Nov. 1, 1960 W. E. RICHTER 2,958,498

DETACHABLE HOOK FOR REFRIGERATOR CARS

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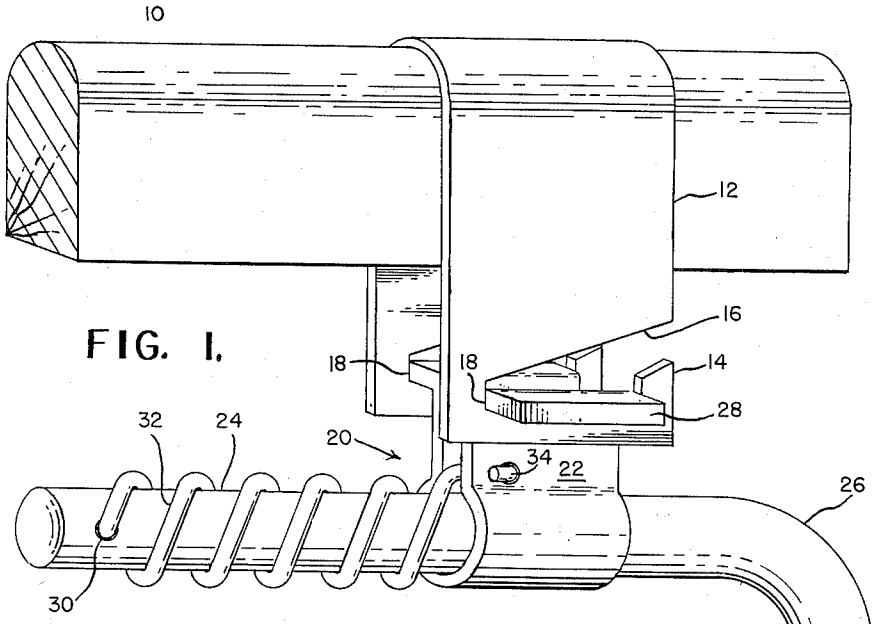


FIG. 1.

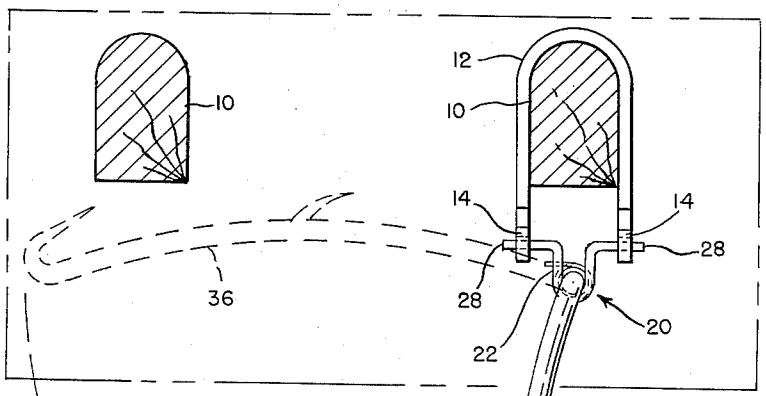
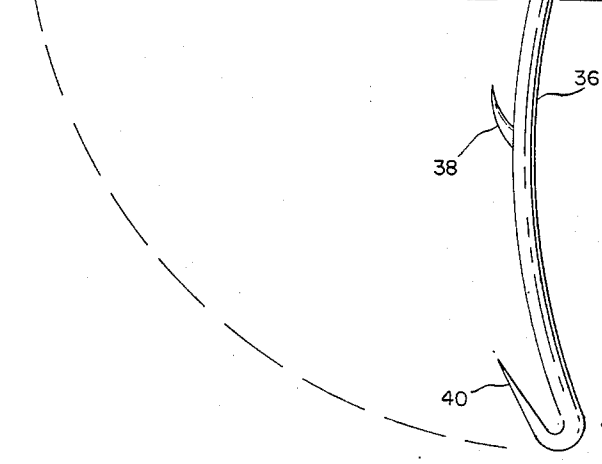


FIG. 2.



INVENTOR.

Werner E. Richter

ATTORNEY

James K. Campbell

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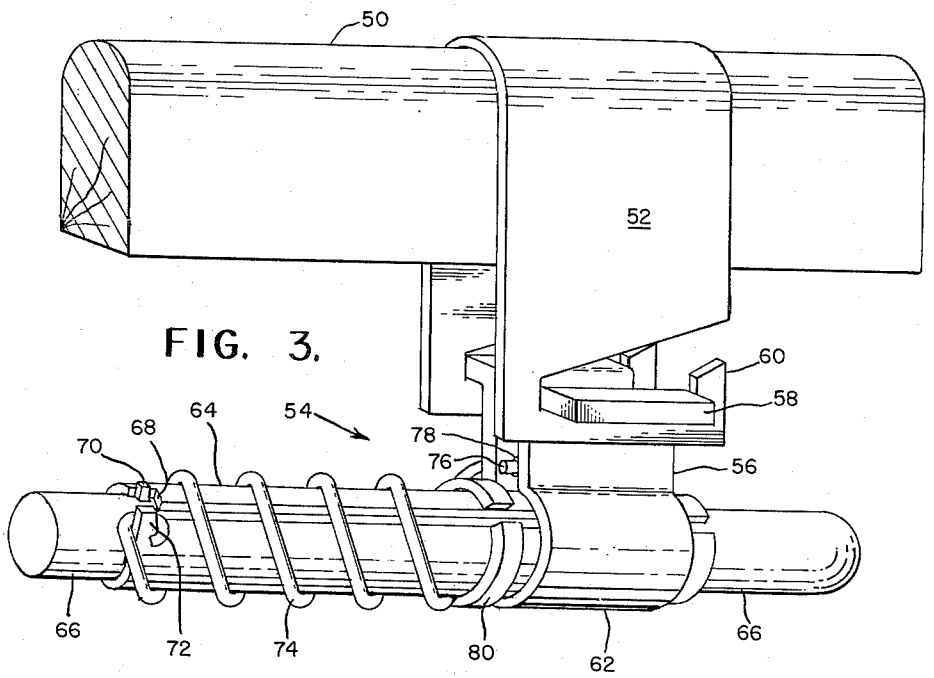


FIG. 3.

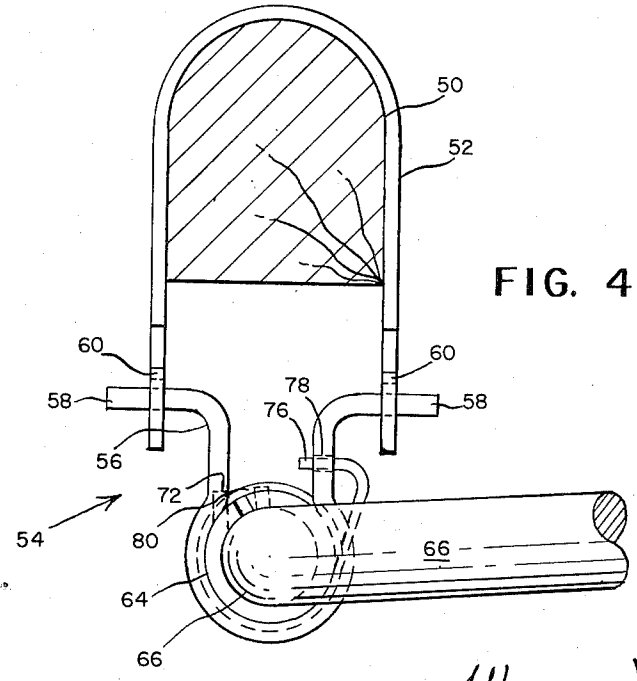


FIG. 4.

INVENTOR

Werner E. Richter

James R Campbell

ATTORNEY

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DETACHABLE HOOK FOR REFRIGERATOR CARS

Werner E. Richter, 1—63 14th Ave., East Paterson, N.J.

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4 Claims. (Cl. 248—340)

The present invention relates to hooks and more particularly to a novel hook adapted for use in refrigerator cars.

Current practices employed in the refrigerator car industry in loading and unloading sides of beef, or like edible products, consist in hanging the beef on an S-shaped hook detachably mounted on a supporting rail in the car; or in suspending the beef on a pivotally mounted hook as disclosed in my copending application Serial No. 470,577, filed November 23, 1954, now abandoned.

The aforementioned S-shaped hook is unsuitable for use with modern methods of transportation of edible products, not only from the standpoint of unreasonable cost involved in the loss, replacement and cleaning of hooks, but also because of the extreme hazard presented to personnel engaged in the car loading operations. Continued development of the hook disclosed in said copending application has resulted in a device automatic in operation, while still retaining the desirable feature of detachability which renders it adaptable for removal and cleaning purposes. The herein disclosed hook is designed with such flexibility as to provide for economical and speedy loading and unloading of cars while providing a large degree of safety to workers engaged in performing this operation.

It is an object of the invention to provide a versatile hook having few moving parts and inexpensive to manufacture.

Another object of the invention is to provide a refrigerator car hook automatically movable to a raised position.

Still another object of the invention is to provide a detachably mounted hook capable of ease in removal for cleaning purposes.

A further object of the invention is the provision of a hook capable of supporting a plurality of loads without interference therebetween.

With these and other objects in view, as will more readily appear, reference is now made to the accompanying drawings wherein:

Figure 1 is an isometric view of apparatus utilized in supporting the handle portion of a hook;

Figure 2 is a view in elevation, partly in section, showing the hook in a lowered operative position, and by dotted lines, the assumed position when not in use;

Figure 3 is an isometric view of a modification of the device shown in Figure 1; and

Figure 4 is a view in elevation, partly in section, showing details of apparatus for supporting a handle of the hook of Figure 3.

Referring now to Figures 1 and 2 of the drawings wherein like reference characters designate like or corresponding parts throughout the several views, there is shown a plurality of rails 10 adapted for attachment to overhead structure extending the length of a railway refrigerator car. Positioned over the rail in either fixed or movable relationship therewith is an inverted U-shaped

bracket 12 provided with a pair of jaw-like slots adjacent its lower end. The slots consist of upstanding stop members 14 oppositely disposed from diagonal surfaces 16 terminating near the back of the bracket in a vertical wall 18.

A removable hook holding assembly 20 including a hook holder 22 supporting the handle end 24 of a hook 26, is adapted for positioning within the slots. The holder 22 is equipped with a pair of laterally extending arms or plates 28 of a size capable of fitting within the slots formed in bracket 12. The lower end of the holder receives and is formed to the curvature of handle 24 thereby providing a large surface contact for relative motion therebetween. As shown in Figure 1, the handle 24 extends through the holder and is furnished with an opening 30 adjacent one end for receiving an extremity of spring 32. The other end of the spring extends through a similar opening 34 bored in a wall of holder 22 for firmly anchoring the spring to the assembly.

Referring to Figure 2, the handle 36 of the hook is equipped with a pair of supporting prods 38 and 40 for respectively receiving two meat loads, usually one small and one large. The shank 36 is curved as shown, so that the load on prod 38 cannot become engaged or otherwise entangled with the sharp point of prod 40. It will be noted that points or prods 38 and 40 are formed on the hook in a manner to have them race upuwardly when the hook assumes the horizontal position. As indicated above, removal of a load from the hook, permits the spring to overcome frictional and gravity forces acting thereon and raise it freely to the horizontal.

In assembling the parts comprising hook holding assembly 20, the handle 24 is inserted through holder 22 and attached spring 32. The handle must then be turned to a position where the shank 36 is substantially on a plane passing horizontally through the holder 22 so that the end of spring 32 can be fitted in opening 30 provided in the hook handle. The ends of spring 32 are then preferably, although not necessarily, bent to a locking position to prevent accidental disengagement of the handle 24 from the spring and holder. The purpose of assembling the parts in this manner is that when the assembly is mounted in bracket 12, the spring biases the hook shank to a horizontal position, as shown in Figure 2, for positioning the points of prods 38 and 40 adjacent the car ceiling thereby precluding possible injury to personnel working in the car. When it is desired to place a load on either or both prods, the shank is pulled downwardly against the action of spring 32 and upon application of the load, the weight thereof is then capable of maintaining the hook in a vertical position. From the above, it is evident that the hook, by virtue of the tension in the spring, assumes a horizontal and therefore a safe position when not in use, but will remain in a vertical position when a load is suspended from either prod. In the event steam cleaning of the hook is necessary, the hook holding assembly 20 is removed from the bracket as a unit, thus making it unnecessary to dismantle the apparatus.

Referring now to the modification of Figures 3 and 4, there is shown a rail 50 supporting a bracket 52 in the same manner as that disclosed in the species of Figure 1 and 2. A pair of jaw-like slots are formed in the bracket for receiving a hook holding assembly 54 adapted for removal as a unit. Hook holder 56 is furnished with laterally extending plates 58 which coact with stop member 60 for preventing longitudinal displacement of the hook holder in the jaw-like slots. The lower portion 62 of the hook holder is formed to the curvature of a sleeve 64 encompassing handle 66 of a hook.

The sleeve 64 is made of relatively heavy material for withstanding rugged use and is designed to conform

closely to the peripheral surface of handle **66**. A longitudinal slot extends the length of the sleeve and the latter is provided at an end with a cut-out portion **68** engageable by stud **70** affixed to the surface of handle **66**. Integrally formed with the sleeve is an upstanding member **72** oppositely disposed from the cut-out portion for receiving an end of spring **74** encircling the sleeve. The other end **76** of the spring protrudes through an opening **78** in the hook holder for firmly attaching the spring to the sleeve. Flange **80** encircling sleeve **64** prevents handle **66** of the hook from becoming disengaged from the hook holder.

With the parts fixed in the position shown in Figure 3, the shank of the hook will remain in a horizontal position due to the action of spring biased sleeve against lug **70** on the hook handle. When it is desirable to load the hook, it is rotated manually to a vertical position and in so doing, the lug **70** acts against the cut-out portion of sleeve **64** causing clockwise rotation of the sleeve and thus winding or creating a tension in the spring. The weight of an applied load to the prods will then maintain the hook in a vertical position. The tension in the spring is just sufficient to support the hook in a horizontal position when not in use and is not so great as to cause difficulty in moving the hook to a vertical position for loading.

While only the preferred embodiments of the invention have been described, it will be obvious to those skilled in the art that various modifications and changes may be made without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A device for suspending a load from a supporting member comprising bracket means adapted for attachment to said member; open jaw-like slots in walls of said bracket means for detachably receiving a hook holding assembly; said assembly comprising a holder removably positioned in the slots formed in walls of said bracket means and held against outward displacement during use by a stop member formed on the bracket means but capable of ready disengagement therefrom; a hook having a handle on one end rotatably mounted in said holder and thereby capable of movement between vertical and horizontal positions; said hook terminating at its other end in a pointed prod for receiving said load; and biasing means connected between said holder and said hook for rotating the latter to a horizontal position when in an unloaded condition.

2. A hook device for supporting a load from an overhead support comprising a U-shaped bracket adapted for attachment to said support, open jaw-like slots formed in oppositely disposed walls of said bracket for detachably receiving a hook holding assembly, said assembly comprising a U-shaped holder having outwardly extending arms respectively insertable in said slots for locating said holder in a fixed immovable position, a hook having a handle portion mounted for rotation in said fixed holder and in an arc with respect thereto, and biasing means attached to said holder and connected for coaction with said hook for moving the latter through said arc to a horizontal position when in an unloaded condition.

3. The combination according to claim 2 wherein said biasing means comprises a spring concentrically mounted on the handle portion of said hook.

4. The combination according to claim 2 wherein a sleeve is mounted on the handle portion of said hook, a protruding member on said handle portion engageable by said sleeve, and a pre-stressed spring interconnecting said holder and said sleeve for causing the latter to exert a force against said protruding member and thereby cause rotation of said hook in the holder to a horizontal position when in an unloaded condition.

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