(No Model.)

W. F. FISHER.

SELF-ACTING UNLOCKING LINK.

No. 404,903. Patented June 11, 1889.

Fig.1.

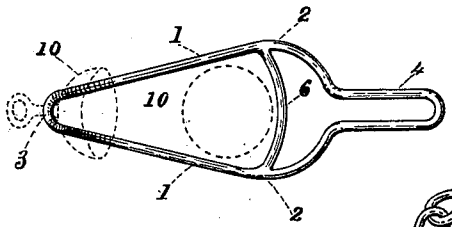


Fig.2.

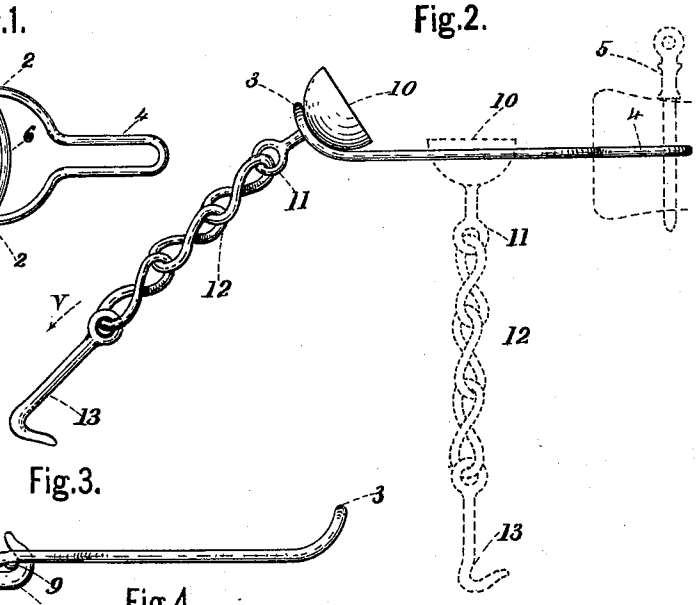


Fig.3.

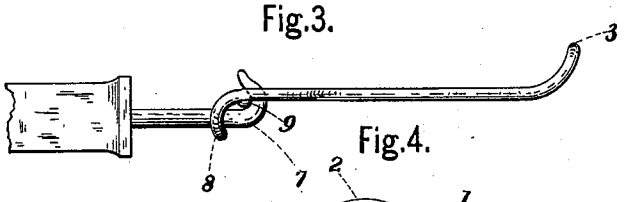


Fig.4.

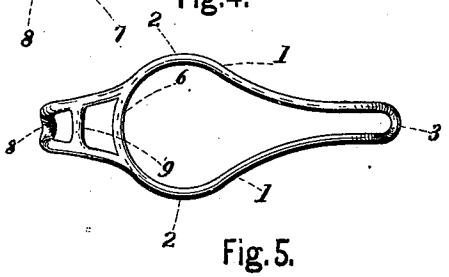
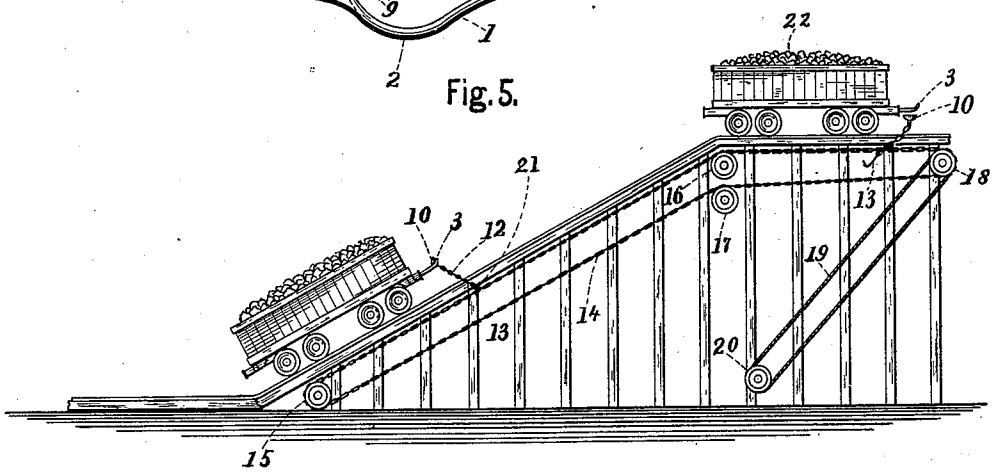


Fig.5.



Witnesses.
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UNITED STATES PATENT OFFICE.

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SELF-ACTING UNLOCKING-LINK.

SPECIFICATION forming part of Letters Patent No. 404,903, dated June 11, 1889.

Application filed March 2, 1889. Serial No. 301,758. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. FISHER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Self-Acting Unlocking Links and Chains, of which the following is a specification.

My invention is designed for use in places where loaded cars have to be drawn up a steep incline (an inclined railway-trestle, for instance) for the purpose of depositing their load in an elevated location, so that it can be conveniently drawn therefrom through chutes and loaded into vessels, cars, or other vehicles; and it consists of a self-acting unhooking or releasing link and chain adapted for the purposes above mentioned.

As heretofore constructed, such devices have to be operated or released by hand—an operation which is troublesome and dangerous—which objections my invention is designed to obviate, by the use of an automatically-acting device, which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the link, showing a similar view by dotted lines of the holding and also the releasing position of the semispherical holding-piece that connects with a chain and hook for drawing the cars. Fig. 2 is a side elevation of the same device, showing the position of the link in the draw-head of a car and the holding portion, with its chain and hook in position for holding and pulling on the link, showing also the position of the holding portion and chain while automatically releasing itself. Fig. 3 is a side elevation of a similar link adapted to be attached to such cars as are usually called "dumps," on which a hook receives the connecting-link and to which the link is represented as attached. Fig. 4 is a plan of the link shown in Fig. 3, and Fig. 5 represents a diagram showing an inclined railway trestle and cars for the purpose of illustrating the operation of my invention. Figs. 1, 2, and 4 give a good idea of the shape or form that gives the link its self-releasing qualities.

The forward portion of the link consists of the tapering side pieces 1, which from the side pieces 2 incline toward each other and terminate in the contracted upwardly-curved portion 3. The rear portion of the link is curved and bent into the U-shaped portion 4, adapted to pass into a draw-head of a car and be secured by a pin 5 (shown in dotted lines in Fig. 2) in the same way that an ordinary link is secured. To strengthen the link, I secure a cross-brace 6 within it, as shown in Figs. 1 and 4; but this cross-brace is not necessary to the successful operating of the device, and may in some cases where there is not much strain on the link be dispensed with. In Figs. 3 and 4 I have shown a link adapted to be connected to a hook 7 of a dump-car. The rear end portion is provided with a downwardly-curved portion 8, to rest up against the under side of the hook 7, and a short cross-brace 9, adapted to rest on the top side of the hook. The object of this construction is to keep the link in a horizontal position when attached to a car. The holding-head 10, I have shown in a semi-spherical form, but it may be made cone-shaped, or in any form that tapers gradually from the top to the bottom. At the bottom is a projecting piece or ring 11, adapted to receive the end link of the chain 12. At the opposite end of the chain is a hook 13, made in any well-known way.

I construct my link and connecting portions preferably of iron; but any other suitable material may be used.

The operation of the invention is as follows: It will be seen that the head-piece 10 of the chain 12, when in the position shown in Fig. 2, is drawn forward in the direction of the arrow V and lies close to the upwardly-curved portion 3, and that while in this position its connection with the link is sure, and it is impossible for it to be accidentally disengaged; but if the strain is taken off from the cable or chain and it is allowed to drop vertically downward, substantially as shown in the dotted lines 12 in said Fig. 2, it will instantly slide backward and down in the link and drop from it at once, because of the tapering or semi-spherical form of the head or holding portion 10 and the gradually-widening opening between the sides of the link, so that while in one position the chain is securely connected to the link, in the opposite position it is instantly released.

Its use for drawing coal-cars up a steep incline will be better understood by reference to Fig. 5, in which a portion of a railroad coal-trestle is shown.

14 is an endless chain mounted on the wheels 15 16 17 18 in the usual way. The wheel 18 is connected by a chain or cable 19 to a driving-wheel 20, which receives a rotary motion from an engine or any suitable source of power, so as to cause the upper side of the endless chain 14 to move in a direction up the incline.

It will now be seen that if the head 10 of the chain 12 is secured in the upwardly-curved portion 3 of the link attached to a car, and the hook 13 be hooked into or otherwise secured to the upper side of the chain 14, as shown at 21 in Fig. 5, (the chain 14 being in motion, as hereinbefore mentioned,) the car will move up the incline, and that when the car is up, as shown at 22, and the movement of the endless chain and engine stopped, the car by its own momentum will still move forward, which operation will change the position of the strain on the head 10 and chain 12, thereby causing its instant release, substantially as shown. The chain is now dropped below, where an operator secures it to another car and to the cable or chain 14 in the same way, and the operation is repeated. I do not confine myself to the exact shape of the link shown, as it may be varied some, and still the opening will gradually enlarge from the front toward the rear, so as to operate the same. In Fig. 4 I have shown a slightly-different form of link, but its mode of operation is exactly the same, and the hook 13 may be made in any well-known way for grasping a cable or chain 14.

I claim as my invention—

1. A link for cars having an upwardly-curved front portion, with its sides spread outward, so that the opening between them is gradually enlarged from the front toward the rear, and having a contracted portion at the rear adapted for connection with a car, substantially as and for the purposes described.

2. The combination of a connecting-link for cars having its sides spread outward so that the opening between them gradually enlarges from the front toward the rear, and a chain provided with a tapering or semi-spherical head at one end and a means at the opposite end for connecting with a movable cable or chain, the front portion of said link having an upward inclination, substantially as described.

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