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SAFETY CRANE HOOK

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Fig. 1.

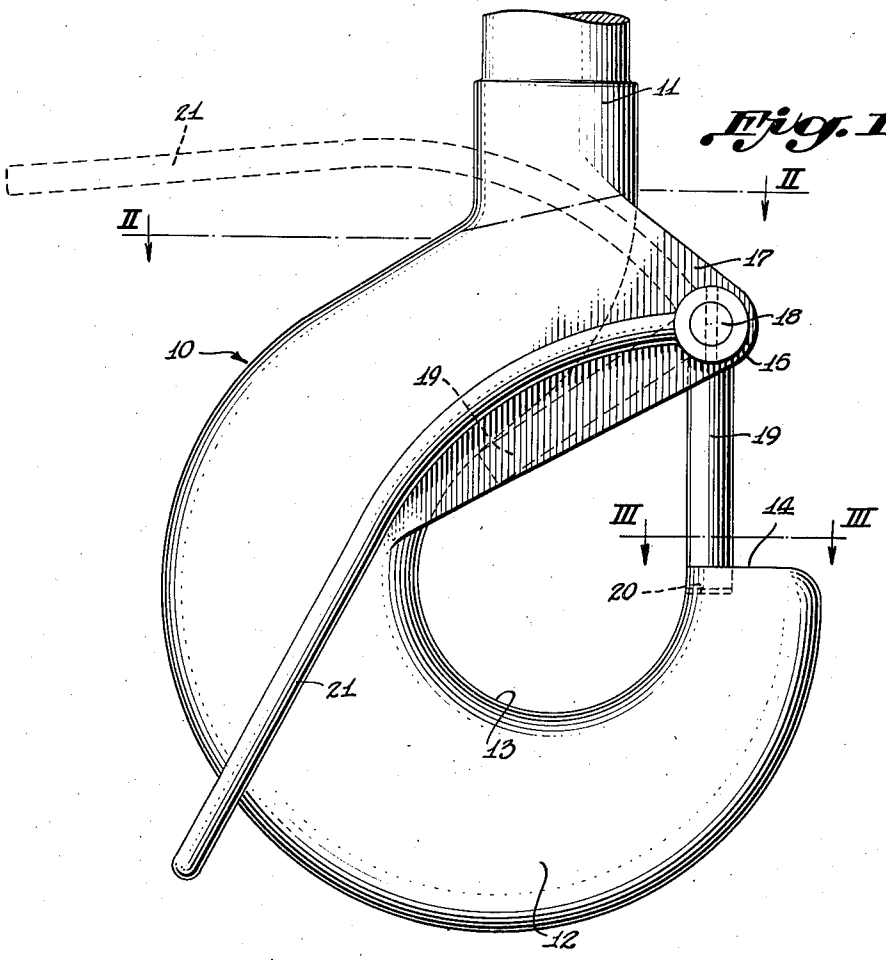


Fig. 2.

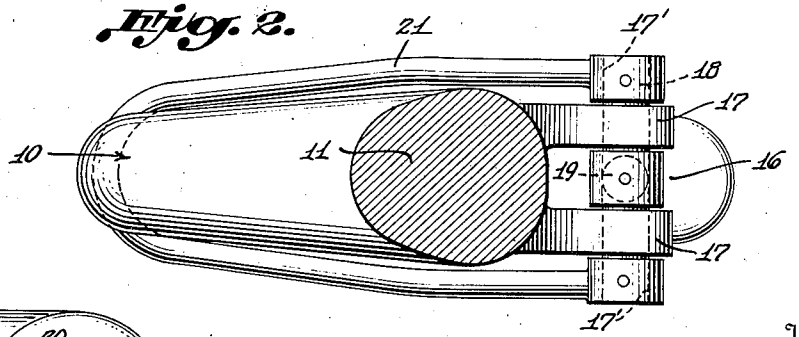
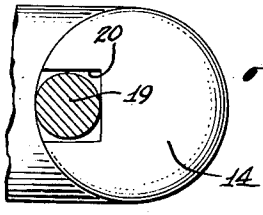


Fig. 3.



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SAFETY CRANE HOOK

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1 Claim. (Cl. 294—83)

The present invention relates to improvements in safety devices for crane or derrick hooks to prevent accidental disengagement of the load from the hook.

In steel mills and other industrial environments, stationary derricks and travelling cranes move large loads from place to place. In order for the derrick or crane hook to lift the load there must usually be a load handling device, such as chains, platforms with lifting bails, or special equipment to support the objects to be lifted in such a manner that the hook can engage and disengage the same. All such load handling devices are extremely heavy and cumbersome. When the crane is lowering the load and the load comes to rest upon a support, further movement of the hook often disengages those parts of the load handling device engaged with the hook catching the operator adjacent the hook unawares. Many fatalities occur from this source when the liberated parts of the load handling device strike an operator.

The present invention obviates this hazard by giving the operator of the hook full control at the point at which the load handling device is released from the hook. The present invention provides a bar or guard for closing the mouth of the hook. This feature alone is not new over the prior art, but further provision is made for automatic closing movement of this bar and ready control of its opening movement by the operator. The hook itself is designed so that the bar in inoperative position will not interfere with movement of bails and the like into and out of the hook mouth. These desiderata are achieved without the strength of the hook being reduced or the operating efficiency of the crane lowered.

An important object of the present invention is to provide a crane hook having a safety feature preventing accidental engagement of the load.

Another important object of the present invention is the provision of a safety crane hook which allows engagement with a load at all times but prevents accidental disengagement thereof.

A further important object of the present invention is the provision of a guard for crane hooks positively maintained in operative position relative to load engaging devices engaged by the hook.

A still further object of the present invention is the provision of a guard for crane hooks which shall be out of the way in inoperative position.

Other objects and advantages of this invention will become apparent from the following detailed description thereof, reference being had to the accompanying drawing which constitutes part of the present disclosure and wherein;

Figure 1 is a view in elevation of a structure embodying the present invention;

Figure 2 is a view in cross-section taken on the line II—II of Figure 1; and

Figure 3 is a view in cross-section taken on the line III—III of Figure 1.

Referring more specifically to the drawing, reference numeral 10 designates generally the body portion of a hook for cranes and the like which incorporates a shank 11 and a hook-shaped member 12. The body portion at 13 defines a recess, opening in a mouth defined by lips 14 and 15. Adjacent the shank and in the neighborhood of the mouth of the hook, the body portion is slotted at 16 to form legs 17. Legs 17 are drilled at 17' in a direction perpendicular to the bifurcated section. Rotatably mounted in the drill holes 17' is a pivot pin 18. Rigidly mounted on pivot pin 18 and depending therefrom is a bar or guard 19. By rotation of pin 18, guard 19 moves between two extreme positions. In the vertical position shown in Figure 1 in full lines, the lower end of guard 19 fits into a recess 20 in the lip 14 of the body portion of the hook. In its other extreme position guard 19 is received between the legs of the slotted section 16, as shown in dotted lines in Figure 1. Outside legs 17 pivot pin 18 carries an operating handle or arm 21, which is rigidly connected to the pivot pin. Movement of arm 21 from the position shown in full lines in Figure 1 to the position shown in dotted lines results in movement of guard 19 between its two extreme positions.

With the hook hanging in its customary position, as shown in Figure 1, the weight of handle 21 maintains guard 19 in abutment with lip 14 at recess 20 which thus acts as a stop to limit movement of the guard past operative position. When the bail or hook engaging element of the load handling device is to be engaged by the hook, it may be pushed into the mouth of the hook against the resistance presented by bar 19 due to the weight of arm 21. If desired the operator at the hook may lift handle 21 to withdraw guard 19 out of the way. When disengagement of the load handling device from the hook is desired, handle 21 must be raised and when raised to its extreme position as shown in dotted lines in Figure 1, any interference of the guard with the load handling device is eliminated because legs 17 of the bifurcated section of the body portion enclose the guard throughout its length. Recess 20 pro-

tects the end of the guard when the same is in operative position.

Although the preferred form of the present invention is herein shown and described, it will be obvious that departure therefrom within the scope of the invention can be readily made. The invention is, therefore, not to be limited by the present disclosure except as hereinafter defined by the claim.

We claim:

A safety hook for cranes and the like comprising a body portion including a shank, the body portion being formed in the shape of a hook to define a recess opening in a mouth, a slot in the body portion presenting legs, a pin passing through the legs and rotatable relative thereto, a guard rigidly mounted on the pin between the legs movable between an operative and inoperative position and closing the mouth in operative position, an arm extending around the body portion and having rigid attachment with the pin outside each leg, the arm making an angle with the guard such that the weight of the arm maintains the guard in operative position, and a stop means limiting movement of the guard in operative position, the arm in such position being maintained out of contact with the body portion.

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