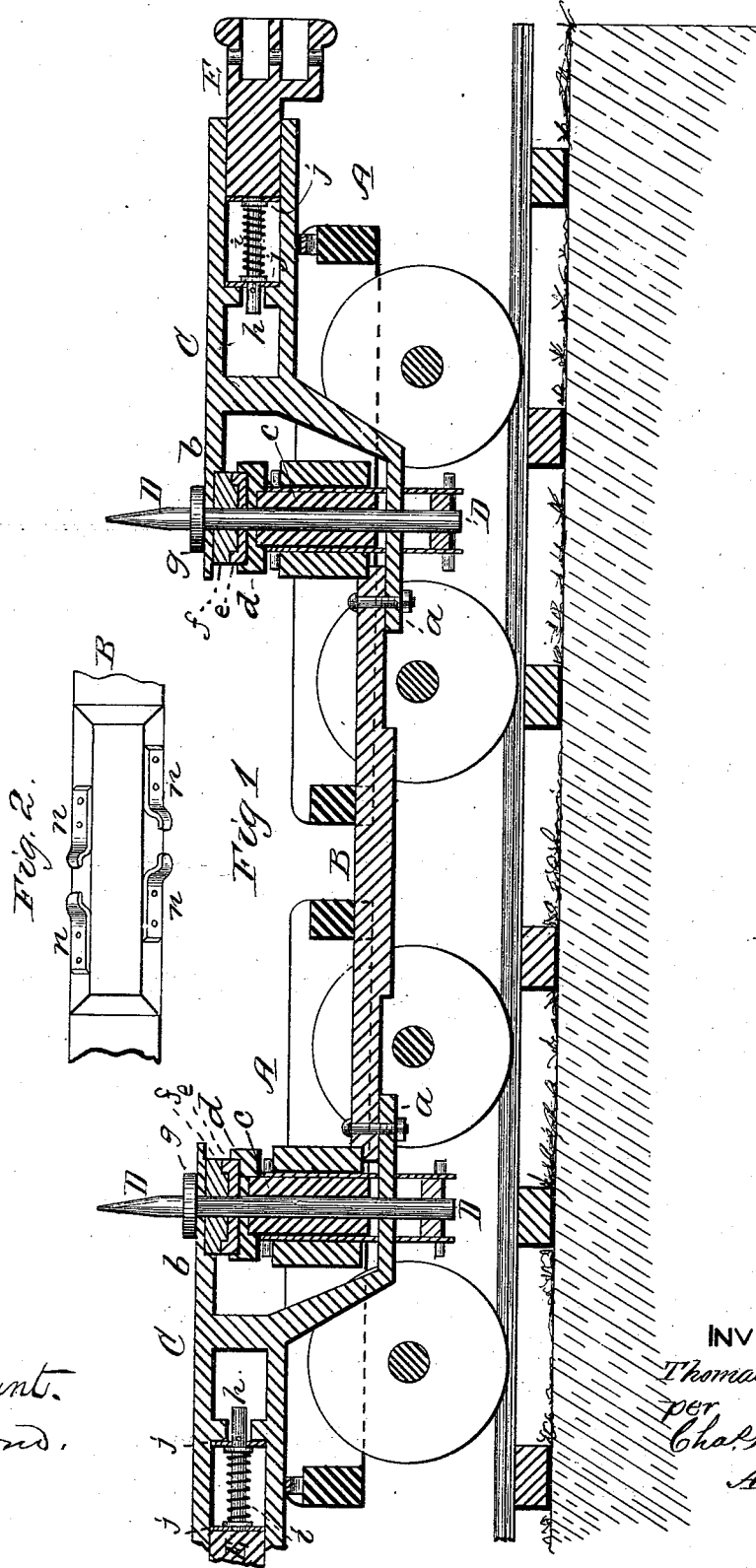


T. MUELLER.
Safety-Car.

No. 208,113.

Patented Sept. 17, 1878.



WITNESSES

Nat. E. Olyphant.
Wm. Bond.

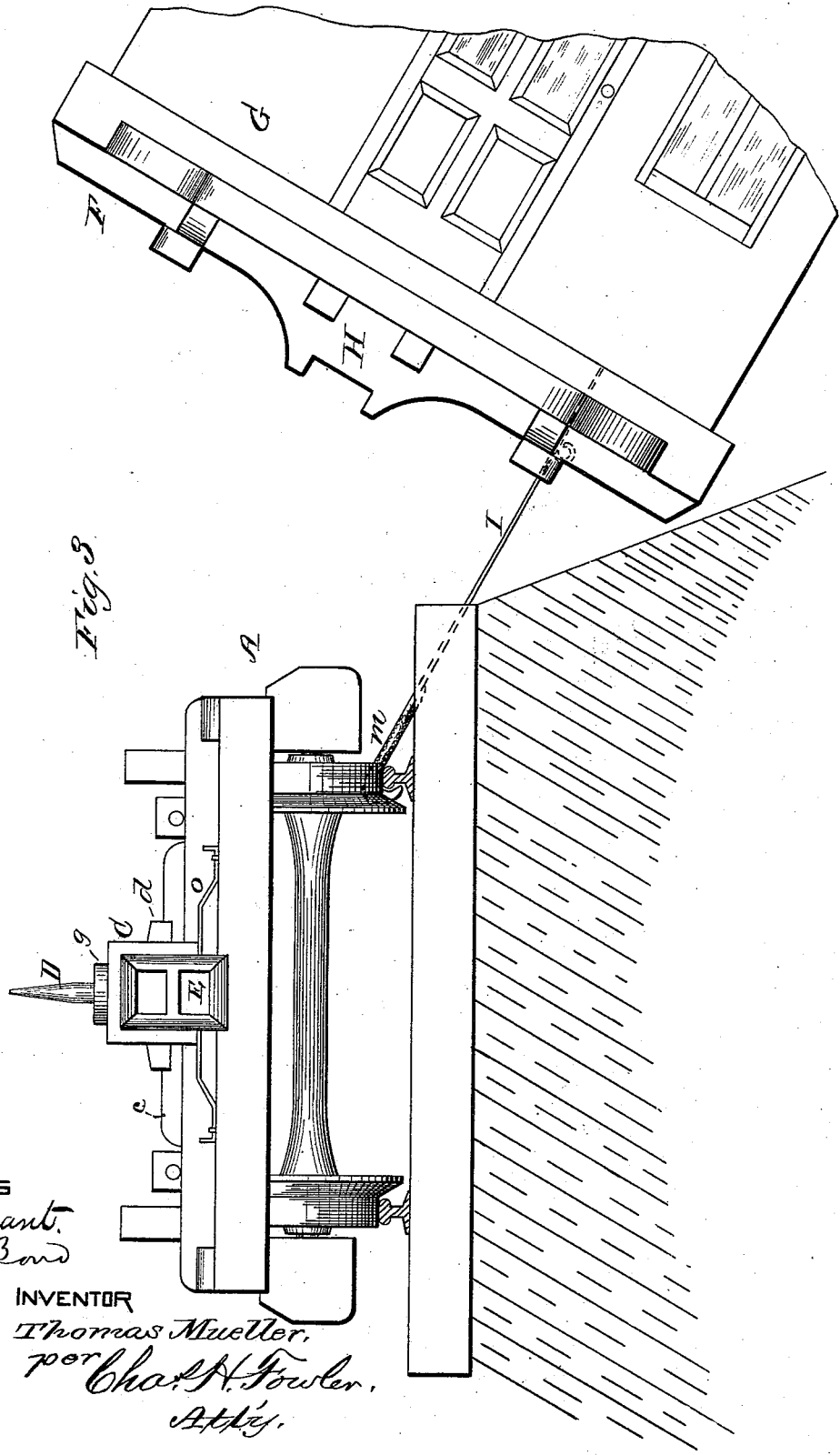
INVENTOR

Thomas Mueller
per
Chas. H. Fowler
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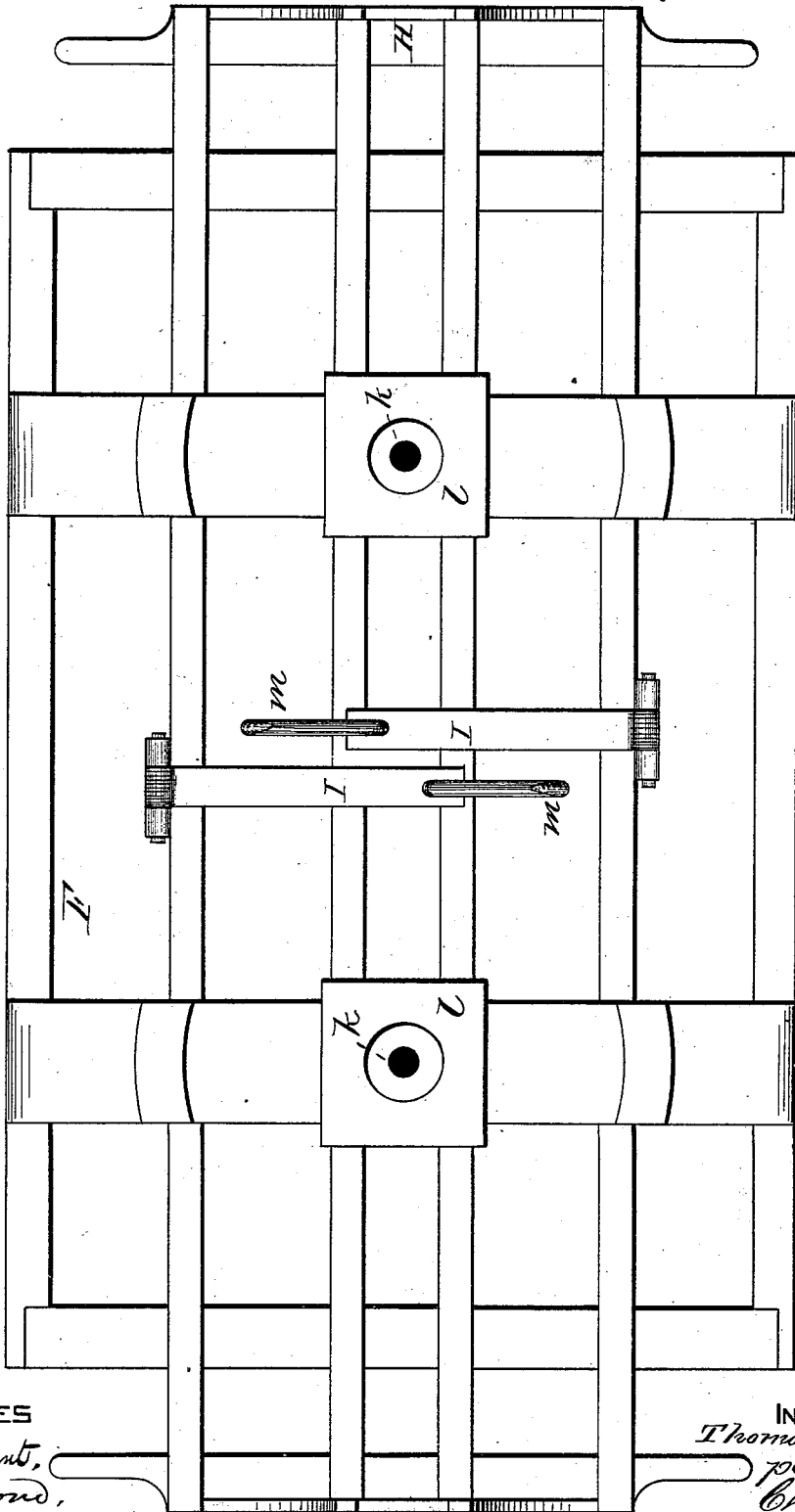
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Fig. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS MUELLER, OF ZANESVILLE, OHIO.

IMPROVEMENT IN SAFETY-CARS.

Specification forming part of Letters Patent No. **208,113**, dated September 17, 1878; application filed August 23, 1878.

To all whom it may concern:

Be it known that I, THOMAS MUELLER, of Zanesville, in the county of Muskingum and State of Ohio, have invented a new and valuable Improvement in Safety-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal vertical section of a car-truck with my invention applied. Fig. 2 is a detailed view of the central connecting-bar with hooks or latches secured thereto. Fig. 3 is an end view of a car-truck, showing the car suspended by my improved grappling device. Fig. 4 is a bottom-plan view of the car.

This invention has relation to safety-cars; and its object is to provide means for preventing railroad-cars from being thrown down embankments, ravines, gorges, or mountain-clefts, or over a bridge.

The invention consists in the means hereinafter described whereby the car is automatically detached from the trucks when the same is thrown over or tipped at an angle, the car being suspended or held by grappling devices or other convenient means engaging with the rail or other object with which they come in contact after the car is disconnected from the trucks.

The invention further consists in the general construction of the several parts, as will be hereinafter described.

In the accompanying drawings, A represents a car-truck of the ordinary construction generally used on passenger, freight, or cattle cars, consisting of two sets or more of wheels connected together by a suitable frame. These frames, however, in my invention are connected together by a central bar, B, of such form and construction as to admit of the required amount of strength. This bar at its ends is bolted or otherwise rigidly secured to the lower plates, *a*, of the draw-bars C, said draw-bars being formed with an upper plate, *b*, through which passes a vertical bolt, D, and also through the cross-beams *c* of the truck-frame and through the lower plate, *a*, of

the draw-bar, thereby securely connecting the draw-car and truck-frame together.

Upon the cross-beams *c* are secured recessed plates *d*, which receive a circular recessed plate, *e*, and within the recess fits an annular flange of a circular plate, *f*, the several plates being located between the beams *c* and the upper plates, *b*, of the draw-bars C, the bolts D passing through them and holding them in place within the recess of the plates *d*.

An annular flange, *g*, is formed upon the bolt D, which rests upon the upper face of the plates *b*.

The draw-heads E are secured within the draw-bars C, and have a short rod, *h*, secured to their inner ends, around which is placed coiled or spiral spring *i*, the outer end bearing against two guide-plates, *j*. Any other suitable spring may be interposed between the plates, as found expedient.

It will be seen that by the means used for connecting the two truck-frames together, and having the draw-bars connected to the trucks and connected to the cross-beams and central bar, B, the danger of telescoping the cars is greatly lessened, and the usual jarring as the cars collide or jerk apart in stopping and starting is to an extent avoided.

The several plates *c d e*, with their recesses, render great strength in supporting the weight of the car and its contents, and reduce the friction of the parts to a considerable extent. The flange-plates *g* of the vertical rods D rest or fit within recesses upon the upper face of the plates *e*, or may be otherwise firmly secured to the plates *e*, so they will move with it. The bolts D, at their upper ends, come to a point, or are made conical, to fit within holes *k* formed in plates *l*. These plates are recessed, so that when the car is placed upon the trucks the upper plates, *e*, will fit within the recess of the plates *l*, said plates being suitably connected to the bottom of the car, as illustrated in Fig. 4 of the drawings.

The frame-work F at the bottom of the car G projects out from the ends of the same, and has secured thereto guide-plates H, which fit over and upon the draw-bars C, to assist in holding the car steady or in place upon the trucks.

To the bottom or under side of the car G

are hinged, pivoted, or otherwise secured strong metal arms I, formed upon their free ends, with claws *m*, also of the required strength. These arms may be secured to any part of the bottom of the car, and may be multiplied in numbers and arranged in pairs, as found desirable.

When the car is in place upon the trucks the claws upon the arms engage with hooks or latches *n*, arranged and secured to the sides of the bar B.

The car being in place upon the trucks A, and the claws engaging with the hooks or latches *n* to assist in holding the car firmly upon the trucks, should the trucks by any cause be thrown to one side at a sufficient angle, the claws of the arms I would disconnect themselves from the hooks or latches *n*, and the car would slide off the trucks, the claw of the arm upon the side nearest to the truck grasping the rail, and thereby holding the car suspended, and preventing it from falling down the embankment or off the bridge over which the train is passing. Should the claw of the arm miss the rail it will catch on the timbers, rock, or any other object in its course of descent.

Spring-plates *o* are secured to the truck-frame directly under the draw-bar, to prevent any sudden jar or break the concussion between the frame and draw-bar.

By my invention the cars are insured against such accidents as frequently occur from the sudden throwing of the car or cars down an embankment or other steep locality over which the cars may be passing; the arms with their claws forming grappling devices for holding the car suspended.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A freight, cattle, or passenger car connected to the car truck or trucks substantially as described, whereby said car is automatically detached therefrom by the tipping of the truck, in combination with a grappling device connected to the car and adapted to engage with the track or other object, substantially as and for the purpose set forth.

2. The car-truck provided with suitable hooks or latches *n*, in combination with the hinged arms I, secured to the bottom of the car and formed at their free ends with claws *m*, substantially as and for the purpose described.

3. The draw-bars C, formed with plates *a b*, in combination with the bolts D and recessed plates *d e f*, substantially as and for the purpose set forth.

4. The draw-bars C, formed with plates *b a*, and connected to the truck by bolt D, in combination with draw-heads E, bolts *h*, springs *i*, and guide-plates *j*, substantially as and for the purpose set forth.

5. The draw-bars C, formed with plates *a b*, and connected to the trucks by the bolt D, in combination with the central bar, B, securing the draw-bars together, substantially as specified.

6. The trucks A, provided with pins or bolts D, formed with flanges *g*, and bar B, with hooks or latches *n*, in combination with the car G, guide-plates H, recessed plates *l*, and arms I, with claws *m*, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

THOMAS MUELLER.

Witnesses:

NAT. E. OLIPHANT,
CHAS. H. FOWLER.