

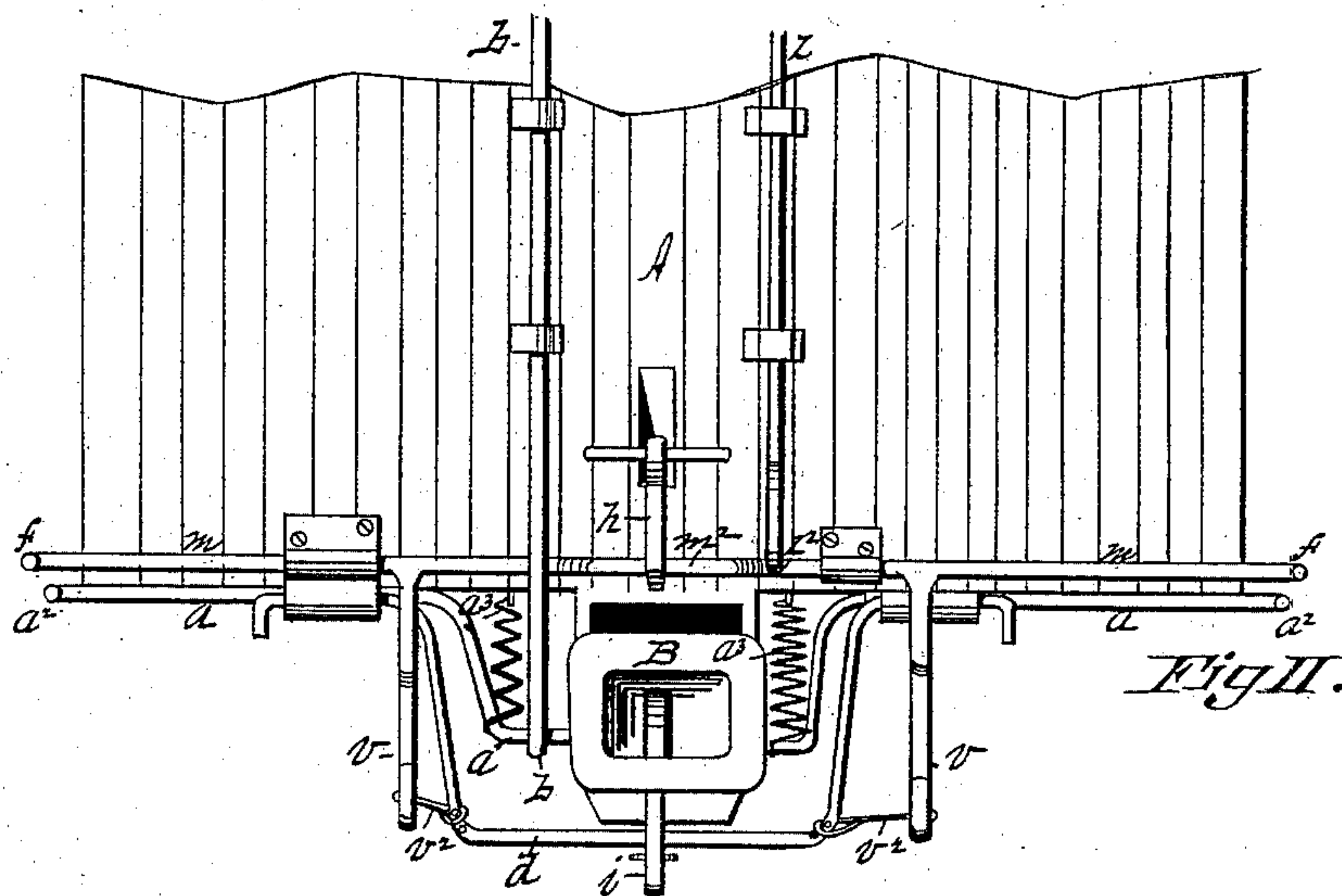
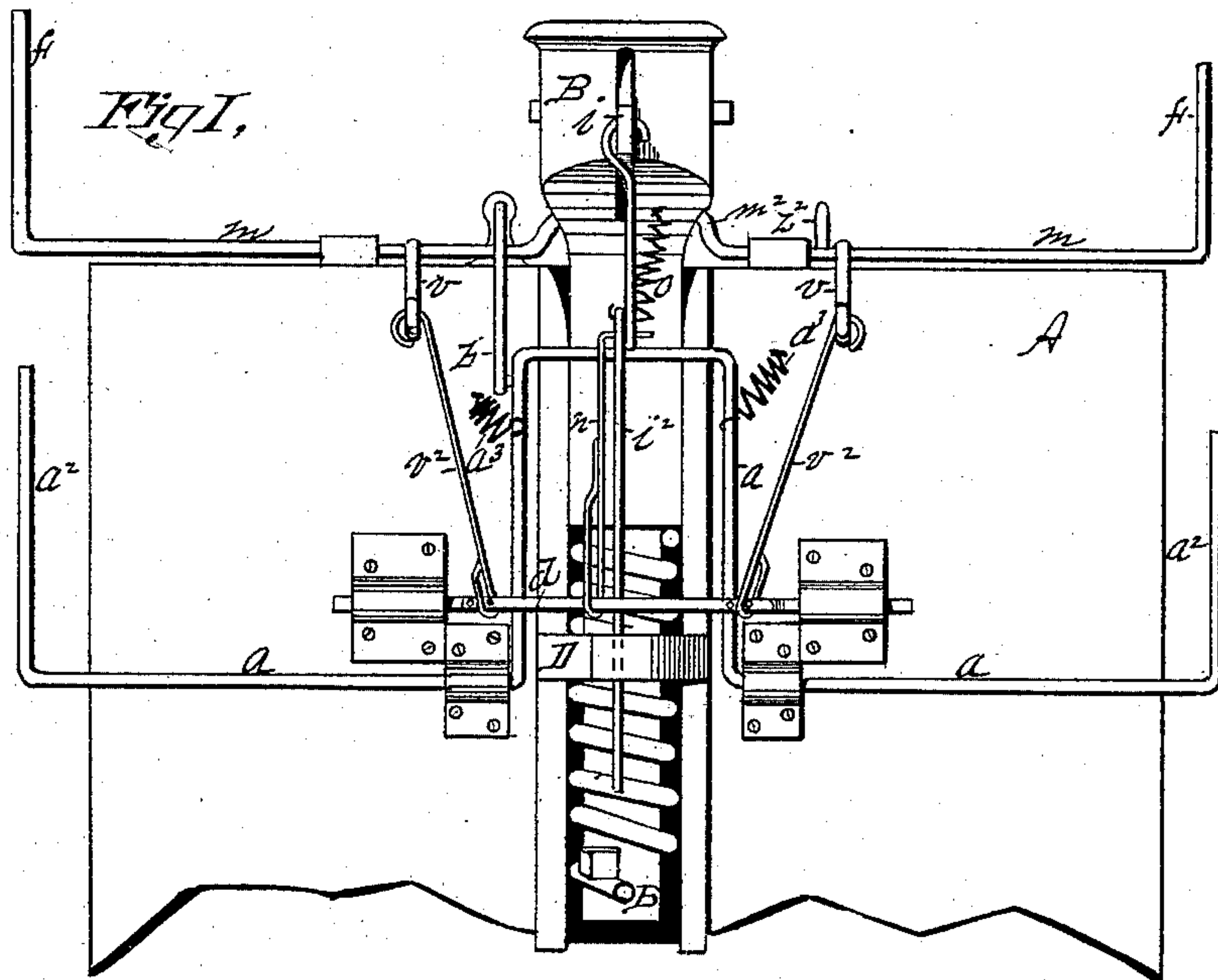
(No Model.)

2 Sheets—Sheet 1.

F. L. EAGER.
CAR COUPLING.

No. 270,032.

Patented Jan. 2, 1883.



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UNITED STATES PATENT OFFICE.

FRANK L. EAGER, OF PALMER, MASSACHUSETTS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 270,032, dated January 2, 1883.

Application filed September 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. EAGER, a citizen of the United States, residing at Palmer, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to improvements in devices for coupling cars and to improved means for adapting the ordinary draw-bar to co-operate with the coupling devices, the object being to provide a draw-bar which is capable of being adjusted to different heights, having pivoted thereto a self-acting link-hook, and suitable devices for operating said draw-bar and hook from either side of the car or from the top thereof, and for automatically bringing said link-hook to proper coupling position in the draw-bar head after a car has made a "flying switch."

In the drawings forming part of this specification, Figure I is a view of a portion of the under side of a railway-car having applied thereto coupling devices embodying my invention. Fig. II is a front elevation, and Figs. III and IV are side elevations, showing the draw-bar in two positions. Fig. V is a view of the draw-bar yoke and a portion of the devices which secure it to the car.

In the drawings, A represents a part of a railway-car. B is the draw-bar. D is a yoke attaching the draw-bar to the car. *e e* are coiled springs. *i* is a pivoted link-hook. *i*² is a link-hook rod. *a* is a draw-bar crank-shaft; *a*², hand-lever on shaft *a*. *a*³ are springs connecting crank-shaft *a* with the car. *b* is a rod connected to the crank in shaft *a*, and extending to the top of the car. *d* is a link-hook yoke hung to have a vibrating movement under the car. *n* is a connecting-hook having a looped rear end. *o* is a spring connecting-rod *i*² with the draw-bar. *m* is a shaft running across the end of the car above the draw-bar and having a short crank, *m*², formed on it over the latter, and its ends are bent to form hand-levers *f*. *h* is a latch hung in the end of the car over said crank *m*². *v* are down-hanging arms on shaft *m*. *v*² are rods connecting arms *v* with the link-yoke *d*. *z* is a rod connected to an arm, *z*², on shaft *m*.

The draw-bar B is substantially of the form ordinarily used for a link-and-pin coupling,

excepting that its mouth is made somewhat larger. Said draw-bar is supported between the usual side pieces under the car, between which it can have the common end motion; but instead of being held up between said side pieces by cross-supports thereunder, as usual, the draw-bar is secured therebetween at a single point by a yoke, D, which is firmly secured between said supports and provided with an opening through it to admit of passing the shank of the draw-bar through it, and a coil-spring, *e*, is placed on said shank each side of said yoke D, one of which serves as a draw-spring and the other as a bunter-spring. The said opening through yoke D is of a somewhat oval form vertically to permit the outer end of the draw-bar to have a vibratory vertical motion.

A link-hook, *i*, is pivoted in the head of said draw-bar back of its mouth, and is adapted to operate in a slot in the under side thereof, and has a part extending downward under the latter, and to have a rod, *i*², which runs back under the car, connected with it. The point of said link-hook, which swings up into the mouth of the draw-bar, is adapted to operate with a common link to engage in the latter when it is forced into the draw-bar mouth, and to resist the drawing action thereof. The said connection of rod *i*² with the latch *i* will be explained farther on. A draw-bar crank-shaft, *a*, runs across the bottom of the car back of its end, and has a hand-lever, *a*², on each end. Said shaft *a* has also a crank formed in it under the draw-bar B, extending toward the outer end of the latter. Said crank is connected to the bottom of the car by two springs, *a*³ *a*³, of sufficient force to sustain the weight of the outer end of the draw-bar and to keep it up against the bottom of the car. A vertical rod, *b*, is supported on the end of the car, and its lower end is connected with said crank on shaft *a*. A vibratory yoke, *d*, is hung under the car and across the draw-bar somewhat below the latter. A rod, *i*², is connected to the lower end of the link-hook *i*, having means, as shown, about centrally therein for connecting a spring, *o*, and a hooked rod, *n*, having a looped end therewith. Said rod *i*² extends rearwardly through the lower part of yoke D, whereby its end is supported. Said spring *o* is connected to the under side of the draw-bar

B, and serves to swing the link-hook *i* to carry its hook end up into the draw-bar mouth. The said hook-rod *n* connects rod *i*² with said vibratory yoke *d*, its looped end permitting the latter to swing freely forward. A shaft, *m*, runs across the end of the car above the draw-bar B, and has a short crank formed therein over the latter. A hand-lever, *f*, is formed on each end of said shaft. A latch, *h*, is hung on the end of the car above said short crank, and has a notch in its under edge, which is adapted to engage with said crank, so as to hold the latter over toward the top of the draw-bar. Two down-hanging arms, *v v*, on said shaft *m*, are connected by rods *v*² *v*² with said vibratory yoke *d*, whereby the latter and the link-hook *i* are operated to swing the latter to the position shown in Fig. 3. A vertical rod, *z*, on the end of the car (see Figs. I and II) is attached to the end of an arm, *z*², on shaft *m*, whereby the latter may be operated from the top of the car.

The operation of my improvements is as follows: If a car carrying a link be approaching the mouth of draw-bar B, and the position of said link be too low to properly enter the mouth of said draw-bar, the latter may be swung down by seizing one of hand-levers *a*², or by pressing down on rod *b*, thus swinging the crank on shaft *a* down. The said approaching link will then enter draw-bar B, and, sliding over the point of hook *i*, become engaged therewith. To disconnect a link from hook *i*, shaft *m* is turned by swinging down levers *f*, whereby yoke *d* is swung backward, drawing the point of hook *i* down through rods *n* and *i*², connecting said yoke therewith. Spring *o* returns hook *i* to the engaging position again, and after the end of the draw-bar has been de-

pressed, as above mentioned, the springs *a*³ swing it up when shaft *a* is freed.

In making a flying switch with a car having these improved couplings on it, and in cases where the pushing-car has a draw-bar on it lower than the pushed car, the head of the draw-bar is depressed to meet that of the coming car by turning shaft *a*, as above described, and at the same time shaft *m* is turned to swing the point of hook *i* downward, so that it may not engage with a link that may be in the other coupling. It is desirable that hook *i* be retained in said downward position until the cars part, and for this purpose the latch *h* is thrown down and engages with the short crank on shaft *m*, as in Fig. III, and when the cars separate the end of draw-bar B is released and is thrown up by springs *a*³, knocking latch *h* away from crank *m*² and letting hook *i* swing again into the draw-bar head, ready again to engage with a link.

What I claim as my invention is—

1. In combination, the draw-bar B, yoke D, the crank-shaft *a*, and the springs *a*³, substantially as set forth.

2. In combination, the draw-bar B, the pivoted link-hook *i*, the rods *i*² and *n*, spring *o*, yoke *d*, shaft *m*, and means, substantially as described, for connecting said shaft *m* with said yoke, all as set forth.

3. In combination, the shaft *m*, provided with the crank *m*², the latch *h*, yoke *d*, rods *n* and *i*², and means, substantially as described, for connecting said shaft *m* with said yoke, all as set forth.

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Witnesses:

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