(No Model.)

G. W. SMITH.

CAR COUPLING.

No. 299,029. Patented May 20, 1884.

Fig 1

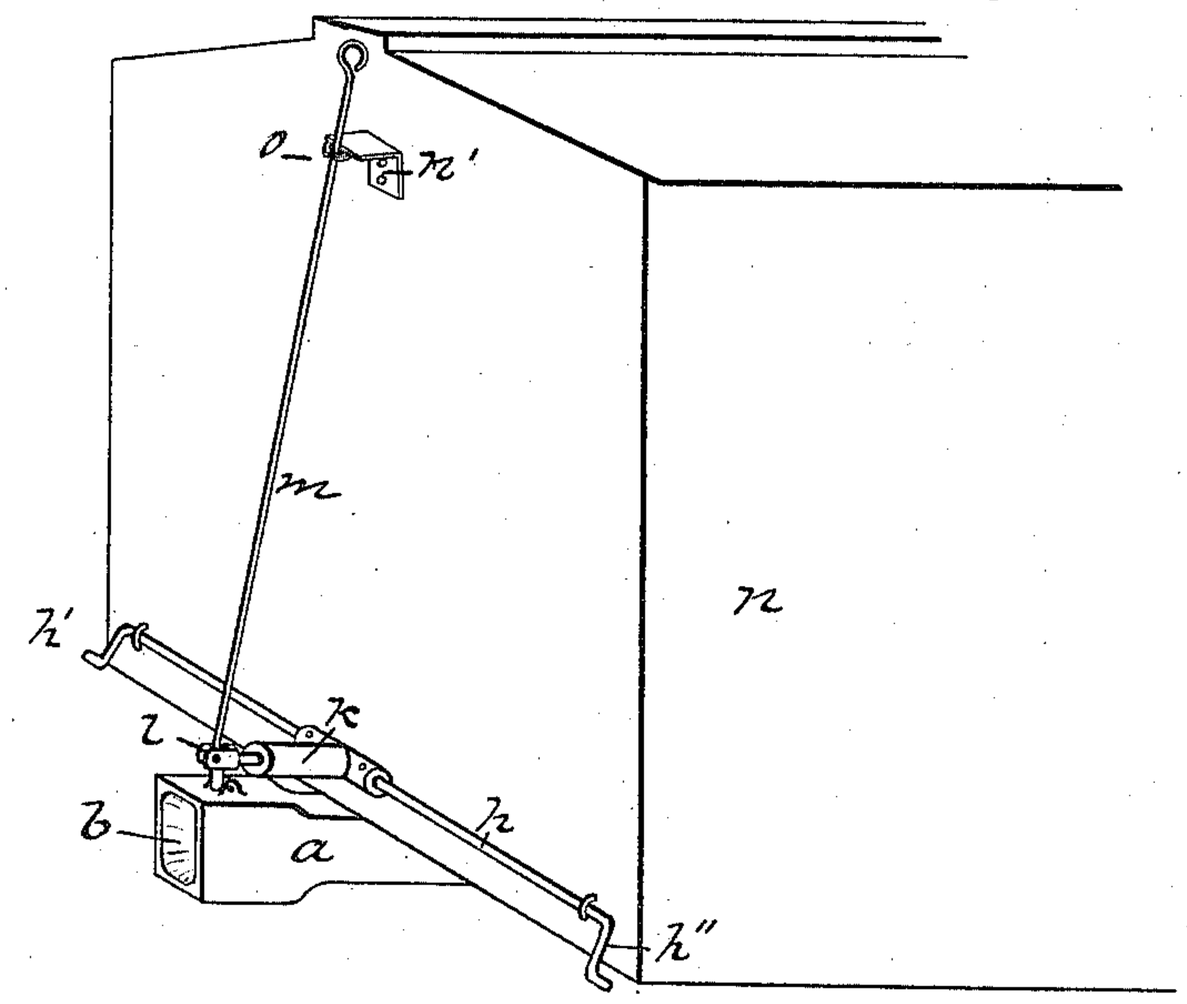


Fig 2.

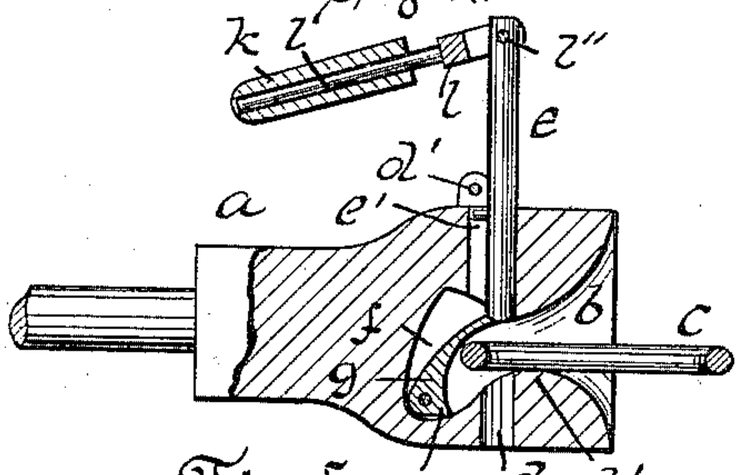


Fig 3.

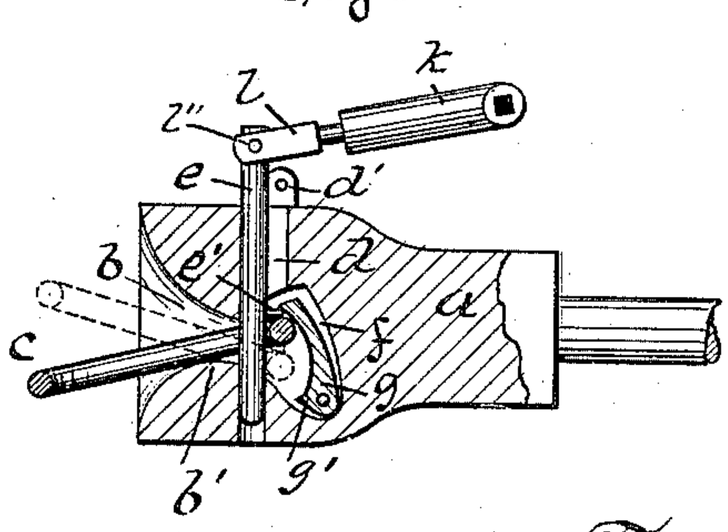


Fig 5

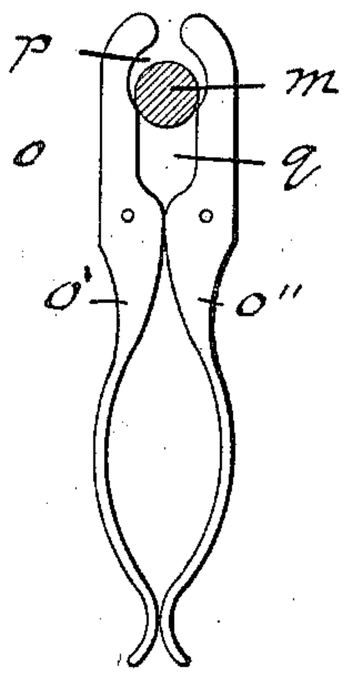


Fig 4.

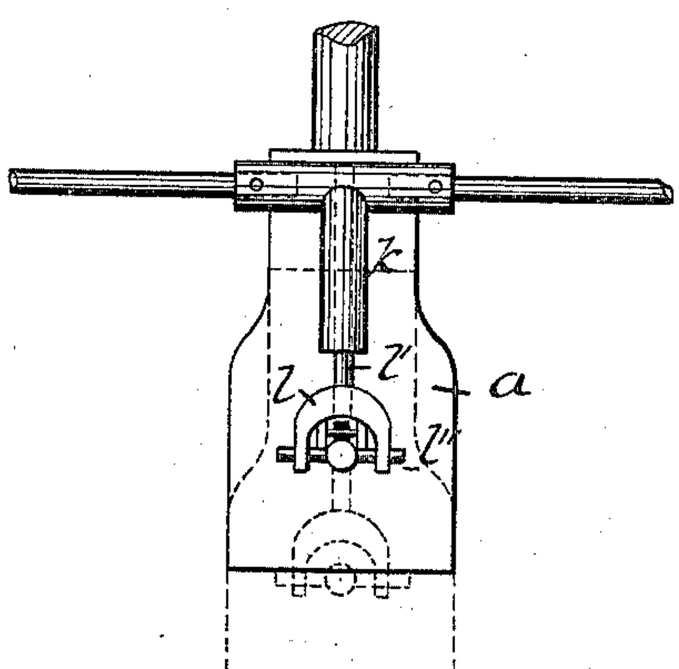
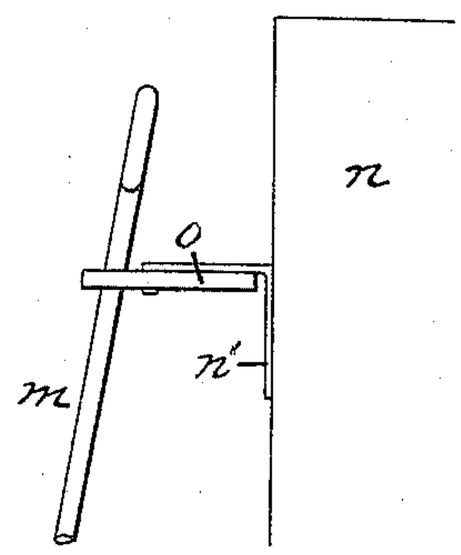


Fig 6



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 299,029, dated May 20, 1884.

Application filed March 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMITH, of Athol, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Car-Couplings, of which the following is a description, reference being had to the accompanying drawings, where—

Figure 1 is a view of my device as applied to the end of a freight-car. Fig. 2 is a detail view of a draw-bar embodying my improvements in the attachments shown. Fig. 3 is a detail view of same, showing the relative position of the parts when a link is held in the bar. Fig. 4 is a detail top view of pin holder and operator. Fig. 5 is a detail top view of my device for holding the pin-operating rod so that it may be detached without breaking the parts.

My invention relates to the class of car-couplings known as "automatic" or "self" couplers, and to those in which the ordinary link and form of coupling-pin may be used in the event of breaking the special device.

The invention consists, mainly, in the new combinations of the parts, and in the improved method of operating them, as more particularly hereinafter described.

In the accompanying drawings, the letter *a* denotes a draw-head of the ordinary material and general form, having the opening *b* for the reception of the link *c*, the vertical perforation *d* for the pin *e*, and the recess *f* for the pivoted prop *g*. This draw-head or draw-bar is secured to a car in the usual manner.

The opening *b* is so formed as to present a flaring mouth at the front of the draw-head, and is cored out in rear so as to leave a ridge, *b'*, upon which the link may tilt or rock. The face of the socket or recess *f* conforms to the outline of the back of prop *g*, which is pivoted to the draw-head, so as to throw the center of gravity of the prop always forward of the pivot, and so make it always tend to lean or fall forward, and in this position to hold up the pin *e* by contact with its lower end. The bottom of the prop *g* has a toe, *g'*, that strikes the bottom of the recess as soon as the prop is in the right position to catch the pin, and this limits its forward play. A bolt or similar device, *d'*, limits the upward movement of the pin *e* by closing the path of the lug in that direction. On the front of the car, and just above the draw-bar, is horizontally pivoted a rod, *h*, with handles *h' h²* arranged just within the sides of the car. Near the center of this rod, and just over the draw-bar, the sleeve *k* is so fastened as to move in a vertical plane when the rod is rotated. The sleeve is perforated and bears the shaft *l'* of the fork *l*, which slides easily within the sleeve. The head of the coupling-pin is pivoted between the tines of the fork by the pin *l''*. This arrangement allows horizontal play of the draw-bar, (see Fig. 4,) carrying the pin without damage to any of the parts or interference with their perfect action. A rod, *m*, is pivoted to the arm or fork *l*, preferably by pin *l''*, and terminates at its upper end in a handle, by which a train-hand may operate the coupler from the top of the car *n*. The rod passes between the jaws of the clamp *o*, which is preferably secured on the under side of the foot-board *n'*. The clamp is composed of the corresponding pivoted spring-levers, *o' o''*, forming between their outer ends a space of varying width. When rod *m* lies between them in space *p*, it may be readily raised or lowered; but when it is pressed back into space *q*, it is held from vertical play. The rear ends of the levers are in contact, and the thinner portions form springs that yield slightly to allow the rod to be forced back into space *q*.

The coupler being arranged as in Fig. 2, and a coupling-link forced into the draw-head in the usual manner, the prop *f* is pushed back, and the pin *e* released and dropped through the link and down in hole *d* till the lug *e'* bears on the upper edge of the link at its end, holding the link in the draw-bar *a* in a nearly horizontal position.

When the prop is thrown back, it fits closely against the recess, and the blow of the link is borne by the mass of the head, with no danger of bending or breaking the prop.

To allow for variations of height of the draw-bars of any two cars, the link may be steered, as shown in Fig. 3, by means of the handle *h'* or *h''*, from either side of the car, or by means of rod *m* from the top, by pressing down upon the pin *e*, which tilts the link up, or by raising the pin slightly, which allows the front end of the link to fall.

When the rod is raised and pushed back into space *q* in the clamp, the cars may be bunted together and links run into the draw-heads without coupling the cars. To render the coupler automatic again, the rod is pulled forward into space *p*.

Cars coupled by my device are uncoupled from the top or sides by lifting out the pin by the means described.

In case the draw-bar is torn out, the shaft of the forks slips from the sleeve, and rod *m* pulls through the points of the clamp without injury to any of the parts, and the whole can be readily reassembled when the draw-bar is replaced. The link used is of the standard form and size in common use, and the coupling-pin is the same, with the exception of the lug on one side, and therefore any of the couplers in common use will couple with my device; or, in case of loss of or injury to any of these parts, the common links and pins are readily used till replaced by mine.

I claim as my invention—

1. In a car-coupler, in combination, car *n*, rotary rod *h*, bearing-sleeve *k*, fork *l*, pivoted to the coupling-pin *e*, and draw-bar *a*, all substantially as described.

2. In a device for supporting the rod *m*, a spring-clamp, *o*, having jaws with openings *p* and *q*, all substantially as described.

3. In combination, car *n*, draw-bar *a*, rotary rod *h*, having handles *h′ h″*, and bearing-sleeve *k*, fork *l*, pin *e*, pivoted to said fork, rod *m*, and clamp, all substantially as described.

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