

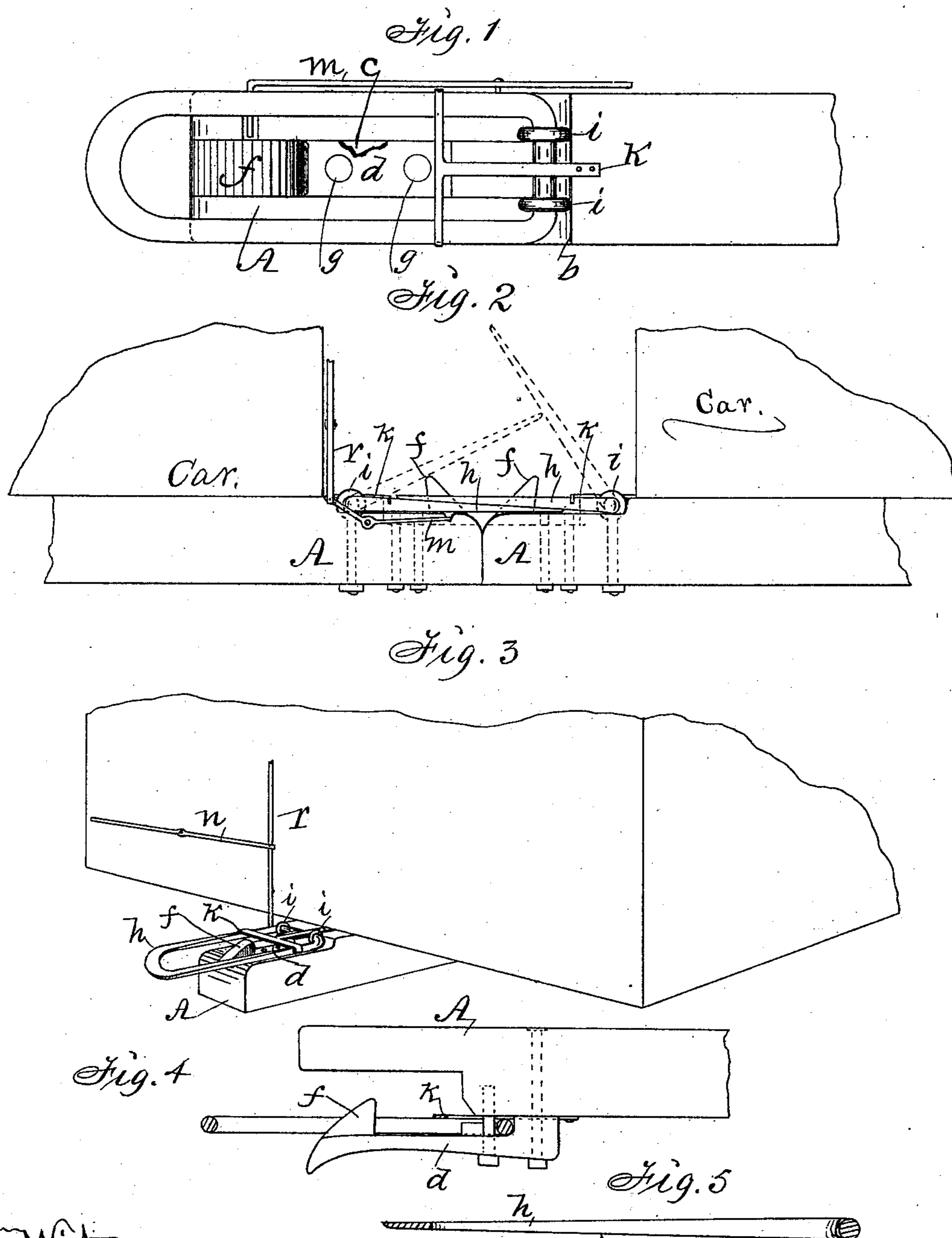
(No Model.)

S. H. SPRINGER.

CAR COUPLING.

No. 360,926.

Patented Apr. 12, 1887.



Witnesses:

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# UNITED STATES PATENT OFFICE.

STEPHEN H. SPRINGER, OF DES MOINES, IOWA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 360,926, dated April 12, 1887.

Application filed September 7, 1886. Serial No. 212,953. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN H. SPRINGER, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented an Improved Automatic Car-Coupling, of which the following is a specification.

My object is to provide each end of each car with a draw-head and link and link-governing mechanism in such a manner that whenever two cars come together on a track the two links and the two abutting draw-heads will be reciprocally and automatically coupled together, as required to connect the two cars flexibly and securely, and also in such a manner that a person at the side or on top of either one of the cars can readily lift the overlapping links jointly, as required to uncouple.

I accomplish the results contemplated as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top view of one of my draw-heads and links and link-governing devices combined. Fig. 2 is a side view representing two cars coupled together by means of my draw-heads and links. Fig. 3 is a perspective view showing one of the draw-heads having a link hinged thereto and link-governing devices combined with a car. Fig. 4 shows a modified form of my draw-head, in which the metal hook is inverted and fixed to the under side and a link hinged between the hook and the draw-head. Fig. 5 is a longitudinal half-section of my tapering link having a pointed and flat front end.

A is a solid cast-metal draw head and bar, adapted to be fixed to a car in a common way. It has a raised surface and shoulder, *b*, and a longitudinal groove, *c*, extending from said shoulder to its front end.

*d* is a wrought-metal plate that has an integral hook, *f*, at its front end, fitted in the groove *c* and secured therein by means of bolts *g* in such a manner that the hooks will project vertically from the front end and center of the draw-head. The top portion of the front face and end of the draw-head, and also the front face of the hook *f*, are inclined and adapted to direct the free end of a link upward, as required to engage the hook.

*h* is a link that is flat and pointed at its front end, and hinged to the draw-head and against the shoulder *b* by means of eyebolts *i*, or in any suitable way, in such a manner that the front end of the link will, when it comes in contact with the hook *f* of a mating draw-head, slide up over the inclined face of the hook and drop down over the hook.

*k* is a spring, preferably T-shaped, fixed on top of the draw-bar, to project over the link *h* in such a manner that it will, in its normal condition, press the link down flat upon the draw-head, as required to retain it upon the hook of a mating draw-head when two cars are coupled together.

*m* is a lever pivoted to the side of the draw-head. Its free end is bent inward at right angles to extend under the link *h* in such a manner that when its rear end is depressed it will lift the front end of the link, as required to disengage it from a mating draw-head.

*n* is a lever pivoted to the end of the car.

*r* is a rod connected with the rear end of the lever *m*, and also with the inner end of the lever *n*, in such a manner that a person at the side of the car can lift the free end of the lever *n*, and thereby operate the lever *m* as required to lift the link; or a person on top of the car can operate the lever *m* for the same purpose by pressing down upon the rod *r*.

In the practical operation of my invention, when two cars having my coupling applied come together, the front and tapering flat ends of the links will readily pass and overlap each other and slide up over the inclined faces of the hooks to reciprocally engage the hooks, so that the two links will be simultaneously and automatically operated and placed in position to form a double and flexible connection between the two cars, and the springs, pressing upon the links, will hold them securely in place as long as the cars are safe upon the track; but when a car is derailed, breaks down, or falls through a bridge, and one of the draw-heads is brought into an angling position relative to the other, the links will be automatically lifted and the cars uncoupled. To uncouple when the cars are level upon a track, I simply depress the rear end of the lever *m* by means of the lever *n* and rod *r*, and thereby lift the overlapping links jointly, as required

to disengage them simultaneously from the hooks.

I claim as my invention—

5 1. The draw-head A, having a shoulder, *b*, and groove *c*, the plate *d*, having the hook *f*, a link, *h*, and a spring, *k*, constructed and combined substantially as shown and described, to operate in the manner set forth, for the purposes stated.

10 2. The combination of the hinged link *h*, the levers *m* and *n*, and the rod *r* with a draw-head and car, substantially as shown and described, for the purposes stated.

15 3. An improved car-coupling comprising the following elements, to wit: a draw-head having a hook projecting vertically from its front end and center and the hook provided

with a rearwardly-inclined front face, a link hinged to the draw-head to extend forward around the hook and beyond the front end of 20 the draw-head, a spring fixed to the draw-head to retain the link flat upon the draw-head, and mechanism for lifting the front end of the link.

4. The draw-head A, having a shoulder, *b*, 25 and groove *c*, the plate *d*, having a hook, *f*, the link *h*, the eyebolt *i*, the spring *k*, the levers *m* and *n*, and the rod *r*, arranged and combined with a car substantially as shown and described, for the purposes stated.

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Witnesses:

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