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SELF SETTING CAM HOOK

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Fig. 1.

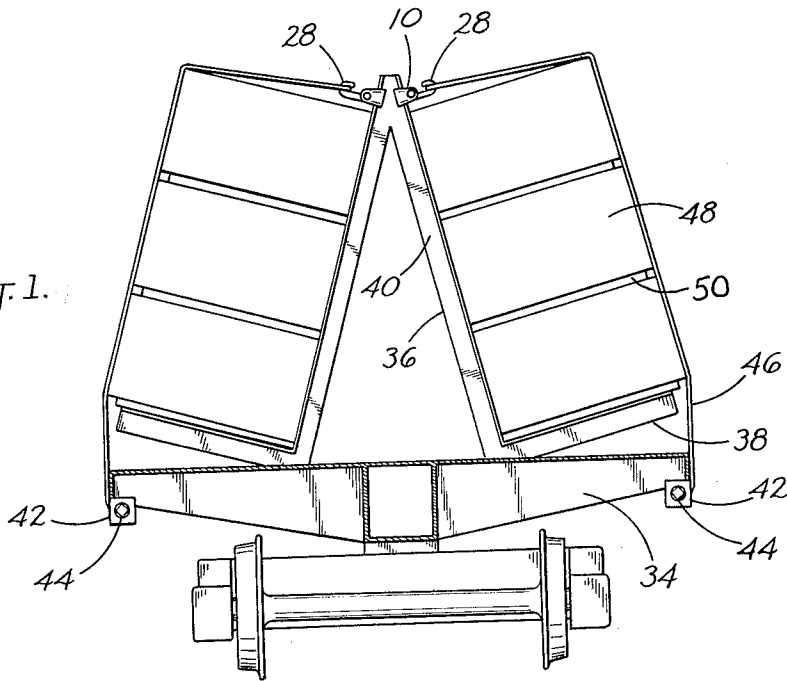


Fig. 2.

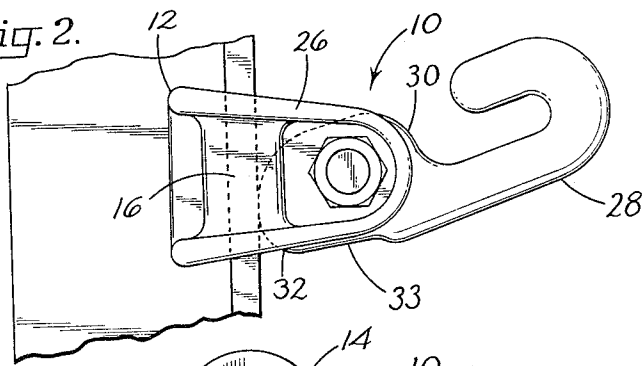
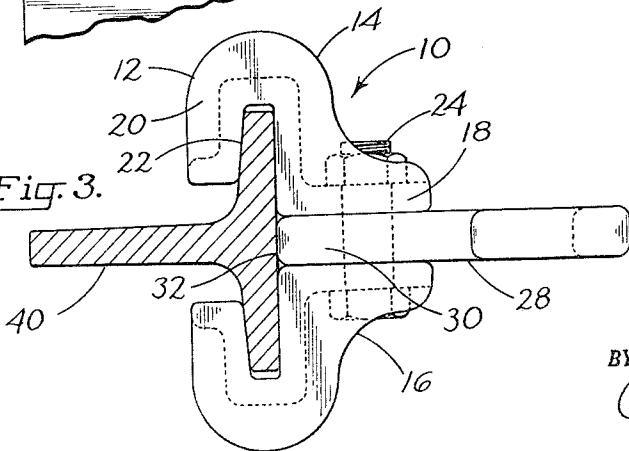


Fig. 3.



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SELF SETTING CAM HOOK

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This invention relates to a hook structure and more particularly is concerned with a self setting cam hook.

A primary objective of the present invention is to provide a hook structure which is adapted for slidable engagement on a mounting element but which at the same time is capable of being securely anchored in a set position on the mounting element.

A more particular object is to provide a self setting cam hook having a transverse opening or recess for slidable mounting on a mounting element and having a bill portion pivotally arranged and provided with a cam portion for engaging the mounting element whereby to control release and set positions of the hook on said mounting element.

Still another object is to provide a self setting cam hook which is adapted for use particularly in the binding of pallet loads of lumber on shipment vehicles such as railroad flat cars or trucks.

Briefly stated, the present self setting cam hook comprises a body portion formed of two sections releasably connected together by fastening means. The body portion is provided with first opening or recess means for slidably receiving a mounting element for the hook. The housing portion is provided with second or recess means which lead into the first opening and which receive a bill portion the shank of which has a cam element. The bill portion is pivotally supported on the body portion and has a cam end adapted to project into the first opening for selected engageable relation with a mounting element in the first opening to control release and set positions of the hook.

The invention will be better understood and additional objects thereof will become more apparent from the accompanying specification and claims considered together with the accompanying drawings, wherein like numerals of reference indicate like parts, and wherein:

FIGURE 1 is a cross sectional view of a loaded railroad flat car and showing the present hook as a part of load binding means thereon;

FIGURE 2 is a side elevational view of the hook; and

FIGURE 3 is a top plan view thereof.

Referring now in particular to the drawings and first to FIGURES 2 and 3, the present hook is designated generally by the numeral 10. It comprises a housing portion 12 formed of two complementary sections 14 and 16. Each of the sections 14 and 16 in plan is itself somewhat hook shaped in that it has a forward shank portion 18 and a rearward hook portion 20, the latter portions receiving their hook shape through the medium of laterally disposed openings or recesses 22 therein. The housing sections are connected together by a bolt 24 projecting laterally through the shank portions 18. The housing sections 14, 16 are suitably ribbed at 26 around their outer confines for structural strength.

Associated with the housing 12 is a bill portion 28. The bill portion has a rear enlargement 30 suitably apertured transversely for pivotal support on the bolt 24. This hook portion is disposed intermediate the shank portions 18 of housing sections 14, 16, and sufficient looseness of fit is maintained between said sections that free pivotal movement is accomplished.

The rear edge 32 of enlargement 30 comprises a cam edge and the lower portion of this edge has a downward and outward progression relative to the pivot point 24 so that as the bill portion 28 pivots downwardly, clock-

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wise in FIGURE 2, the cam edge progresses into the rear opening. Although the shape of cam edge 32 may be such as to lead into the rear opening at substantially any selected pivotal position of the bill portion 28, it is preferred that such edge commences penetrating this opening in the FIGURE 2 position of the bill portion 28, namely a position inclined slightly above the horizontal. Thus, as the bill portion 28 pivots downwardly or clockwise, a greater penetration is accomplished.

The lower edge of the bill portion 28 is recessed or cut away at 33. As apparent in FIGURE 2, it will be noted that this recessed portion extends from about the pivot location rearwardly, and the purpose of such structure will be described hereinafter.

The present hook is adapted particularly for use in combination with a railroad flat car 34 of a special type employing longitudinally spaced, upright A-frames 36. Each leg of the A-frame has a right angular, outwardly directed arm 38, and such A-frames are constructed of T-bars 40. Also associated with the special flat car construction are winches 42 having the usual ratchet controlled drums, not shown, and lever operated members 44 for winding the drums. Leading from the winches are load binding cables 46.

In loading the flat car, loads of material such as lumber 48 are placed on the outwardly angled arms 38 of the A-frames, such loading being accomplished by lift trucks and each of the loads 48 therefore being disposed on pallets 50. Thus no manual handling of the loads is necessary either in loading or unloading.

In binding the load on the flat car, hooks 10 are mounted on the T-bars 40 by engaging the flange portion of the latter in the recessed portions 22 of the hooks as best apparent in FIGURE 3, the recesses being of a sufficient dimension in width and length to allow slidable movement of the hooks on the T-bars. The ends of load binding cables 46 from winches 42 are brought up around a load and engaged with bill portions 28, and upon tightening the cable through the medium of the winches the bill portions 28 pivot downwardly to the housing 12 and the cam edges 32 thereof bear against the T-bars 40 to securely anchor the hooks on the T-bars.

When loading or unloading a flat car, the hooks 10 may be slid to the top of the A-frame 36 and anchored by manually pulling down on bill portions 28. Thus the hooks may be kept in an out of the way position in the stages of loading and unloading. When it is desired to locate them, the bill portions 28 are merely rotated upwardly a slight amount to disengage the cam edges from the T-bars and allow vertical slidable adjustment of the hooks.

If in unloading, a load 48 should accidentally be brought up into engagement with a hook it is apparent that since the bottom edge of bill portion 28 on the forward side of the pivot point 24 is disposed below that portion rearwardly of the pivot point, such forward portion will be engaged to rotate the bill portion 28 upwardly and release its grip on the bar 40. The cut away portion 33 insures that in such cases of accidental engagement of the hook by the load, the hook will not be rotated in the opposite direction to increase its grip which may result in damage to the hook, the frame, or the load.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A binding arrangement for loads comprising a base, a central frame, winch means on the base, a load binding cable leading from said winch means and adapted to lead

up the sides and over the top of a load disposed on said base outside of said central frame, hook means slidably mounted on said central frame, said hook means having a laterally disposed opening extending therethrough for the slidable mounting of the hook means on said central frame, a cable engaging bill portion pivotally mounted on said hook means, said bill portion having a rear cam edge of a shape adapted to project into said laterally disposed opening upon pivotal movement of the bill portion in one direction by the force from the load binding cable for engaging the central frame in said laterally disposed opening to secure the hook thereon and adapted to move out of said laterally disposed opening upon pivotal movement of the bill portion in the opposite direction to release.

2. The binding arrangement of claim 1 wherein said central frame comprises a T-bar.

3. A self-setting hook structure comprising a body portion, said body portion having a laterally disposed opening extending therethrough adapted to receive a mounting element, said body portion also having a forwardly extending longitudinal opening, a cable-engaging bill portion pivotally mounted in said longitudinally extending opening, said bill portion having a rear cam edge

of a shape adapted to project into said laterally disposed opening upon pivotal movement of the bill portion in one direction by the force from a load binding cable for engaging a mounting element in said laterally disposed opening to secure the hook thereon and adapted to move out of said laterally disposed opening upon pivotal movement of the bill portion in the opposite direction to release the hook, said bill portion having a bottom edge, the portion of said bottom edge from a plane approximately adjacent the point of pivot of said bill portion to the rear cam edge being cut-away whereby the forward bottom edge portion of said bill portion is in a lower plane than the rearward portion thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

499,644	McRee	June 13, 1893
604,146	Graham	May 17, 1898
1,359,032	Cole	Nov. 16, 1920
2,422,865	Tucker	June 24, 1947

FOREIGN PATENTS

539,544	Great Britain	Sept. 6, 1941
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