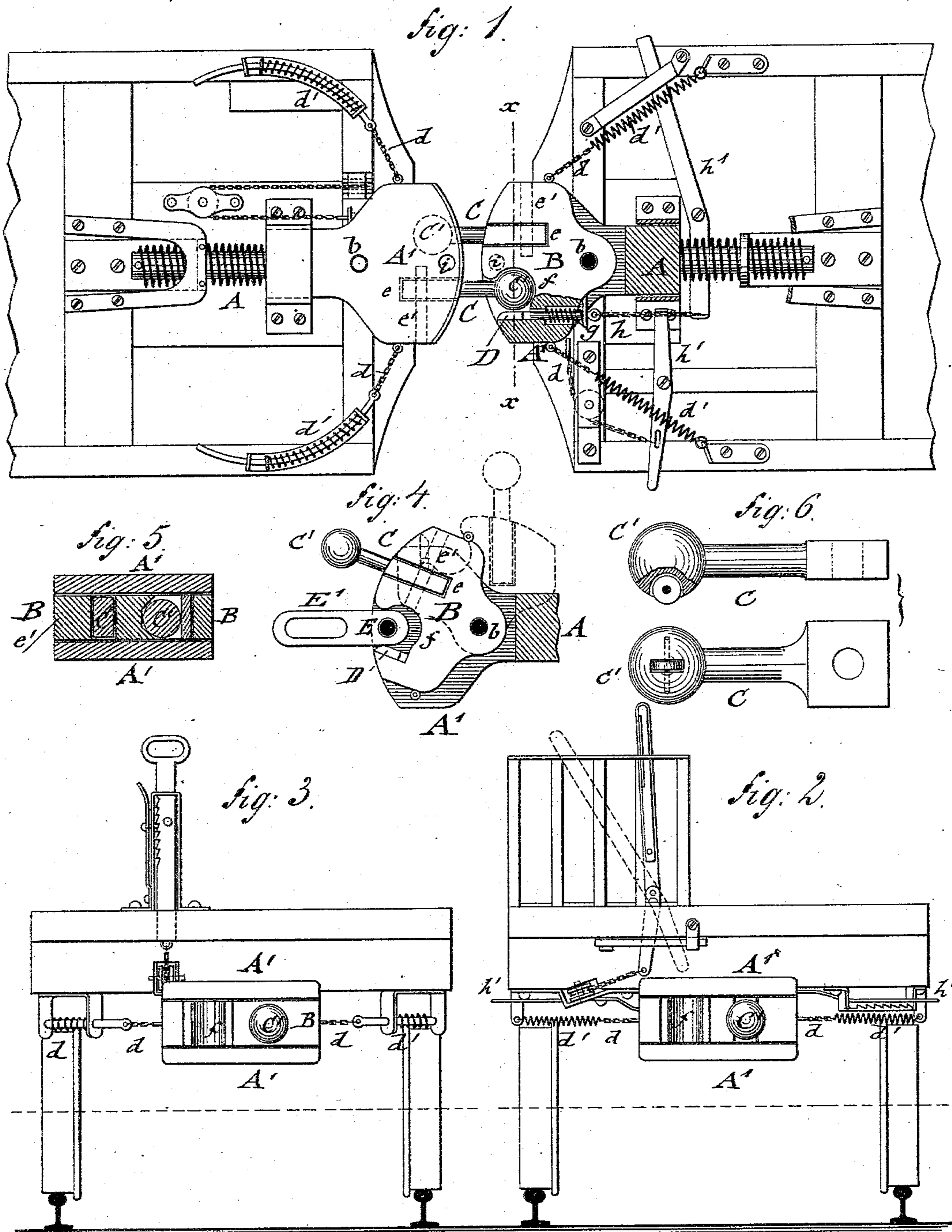


(No Model.)

A. LEHMANN.
CAR COUPLING.

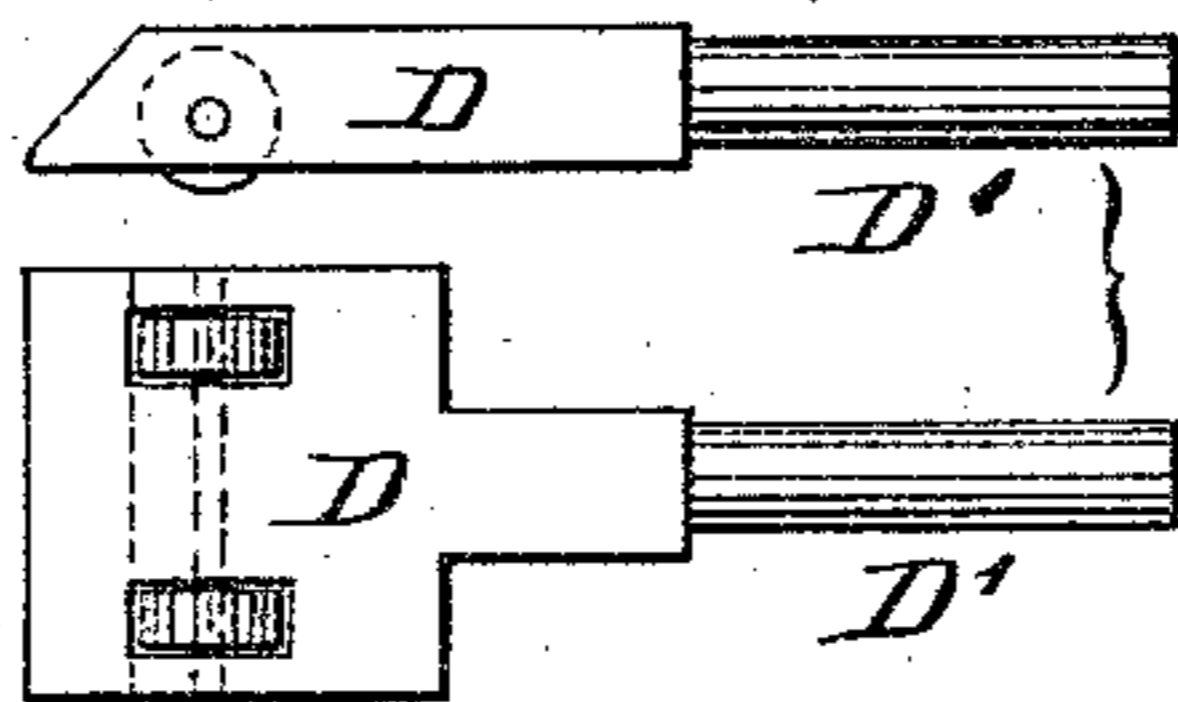
No. 288,074.

Patented Nov. 6, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ADOLF LEHMANN, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 288,074, dated November 6, 1883.

Application filed September 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADOLF LEHMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention has reference to improvements in car-couplings of that class in which the draw-bars of the cars are automatically coupled without the use of the common coupling pin and link; and the invention consists of a spring-cushioned draw-bar which supports between its top and bottom plates a centrally-pivoted and laterally-oscillating block, that is provided at one side of its center line with a laterally-swinging coupling-link having a spherical head, and at the other side thereof with a cavity for the headed link of the opposite draw-bar, said link being retained in said cavity by a sliding and spring-actuated locking-jaw that is operated by a suitable uncoupling chain-and-lever mechanism from the platform side or top of the car.

In the accompanying drawings, Figure 1 represents a bottom view of two cars connected by my improved coupling, one of the draw-heads being shown with parts broken away. Figs. 2 and 3 are end views of the coupling and of the mechanism for uncoupling the draw-bar. Fig. 4 is a detail section of one of the draw-heads, showing it coupled with a common pin and link. Fig. 5 is a vertical transverse section of the draw-head on line *x x*, Fig. 1; and Figs. 6 and 7 are details, respectively, of the coupling-link and of the sliding jaw for locking the link to the draw-head.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a draw-bar which is supported and guided in the usual manner on the bottom frame of the car and cushioned in either direction by strong spiral springs applied to the shank of the draw-bar, as shown clearly in Fig. 1.

The head A' of the draw-bar A is made wider than the shank and made open at both sides, so that between the horizontal top and bottom plates of the same space is obtained for a laterally-movable block, B. The front end of the block B, as well as the front edges of the top and bottom plates of the draw-head A', are made arc-shaped, so that these parts can

move along each other without interference when the cars are rounding curves.

The segmental block B is pivoted at its rear end by a vertical pin, *b*, to the draw-head A, so as to swing to either side thereof. The sides of the block B are connected, by chains *d* and spiral springs *d'*, or other equivalent devices, to points at opposite sides of the car bottom, the springs serving to return the block B into its normal position after it has been moved to one side or the other in the draw-head.

The block B is provided at one side of its center line with a vertical recess, *e*, into which is placed a shank of a coupling-link, C, which shank is hinged by a horizontal pin, *e'*, to the block B. The end of the link C is provided with an enlarged head, C', that is preferably of spherical shape. At the opposite side of the center line of the block B is arranged a nearly-circular cavity, *f*, which is large enough to admit the spherical head of the link of the draw-head of the next adjoining car. One side of the cavity *f* is made straight, so as to guide a locking bar or jaw, D, that is arranged parallel to the center line of the segmental block B. The shank D' passes through a suitable opening in the rear part of the block to the outside thereof, and is cushioned by a spiral spring, *g*, that is interposed between a shoulder of the shank and a guide-plate of the block B.

The rear end of the shank of the locking-jaw D is connected by an intermediate chain, *h*, to a fulcrumed lever, *h'*, that is operated by a connecting lever mechanism from the side, platform, or top of the car, so that the locking-jaw can be withdrawn, and thereby the head of the coupling-link C released.

When the cars approach each other, the heads of their coupling-links C C enter into the respective cavities *b b* of the blocks B of the draw-heads, and push the longitudinally-sliding locking-jaws D backward against the tension of their springs until the heads C' C' are entirely within the cavities *b b*. The locking-jaws D are then forced forward by the action of their springs, so as to bind on the heads of the coupling-disks C C and lock them into the cavities of the blocks B. The jaws D D prevent the links C from being withdrawn from the cavities until they are released by

withdrawing the locking-jaws by means of the uncoupling-lever mechanism described.

To facilitate the coupling of the links with the jaws D' of the blocks B, the links as well as the jaws may be provided with anti-friction rollers, as shown in Figs. 6 and 7, whereby the friction is considerably reduced. The side wall of the cavity *f* may be grooved or concave, as shown in Fig. 5, whereby a better grip on the spherical head of the coupling link is obtained.

When it is desired to couple the draw-heads with the common pin and link, a coupling-pin, E, is applied to holes *i i* of the top and bottom plates of the draw-head and to a coupling-link, E'. For this purpose the segmental block is thrown sidewise, which may be either inverted into the cavity *f* or entirely out of the way of the coupling-link, as indicated in dotted lines in Fig. 4. In this manner a car provided with my improved automatic coupling may be readily coupled with cars having the old style of pin and link.

The advantages of my improved car-coupling are: first, that the coupling of the draw-heads is automatically accomplished on the approach of the cars by the simple entering of the links into the corresponding cavities of the segmental blocks; secondly, that the coupling-links by the pivoted segmental blocks of the draw-heads have a lateral play by which the cars can readily round curves without any objectionable strain on the couplings; and, thirdly that the coupling-links have a slight up-and-down movement, so as to provide for

the vertical vibrations of the cars; and, lastly, that a reliable and effective double coupling is accomplished.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a spring-cushioned draw-bar, having an enlarged draw-head open at its sides, a segmental block pivoted to said draw-head, said block having at one side of its center a hinged coupling-link with enlarged head, and at the other side a circular cavity and a longitudinally-sliding and spring-actuated locking bar or jaw, substantially as set forth.

2. The combination of a spring-cushioned draw-bar, having an enlarged draw-head open at the sides, an intermediate segmental block pivoted to the draw-head, a coupling-link with an enlarged head hinged at one side of the center line of the block, a circular cavity arranged at the other side of the block, a longitudinally-sliding and spring-cushioned locking bar or jaw, arranged at one side of the circular cavity, and a chain-and-lever mechanism connected to the rear end of the locking-bar, so as to move the same in backward direction for uncoupling the link, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ADOLF LEHMANN.

Witnesses:

PAUL GOEPEL,
SIDNEY MANN.