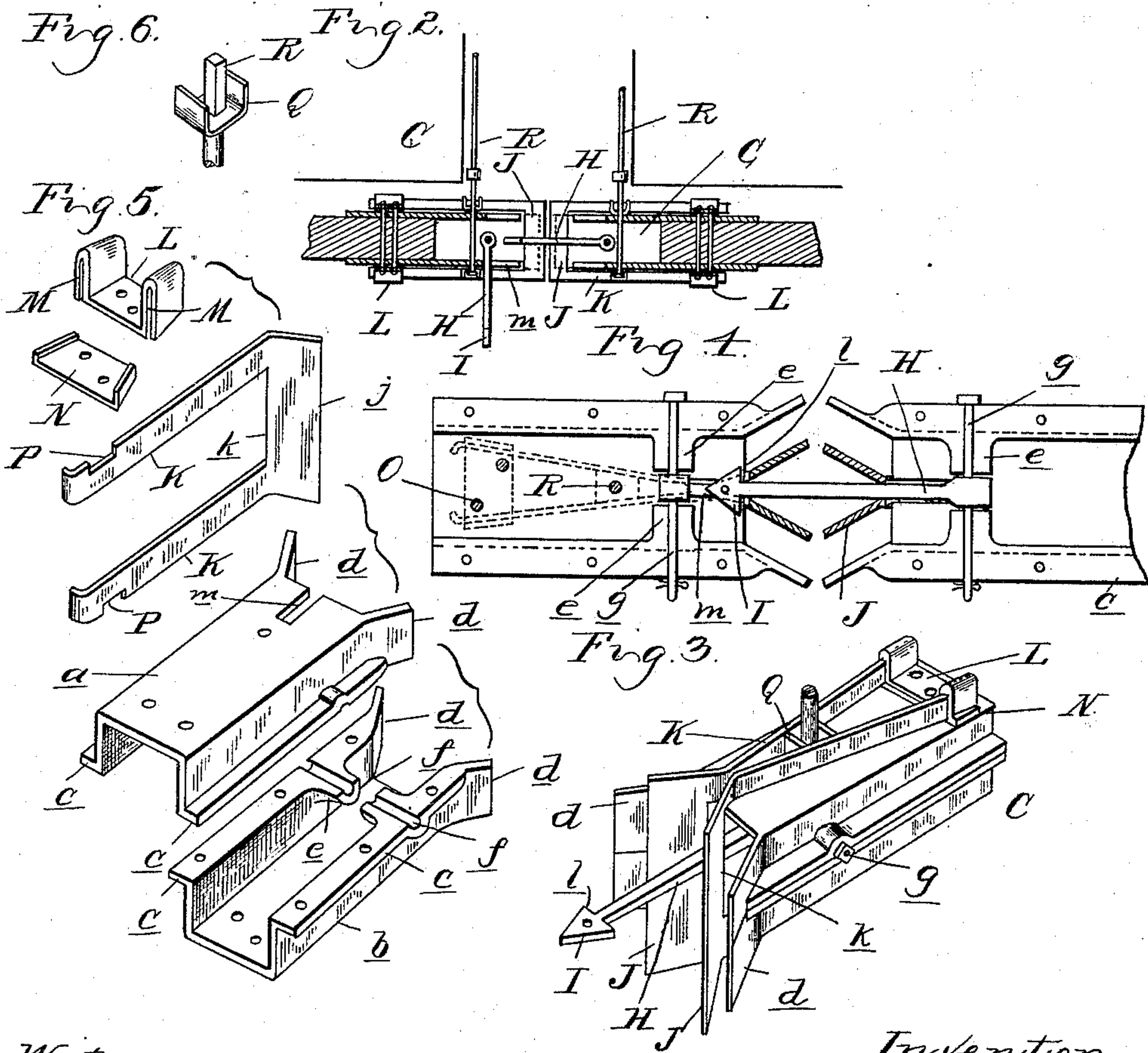
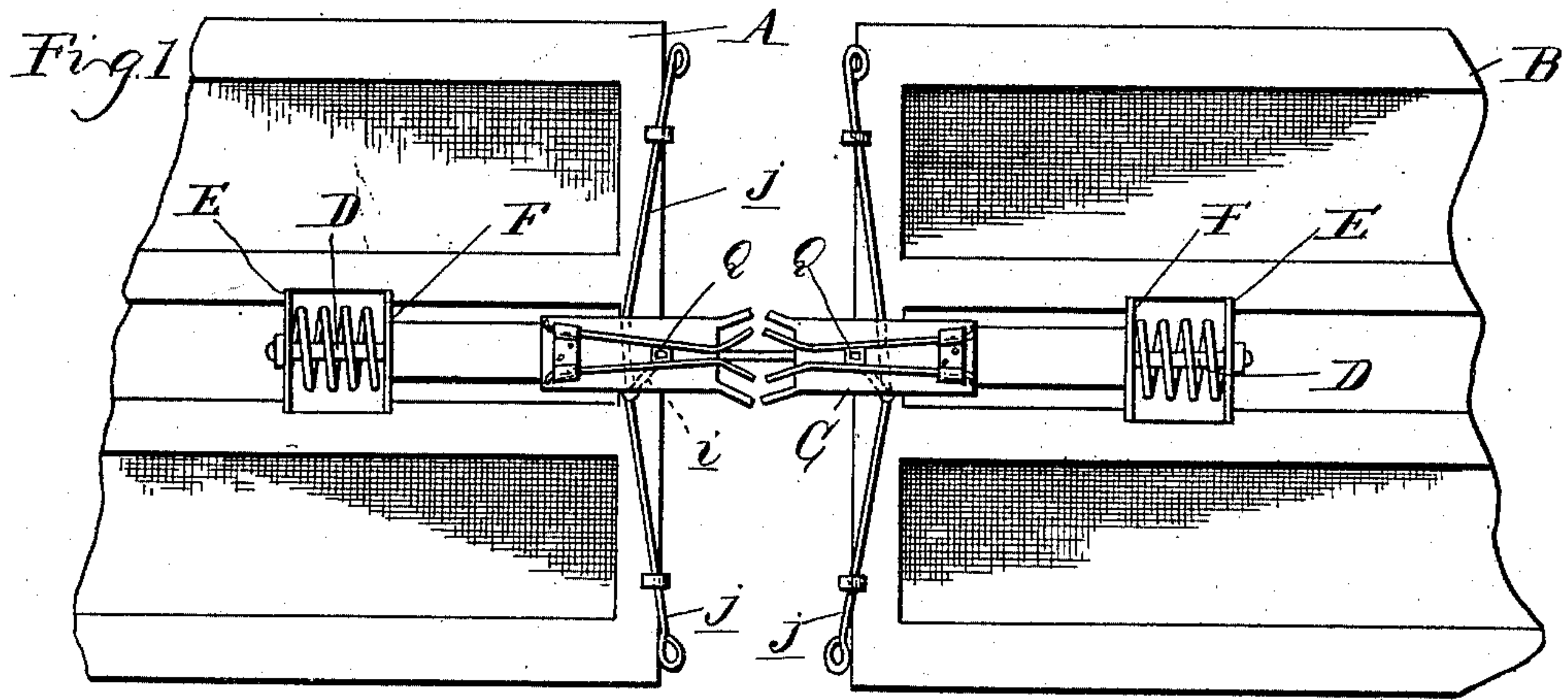


(No Model.)

P. HOFF.
CAR COUPLING.

No. 476,016.

Patented May 31, 1892.



Witnesses:
A. L. Kobbler
N. L. Lindop.

Inventor
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UNITED STATES PATENT OFFICE.

PETER HOFF, OF DETROIT, MICHIGAN, ASSIGNOR OF THREE-FOURTHS TO
ED. E. BRYANT, G. H. BARNES, AND ED. H. GILLMAN, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 476,016, dated May 31, 1892.

Application filed January 8, 1892. Serial No. 417,352. (No model.)

To all whom it may concern:

Be it known that I, PETER HOFF, a subject of the Queen of Great Britain, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in car-couplers; and the invention consists in the peculiar construction of the draw-head having spring draw-bars, with which a hook upon the adjacent car is adapted
15 to engage.

The invention further consists in the peculiar construction of this spring draw-bar, whereby cars may be coupled, notwithstanding the difference in height or difference in
20 alignment in curves, whereby they may be more readily uncoupled or coupled with the ordinary link-and-pin type of coupler.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts, all as more fully
25 hereinafter described.

In the drawings, Figure 1 is a bottom plan view of the meeting ends of two adjoining cars to which my couplers are attached, showing the parts in coupled position. Fig. 2 is a
30 vertical central longitudinal section through the couplers thereof. Fig. 3 is a detached perspective view of one of the couplers. Fig. 4 is a horizontal section through the couplers in the position shown in Fig. 2. Fig. 5 shows in
35 detached perspective view the parts of the draw-bar and draw-head. Fig. 6 is a detached perspective view of the uncoupling-blocks.

A and B show the ends of two cars to which
40 my improved coupler is attached.

C is a draw-head, which I preferably make of cast metal in the form of a rectangular box and consisting of the two parts *ab*, more plainly shown in Fig. 5, having lateral flanges *c*, by
45 means of which the two parts are secured together. At the forward end this draw-head is provided with the flaring lips *d*, forming the mouth of the draw-head. The draw-head at its rear end is provided with a bar or shaft D,
50 which passes through the heads E and F, clamping a spring G between, which acts as

the usual buffer-spring. Near the forward end the draw-head is provided with the inwardly-extending lug *e*, having the half-boxes *f*, formed in each half, the two forming a whole
55 box or bearing for the cross bolt or bar *g*, upon which is secured a hook H, extending some distance beyond the mouth of the draw-head and provided at its outer end with the arrow-shaped coupling-head I.
60

My draw-bar consists of two vertical plates J, angularly arranged in relation to each other and which make a substantially V-shaped mouth or opening corresponding, or nearly
65 so, with the flaring mouth of the draw-head, only smaller, the inner edges of such plates meeting, or nearly so.

K are spring-arms extending rearwardly from the upper or lower edges of said plates above and below the draw-head and secured
70 at their rear ends in the clips L, which are provided with the recesses M, in which the ends of such spring-arms engage, a clip-plate N being secured beneath this plate and the whole bolted by means of bolts O to the rear
75 end of the draw-head, which is plainly shown in Figs. 3 and 5.

To prevent lateral displacement of this draw-bar, I preferably form notches P in the upper and lower edges of these springs, which
80 engage with the clip L and prevent their withdrawal.

The spring-arms K act with their tension to approach the two plates J, and they are limited in such inward movement by a tapering block Q, secured to a vertical shaft R,
85 passing through suitable apertures in the draw-head and provided with suitable means for actuating it from the roof and side of the car for freight-cars and from the platform or
90 side of the car for passenger-cars. The means which I have shown for actuating it consist of a crank *i* and the links *j*, extending to each side of the car, by means of which this block may be rotated to spread the spring-arms K
95 and separate the plates J.

The operation of the device is as follows: Two cars approaching each other supplied with my improved coupler, one or both of the hooks H being held in horizontal position by
100 the engagement of the lips *k* of the plates J on the sides of the hook H, the head I of such

hook will impinge against the plates J on the opposite coupler, separating them, owing to its wedge shape, and they will close again when the head I has passed beyond the plates, and shoulders l being locked against the lips k to prevent a disengagement of the parts. In this position, which is shown in Fig. 4, it is evident that the two cars will be securely coupled, and it is also evident that any angular movement required in going around curves, &c., may readily take place, the hook turning on its bearing between the plates J, and if too sharp curves are experienced it may separate them slightly, but not sufficiently to become disengaged. It is also evident that any amount of vertical movement required in going around curves, &c., may take place without disengaging the parts. The head I cannot pass downward beyond the lower edge of the head, so that the jolting of the cars in traveling will have no effect in disengaging it. The draw-heads are preferably slotted, as shown at m, above and below the hook H, so that that hook may be turned up or down, as shown in Fig. 2, upon the car in which the coupling-hook is not desired to be used to couple the cars. The operator at the side of the car can slide in the link j, rocking the block Q, which will separate the springs K and separate coupler-jaws J a sufficient distance to allow the head I to be freely withdrawn. As soon as the operator releases his hold the parts will assume the position ready for the new coupling. In case one car should be overturned the head I will then be arranged in line with the opening between the coupling-jaws J and be readily withdrawn without turning the adjoining car with it in case it is derailed.

It will be seen that with my construction I overcome many of the objections to the present type of coupler, my device being entirely automatic in its coupling and uncoupling without requiring the operator to pass be-

tween the cars, enables me to couple cars in which the coupler is located at different heights or to couple cars upon the sharpest curves, will become readily detached in case of accident, and yet not detachable under any of the ordinary exigencies of travel.

What I claim as my invention is—

1. In a car-coupler, the combination, with a draw-head, of a draw-bar secured thereto, consisting of two vertically-disposed and oppositely-inclined plates or jaws arranged across and free of the end of the draw-head, springs extending backward from the plates, arranged to cause the plates to normally approach each other, and a pivoted draw-bar arranged to be engaged and held between the plates by the springs, substantially as described.

2. In a car-coupler, the combination, with a draw-head and a draw-bar secured thereto and consisting of oppositely-inclined jaws arranged vertically across the open end of the draw-head, of springs formed by extension of the plates for causing said plates to approach each other, and a draw-bar pivoted on a transverse bar in the draw-head, having an arrow-shaped coupling-head, said bar being clamped between the jaws and adapted to be turned out of coupling position, substantially as described.

3. In a car-coupler, the combination of a draw-head formed of the two halves a b, the flanges c, bolts therethrough for securing the halves together, the half-bearing in each half, the shaft in said bearings, the hook secured to said shaft, and the spring-jaws with which said hook is adapted to couple, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PETER HOFF.

Witnesses:

M. B. O'DOHERTY,
N. L. LINDOP.