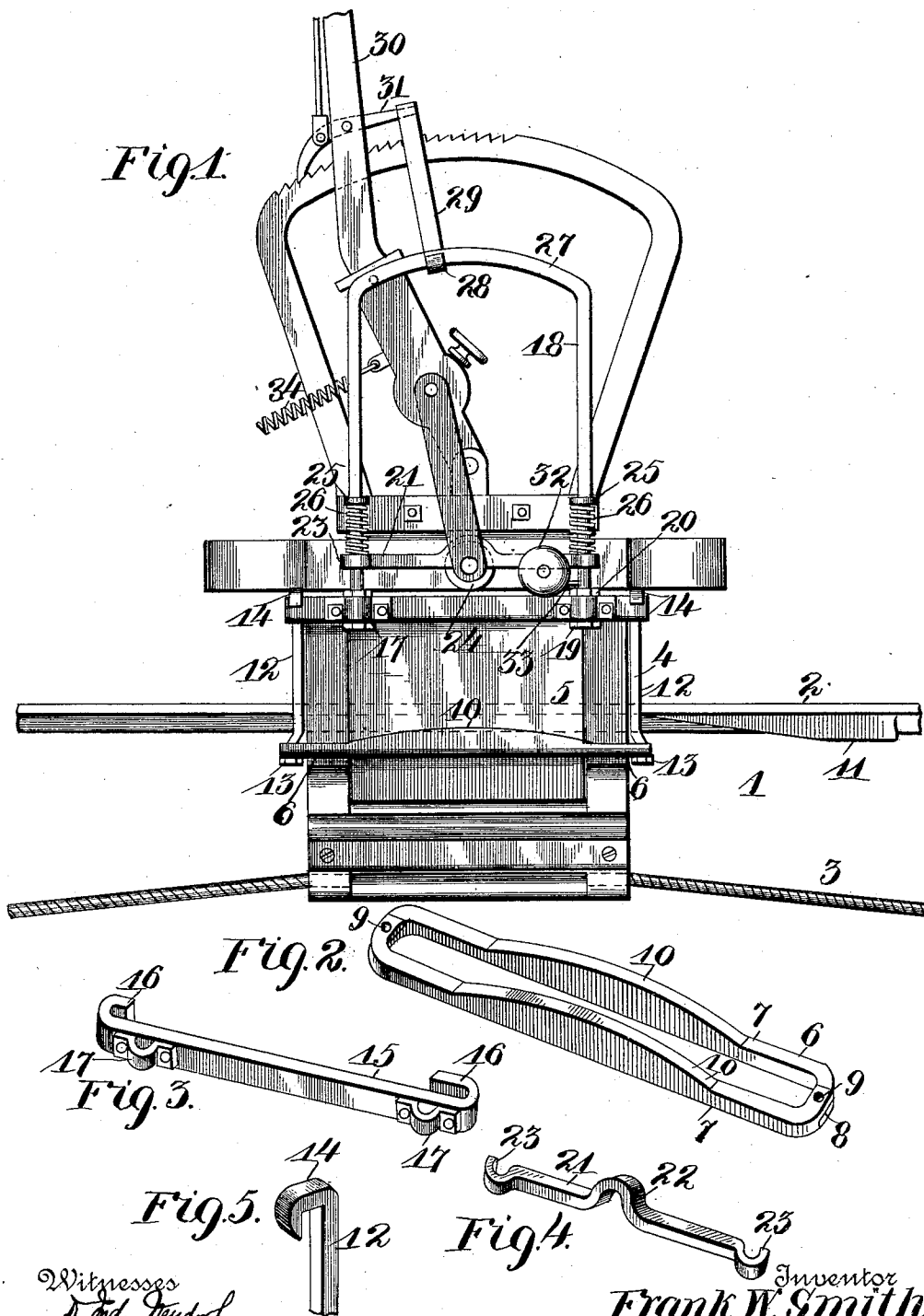


(No Model.)

F. W. SMITH.
AUTOMATIC RELEASE FOR CABLE CROSSINGS.

No. 484,346.

Patented Oct. 11, 1892.



Witnesses
D. Ind. Tendorf
Wm. J. Walker.

Inventor
Frank W. Smith.
By his Attorneys,
Keller & Stuck

UNITED STATES PATENT OFFICE.

FRANK W. SMITH, OF ST. LOUIS, MISSOURI, ASSIGNOR OF FIVE-EIGHTHS TO
C. W. CRUTSINGER AND ALBERT D. SMITH, OF SAME PLACE.

AUTOMATIC RELEASE FOR CABLE-CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 484,346, dated October 11, 1892.

Application filed May 21, 1892. Serial No. 433,850. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. SMITH, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Automatic Releases for Cable-Crossings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in automatic releases for cable-crossings; and it consists in the novel arrangement and combination of parts, as will be more full hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a side elevation of my complete invention as applied to a cable-grip of the usual construction. Fig. 2 is a perspective view of the lower portion of my invention, or that part which comes in contact with the wedge-shaped shoes fixed to the under surface of the slot-rails. Fig. 3 is a perspective view of the upper transverse bar also forming a part of my invention. Fig. 4 is a perspective view of the bar which I employ as a rest for the springs and which is supported by the stationary portion of the grip; and Fig. 5 is a perspective view of the upper end of one of the connecting-rods, showing more properly the formation of the same.

The object of my invention is to simplify and reduce the construction heretofore required in this class of inventions; and it consists in a device which may be attached to and removed from the grip of the ordinary construction without in any way changing or altering the same.

Referring to the drawings, 1 represents a subway of the construction generally employed in cable railways, and 2 the slot-rails forming a part of the same.

3 represents the moving cable, which is located in the subway and designed to propel the cars along the line and, as shown in the drawings, is located in the jaws of the grip.

Referring to the grip-releasing mechanism, 4 represents the frame, which is so shaped as to be located about the lower portion of the grip 5 and detachable therefrom and functionally operated by means hereinafter described without in any way affecting the true workings of the said grip.

6 represents the lower portion of the frame 4, which is composed of two parts 7 and passes entirely around the lower part of the grip, the construction of which is best shown in Fig. 2. The ends of the sections 7, which compose the said lower portion of the releasing device, are curved, leaving a sufficient space for the grip, and said ends are also provided with decreased portions 8, which when united, as shown in Fig. 2, present a finished appearance.

9 represents a vertical aperture, which is formed in each end of the sections 7, through the decreased ends, the said apertures registering with one another when the parts are united, affording means for attaching the lower portion 6 to the remaining parts of the frame 4.

The medium portions of the sections 7 are widened, as shown at 10, and the upper edges of the same curved and adapted to come in frictional contact with the wedge-shaped shoes 11, fixed longitudinally to the under surface of the slot-rails 2, adjacent to the slot in the subway formed by the said rails.

12 represents two connecting-rods, which are arranged on the opposite edges of the grip 5, the lower ends of which are provided with screw-threads, and said ends are passed through the apertures 9, formed in the ends of the lower portion of the frame 4. After the rods 12 have been inserted through the apertures 9 nuts 13 are turned on the screw-threaded ends of the same, which serve to support the said lower portion 6. The opposite ends of the said connecting-rods terminate in hooks 14, which are adapted to receive the upper edge of the transverse piece 15 when the parts are united, as shown in Fig. 1, holding the said lower portion in a depending position. The said transverse piece 15 is constructed from a suitable length of metal and the ends thereof bent, forming hooks 16, one of which is a little longer than the other, the object of which is to freely pass the said piece on and off the grip and yet lock itself to the same when the various parts are properly united and arranged. The space formed by the hooked ends of the piece 15 is for the reception of both the grip and the hooked ends of the connecting-rods 12, the said piece being first placed in position upon

the grip, after which the said hooked ends 14 are placed in position, as shown in Fig. 1, by inserting the lower ends of the said connecting-rods first through the space left for their reception by the piece 15, observing that the same is somewhat longer than the width of the grip.

17 represents metallic loops, which are fixed to one side of the piece 15 and are adapted to receive the lower ends of a U-shaped bar 18, which ends are screw-threaded, upon which nuts 19 are turned for the purpose of uniting the said bar to the piece 15. Like nuts are also screwed on the said ends of the U-shaped bar above the first-named nuts and designated by 20, between which nuts the loops before mentioned are interposed.

21 represents a bar of metal, which is bent intermediate of its length, forming a loop 22, and the terminal ends of the said bar are formed into hooks 23, which hooks are adapted to receive the rounded ends or lower portions of the U-shaped bar 18, preventing the said bar 21 from moving out of its relative position, as shown in Fig. 1, and yet allowing the said U-shaped bar to be operated independent of the same. The bent portion of the said bar 21 is designed to rest upon and is supported by a rounded extension 24, forming a permanent part of the grip, and is interposed between other parts forming the said grip and common in grips of this character. At a suitable distance from the ends of the U-shaped bar 18 and fixed thereon are collars 25, and encircling said lower ends and interposed between the said collars and the nuts 20 are coiled springs 26, which operate to cause the entire framework 4 to assume its normal or elevated position after the same has been acted upon by being brought in contact with the wedge-shaped shoes 11. The upper or medium portion of the U-shaped bar 18 is curved, as shown at 27, and is adapted to be received by the hooked end 28 of the plate 29, but is not in any way fixed to the same, but, on the contrary, is adapted to slide or move when the grip-lever 30 is moved without in any way affecting the true workings of the releasing device.

For the sake of clearness it will be well to state that the frame proper is composed of the lower portion 6, connecting-rods 12, transverse piece 15, and U-shaped bar 18, all of which parts operate simultaneously.

The upper end of the plate 29 is rigidly attached to the projecting end of the pawl 31, carried by the grip-lever, by which construction when the frame 4 is depressed the said pawl will be released from its engaging position with the ratchet-toothed edge of the upper portion of the grip 5.

32 represents a bell, which is fixed to the grip proper, and attached to one of the legs formed by the U-shaped bar is a horizontal projecting bolt or extension 33, having a suitable clapper, which is adapted to be brought

in contact with the said bell when the frame 4 is depressed, sounding an alarm.

The alarm is very desirable and is designed to notify the gripman of the approaching of a crossing cable before the same is reached, in which instance the grip-lever may be handled in time before the same is acted upon by the frame in a manner heretofore described.

34 represents a coil or other device or spring, one end of which is attached to the grip-lever and the opposite end attached to any convenient portion of the car carrying the grip, the object of which is to cause the said grip to move in one direction when the pawl is released from its engaged position, or, in other words, allow the cable to be released by the grip, insuring no accident.

The workings of the device are very evident from the foregoing description. The object aimed at is to automatically release the jaws of the grip upon the cable at a suitable distance from the crossing cable or cables.

The various parts comprising my invention are detachable and can be removed from the grip with but very little inconvenience, and, further, the parts constituting the same are very durable and designed to stand the usage to which the same are necessarily subjected.

Having described my invention, what I claim is—

1. The herein-described automatic release for cable-grips, comprising a removable frame, a lower portion, such as 6, composed of two sections united at their decreased ends, apertures formed in the said ends for receiving the lower ends of the connecting-rods, hooks formed on one end of the said rods, transverse pieces 15, normally in contact with said hooks, a U-shaped bar removably attached to the said transverse piece, and means for uniting the said U-shaped bar with the pawl carried by the grip-lever and for restoring the said frame to its normal position, substantially as described.

2. In an automatic release for cable-grips, a movable frame adapted to be attached to the said grip and a transverse piece, such as 15, having hooked ends providing means for attaching the same to the grip, substantially as described.

3. In an automatic release for cable-grips, a frame adapted to be attached to the grip, a U-shaped bar having its ends attached to the transverse piece 15, forming a part of the said frame, collars fixed to the said U-shaped bar, and springs bearing against said collars and operating to cause said frame to assume its normal position after the same has been actuated, substantially as described.

4. In an automatic release for cable-grips, a U-shaped bar the ends of which are fixed to the detachable frame 4 and a plate 29, having a hooked end adapted to receive the curved medium portion of the said U-shaped bar and its opposite end fixed to the pawl carried by the grip-lever, whereby the said pawl is automati-

cally released when the frame is depressed, substantially as described.

5 5. In an automatic release for cable-grips, a bar, such as 21, having a curved medium portion 22, adapted to rest upon an extension forming a part of the grip, hooks 23, formed on the ends of the said bar, through which the ends of the U-shaped bar 18 are passed, and coil-springs 26, resting upon the said hooked
10 ends and interposed between the same and the collars carried by the said U-shaped bar, substantially as described.

6. An automatic release for cables, consisting of a frame 4, a lower portion 6, composed
15 of two sections and united at their decreased ends, openings 9, formed in the said ends, through which the screw-threaded ends of the connecting-rods 12 are passed, hooks 14, formed on the opposite ends of the said rods,
20 a transverse piece 15, having hooked ends, the upper edge of which is adapted to be received by the said hooks 14, a U-shaped bar 18, attached to the said transverse piece, collars fixed to the said last-named bar, a bar 21, supported by the grip, coil-springs interposed
25 between said collars and bar, and a plate 29, having a hook carried by the pawl forming

a part of the grip-lever and operated by the said U-shaped bar, substantially as described.

7. An automatic release for cables, consisting of a plate 29, carried by the pawl of the
30 grip-lever, a hook 28, formed on the free end of the said plate, a U-shaped bar 18, having a curved medium portion received by the said hook, a bar 21, having its medium portion
35 supported by the grip and provided with hooked ends 23, coil-springs 26, encircling the ends of the said U-shaped bar and interposed between the hooks 23 and the collars 25, a transverse piece 15, having hooked ends serving to
40 hold the same upon the grip, loops 17, fixed to the said piece 15 for receiving the ends of the said bar 18, a lower portion 6, forming a part of the frame and supported by connecting-rods 12, and hooks 14, formed on one end
45 of the said rods for receiving the edge of the piece 15, substantially as described.

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

FRANK W. SMITH.

Witnesses:

D. IND. NEUDORF,
WILLIAM J. WALKER.