

(No Model.)

2 Sheets—Sheet 1.

E. DELIRA, Jr.
Car Coupling.

No. 238,364.

Patented March 1, 1881.

Fig 1.

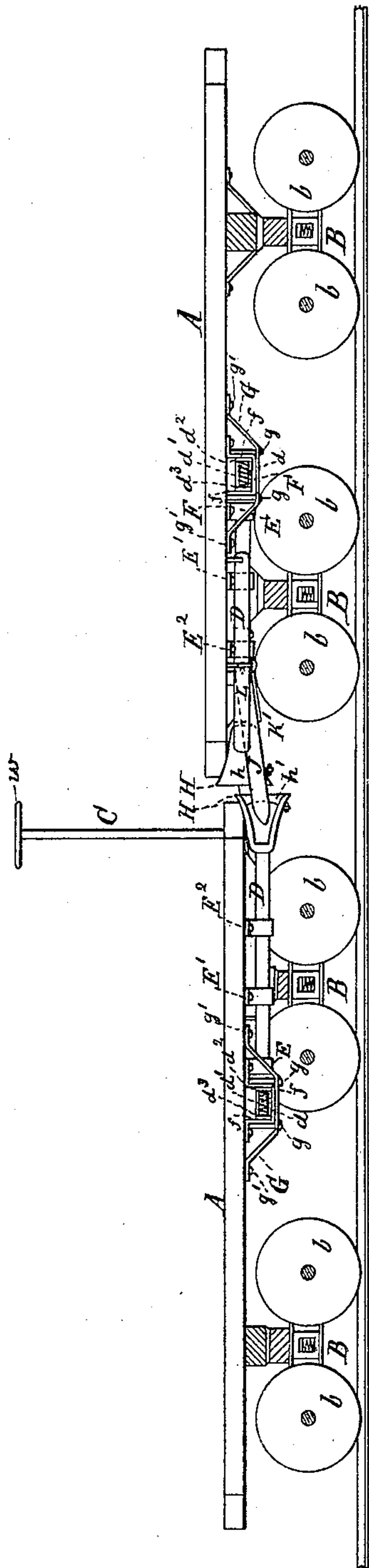
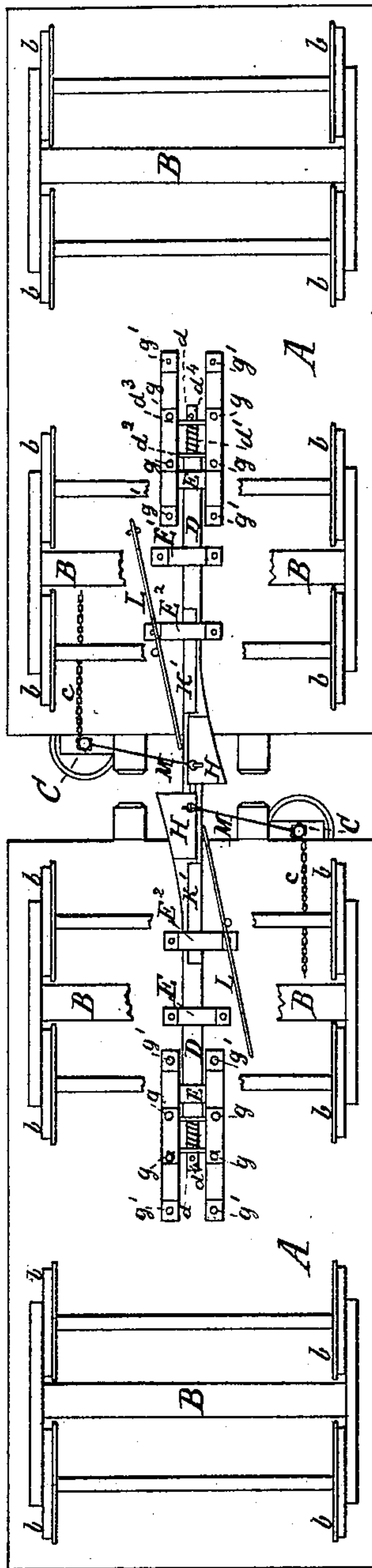


Fig 2.



Witnesses:
N. A. Hall
J. P. Theo. Lang

Inventor:
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by his Atty,
Messrs. Russell & Lawrence

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2 Sheets—Sheet 2.

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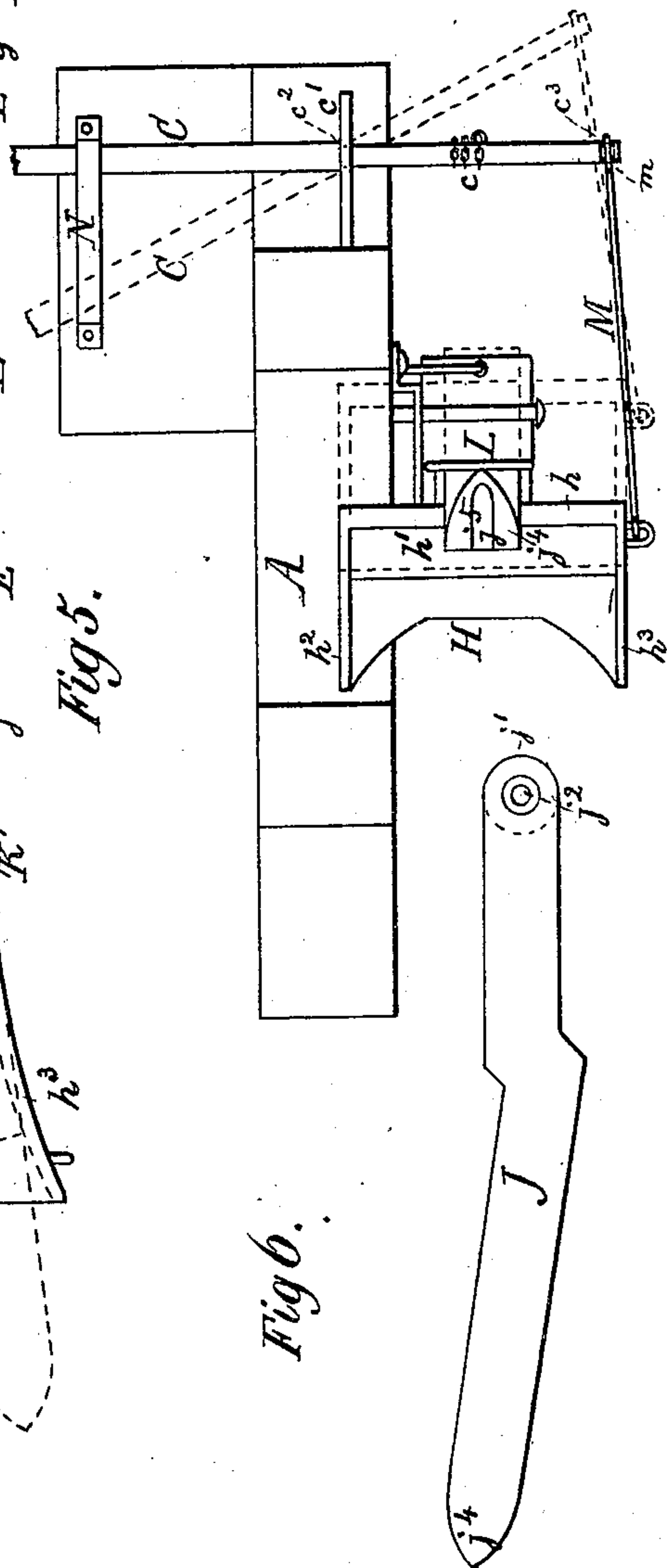
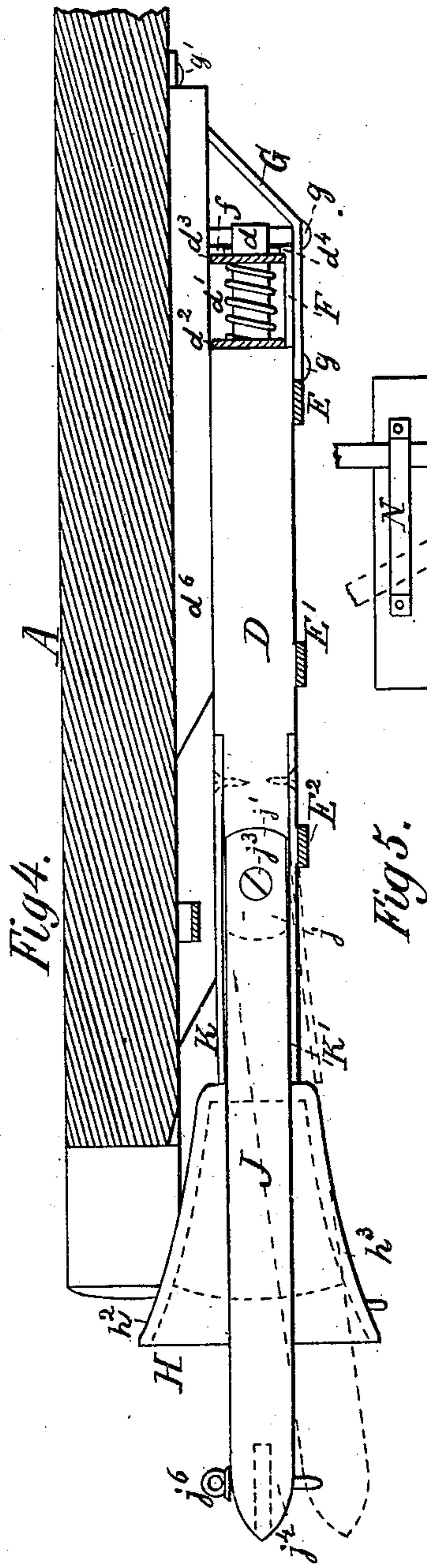
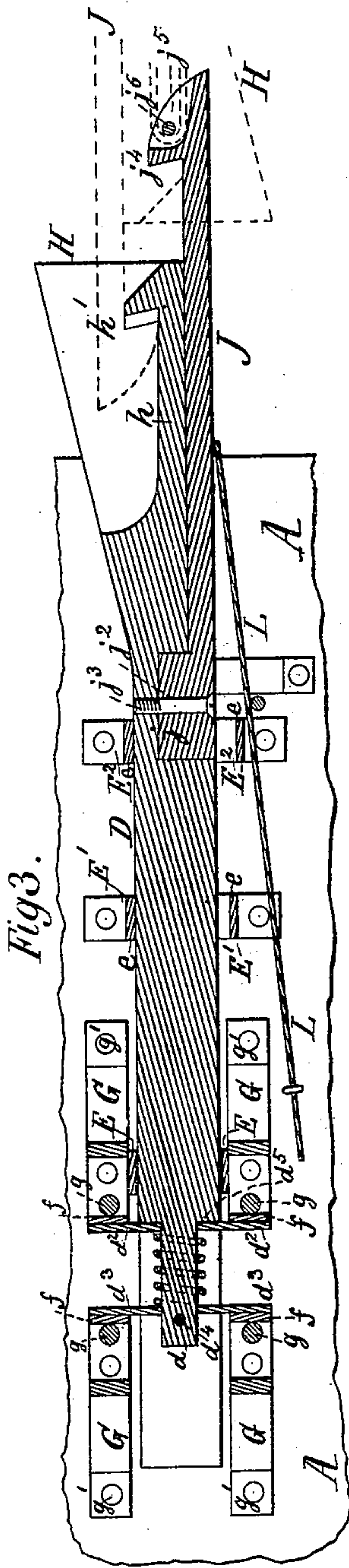


Fig6.

Witnesses:
H. A. Hall.
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Inventor:
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Wm. R. Smith & Lawrence

UNITED STATES PATENT OFFICE.

EUGENE DELIRA, JR., OF BEEKMANTOWN, ASSIGNOR OF TWO-THIRDS TO
GEORGE A. DELIRA, OF SAME PLACE, AND GEORGE L. CLARK, OF
PLATTSBURG, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 238,364, dated March 1, 1881.

Application filed December 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, EUGENE DELIRA, Jr., a citizen of the United States, residing at Beekmantown, in the county of Clinton and State of New York, have invented a new and useful Car-Coupler, of which the following is a specification.

My invention relates to improvements in car-couplers in which a horizontally and vertically articulating spring-hook of one car engages with a corresponding step or catch in the bumper-head of another car; and the objects mainly of my invention are, first, to enable two cars to be coupled by being simply pushed together, and without the assistance of a laborer to manipulate the coupling; second, to effect such coupling of two cars not only when their platforms are of the same height, but also when their platforms differ in height; and, third, to effect an uncoupling of two cars by the use of the same brake-spindle which is used to bring into action the brakes of a car.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of two railway-cars provided with and coupled by my improved coupler, parts of the car trucks and brakes being omitted in order to fully expose the mechanism of the coupler. Fig. 2 is a bottom view of the same. Fig. 3 is an enlarged horizontal central longitudinal section of the draw-bar and hook-bar of my coupler; and Fig. 4 is an elevation of the same, a portion of the platform being shown in section; and Fig. 5 is an end view of the platform of a car with my coupler applied thereto in connection with mechanism for uncoupling. Fig. 6 is a diagram of a hook-bar of a modified construction. Similar letters refer to similar parts throughout the several views.

A indicates a railway-car platform; B, the supporting-trucks; *b*, the wheels; and C, the brake-spindle, provided with a brake-chain, *c*.

To the lower surface of the platform A a draw-bar, D, is provided, which moves in horizontal guides E E' E², so constructed that the front end of the draw-bar can be swung out of

its normal position to one side and back again. Its rear end, *d*, is cylindrical and of less diameter than the body of the draw-bar, and is provided with a spring, *d'*, which is secured between two oblong washer-plates, *d*² *d*³, loosely upon the end *d*. A pin, *d*⁴, is inserted into the end *d*, so as to prevent the casual separation of the plate *d*³ and draw-bar. The plates *d*² *d*³ extend each side of the draw-bar into a guide and stop frame, F, having vertical sides *f*, which serve as abutments to said plates, and thus when the bar D is pulled forward the plate *d*³ and spring *d'* will be moved forward, by means of the pin *d*⁴, against the plate *d*², which itself is prevented from forward movement by the two forward vertical sides *f* of the frame F, and when the draw-bar is pushed backward the shoulder *d*⁵, caused by the formation of the reduced end *d*, pushes the plate *d*² and the spring *d'* against the plate *d*³, which is prevented from moving backward by means of the two rear vertical sides *f'* of the frame F. This construction insures an elastic longitudinal thrust bearing, with the capability of the lateral movement of the plates in accord with the lateral movement of the draw-bar. The frames F, being subjected to heavy strains, are strengthened by double braces G, bolted upon said frames and the platform by means of bolts *g* and *g'*, as shown.

The outer end of the draw-bar D is formed into a bumper-head, H, composed of three flaring walls, *h* *h*² *h*³, (shown in end view in Fig. 5,) the outer extremity of the upper and lower flaring walls, *h*² *h*³, being spread apart sufficient to allow the entrance into the bumper-head of a hook-bar of an adjoining car, whether the adjoining car shall have either a high or a low platform. At one side the flaring parts are connected by a side wall, *h*, which, near its outer end, is provided with a ratchet-step, *h'*, with which the coupling-hook of the other car engages, while opposite the wall *h* the bumper-head is left open, as signified in Figs. 3 and 5.

On one side of the draw-bar D a hook-bar, J, is provided, as shown. This hook-bar has, at its rear end, an oblong boss, *j*, with rounded end faces, *j'*, and a central pivot-hole, *j*². The

boss j is inserted into the side of the draw-bar and secured thereto by a bolt, j^3 , as shown. This connection of the draw-bar and hook-bar allows the hook-bar to freely articulate vertically, while it is kept in line with the draw-bar by means of two springs, $K K'$, one of which is fastened to the upper and the other to the lower side of the draw-bar, as shown in Fig. 4.

A spring, L , suitably fastened to the platform of the car, bears upon the outside of the hook-bar J , and thereby holds the draw-bar D against the abutting sides e of the guides $E E' E^2$, thus keeping the draw-bar in its normal position for coupling. The hook-bar J has its front end formed into a pointed hook, j^4 , which by preference is provided with a horizontal slot, j^5 , and vertical pin-hole j^6 . The hook j^4 engages with the step h' of a similar device on another car, while the slot j^5 and pin-hole j^6 , if occasion should require, will serve for the reception of an ordinary coupling link and pin to effect a coupling of two cars together. A wearing-piece, d^6 , is interposed between the draw-bar and platform, whereby the platform is protected against the wear of the draw-bar.

When there is a considerable difference in the height of the platforms of cars I propose to make the hook-bar of the lower platform of a bent shape, as shown in Fig. 6, in order to secure its entrance into the corresponding bumper-head of the higher platform; and by reversing the outlines or shape of the hook-bar it will be equally suitable for the higher platform.

The bumper-head H is left open on one side, as shown, to allow it to swing free from the hook-bar of the adjoining car in the act of uncoupling. The uncoupling or withdrawal of the hook j^4 from the step h' is effected by swinging the draw-bar D , with the hook-bar J , laterally out of their normal position and against the spring L . This is done by means of a link, M , which connects the bumper-head H with the lower end of the brake-spindle C , said spindle being adapted to swing like a handle, as signified in dotted lines in Fig. 5. The upper portion of the spindle is of larger diameter than the lower, and forms a step, c^2 , where the lower portion is joined to it. This step c^2 rests upon a horizontal plate, c' , through which the lower portion of the spindle passes in such manner as to permit the spindle to be swung laterally. At a proper height from the platform A , a suitable guide, N , is provided which confines the movement of the upper portion of the brake-spindle C to the proper limits. The lower portion of the brake-spindle is provided, as usual, with a brake-chain, c , which connects with the brakes of the car, and at a proper distance below the chain with a groove, c^3 , to receive a loosely-encircling eye, m , of the link M , which eye adapts itself to the different inclinations of the brake-spindle without losing its hold thereon.

As shown in solid lines, Fig. 3, the bumper-head H is represented in its normal position and coupled with a hook-bar, J , (shown in dotted

lines,) of an adjoining car. This position of the bumper-head is maintained by the pressure of the spring L , while at the same time the hook-bar J (shown in solid lines in said figure) is, by the same pressure of the spring L , held in a coupled condition with a bumper-head, H , of the adjoining car, as indicated in dotted lines. During this normal position of the bumper-head it will be seen, by reference to Fig. 5, that the spindle C is maintained in a vertical position by the action of the spring L upon the bumper-head and consequent draft upon the link M , attached at one of its ends to the bumper-head, and at its other end to the foot of the spindle, and that in this condition the spindle is suitably held in position for operating the brakes in the usual manner. When, however, it becomes desirable to uncouple the cars, the spindle C is used as a lever for such purpose by forcing it from its vertical position (shown in solid lines) to its oblique position, as shown in dotted lines in said figure, thereby drawing the bumper-head H from its normal position (shown in solid lines in Fig. 5) to the position indicated in dotted lines in same figure. In this manner the spindle C can be utilized either for bringing into action the brakes or to uncouple, the operator during either act standing upon the platform A .

When two cars provided with my improved couplers are to be coupled to form a train one is moved toward the other. When they meet the hooks j^4 glide over each other, then over the steps h' , until the bumper-heads come in contact. When the train is started the hooks j^4 are moved toward the steps h' , with which they become engaged, and so couple the cars together.

When of two cars to be coupled one has a platform higher than that of the other, the hook j^4 of the higher platform will, during the act of coupling, strike the upper inner flaring surface of the bumper-head of the other car and glide along such surface down toward the step h' , with which it will finally engage in an inclined position, as seen in Fig. 1, the hook-bar of the other car having the lower platform, will at the same time strike the lower inner flaring surface of the bumper-head of the higher platform and glide up along such surface and over the step h' , with which it finally engages.

I regulate the play between cars provided with my coupler by having the hook j^4 of the draw-bar J project such greater or less distance beyond the outer extremity of the bumper-head H as will allow the desired amount of play after the coupling of the cars together is effected.

I claim—

1. In a car-coupler, the combination of a laterally-swinging draw-bar having a bumper-head, H , composed of three flaring walls, $h h^2 h^3$, and a step, h' , and a horizontally and vertically swinging hook-bar, J , having a hook, j^4 , substantially as and for the purpose described.

2. The brake-spindle C , in combination with

mechanical contrivances whereby it may, at option, be either rotated to bring into action the brakes of a car or swung obliquely to uncouple a car, substantially as described.

5 3. The draw-bar D, having a hook-bar, J, pivoted to it, as at j' , in combination with the spring L and springs K K', substantially as and for the purpose described.

10 4. The bumper-head H, provided with a sloping upper portion, h^2 , a sloping lower portion,

h^3 , and a vertical step, h' , in combination with a vertically and horizontally swinging hook-bar, J, substantially as and for the purpose described.

Signed in presence of two subscribing witnesses. 15

EUGENE DELIRA, JR.

Witnesses:

F. F. HATHAWAY,
WM. REED.