

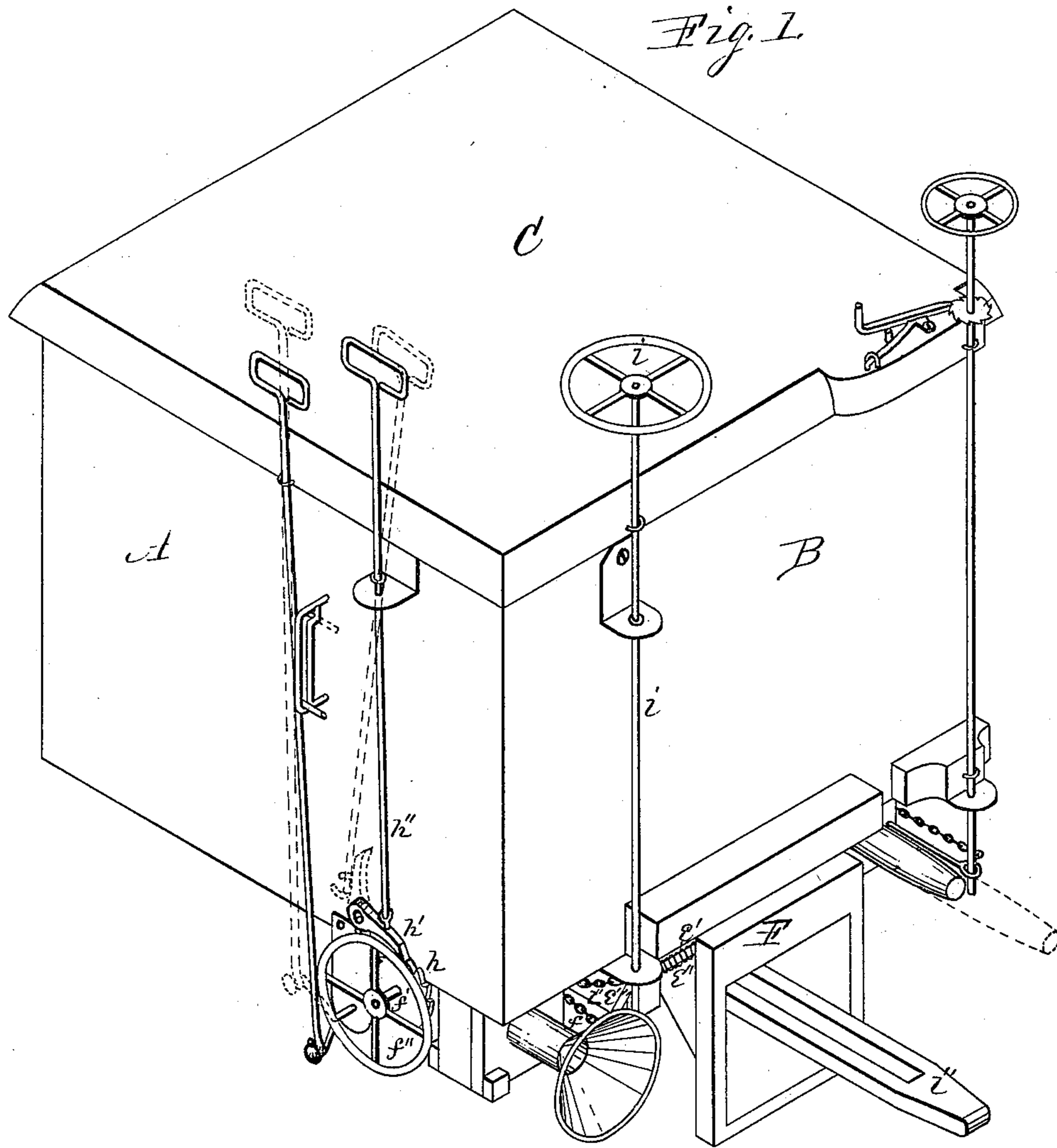
(No Model.)

2 Sheets—Sheet 1.

H. B. HOWARD.
Car Coupling.

No. 231,044.

Patented Aug. 10, 1880.



Witnesses.
C. H. Cornack
A. O. Behel

Inventor.
Horace B. Howard.
Per. Jacob Behel.
Atty.

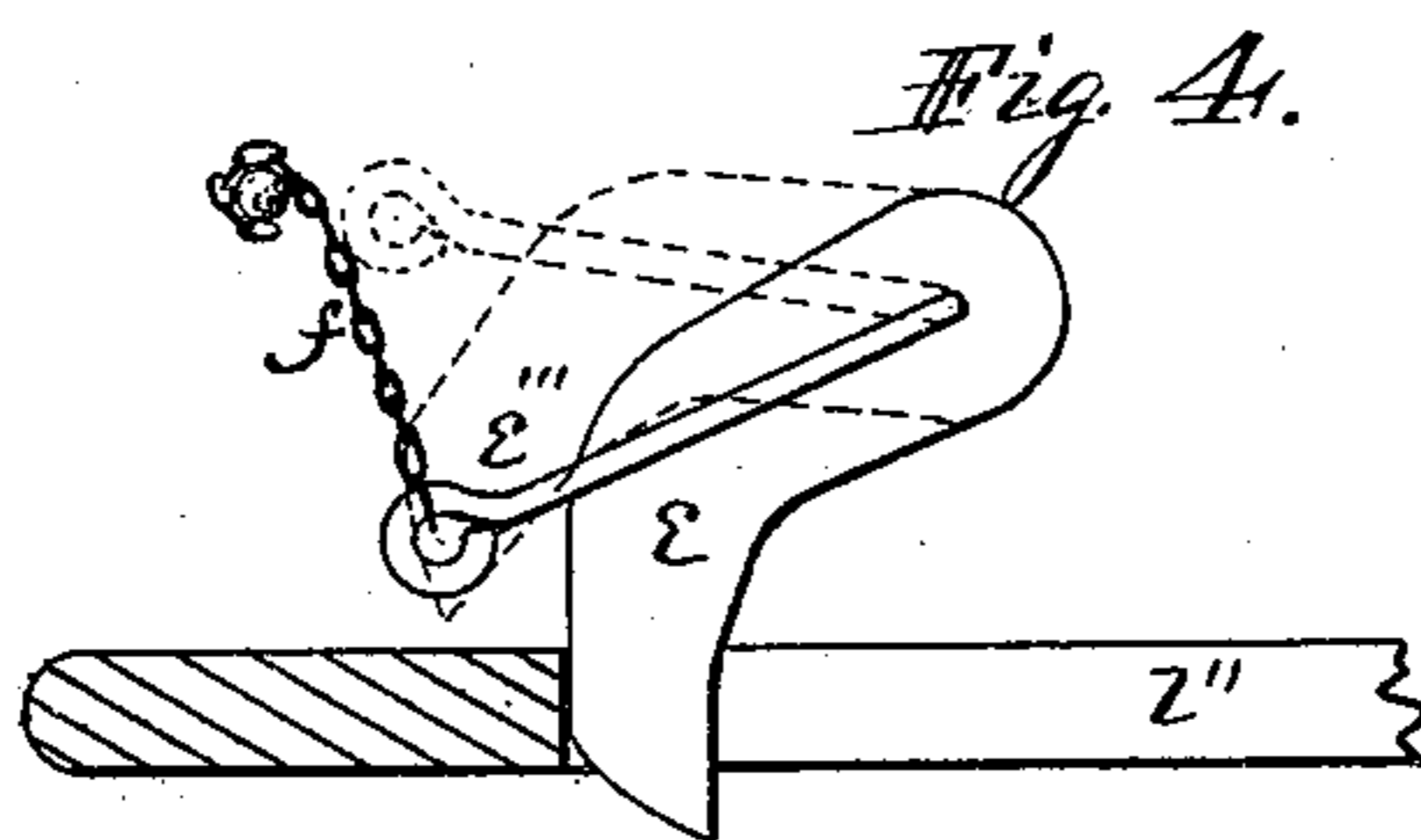
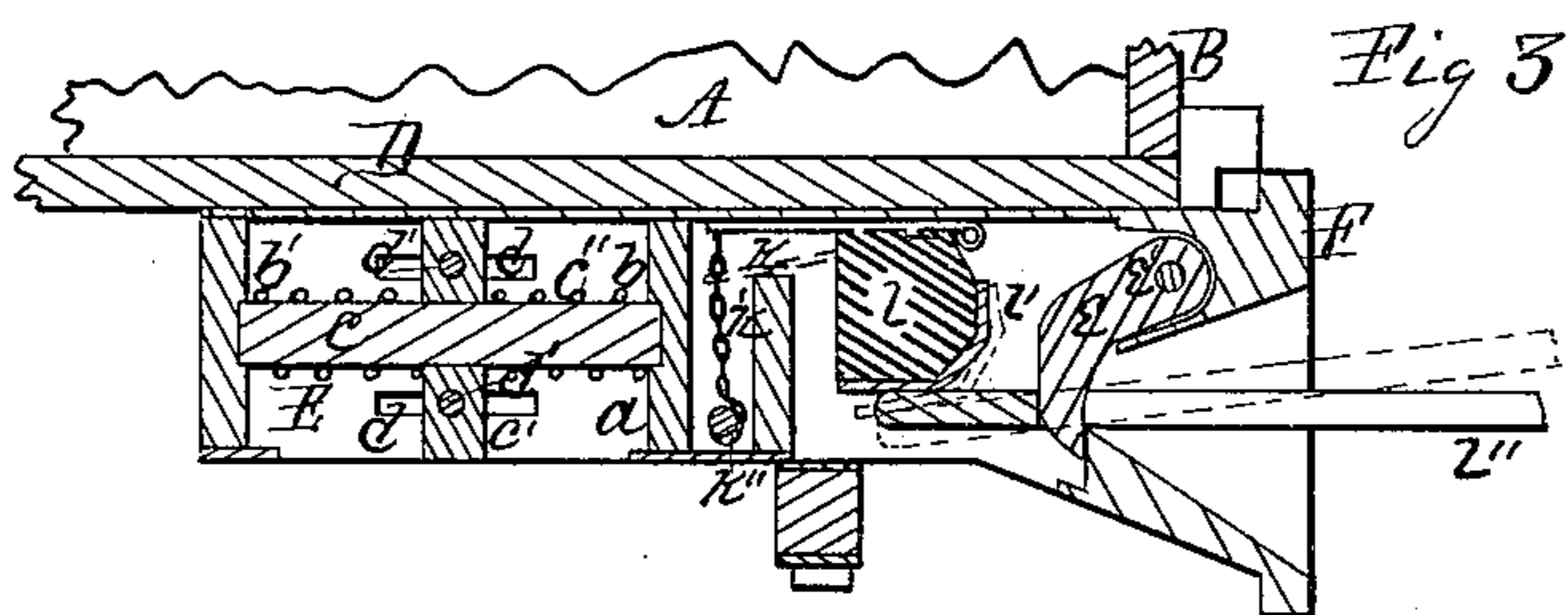
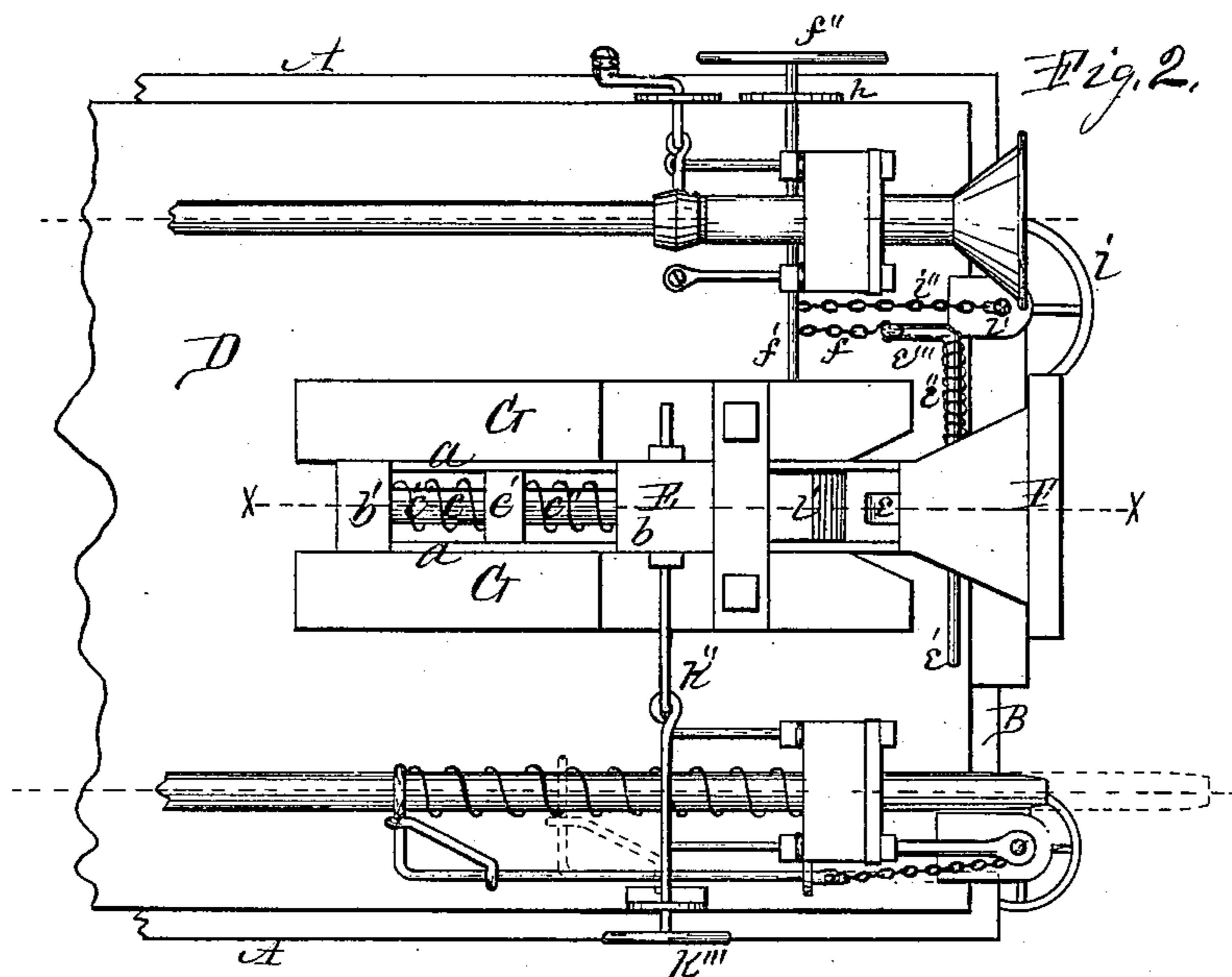
(No Model.)

2 Sheets—Sheet 2.

H. B. HOWARD.
Car Coupling.

No. 231,044.

Patented Aug. 10, 1880.



Witnesses.
G. H. Cornack
A. O. Behel,

Inventor.
Horace B. Howard
Per Jacob Behel
Atty

UNITED STATES PATENT OFFICE.

HORACE B. HOWARD, OF BELVIDERE, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 231,044, dated August 10, 1880.

Application filed March 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, HORACE B. HOWARD, of Belvidere, in the county of Boon and State of Illinois, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention relates to a self-coupling draft-link connection of railway-cars operating to couple the train complete automatically; and the subject-matter of my improvements will be hereinafter more fully described.

In the accompanying drawings, Figure 1 is an isometrical representation of a portion of a car-body on which my improved couplings are mounted. Fig. 2 is a plan view of the bottom of the car with my improvements in place thereon. Fig. 3 is a lengthwise vertical section of the draw-bar and coupling on dotted line *x*. Fig. 4 is a side elevation of the coupling-hook with a portion of the coupling-link.

In the figures, A represents the sides, B the ends, C the top, and D bottom, of a portion of a common railway box-car. This car is fitted with a spring draw-bar, E, and bumper-head F, fitted with an open outer end having its inner walls converging toward a common center, as common in such parts. This draw-bar is placed lengthwise centrally on the bottom of the car, between suitable beams G, fixed thereto in any suitable manner, and its open end projects outward from the end of the car.

The parallel vertical sides *a* of the draw-bar are fixed in their relative position by means of suitable blocks or bars *b* and *b'*, placed between them at proper points, and firmly fixed in such relative position by suitable bolts, which connect the parts.

At *c* is represented a suitable bar placed lengthwise centrally between the draw-bars, and having its ends fixed to the vertical blocks *b* and *b'*.

A block, *c'*, of suitable dimensions to enter freely between the vertical parallel sides of the draw-bar, is fitted to receive the lengthwise bar *c* to slide therein freely.

c'' are spiral springs, of suitable dimensions, placed on the bar *c*, one on each side, between the slide-block *c'* and the blocks *b* and *b'*, fixed in the draw-bar.

The vertical sides of the draw-bar are provided with lengthwise slots, as represented at

d, adapted to receive suitable transverse bolts *d'*, which are passed transversely through the beams G, through the slots *d*, and slide-block *c'*. By this arrangement I produce a combined bumper and draw-head having spring action either as a draw-bar or as a bumper. This draw-bar is provided with a self-coupling draft-hook, *e*, pivoted near the upper edge of the bumper-head on a transverse shaft, *e'*, which passes through the vertical walls thereof, and its outward projecting arm is provided with a spiral spring, *e''*, having one of its ends fixed to the casing of the bumper-head, and its other end connected to the shaft in such a manner that its spring-action will operate to hold the draft-hook in its lowest position, as in the solid lines in Fig. 4. One end of this transverse shaft is fitted with a lever-arm, *e'''*, which, when the draft-hook is down, as represented in the solid lines, will also be inclined downward, as in the solid lines. The free end of this arm is connected by a suitable chain, *f*, to the shaft *f'*, placed under the car, supported in suitable bearings and extending beyond the side thereof, where it is fitted with a hand-wheel, *f''*, by means of which the chain may be wound on its shaft to carry the lever-arm and the coupling-link to the position represented in the dotted lines, as in Fig. 4. This shaft *f'* is also fitted with a ratchet-wheel, *h*.

At *h'* is represented a pawl pivoted to the side of the car, and its free end engages the teeth of the ratchet-wheel to hold the draft-link in its raised position, to permit the draft-link to be withdrawn, to uncouple the cars, or to prevent their coupling when run together. To this pawl is hinged a rod, *h''*, which rises through a suitable guideway a proper distance above the car, and its upper end is fitted with a hand-loop as a convenient means by which the attendant when on deck may disconnect the pawl from the ratchet and carry it over its pivot-center to free the hand-wheel and permit the draft-hook to descend to its lowest position to engage the draft-link and its free end to engage the rear edge of the lower wall of the bumper-head. This pawl may also be readily operated when the attendant is on the ground by means of the same connecting-rod. The coupling-hook may be raised to its elevated position by an attendant on deck by means of

the hand-wheel *i* on the vertical shaft *i'* and its chain-connection *i''* with the shaft.

At *k* is represented a plate, pivoted at its forward end, between the vertical sides of the draw-bar, and its rear end is connected by a suitable chain, *k'*, to an eye-jointed shaft, *k''*, supported in bearings in the vertical sides of the draw-bar, and extending through a vertical support fixed to the side of the car, outside of which it is fitted with a hand-wheel, *k'''*, by means of which the chain may be wound on the shaft to incline the pivoted plate more or less from the lengthwise plane of the draw-bar, and the eye-joint in the shaft will permit the draw-bar to move lengthwise of the car without interfering with the action of the shaft.

At *l* is represented, in this instance, a rubber spring, fixed to the pivoted plate *k* and to the plate *l'*, which is supported thereon in a suitable position to receive the inner end of a suitable coupling-link, *l''*, in such a manner as to hold the outward-projecting end of the link in a flexible manner in position to enter the coupling-head when the cars are run together, and when coupled to permit of a sufficient movement, without cramping, to accommodate itself to the oscillations of the cars.

The position of the projecting end of the coupling-link may be varied by means of a hand-wheel, *l'''*, on the jointed shaft and its chain-connection with the pivoted plate *k*, to incline it more or less, which inclination will operate on the link to change its position higher or lower, as shown in the figures.

In the drawings I have shown certain new improvements in pneumatic air-brakes, which I have reserved for the subject-matter of another application, and I desire to have it understood that I make no claim to such invention here.

I claim as my invention—

1. The combination, with a draw-head, of a draft-hook pivotally secured to a shaft passing

through the draw-head, a spring encircling said shaft for retaining the draft-hook in place, a shaft and mechanism for revolving the same, and a chain connecting said revolving shaft with the shaft on which the draw-head is pivoted, substantially as set forth.

2. The combination, with a spring-pressed draft-hook pivotally secured in the draw-head, of a hand-wheel provided with a ratchet-wheel and a pawl engaging therewith, and a rod extending to the top of the car, said rod adapted to actuate the pawl, substantially as set forth.

3. The combination, with a coupling-link and a draw-head, of a lever and chain located within the latter, and adapted, by depressing the inner, to raise the outer end of the coupling-link, substantially as set forth.

4. The combination, with a draw-head, of a pivoted plate having a rubber spring secured thereto, and a lever, chain, and shaft for raising the outer end of the connecting-link, substantially as set forth.

5. The combination, with a draw-head, of a plate pivoted at its outer end to the upper face thereof, the rear end of said plate being connected with a shaft by a chain, said shaft formed with an eye-hook joint and adapted to be revolved by a hand-wheel located at the side of the car, thereby allowing the chain to be wound upon or unwound from it, substantially as set forth.

6. The combination, with a draw-head, of a plate pivoted at one end thereto, and a protected rubber spring secured to the under face of the plate, said spring operating to depress the inner end and raise the outer end of the connecting-link when the chain attached to the rear end of the plate is wound upon the shaft, substantially as set forth.

HORACE B. HOWARD.

Witnesses:

G. S. HOWARD,
A. PERKINS.