(No Model.)

S. CROWELL.

CAR COUPLING.

No. 515,750. Patented Mar. 6, 1894.

FIG. 1

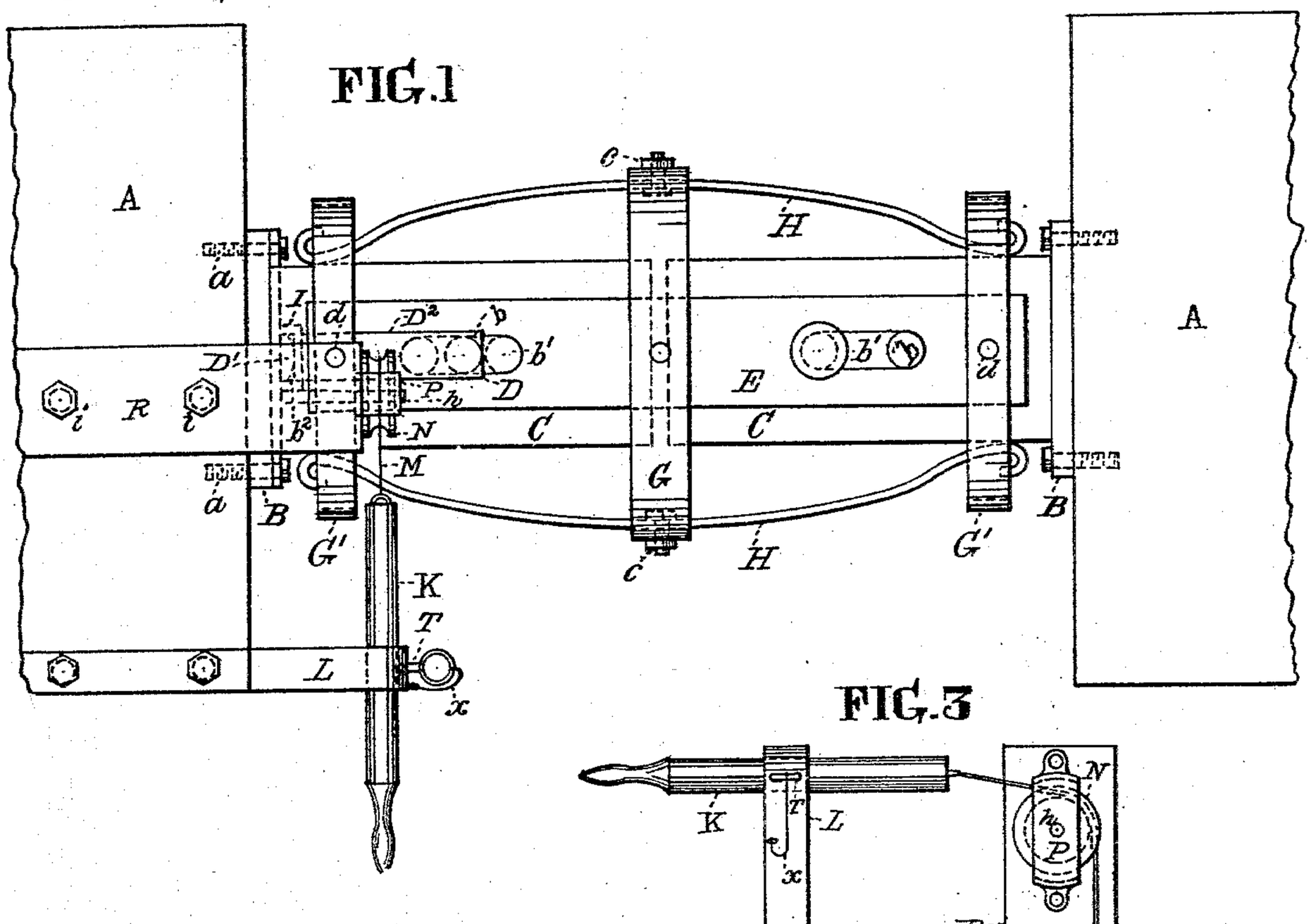


FIG. 3

FIG. 2

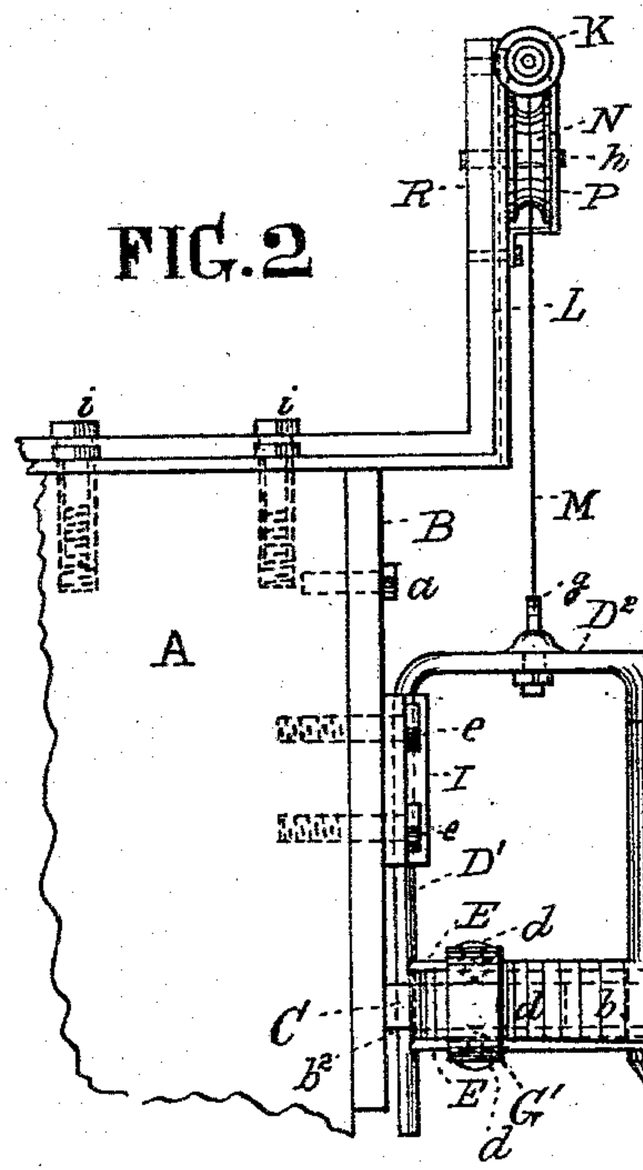
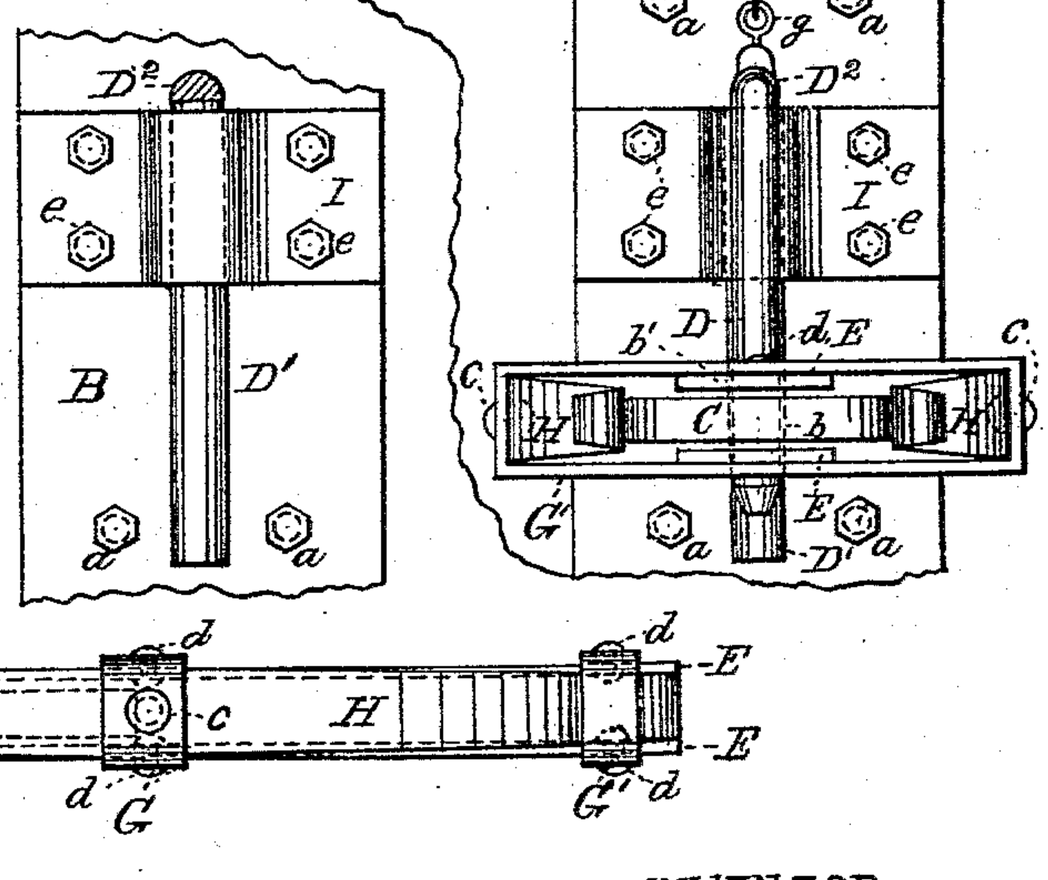


FIG. 4



WITNESSES.

S. E. W. Bewley.

Charles F. Francis.

INVENTOR.

Sommers Crowell.

per Thomas J. Bewley, Att'y.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SOMMERS CROWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CLARA S. WASS AND CHARLES J. WASS, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 515,750, dated March 6, 1894.

Application filed November 7, 1893. Serial No. 490,299. (No model.)

To all whom it may concern:

Be it known that I, SOMMERS CROWELL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to an improvement in car-couplings, in which appropriate mechanism is applied therein, by means of which the operation of coupling, or uncoupling cars, to, or from each other, is attended without risk, or personal injury to the operator, while at the same time assuring the act of connection, or disconnection. And consists in the first place, in the means employed for imparting a vertical movement to the coupling pin, which has attached thereto in its rear by means of a horizontal rod, a steady bar, which is capable of vertical reciprocating movements, in a passage, or bore of a plate secured upon the front end of the car, at right angles thereto. The vertical movements of the bar, and pin are accomplished by means of the reciprocating actuation of a sliding horizontal rod held in a bearing at the side and above the pin and its connected rod, to which it is attached by means of a wire rope, or chain, the latter moving over a pulley placed midway between the horizontal reciprocating rod and the connected coupling-pin and bar, whereby the reciprocating vertical movements are effected to couple, or uncouple the cars.

In the second place, the invention relates to the construction of the link employed for connecting the cars, and consists in a pair of plates arranged in a horizontal position and parallel with each other, to which a series of yokes is bolted, and provided with a pair of semi-elliptic springs, which is bolted midway of their length to the sides of the middle yokes, the ends of the springs being free, and contracted laterally; and resilient in their action, to allow of the entrance between them, and the horizontal plates above-mentioned of a plate extended in same direction from the vertical plate bolted to the end of the car. These last-mentioned plates are provided with orifices through them into which the ends of the coupling pins pass and couple the cars securely together, as will be more fully understood from the following detailed description.

In the accompanying drawings which make a part of this specification, Figure 1, is a plan, or top view of the improvement attached to portions of the end platforms of two cars, the mechanism for operating the coupling pin and its connected bar, being shown as connected to but one car. Fig. 2, represents a side view of the mechanism, and link, as attached to a car. Fig. 3, represents an end view. Fig. 4, represents a front elevation of the steady bar D′, in the guide plate I, the horizontal rod connecting it with the pin D, being in section.

Like letters of reference in all the figures indicate the same parts.

A, represents portions of the end platforms of a railway car, to which the coupling pin, and its connected parts are attached.

B, is a vertical plate secured to the end wall of a car by means of a series of bolts *a;* projecting horizontally, or at right angles therefrom, is the plate C, which is securely attached thereto, seen clearly in Figs. 1, and 2. This plate C, has an orifice *b*, cut through it, centrally arranged transversely, into which the end of the coupling pin passes, when the cars are coupled together, and a corresponding orifice b^2, for the passage of the bar D′.

The link into which the coupling pin D, passes, is formed of a pair of horizontal plates E, with a space between their inner surfaces of sufficient depth, to permit of the insertion within said space of the body of the horizontal projecting plate C. These plates E, are provided with an orifice *b′*, cut vertically through them, elongated lengthwise to permit of the coupling pin D, passing readily into the orifice *b*, of the horizontal plate C. These plates are held in their proper positions in relation to each other by means of the yokes G, and G′, G′, to which they are connected by the rivets *d*, seen in Figs. 1, and 2. To the sides of the yoke G, (*i. e.*, the middle yoke) are secured the resilient springs H, the bolts *c*, holding them firmly in place. The ends of this pair of springs H, are free, and are capable of lateral resilient action within the area of the end yokes G′, G′.

D, is the coupling pin, to which is connected the steady bar D′, by means of the cross bar D², seen clearly in Figs. 2, and 3; the bar D′, being capable of free vertical reciprocating movements in its guide plate I, (in a recess therein) which plate is secured to the outer end of the platform A, by means of screw bolts *e*.

K, is the slide rod for operating the coupling pin D, and its steady bar D′, which is supported in the fixed bearing L, and slides laterally therein, which is connected to a ring *g*, fast on the upper surface of the cross bar D′, by means of the wire rope, or chain M, the rope passing over the sheave N, in the block P, hung on the journal *h*, in the bearing R, secured to the top of the car, by means of the screw bolts *i*, *i*.

The operation of the coupling, is as follows: The cars which it is desired to couple together, are pushed toward each other (an end of the link having been previously attached to one car), and the pin D, and its connected bar D′, being elevated, out of the way; to permit of the entrance of the plate C, between the horizontal plates E, of the link; by means of the operator grasping the outer end of the rod K, which by reason of the intermediate rope, or chain M attached to its inner end, has connection with said pin and bar, by connection with the loop *f*, in the horizontal cross connecting bar, and thus withdrawing, or elevating the same which action removes the pin from the orifice *g*, in the plate C. Then as the cars approach each other said plate C, enters the end of the link between the free ends of the pair of resilient springs H, which act as guides; until the orifice *b*, of said plate C, is brought directly under the end of the pin D, when the rod K, is released, which permits of the descent of the pin D, and steady bar D′, into their orifices, thus coupling the cars. The resiliency of the free ends of the semi-elliptical springs H, allowing of an easy entrance of the plate C, into the link. A reverse movement of the rod K, through the intermediate wire rope M, withdraws and elevates the pin and bar D, D′, thus uncoupling the cars. By this construction, and operation, it is unnecessary for a separate manipulation of the link after once being placed in position, and the danger of injury, or loss of life to an operator is overcome. The pin T, held by means of the wire *x*, to the bearing L, is pushed through an orifice in the bearing, when the rod K, is drawn outward, thereby holding the coupling pin, and bar D, D′, in their elevated position, until released for action.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the coupling pin D, and its steady bar D′, capable of vertical reciprocating movements in the guide plate I, the rope, or chain M, the sheave N, revolving in the block P, and the rod K, for operating said pin and bar D, D′, substantially in the manner herein shown and described for the purpose set forth.

2. The coupling link, consisting of the parallel plates E, E, secured to the upper and lower surfaces of the yokes G, G′, G′, the semi-elliptical springs H, H, secured to the sides of said yokes, the outer ends of the springs being free and resilient in their action, whereby they act as guides for the horizontal plate C, substantially in the manner herein shown and described.

3. In a car-coupling, the combination of the link constructed of the parallel horizontal plates E, E, yokes G, G′, G′, and the resilient springs H, H, with the plate C, secured to the end of the car, the coupling-pin D, and its steady bar D′, chain M, sheave N, in block P, and operating lever, or rod K, arranged substantially as herein shown and described for the purpose set forth.

SOMMERS CROWELL.

Witnesses:
THOMAS J. BEWLEY,
S. E. W. BEWLEY.