L. B. STILSON.

Safety-Hooks for Car-Trucks.

No. 225,659. Patented Mar. 16, 1880.

Fig. 1

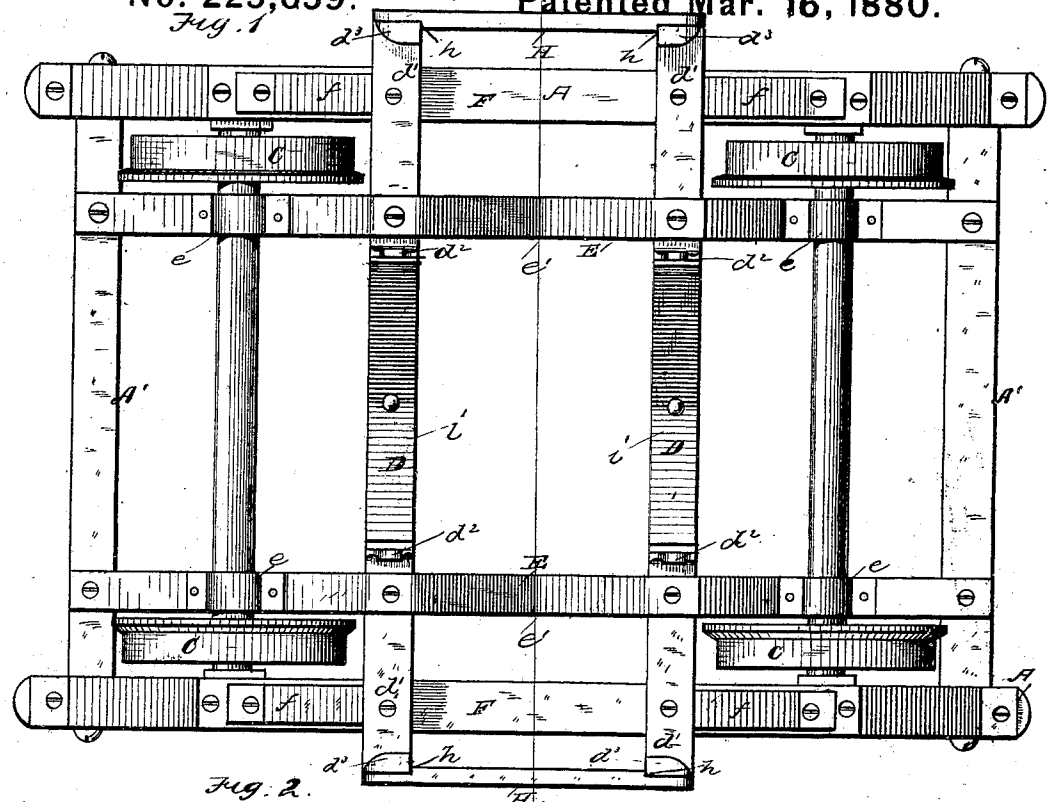


Fig. 2.

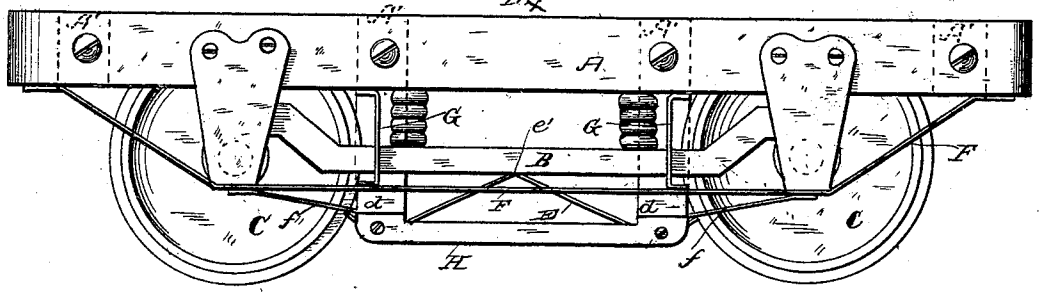


Fig. 3.

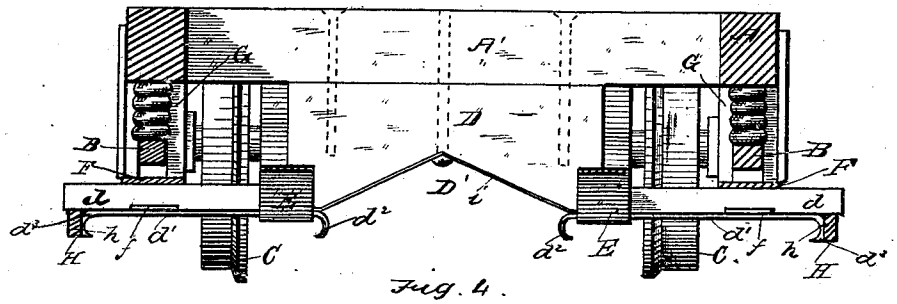
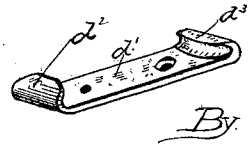


Fig. 4.



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UNITED STATES PATENT OFFICE.

LYMAN B. STILSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ADOLPHUS STRASSMAN, OF MILWAUKEE, WIS.

SAFETY-HOOK FOR CAR-TRUCKS.

SPECIFICATION forming part of Letters Patent No. 225,659, dated March 16, 1880.

Application filed February 9, 1880.

To all whom it may concern:

Be it known that I, LYMAN B. STILSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Railway Safety Car-Hooks to prevent accidents from broken rails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 is a bottom-plan view of a truck-frame supplied with my improved railway-car hook for the prevention of accidents from broken rails. Fig. 2 is a side elevation of the same; Fig. 3, a vertical section in line *x x*, Fig. 1; and Fig. 4 is a perspective view of one of the hooked plates.

Many and serious accidents, endangering both life and property, have been caused by railroad-cars jumping or being thrown from the track by reason of one or more of the rails being removed, misplaced, broken, or spread apart, as well as by the carelessness of switchmen in leaving open switches.

The object, therefore, of the present invention is to provide means whereby a railroad-car, when thrown from the track by any of the above-named causes, shall not be overturned or injured to any great extent, but shall be, by said means, brought to rest.

It has also for its object the provision of means whereby, in the event of an axle breaking while the train is motion, the wheels shall not be instantly thrown from their places in the truck-frame, as is the case at the present time, but shall be retained in place a sufficient length of time for the train to be stopped and remove or remedy said broken axle.

To the accomplishment of the above-named results, my invention consists in auxiliary cross-pieces placed beneath and firmly secured to the cross-pieces proper of the truck-frame, the said auxiliary cross-pieces having at each end and at their lower sides projections, that extend under the truck-frame and outward beyond the outer faces of the wheels, the said projections being further braced and supported from the truck-frame, as will be hereinafter described.

It further consists in plates having hooks at each end thereof, said plates being secured in any suitable manner to the under side of the auxiliary cross-pieces and projections, and in the means employed to brace and secure said plates to each other and to the truck-frame, as hereinafter described and set forth.

It further consists in metal straps extending under the auxiliary cross-pieces, and thence above the car-axles to the cross-pieces of the truck-frame, for the purpose of further bracing and supporting said auxiliary cross-pieces and the hooked plates thereon, and supplemental straps that pass around the axle of the wheels near the inner faces of the latter, forming boxes for said axles in the event of its being broken while the train is in motion, as will be hereinafter described; and, finally, it consists in the parts as a whole, substantially for the purpose and in the manner hereinafter described and pointed out in the claims.

Referring to the drawings, A represents the frame of a railroad-car truck; B, the equalizing-bar, attached to the truck-frame in the usual manner, and supplied with the usual braces F and wheels C.

D represents auxiliary cross-pieces, secured to two or more of the cross-pieces proper of the truck-frame by bolts or their equivalent. The cross-pieces D are furnished at their lower sides and each end with projections *d*, said projecting portions extending outward under the braces F of the truck-frame to a distance corresponding to about one and one-half the width of the rail. The projections are securely braced against longitudinal displacement by braces *f*, bolted to said projections and to the braces F of the truck-frame, as shown.

The central part of the auxiliary cross-pieces D have a V-shaped recess at their lower sides, as shown in Fig. 3, and are further strengthened by a facing, *i*, of metal, as shown in same figure.

To the lower side of the cross-pieces D, and extending outward under the projections *d* of said cross-pieces, I attach metal plates *d'*,

the said plates being securely fastened to the cross-pieces D by screws, bolts, or their equivalents, and having their ends turned downward, forming hooks, as shown at d^2 and d^3, Figs. 1, 3, and 4. The hook d^3 is rounded from a point near its center to the forward part thereof, and has also its forward under surface also rounded to facilitate and insure its catching and holding upon the rail. The hook d^2 is also slightly curved longitudinally for a similar purpose.

I further strengthen and secure the plates d' in place by brace-bars H, which extend from one to the other of the plates d', and are bolted to the outside of the hooks d^3. The parts of the bar H that touch or are in contact with the hooks d^3 are made somewhat thinner than the body of the bar, thus forming shoulders h, the said shoulders giving greater strength to the plates or hooks d^3.

Extending from front to rear of the truck-frame, and near the inside face of the wheels upon each side of said frame, is a strong metal strap or brace, E, the said strap or brace E extending beneath the plates d', near their inner hooked ends, d^2, and are secured to the cross-pieces D by bolts or screws, which pass through the plates d' and into the cross-pieces D, as shown. The brace E extends from the latter upward above the axle of the wheels, and is attached at each end to the cross-pieces proper, A′, of the truck-frame.

I preferably bend portion e' of the brace E upward, (the said bent portion being the part embraced between the cross-pieces D,) so as to give more room when replacing a car upon the track.

To the under side of the brace E, and at the point where the said braces pass the axles, I attach supplemental straps e, the said straps passing around the axle and forming boxes, whereby, in the event of an axle being broken while the train is in motion, the wheel is retained in place a sufficient length of time for the train to be stopped and to remove said broken axle.

From the upper surface of the brace F, and immediately over the projection d, and extending to the truck-frame, are braces or struts G. The said struts may consist of a single piece of wood or metal bifurcated at its lower end to allow the equalizing-bars to freely play up and down; or it may consist of two distinct struts, one upon each side of said equalizing-bars, its purpose being to give rigidity and strength to the projection d when the latter is brought violently in contact with the rail.

It will be clearly understood from the foregoing description that the different parts of my improved railway-car hook are rigidly attached to and made a part of the truck-frame proper, as fully described, requiring no alteration of the original truck.

The operation of my improved safety-hook attachment for car-trucks is as follows: Suppose one or more rails of a railroad-track be removed or broken and the car-wheels thrown from the track, then the outer hooked end, d^3, of the plate d' will strike against and be held by the rail remaining in place. The said hook d^3, by reason of having its forward side in circular form, as shown, will not cut into the rail, but will slide along upon the outside of the rail, thus generating a large amount of friction and operating effectually as a brake to stop the car, to which end the inner hooked end, d^2, upon the opposite side of the truck-frame contributes by catching and sliding along upon the inside of the next sound or properly-placed rail.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A railway-car truck constructed, as described, with the auxiliary cross-pieces D, having the recesses D′ in their lower sides, and projection d, plates d', furnished with the hooks d^2 d^3, brace-bar H, struts G, and braces f, for the purpose specified.

2. In a safety-hook attachment for car-trucks, the combination of the cross-pieces A′ of the frame with the auxiliary cross-pieces D, having recesses D′ and projections d, hooked plates d', brace H, struts G, and braces f, substantially as described, and for the purpose specified.

3. In a safety-hook attachment for car-trucks, the combination of the straps E, having upward V-shaped bend e', with the auxiliary cross-pieces D and cross-pieces A′ of the truck-frame, substantially as described, and for the purpose set forth.

4. In a safety-hook attachment for car-trucks, the combination of the straps E, having supplemental straps e, with the auxiliary cross-pieces D, cross-pieces A′, and axles of the truck, substantially as described.

5. The combination of the auxiliary cross-pieces D, projections d, hooked plates d', brace-bars H, having shoulders h, struts G, braces f, and straps E, having supplemental straps e, with the cross-pieces A′ and frame A of a railroad-car truck, substantially as described, and for the purpose set forth.

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

LYMAN B. STILSON.

Witnesses:
JOSEPH BREWER,
M. P. CALLAN.