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2,866,247

SAFETY LOCK FOR CRANE HOOK

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FIG. 1.

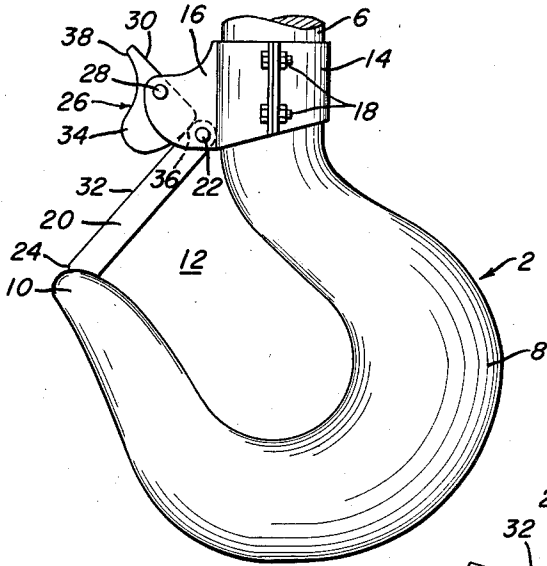


FIG. 2.

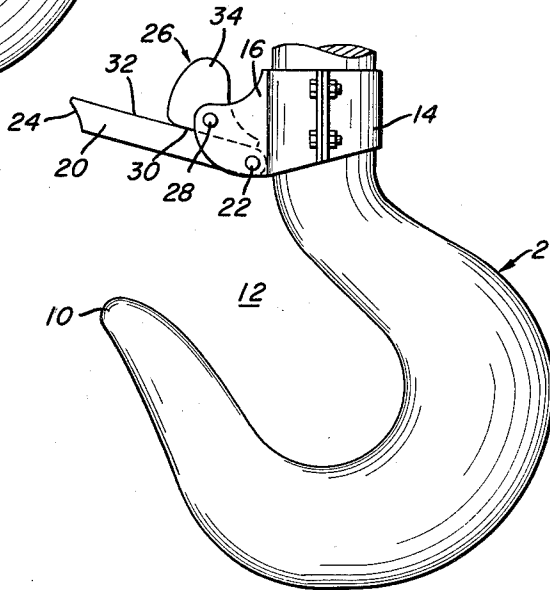
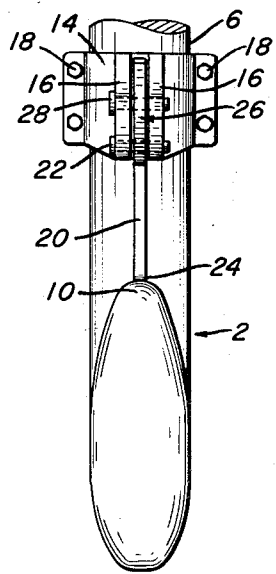


FIG. 3.



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SAFETY LOCK FOR CRANE HOOK

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1 Claim. (Cl. 24—232)

The present invention relates generally to lift cranes and more particularly to a safety lock for a lift crane hook.

It is an object of my invention to provide a safety lock which may be easily installed on a lift crane hook for blocking the throat thereof to prevent accidental displacement of an article carried by the hook.

It is another object of the invention to provide a safety lock as described above which is adapted to move into blocking position by gravity and be automatically secured in blocking position by means of a counterweighted locking member.

It is a further object of the invention to provide a safety lock as described above wherein the locking member can be released by positive manipulation only.

It is a further object of the invention to provide a safety lock for a lift crane hook which is simple and rugged in construction and positive in operation.

These and other objects will become more apparent after referring to the following specification and attached drawings in which:

Figure 1 is a side elevational view showing the safety lock of the invention in closed position;

Figure 2 is a view similar to Figure 1 showing the safety lock of the invention in open position; and

Figure 3 is an end view looking toward the left of Figure 1.

Referring more particularly to the drawings, reference numeral 2 designates a crane hook having the safety lock of my invention installed thereon. The hook 2 is conventional in structure and is comprised of a shank 6, body 8, point 10 and throat 12.

A split bracket 14 having two parallel spaced arms 16 projecting outwardly therefrom is mounted on the shank 6 of the hook by nut and bolt means 18. The arms 16 project in a plane spaced above the throat 12 of the hook. A latch bar 20 is pivotally attached at one end between the arms 16 by means of a pivot pin 22 which is attached to and extends between the lower inside corners of arms 16. The latch bar 20 is of such length as to span the throat 12 and engage the tip portion 10 with its free end 24 when the bar is pivoted downwardly from the bracket, as shown in Figure 1.

A counterweighted locking member 26 is pivotally mounted between the arms 16 by means of a pivot pin 28 which is attached to and extends between the upper and forward portions of the arms 16. The locking member 26 is provided with a straight side 30 which contacts the upper surface 32 of the latch bar when the latter is in elevated or open position, as shown in Figure 2. The locking member 26 is also provided with an enlarged counterweighted portion 34 which has a cam surface 36 which engages and locks the latch bar 20 against the point 10 of the hook. The latch bar 20 is normally in locking position as shown in Figure 1 since it is free to pivot by its own weight.

In operation, to elevate the latch bar 20 to open position the locking member 26 is rotated in the clockwise direction by applying force manually against the surface

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38 thereof. After the locking member has been rotated to the position shown in Figure 2 the latch member is lifted and held in elevated position until the crane hook is loaded or unloaded. Then the latch bar is released causing it to fall against the tip portion 10 of the hook and again block the throat 12. The latch bar is automatically locked in this position by means of the locking member 26 which due to its counterweighted shape rotates counterclockwise when the latch bar is released and engages the upper surface 32 of the latch bar with its cam surface 36. Thus, the latch bar is maintained in locking position by the locking member regardless of the pressure which may be applied to its underside by the shifting of rings, slings or other articles being carried on the hook. It will be seen that the safety lock of my invention provides a positive means for restricting the clearance of the throat of the hook at all times. Although it assumes locking position automatically it requires manual manipulation of the locking member 26 to release the safety lock from locking position.

While one embodiment of my invention has been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claim.

I claim:

In a crane hook having a shank, a curved portion in the shape of a bow extending arcuately downwardly and then upwardly from the lower end of said shank, a tip portion on the upper free end of said curved portion, said tip portion and said shank defining a throat therebetween, the improvement therewith of a safety lock which comprises a bracket removably mounted on said shank, said bracket including a split collar body portion removably mounted around said shank, a pair of spaced parallel arms projecting from said body portion in a horizontal plane above said throat, a pivot pin extending between the inner and lower ends of said arms, a latch bar pivotally mounted by one end on said pivot pin between said arms, said latch bar being of such length as to span said throat and extend to said tip portion for engagement therewith to block said throat when the latch bar is pivoted downwardly from said bracket, said latch bar being freely pivotal on said pin whereby it normally assumes throat-blocking position by gravity through its own weight, a second pivot pin extending between the upper and outer ends of said arms, a counterweighted locking member for said latch bar pivotally mounted on said second pivot pin, said locking member having a straight side which contacts a side of said latch bar when said latch bar is in elevated position away from said point, said locking member having an enlarged counterweight portion with a cam surface adjacent said straight side for engaging said latch bar when the latter is in engagement with said tip portion in throat-blocking position, said enlarged counterweight portion being remote from said bracket whereby to rotate said locking member by gravity to engage the cam surface of said locking member with said latch bar to lock the bar against said tip portion when the free end of the latch bar is pivoted toward said tip portion away from said bracket.

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