notches engageable with the edges of said ribs around said openings for locking said bar in selected positions against longitudinal movement relatively to said ribs; and a hoist-hook receiving loop member attached to the bar and positioned between the supporting ribs.

3. A stock lifting hook for engaging and transferring loads, said hook consisting of two rigid beams each shaped to provide an upper horizontal and a vertical arm, said beams being secured together in side by side, spaced relation by a plurality of spacer ribs secured between the horizontal and vertical arms of said beams, two adjacent ribs between the two upper horizontal arms of the beams each having an opening midway between said beams; a rigid load supporting member removably secured to the vertical arm of each beam and having a portion parallel to the horizontal arm of the respective beam; a balance bar slidably supported in the openings of said two adjacent ribs so as to be longitudinally movable relatively to the horizontal arms of the beams; pairs of notches in the bar each pair spaced so as to receive the edges around the openings of said two adjacent ribs for locking the bar in a selected longitudinal position relatively to said ribs; and a loop member provided on the bar and extending from the hook between the horizontal arms and the two adjacent ribs engaged by the bar.



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