No. 858,545. PATENTED JULY 2, 1907.

H. J. SUMMERS.

SELF RELEASING HOOK.

APPLICATION FILED FEB. 2, 1907.

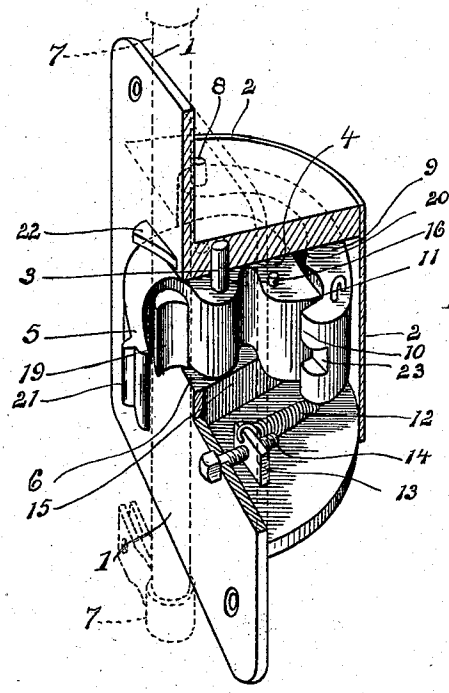


Fig. 1

Fig. 2.

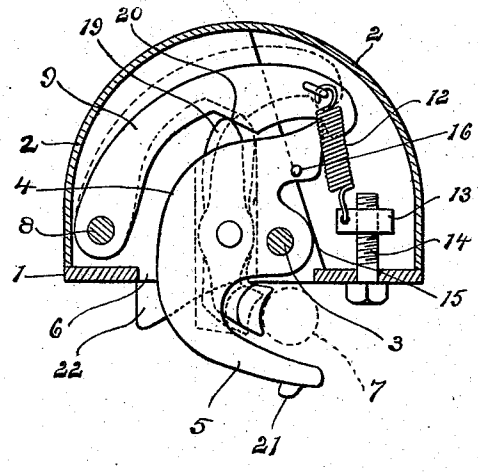
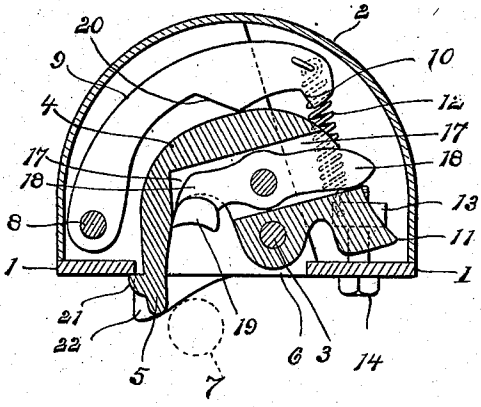


Fig. 3.



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HARRY J. SUMMERS, OF DETROIT, MICHIGAN.

SELF-RELEASING HOOK.

No. 858,545. Specification of Letters Patent. Patented July 2, 1907.

Application filed February 2, 1907. Serial No. 355,345.

To all whom it may concern:

Be it known that I, HARRY J. SUMMERS, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Self-Releasing Hooks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a retaining hook or catch adapted to automatically release a member retained by the hook when a predetermined strain or force is applied to said hook by said member, said hook being especially adapted for use upon the vestibules of railway cars to hold the spring actuated curtains forming the inner side walls or surfaces of the passages leading from one coach to the next when the coaches are coupled together in a train, said curtains covering the bellows connection to prevent the passengers or their clothing from becoming caught and injured therein. As often occurs, if the trainmen neglect to release these curtains before uncoupling the cars, the expensive leather or other material from which they are made is torn, and the object of this invention is to provide a simple and convenient catch or hook with which the curtain on the adjacent car may be engaged and which hook will, when undue strain is put upon the curtain, automatically release the same, thus preventing the tearing of said curtain should the cars be uncoupled without first releasing it, said hook being also adapted for other uses wherever such a device is desirable.

To this end the invention consists in the construction hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawing in which:—

Figure 1 is a perspective view of a device embodying the invention with parts broken away to show the construction; Fig. 2 a horizontal section of the same showing the internal parts in plan view; and Fig. 3 a similar section showing the parts in section and in their unlocked or inoperative position.

As shown in the drawings, 1 is a suitable face plate by means of which the device is secured in place and projecting from the rear side of the face plate are two semicircular flanges which form the upper and lower ends of a casing 2 the curved side of which casing is formed by a bent sheet of metal and the other side by the face plate.

Pivoted between the ends of the casing upon a pin 3 is a hook member 4 adapted to be turned on the pin to project its curved arm or hook 5 outward through a central opening 6 in the face plate in a position to receive and hold a member 7 (indicated in dotted lines) designed to be retained by the hook. Pivoted within the casing at one side of the hook member upon a pin 8 is a curved pawl 9 having a projection or shoulder 10 at its free end to engage a projecting point or lug 11 on the hook member when said member is turned with its hook projected or in its operative position. To hold this pawl in contact with the hook member, two coiled springs 12 are attached at one end to the upper and lower sides of the pawl near its free end and at their opposite ends said springs are secured to nuts 13 upon the screw-threaded inner ends of screw bolts 14 which extend through openings in the face plate and turn freely therein so that by turning said bolts by means of a wrench applied to the bolt heads or otherwise, the tension of the springs may be accurately adjusted. The hook member and pawl swing between the upper and lower ends of the casing which thus form guide bearings therefor, and these ends are reduced in thickness at one side to make room in the casing for the springs 12 and to form shoulders 15 adapted to be engaged by pins 16 projecting upward and downward from the hook member to limit the outward swing of said member on its pivot.

A chamber 17 is formed in the hook member extending transversely therethrough and opening at one end through the side thereof toward the pawl and at the other end into the bottom of the receiving recess formed by the hook 5. In this chamber is pivoted a latch 18 formed at one side with a bearing head 19 adapted to lie within the hook recess and the opposite end of the latch is rounded and projects from the chamber a short distance to engage an incline 20 on the pawl when the hook member is held by said pawl in its operative position, said bearing head being held by such engagement at a short distance from the bottom of the hook recess. The retained member 7 while being held by the hook, seats upon the bearing head of the latch and when the strain or pull on said member 7 is sufficient to overcome the force of the springs 12, the latch 18 will be turned on its pivot, its opposite end, which engages the incline on the pawl, forcing said pawl away from the hook member against the action of said springs, and disengaging its shoulder from the lug on the hook member. The latch thus operates to release the hook member to permit it to be turned into the casing by the pull on the retained member which is thus released. A lug or rib 21 on the extreme outer end of the hook arm is provided to engage the facing plate and form a stop to limit the inward turning of the hook member, and to assist in returning the parts to their operative position. To prevent the retained member 7 from catching upon the projecting end of said hook-arm when said member is released, lugs 22 are provided on the facing plate above and below the opening 6, which lugs have inclined sides to raise the said member over said projecting end.

The projecting shoulder 10 on the pawl is cut away at the center forming a notch 23 therein through which the end of the latch passes to permit the hook member

to turn after being released by the latch. The amount of strain which is necessary to operate the latch is accurately regulated by adjusting the tension of the springs.

While the device shown is especially adapted and designed to hold the curtains of railway car vestibules, it may be used for any other purpose or in any other place where automatically releasing hooks are desirable.

Having thus fully described my invention what I claim is:—

1. In a device of the character described, the combination of a retaining member having a recess adapted to receive a member to be retained, means for holding said retaining member in operative position, and means for releasing said holding means projecting into said recess and adapted to be engaged and actuated by the member retained.

2. In a device of the character described, the combination of a retaining member having a recess adapted to receive a member to be retained, means for holding said retaining member in operative position, and means for releasing said holding means extending into and movable in the bottom of said recess and forming a seat for the retained member.

3. In a device of the character described, the combination of a pivoted retaining member turned into operative position, and a latch adapted to be engaged and operated by a member held by the retaining member to release the holding means and permit the said retaining member to turn to release said member held thereto.

4. In a device of the character described, the combination of a retaining member having a recess to receive and hold a member adapted to be retained thereby and formed with a chamber extending therethrough and opening at one end into said recess, means for holding the retaining member in operative position, and means in the chamber projecting into the recess at one end to be engaged and operated by the retained member and adapted to engage at its opposite end the holding means and actuate the same to release the retaining member.

5. In a device of the character described, the combination with a casing having an opening, of a retaining hook pivoted in the casing to swing outward through said opening into operative position, a pawl pivoted in the casing to engage and hold the hook in operative position, and means carried by the hook and adapted to be engaged by a member retained by the hook to actuate said means and release the pawl.

6. In a device of the character described, the combination of a pivoted retaining hook, means for detachably holding said hook in its operative position, a pivoted latch adapted to be turned to release said means, and a head on said latch projecting into the bottom of the hook and forming a seat for a member retained by said hook.

7. In a device of the character described, the combination of a pivoted retaining hook formed with a chamber extending therethrough, a pawl pivoted to engage and hold the hook in its operative position, and a latch pivoted within the chamber of the hook with one end engaging the pawl and the opposite end projecting into the bottom of the hook to form a seat for a member to be retained by the hook.

8. In a device of the character described, the combination with a casing having an opening in one side, of a retaining hook pivoted within the casing to be turned to project through said opening, means in the casing for detachably holding the hook in its projected position, means operated by the strain put upon the device for releasing said holding means, a stop on the hook to limit the inward turning, and lugs having inclined sides on the casing at each side of the opening.

9. In a device of the character described, the combination with a casing, of a retaining hook pivoted within the casing, a latch pivoted intermediate its ends to the hook and carried thereby, a head on one end of the latch extending within the hook recess and forming a seat for a member retained by the hook, a curved pawl pivoted within the casing to engage and detachably hold the hook in its operative position and provided with an incline engaged by one end of the latch, and a spring or springs for holding the pawl in engagement with the hook.

10. In a device of the character described, the combination of a pivoted retaining hook, a pawl to engage and hold said hook in its operative position, means operated by the strain or pull of a member retained by the hook for disengaging the pawl from said hook, a spring to yieldingly hold said pawl against the action of said means, and means for adjusting the tension of said spring.

11. In a device of the character described, the combination with a casing having a face plate forming one side thereof which is formed with a central opening, of a retaining hook pivoted in the casing to swing through said opening, a pawl pivoted within the casing to engage a projection on the hook and hold the same in operative position, a latch carried by the hook engaged at one end by a member retained by the hook and at its opposite end engaging the pawl, a spring attached at one end to the free end of the pawl, a bolt adapted to turn within an opening in the face plate, and a nut on the inner end of said bolt to which nut the other end of said spring is attached.

12. In a device of the character described, the combination of a face plate having a central opening, a casing on the rear side of the face plate having upper and lower ends reduced at one side to form shoulders and a retaining hook pivoted between said ends of the casing to be turned to project outward through the opening in the face plate and formed with a chamber extending therethrough from the bottom of the hook recess, stops on the hook to engage the shoulders on the ends of the casing, a curved pawl pivoted within the casing with its free end projecting between the reduced sides of the heads of the casing and provided with an incline, a latch pivoted intermediate its ends within the chamber of the hook with one end adapted to engage the incline on the pawl, a head on the opposite end of said latch forming a seat for a member to be retained by the hook, coiled springs attached at one end to the upper and lower sides of the free end of the pawl, and means for adjusting the tension of said springs to which they are attached at their opposite ends.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY J. SUMMERS.

Witnesses:
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ANNA M. DORR.