Dec. 18, 1923. 1,477,836

O. J. McGOWAN

TRIP HOOK

Filed July 26, 1921

Fig. 1.

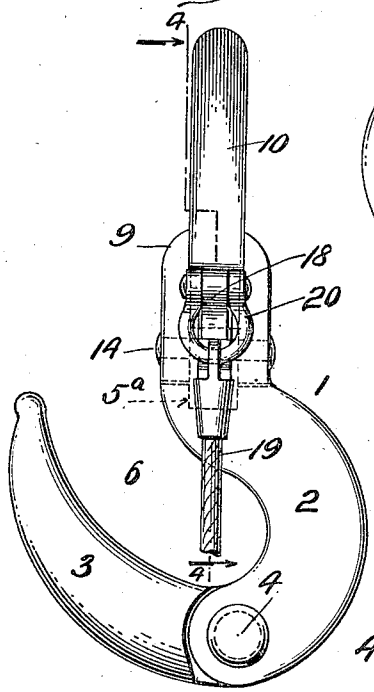


Fig. 2.

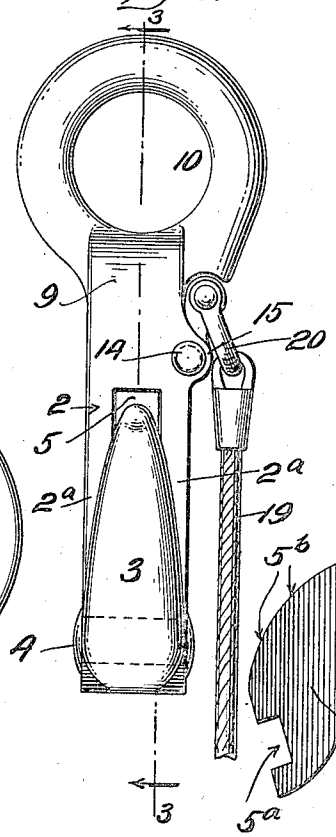


Fig. 3.

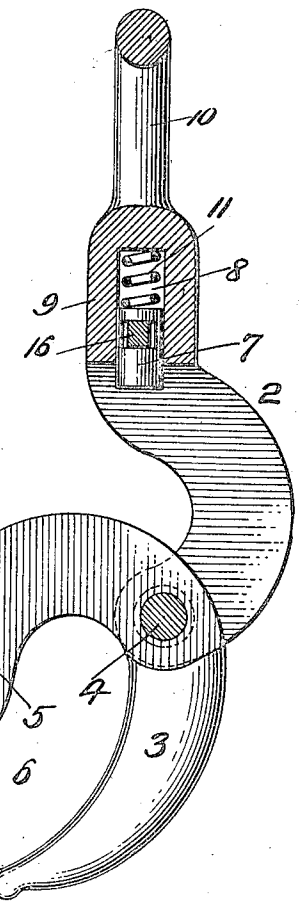
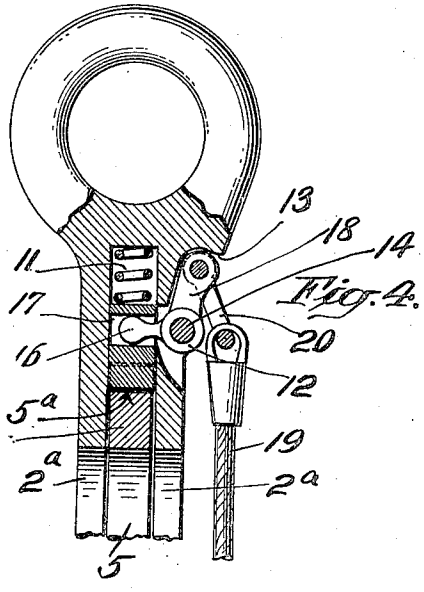


Fig. 4.



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UNITED STATES PATENT OFFICE.

OWEN J. McGOWAN, OF BROOKLYN, NEW YORK.

TRIP HOOK.

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To all whom it may concern:

Be it known that I, OWEN J. McGOWAN, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Trip Hooks, of which the following is a specification.

This invention relates to improvements in trip hooks.

One of the objects of my invention is to provide a trip hook having a bill portion pivoted to and so arranged in relation with a body portion that the mouth of the hook will be free and unobstructed and the pivoted bill portion will be automatically and securely latched by a simple swinging of the parts into operative position while the latch may be readily and easily disengaged to cause the hook to trip and release its load.

Another object of my invention is to embody in a trip hook an attaching portion, a neck portion and body portion, in combination with a bill portion pivotally connected to the body portion and having a tail preferably curved to substantially conform in outline with the body portion and to engage with a latch bolt at the upper end of the hook to securely latch the pivotally connected parts together, and means for releasing said latch to trip the hook.

Another object of my invention is to provide a trip hook having a latch-bolt member connected with and preferably completely enclosed in the connecting portion or neck of the hook between the body portion and attaching eye.

Another object of this invention is to provide a trip hook which will be as strong and durable as the conventional non-tripping hook; will have the same general appearance and utility and may be manufactured economically.

Another object of my invention is to increase the strength of the latch bolt by omitting the usual inclined riding surface thereon and to so arrange the parts that the rear curved surface of the tail portion of the pivoted bill will provide the necessary riding surface for the latch and during the closing movement of the bill will engage the latching bolt and gradually force the same inwardly as the bill turns on its pivot, thus permitting a larger extension of the bolt into the bill member and enabling a secure locking of the same to the body or neck.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to co-act and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:—

Fig. 1 is a side elevation of the hook embodying my invention;

Fig. 2 is a front elevation of the hook shown in Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 2; and

Fig. 4 is a fragmentary sectional view partly in elevation of the neck of the upper portion of a hook embodying my invention.

Referring now to these drawings, 1 indicates a trip hook embodying a body portion 2 which is preferably concavely curved, as shown, and is split to provide spaced prong members 2^a—2^a. A bill 3 is pivoted at the end of the prong members 2^a on a pivot 4 and has a tail portion 5 which fits into and fills up the space between the prong members 2^a—2^a. The tail portion 5 of the bill is preferably curved, as shown, to conform with the shape of the body portion 2 and is preferably of substantially the length thereof so as to extend into contact or engagement with the upper end of the hook at the side of the mouth 6 of the hook opposite to that on which the bill proper is disposed. Said tail portion is preferably provided at its upper end with a notch 5^a which, when the bill is in its normal position shown in Fig. 1, is engaged and securely locked in such normal position by a spring-pressed latch bolt 7 which, as shown, is movable vertically in a socket 8 in a connecting or neck portion 9 between the body portion 2 and an attaching portion comprising, as shown, an eye 10. Obviously the bill may by the arrangement just described be locked in fixed relationship to the body without in any way obstructing the mouth or weakening the structure of the hook.

The latch 7, as illustrated, is preferably formed of a solid cylindrical piece of metal without the usual incline and is preferably engaged and moved inwardly by the rear surface 5^b of the tail piece against the action of a spring 11 which serves to force the same outwardly to latching position. Thus, the

upper end of this rear curved surface 5^b, during the turning movement of the bill 3 into normal position, engages the lower end of the latch bolt 7 and gradually pushes the same into its socket 8 against the action of the spring 11 until the bolt rides into registry with the notch 6 when the spring automatically forces the bolt 7 into the said notch and causes the locking of the two parts securely together.

I preferably provide means for enabling the manual withdrawal of the bolt 7 from the notch in order to trip the hook and release the load and for this purpose I preferably provide a pawl or dog 12 arranged at one side of the hook and as shown so arranged in a cut out housing 13 provided in the side wall of the hook therefor. As illustrated, the dog 12 is pivoted on a pivot 14 extending through the pivot bearings 15 in the neck of the hook and said pawl is provided with a latch-engaging arm 16 which extends into a socket 17 in the latch bolt 7 and at the opposite side of the pivot 12 has an actuating arm 18 to which, as shown, is connected a trip-rope 19 which, as shown, is connected to the arm 18 by means of a link 20.

The operation of my improved hook is as follows:—

In its normal position shown in Fig. 1 it is ready to be employed for any purpose for which a conventional hook may be used and may be applied or attached to any load in the same manner and as quickly and securely as the ordinary hook. When, however, it is desired to release a load, it is merely necessary to pull the trip-rope 19 whereupon the pivoted bill will be caused to swing downwardly and into the releasing position shown more particularly in Fig. 3 to discharge the load from the mouth thereof. To reposition the hook for use on another load, it is merely necessary to swing the bill 3 upwardly, whereupon the rear side 5^b of the tail portion of the bill will engage and force inwardly the latch 7 until the notch 5^a is reached when the bolt 7 will, by the pressure of the spring, be shot into the notch 5^a and lock the two parts of the hook securely together, whereupon it will be prepared for reattachment to a new load.

Having described my invention, I claim:—

1. A trip hook embodying, in combination, a substantially concavely curved body portion, a bill pivoted at the lower end to said body portion and having a tail portion extending into contact and curved into substantial conformity with the body portion at the side of the mouth opposite to the bill proper, said tail portion also being provided with a locking notch at its terminal end, a neck portion at the upper end of said body portion, having a vertically-disposed socket completely enclosed therein, a spring-pressed latch-bolt slidably mounted in said socket and adapted to extend into the locking notch in the tail portion and a pawl pivoted at one side of said socket for releasing said bolt to trip the hook.

2. A trip hook embodying, in combination, a substantially concavely curved body portion, a bill pivoted at the lower end to said body portion and having a tail portion extending into contact and curved into substantial conformity with the body portion at the side of the mouth opposite to the bill proper, said tail portion also being provided with a locking notch at its terminal end, a neck portion at the upper end of said body portion having a vertically disposed socket completely enclosed therein, a spring-pressed latch-bolt mounted in said socket and adapted to extend into the locking notch in the tail portion and a tripping pawl arranged at the side of the hook for releasing said latch-bolt.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

OWEN J. McGOWAN.

Witnesses:

GEO. A. RIBLET,

HELEN V. WHIDDEN.