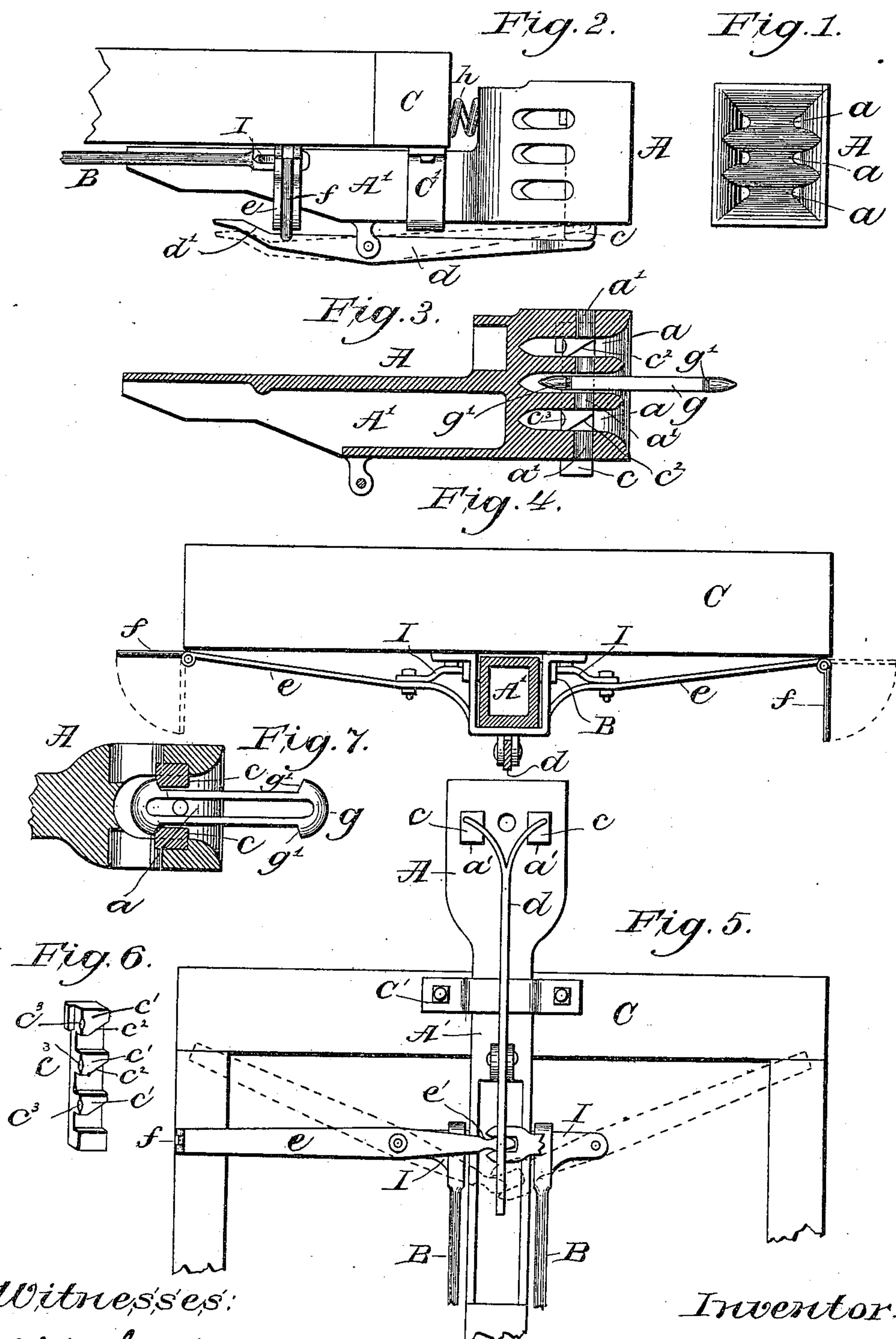


M. CARTER, Jr.
COUPLING AND DRAFT APPARATUS FOR CARS.

No. 426,769.

Patented Apr. 29, 1890.



Witnesses:

H. G. Snedeker
C. H. Carter

Inventor:

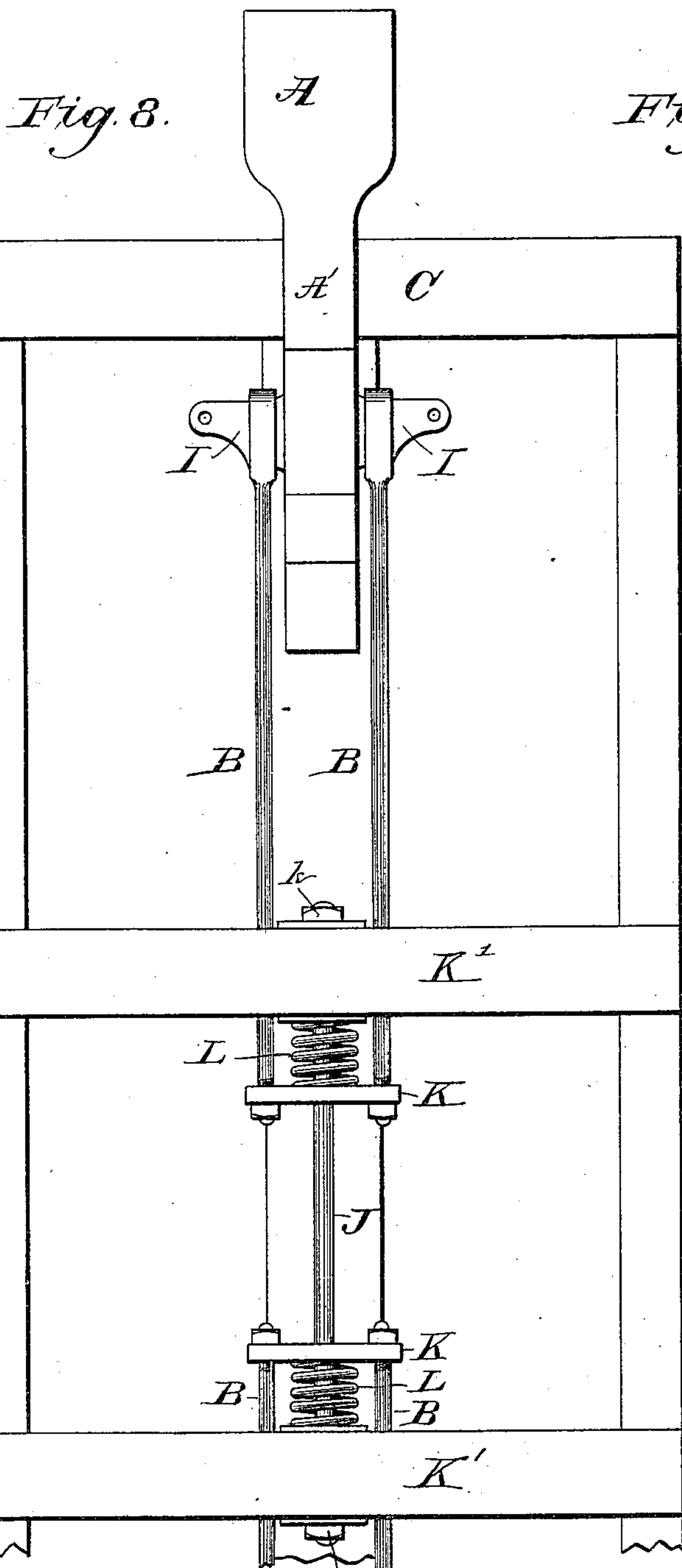
Michael Carter Jr

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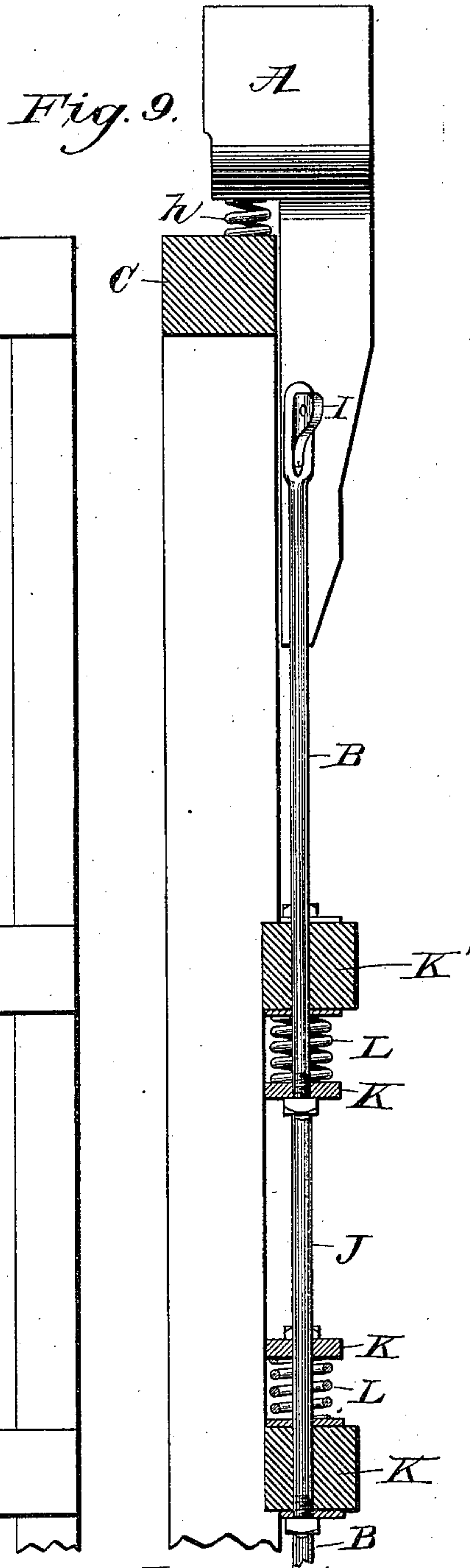
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UNITED STATES PATENT OFFICE.

MICHAEL CARTER, JR., OF CHICAGO, ILLINOIS.

COUPLING AND DRAFT APPARATUS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 426,769, dated April 29, 1890.

Application filed October 30, 1889. Serial No. 328,731. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL CARTER, JR., a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Car-Coupling and Draft Apparatus for Cars, of which the following is a specification.

My invention relates to a coupling and draft apparatus adapted to be attached to the cars ordinarily used in railroad traffic.

The objects of my invention are, first, to provide a draft apparatus to be attached to the cars, of which draft apparatus the draw-heads constitute a part, such draft apparatus being adapted to take all strain of the car or cars following and drawn by the car to which the draft apparatus is attached off the body of such car when it forms an intermediate car of a train being pulled along the track by a locomotive, in the ordinary manner of drawing trains of cars; secondly, to provide a means by which cars may be coupled and uncoupled by the person in immediate charge thereof without such person going in between the cars so being coupled or uncoupled. I attain these objects by the mechanism described in this specification and illustrated in the drawings accompanying and forming a part hereof, in which—

Figure 1 is a front elevation of the draw-head forming a part of my invention. Fig. 2 is a side elevation of the draw-head. Fig. 3 is a longitudinal sectional view of the draw-head and a link engaged therewith. Fig. 4 is a front elevation of the end of a car to which the draw-head is secured, showing the transverse sectional view of the draw-head stem back of the draw-head. Fig. 5 is a bottom plan view of the draw-head and connecting parts and of a section of the bottom of a car to which the draw-head is attached. Fig. 6 is a perspective view of one of the duplicate coupling-pins required by me to secure a coupling-link in the draw-head. Fig. 7 is a horizontal sectional view of the draw-head, a plan view of a link, and a cross-section of the coupling-pins holding such link in the draw-head. Fig. 8 is a bottom plan view of the draw-head, the stem of the draw-head, and of

a portion of the bottom of a car with the draft apparatus by which the draw-head is secured in position under the platform of the car. Fig. 9 is a side elevation of the draw-head and draft apparatus with a cross-section of the sill and cross-timbers of the car.

Like letters refer to like parts throughout the several views.

A is the draw-head, having a stem A', pockets *a a a* therein, and vertical holes *a'*.

C is the car-body, and C' is a strap extending around the stem A' of the draw-head A. The strap C' is secured rigidly to the car-body C, and the stem A' of the draw-head A slides freely in this strap in the ordinary manner. On the inner end of stem A' are placed the lugs or ears I I, which may be cast integral with the stem A', as illustrated in Figs. 8 and 9, or may consist of a separate piece of metal rigidly secured to this stem A'.

B B are draft-rods having an eye at one end thereof adapted to fit over the lugs I I and connected together at the other end by transverse bar K.

L is a spring, one end of which abuts against transverse bar K and the other end thereof abuts against cross-timber K' of the car C.

J is a tension-rod extending through the transverse bar K and cross-timber K' and rigidly secured in position by nuts *k* or other suitable attachments on the rod J. Spring L, it will be observed, is coiled around this tension-rod J.

The draw-head A at one end of the car is a duplicate of the one at the other end thereof, as are also the several rods B B, transverse bar K, and spring L. The tension-rod J extends through each of the transverse bars K K in the same manner.

h is a buffer-spring placed between the draw-head A and the car-body C in the ordinary manner.

In the draw-head A are placed the vertical holes *a' a'*, near the side walls of the pockets *a a*, and in these vertical holes the coupling-pins *c c* slide freely vertically. In order to secure the link *g* in position in draw-head A, two coupling-pins, right and left handed, respectively, are required. These coupling-pins engage with the shoulder *g'* of the link *g*.

$c' c' c'$ are lugs on the inner side of the coupling-pin c , and c^2 is an inclined under face of lug c' .

c^3 is a rounded edge or corner on the rear or back side of lugs c' .

When the coupling-link g is properly inserted in the draw-head A, with coupling-pins $c c$ in position to hold the link in the draw-head, the shoulder g' of the link is in contact with the rounded edge c^3 of the coupling-pin in some one of the pockets of the draw-head. The coupling-pins c in the draw-head are ordinarily in position, so that the inclined under face c^2 of the lug c' is in the pocket a of such draw-head, so that when the coupling-link is pushed into any one of the pockets a the head of the coupling-link will come in contact with this face c^2 , and the pin c will be raised by such pushing in of the link until the head of the link has passed by the lug c' , when such pin will drop into its primary and usual position, wherein the shoulder g' of the link is back of the rounded edge of c^3 of the coupling-pins, and such link will be thereby retained in the draw-head. The rounded edge c^3 of the coupling-pins is designed to prevent the accidental raising of the coupling-pin from the shocks and jars received thereon from the link in the ordinary course of business.

To uncouple the link from the draw-head, the coupling-pins $c c$ must be raised a sufficient distance to allow the head of the link to pass under the lug c' on such coupling-pins, and the manner in which I attain this raising of these coupling-pins is by the following devices:

d is a pivoted lever, on the outer end of which the coupling-pin c may rest.

d' is an inclined upper face on the inner end of pivoted lever d .

$e e$ are horizontally-pivoted levers interlocking at e' , so that when one of such levers is moved by the handle at the outer end of such levers the other of the levers must move in unison therewith.

f is a handle hinged to the outer end of the lever e . The lever e is actuated by the handle f , which may be raised into a horizontal position when it is desired to actuate such lever thereby, and when so raised this handle f extends beyond the side of the car. When this handle f is allowed to drop from the horizontal to the perpendicular position by gravity, this handle f does not extend beyond the side of the car. The inner end of the levers $e e$ is in contact with, or nearly so, the upper face of the pivoted lever d , and when such levers $e e$ are turned from the position shown by the full lines thereof in Fig. 5 to about the position indicated by the dotted lines in Fig. 5 the lever d is turned or moved from the position shown by the full lines in Fig. 1 to the position thereof indicated by the dotted lines in Fig. 1, and thereby the pin c is raised a sufficient distance to permit

the link g to be drawn out of the draw-head underneath shoulders c' , as described.

The manner of operation of the draft apparatus will be readily understood by inspection of Figs. 8 and 9, and is, when, as by the drawing of the car by a link inserted in the draw-head A; a pulling strain is placed on the draw-head and on the rods B B, attached by lugs I I to such draw-head, compression is produced in spring L by the movement of the transverse bar K against such spring. Strain is thus imposed on spring L and is transmitted through such spring to cross-timber K', against which the other end of the spring abuts. This cross-timber K' being secured by tension-rod J to the duplicate cross-timber K', as illustrated in Fig. 8, these two cross-timbers K' K' receive the strain when the car to which this draft apparatus is attached is hauled by the draw-head at one end thereof and such car is the last car in the train. When a car is attached to the other end of such car and is drawn thereby, the attached car, with all the load attached thereto, as additional cars, produces a tensile strain in the draw-head at the rear end of the car and in the several connecting-rods B B and transverse bars K K of the car connecting with such draw-head and with the one at the front end of the car. In this case the strain is received in like manner, as before described, upon the springs L, and transmitted thereby to the cross-timbers K' K' and to the tension-rod J, rigidly connecting such cross-timbers; hence, no matter how many cars or how heavy a load be attached to the draw-bar at the rear end of the car, when the car is pulled by the draw-bar at the front end thereof no further strain is or can be placed on the body of the car than when such car is the last one of the train, all such additional strain being received by the draft apparatus of the car, consisting of the draw-heads at each end of the car, draft-rods B B, transverse bars K K, springs L L, and tension-rod J.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of a draw-head having horizontal pockets therein for the reception of one end of a coupling-link, vertical holes extending through the draw-head and through the pockets therein near the sides thereof, pins sliding freely in the vertical holes, and a link having a head thereon at each end thereof and projecting shoulders behind such head on each side thereof, whereby when such link is inserted in one of the pockets of the draw-head and the vertically-moving coupling-pins are placed in the vertical holes in the draw-head and behind the shoulders on the head of the coupling-link such coupling-link cannot be withdrawn from such draw-head, substantially as described.

2. The combination of a draw-head having horizontal pockets therein for the reception

of one end of a coupling-link, vertical holes extending through the draw-head and through the pockets therein near the sides thereof, pins sliding freely in the vertical holes, such pins having on the inner side of each thereof projections adapted to extend behind the projecting shoulder of a link inserted in the draw-head, and the under surface of the projecting lugs consisting of an inclined plane, whereby when a link having a head at each end thereof and shoulders back of such head on each side thereof is forced into the draw-head the pins are raised by the head of the link passing underneath the projections on the pin, and when the link is fully inserted in any one of the pockets of the draw-head the pins may drop in position behind the shoulders on the link, and such link be thereby retained in such draw-head, substantially as described.

3. The combination of a draw-head having horizontal pockets therein for the reception of one end of a coupling-link, vertical holes extending through the draw-head and through the pockets therein near the sides thereof, pins having projecting lugs on the inner side thereof, such projecting lugs having an inclined under surface and the pins sliding freely ver-

tically in the holes therefor, a pivoted lever, upon the outer end of which such pins may rest and be supported, and interlocking pivoted levers extending from the sides of the car to the inner end of the pin-supporting lever, whereby by moving either of the interlocking levers the pin-supporting lever is actuated and the coupling-pins raised, thereby freeing the coupling-link held in the draw-head by the coupling-pins, substantially as described.

4. The combination of a draw-head provided with lugs on the inner end of the stem thereof, draft-rods attached at one end to the draw-head by such lugs and at the other end to a transverse bar, a tension-rod extending through such transverse bar and through a second and like transverse bar, a spring abutting against the transverse bar and against the tension-rod at each end of such tension-rod, and draft-rods attached to such second transverse bar and to a draw-head at the other end of the car, substantially as described.

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Witnesses:

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