

E. R. QUIMBY.
Car Coupling.

No. 202,117.

Patented April 9, 1878.

Fig. 1.

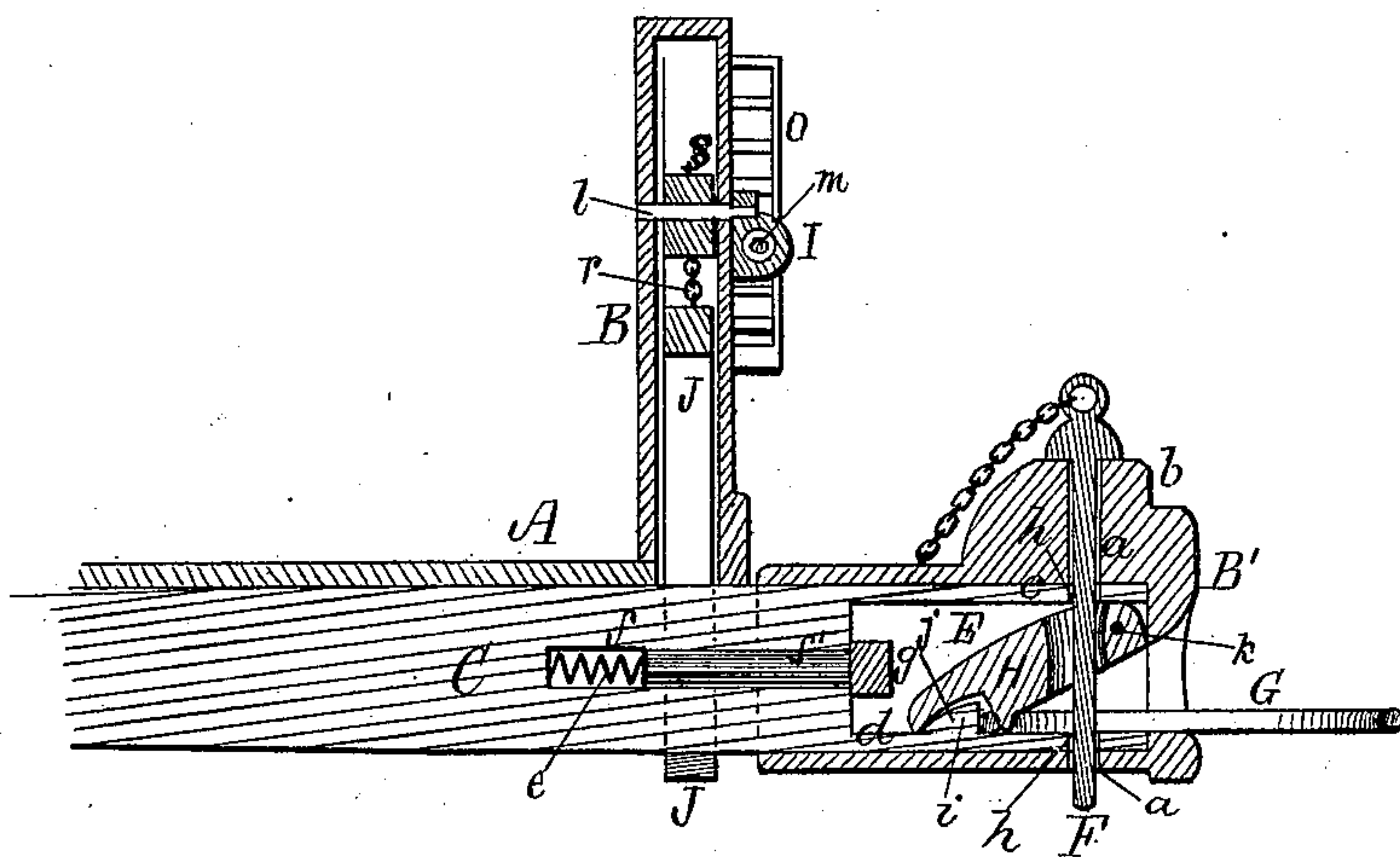


Fig. 2.

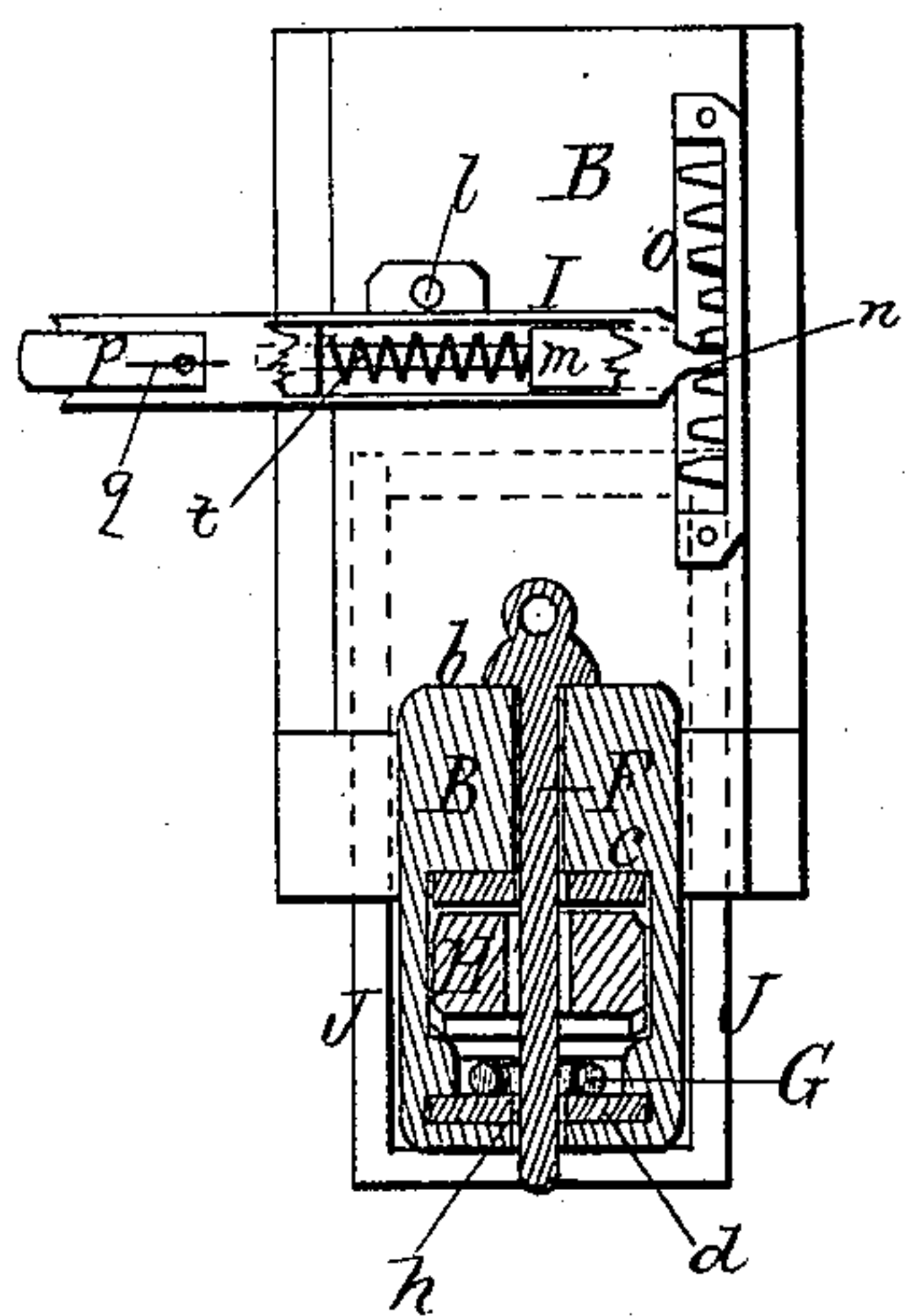


Fig. 3.

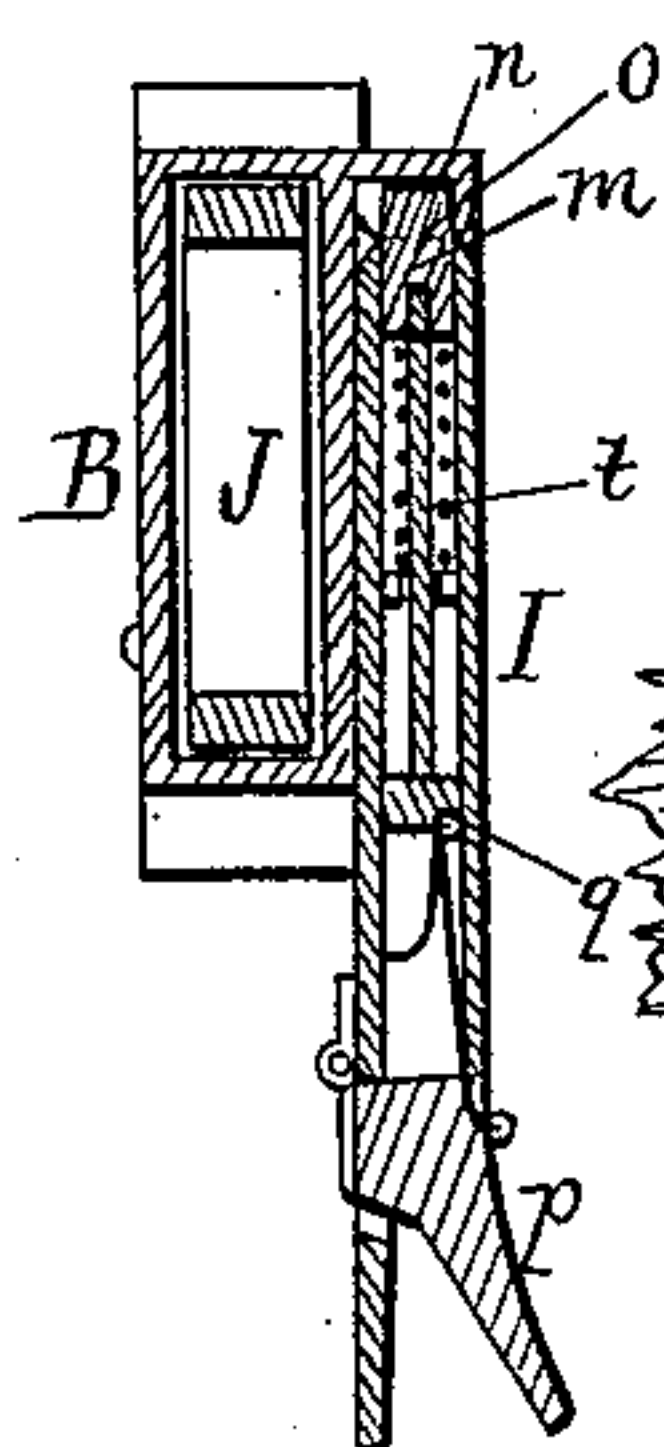


Fig. 4.

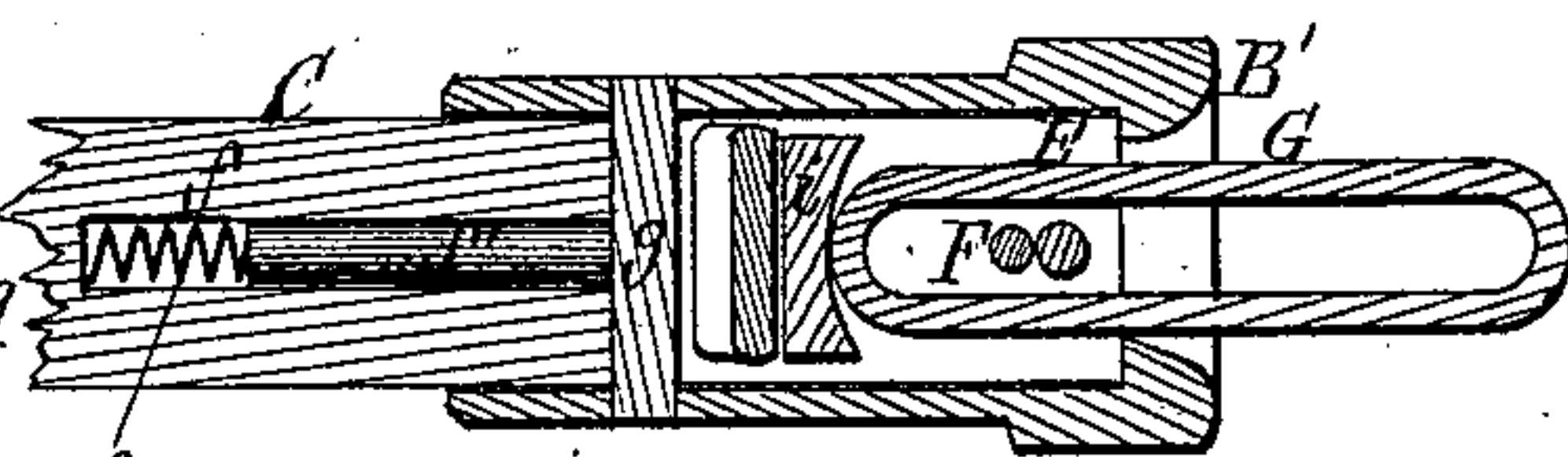
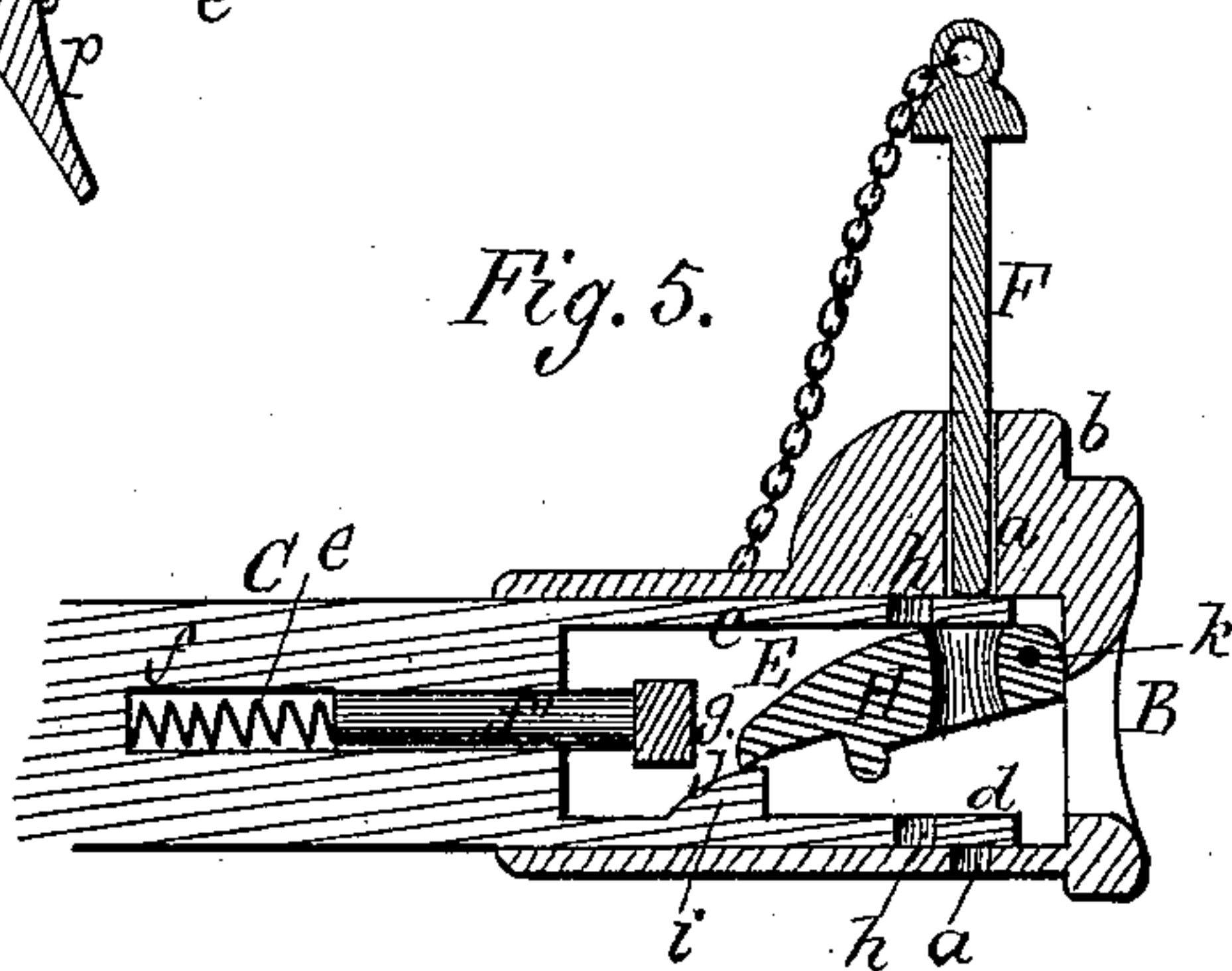


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

ENOCH R. QUIMBY, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO OCTAVUS C. MASON, OF STERLING, ILLINOIS.

IMPROVEMENT IN CAR-COUPINGS.

Specification forming part of Letters Patent No. 202,117, dated April 9, 1878; application filed February 19, 1878.

To all whom it may concern:

Be it known that I, ENOCH R. QUIMBY, of Lynn, in the county of Essex and State of Massachusetts, have invented certain Improvements in Automatic Car-Couplings, of which the following is a specification:

In this coupling the front end of the draw-bar, which includes the bunter-head and link-chamber, is independent of the main body of the draw-bar, and slides upon its front end, being forced forward by a suitable spring disposed in a pocket of said body of the draw-bar, and exerting its stress against the rear end of the sliding head, the movements of the latter in either direction being limited in extent by suitable stops, and a link and keeper being combined with the draw-bar and head, and operating as hereinafter described.

The drawings accompanying this specification represent, in Figure 1, a longitudinal section, and in Fig. 2 a cross-section, of the forward part of the draw-bar and the bunter-head of a railway-car. Fig. 3 is a section of the latch which governs the elevation or altitude of the draw-bar. Figs. 4 and 5 are horizontal and longitudinal sections of the device.

In the above-named drawings, A may be supposed to represent a portion of the flooring of a railway freight-car, and B a portion of the front end of such car, while C represents its draw-bar, and B' the bunter-head of the latter, the link-chamber, which is comprised in part in the draw-bar and in part in the bunter-head, but mainly in the latter, being shown at E.

The coupling-pin is shown at F as adapted to extend vertically through the top and bottom of the bunter-head by a hole or passage, *a*, such pin, when lowered and in a position to intercept and retain the coupling-link G, extending across the link-chamber, and through the bottom of the latter, as shown in Fig. 1 of the drawings; but when raised up to admit of removal of the link in the act of uncoupling a car, the said pin is steadied in an extension or bearing, *b*, which is erected upon the upper front part of the bunter-head, and through which the hole *a* passes, while the lower end of the pin at this time rests upon the top of the forward end of the draw-bar.

The bunter-head B' is hollow throughout,

and incloses and slides upon the front end of the draw-bar, the latter being formed with top and bottom plates *c d* only, which practically constitute the top and bottom of the link-chamber of the bunter-head.

A coiled spring, *e*, disposed in a pocket, *f*, created in the front end of the draw-bar, exerts its stress against the rear end of a bolt, *f'*, also disposed in said pocket, while the forward end of this bolt is crowded against the rear side of a cross-bar, *g*, affixed to the rear part of the bunter-head, and serves to force the two apart—that is to say, to tend to crowd the bunter-head forward away from the draw-bar, the limit of the sliding movement between the two being governed by a stop upon one playing in a slot of the other.

When the pin is out of the link-chamber and the coupling uncoupled, the bunter is crowded forward by the extension of the spring *e*, and the bottom of the pin rests upon the top plate *c* of the draw-bar; but when the link is within the chamber, and the pin intercepts the two, such pin passes through holes *h h* made in the plate *c d*, the holes *h h*, under this condition of things, coinciding with the holes *a a* in the bunter-head, and the whole constituting one common passage for the pin.

A ledge, *i*, is erected upon the upper surface of the lower plate *d* of the draw-bar, and serves as a stop to farther entrance of the link G rearward of its chamber.

H in the drawings represents a heavy block of metal, disposed within the upper part of the link-chamber, and pivoted at its upper front corner, by a pivot, *k*, to the adjacent part of such chamber, and in such manner that its rear end, which rests upon the top of the ledge *i*, is free to rise and fall, in order that when in its lowest position it shall rest upon the link G and maintain the latter in a level position, and when elevated permit of removal of the link.

The upper surface of the ledge *i* slopes away at rear, as shown at *j*, to form an inclined plane, by which the rear end of the block G, which I term a "keeper," is raised and lowered as the bunter-head slides backward or forward upon the draw-bar.

The operation of this coupling is as follows: Taking the position of parts shown in Fig. 5 of the drawings, in which the link-chamber is

empty, the bunter-head in its extreme forward position, and the pin *F* resting upon the top of the draw-bar or its plate *c*, while the tail of the block *H* rests upon the highest point of the ledge *i*, and is thereby raised above the lower part of the link-chamber, to permit of entrance of the link, we will suppose the bunter-head of another car to be approaching the head *B'*, and the link of such approaching car to be locked in position, as shown in Fig. 1 of the drawings. The advanced end of the approaching link enters the link-chamber *E* until it nearly arrives at the ledge *i*, while simultaneously therewith the front end of the approaching bunter-head strikes the front end of the head *B'* and pushes the latter back upon the draw-bar *C* until the holes *a h* coincide and the pin *F* drops into them, and this locks the two bunter-heads and draw-bars together, it being observed that as the bunter *B'* reaches its extreme rearward position the link *G* brings up against the ledge *i*, or nearly so; and also that during the rearward movement of the said bunter-head upon the draw-bar the tail of the block *H* descends the inclined plane *j*, and the block drops upon the rear end of the link *G*, as shown in Fig. 1, and serves to maintain the latter in a level position, should the opposite bunter-head be uncoupled and drawn away.

When it is desired to uncouple, the brakeman raises the pin *F*, by a chain attached to its upper end, until it is raised above the plate *c* of the draw-bar, when the spring *e*, acting upon the bar *g*, throws the bunter-head *B'* forward, and, the block *H* being also carried forward by such head *B'*, rises the inclined plane *j*, and leaves the link *G* free to escape from the link-chamber.

The block *H*, while serving to maintain the link *G* in a level plane to properly present it to the approaching bunter, also permits of freedom of movement of the outer end of the link in any direction at the hands of the brakeman, thereby enabling the said brakeman to raise or lower the outer end of the link, to provide for slight changes in the height of the two approaching bunters, while the yoke *J* provides for great change in such height.

A minor feature of my invention consists in a means of raising or lowering the draw-bar and bunter-head with respect to the body of the car, in order to present the link of one car on a level plane with the link-chamber of an approaching car; and to this end I employ a horizontal latch, *I*, pivoted at about its center, by a horizontal shaft, *l*, to the front *B* of the car, and over the draw-bar, and within this latch, which is hollow or tubular, I dispose a sliding bolt, *m*, the nose *n* of such bolt protruding beyond the adjacent end of the latch, and engaging a rack, *o*, of teeth, affixed to the front *B* of the car, as shown in Fig. 2 of the drawings.

The bolt is operated by a handle, *p*, hinged to the end of the latch opposite the toothed rack *o*, such handle being connected to the

bolt by a wire link, *q*, or in any suitable manner, in order that by closing such handle upon the body of the latch the bolt shall be withdrawn and disengaged from the rack, and when the handle is released the bolt shall be shot by the action of a spring, *t*, and engage such teeth.

J in the drawings represents a rectangular frame or yoke, the upper part of which slides within the front *B* of the car-body, and the lower part encompasses and sustains the weight of the front end of the draw-bar and of the bunter-head, and the yoke is raised and lowered by means of a chain, *r*, one end of which is secured to the upper bar of the yoke and the other end to a windlass or pulley, *s*, carried by the shaft *l*.

By means of the latch *I*, operating through the yoke *J* and chain *r*, the elevation or depression of the draw-bar is effected, while by means of the bolt *m* and rack *o* the draw-bar is held at the desired altitude.

To more easily operate the latch *I* and overcome the weight of the draw-bar and bunter-head, a compound lever may be applied to the front *B* of the car, and operating upon the latch; but in practice this will probably be unnecessary.

Having thus explained the nature and operation of my invention, I claim, and desire to secure by Letters Patent of the United States, the following:

1. The sloping ledge *i*, in combination with the bunter-head *B'* and keeper *H*, as constituting a stop to limit the entrance of the link, and an inclined plane to raise and lower the rear end of the keeper *H*, substantially as and for purposes stated.

2. The keeper or block *H*, in combination with the sliding bunter-head *B'* and forked draw-bar *C*, and operating with the inclined ledge *i* in such manner that when the head *B* is forced rearward upon the draw-bar such keeper shall descend upon the link, and when the head slides forward upon the draw-bar the keeper rises from off the link, substantially as and for purposes stated.

3. As a means of raising or lowering the draw-bar and bunter-head, the yoke *J* and latch *I*, the latch being supported by the shaft *l* and provided with the bolt *m*, to engage the rack *o*, and the yoke supported and operated by the chain *r*, attached to it and to a pulley on the shaft *l*, the whole being substantially as and for purposes stated.

4. The latch *I*, with its bolt *m*, operated by the handle *p* and spring *t*, in combination with the rack *o*, as a means, in combination with the yoke *J*, or its equivalent, of operating and holding the draw-bar at any desired altitude, substantially as and for purposes stated.

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Witnesses:

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