

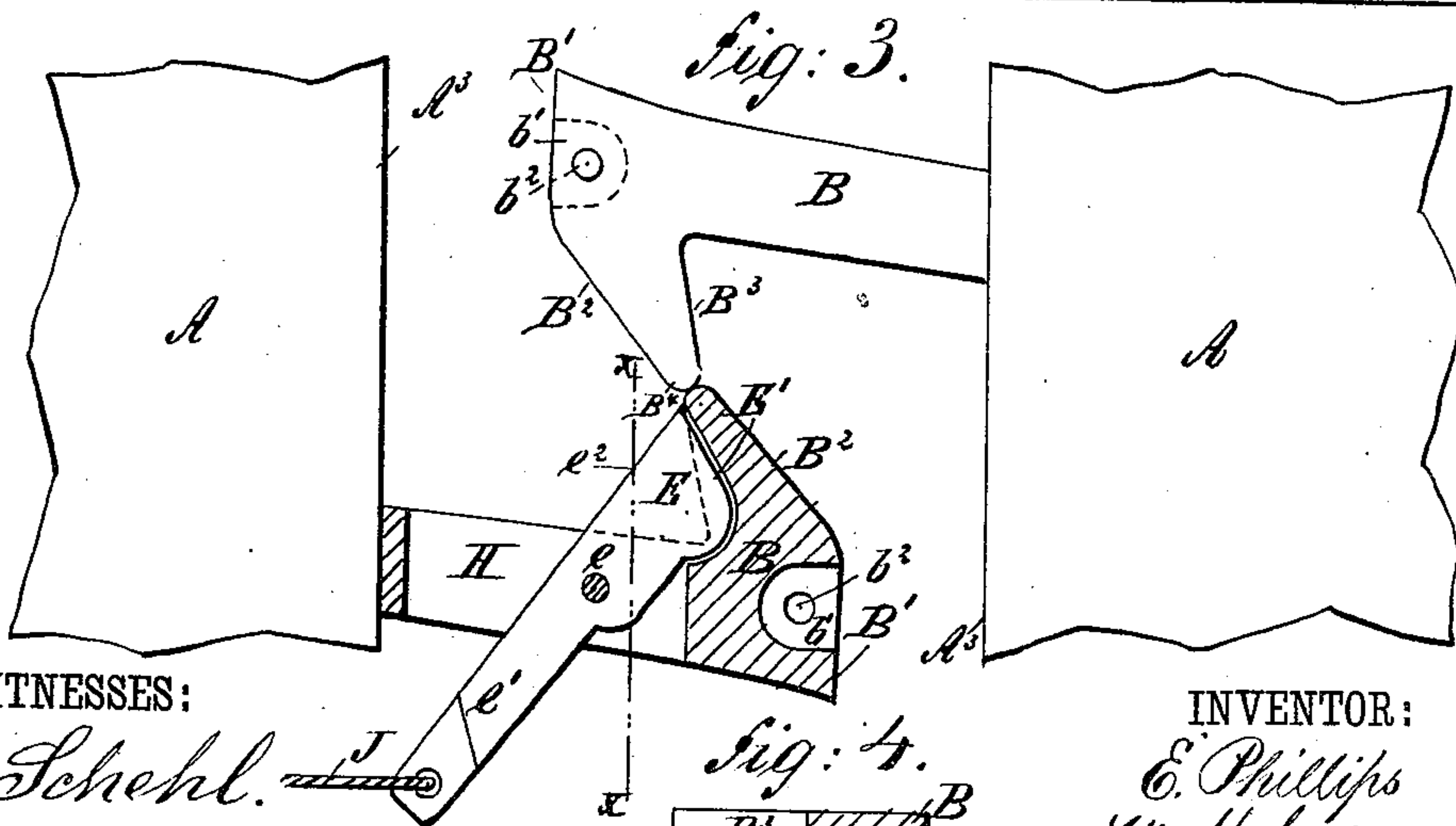
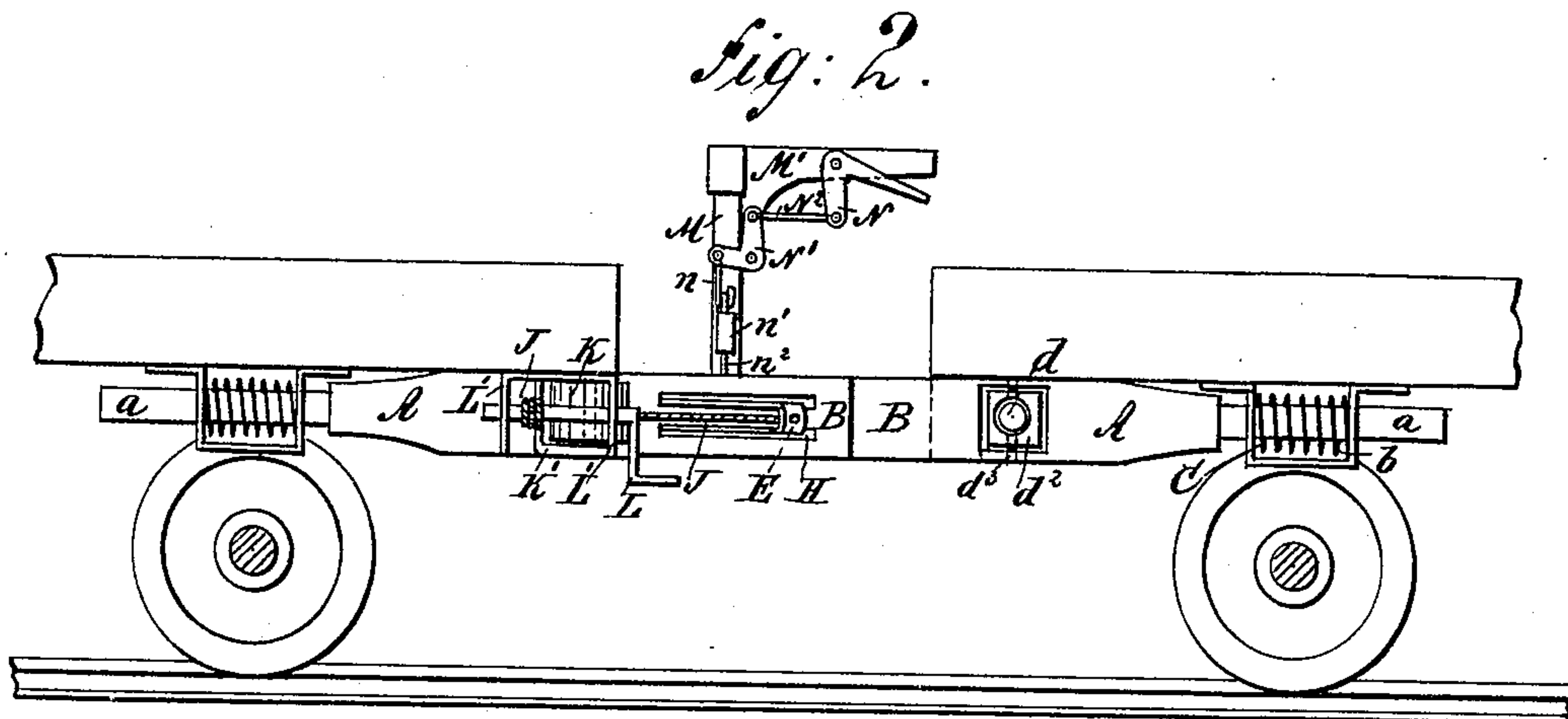
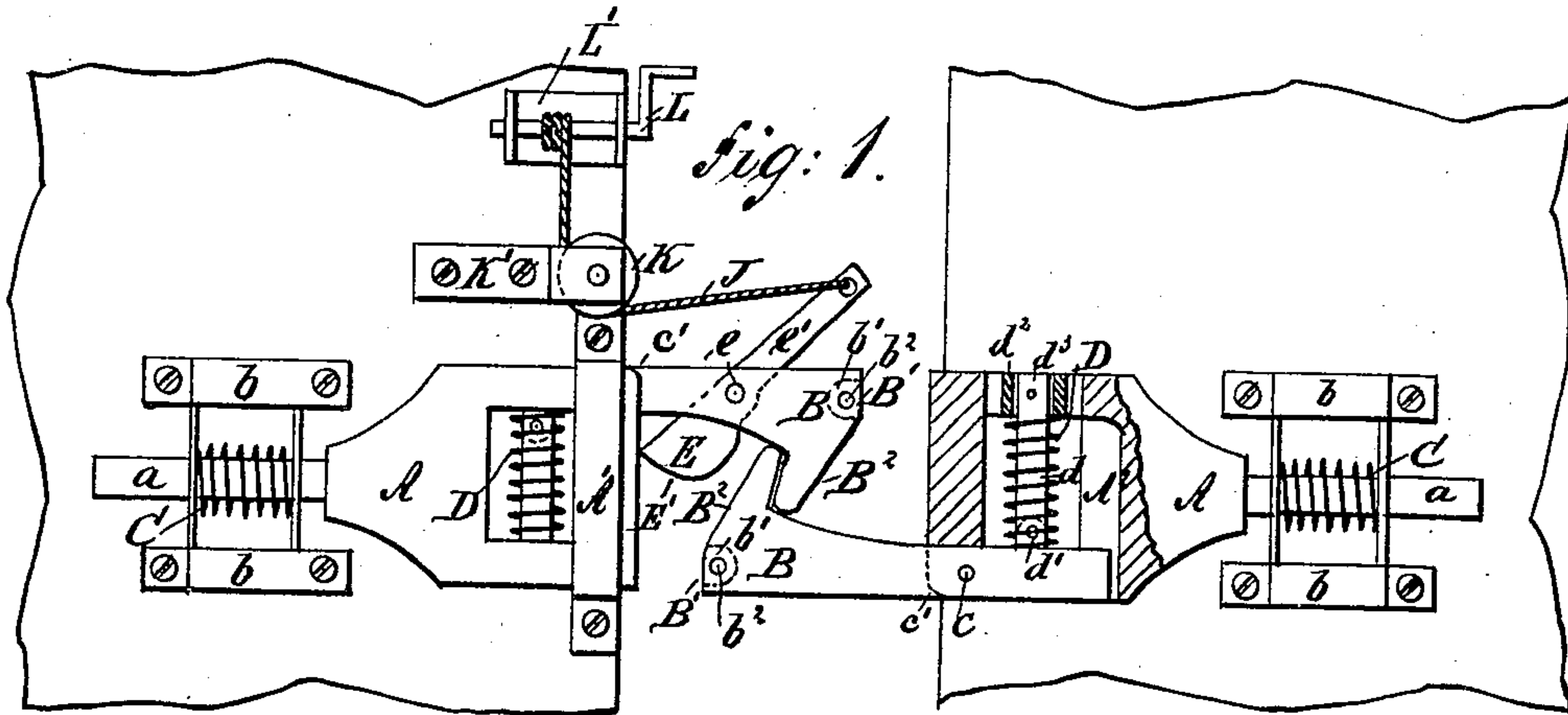
(Model.)

E. PHILLIPS & W. H. COX.

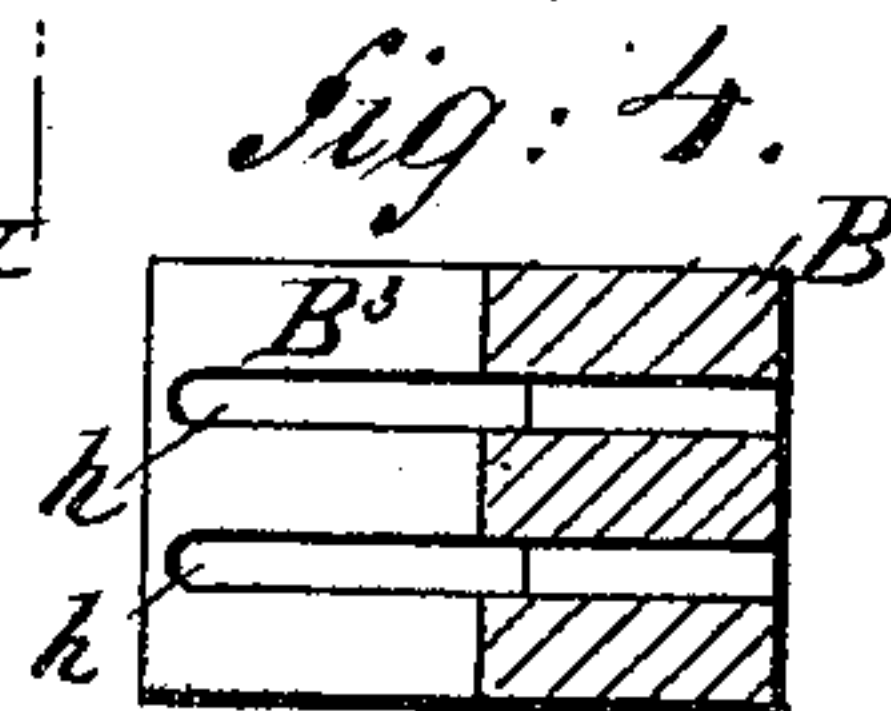
CAR COUPLING.

No. 249,667.

Patented Nov. 15, 1881.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EPHRAIM PHILLIPS AND WILLIAM H. COX, OF NEW CASTLE, PA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 249,667, dated November 15, 1881.

Application filed April 8, 1881. (Model.)

To all whom it may concern:

Be it known that we, EPHRAIM PHILLIPS and WILLIAM H. COX, of New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Improvement in Car Couplers and Detachers, of which the following is a specification.

Figure 1 is a sectional elevation of our coupler and detacher, looking at the under side of the cars. Fig. 2 is a side elevation of our apparatus. Fig. 3 is a sectional plan of portions of the draw-head and coupling-bars. Fig. 4 is a cross-sectional elevation on line $x x$, Fig. 3, looking from the back.

Similar letters of reference indicate corresponding parts.

The object of our invention is to provide improved car coupling and detaching devices which may be operated without going between the cars, and which may be used upon cars whose draw-heads do not meet in the same horizontal plane, and which may also be coupled with any common link-and-pin-coupler.

We more particularly describe our invention as follows: The chambered draw-head A is shown supported in the frame-work of the car by the forward strap, A', and the plates $b b$, the ends of the latter sliding within the bearings b' , which are rigidly secured to the body of the car. The back end of the draw-head, forming the pin a , carries the spiral spring C, which is compressed between said plates $b b$ and permits the gradual longitudinal sliding movement of the draw-head to relieve the shock of coupling the cars. The coupling-bar B is strongly pivoted at c , and has a horizontal movement within the recess A² of the draw-head. Strong shoulders are provided at c' , capable of resisting the shock of coupling the cars, and the strap A' also braces the joint between the bar B and draw-head A. The face B' of the coupling-bar acts as a buffer against the opposite faces A³ of the draw-bar when the cars come together. The coupling-bars B of two opposite cars are held in their normal position and coupled, as in Fig. 1, by the spiral spring D, which is coiled around a pin, d , which has a loose connection with the bar B by means of a tongue and pivot, as at d' , and a pivotal connection with the draw-head at its opposite end through the horizontally-movable

collar d^2 , pinned at d^3 . The spring D is thus always held in place in the draw-head. The outer faces of the heads of the coupling-bars B are beveled, as at B², to cause the coupling-bars of two meeting cars to gradually swing on their pivots c as the cars come together and permit their coupling, as in Fig. 1, when the detacher is not in use. The heads of the coupling-bars B are recessed horizontally, as at b' , and bored vertically, as at b^2 , to permit the introduction of the ordinary coupling-link and coupling-pin, whereby cars having our coupling devices may be coupled with cars having the common coupler.

We describe our improved detaching devices as follows: The coupling-bar B of one meeting car is slotted, as at H, in which slots the horizontally-movable cam-lever or detacher E is pivoted at e . The forward acting-face E' of the detacher is formed eccentrically, so that when its arm e' is drawn backward said face E' will act against the inclined head B² of the opposite coupler-bar B and force both coupling-bars apart, as in Fig. 3, after the cars have been backed or forced together sufficiently to allow the outer edge of the inner hooked faces, B³, to pass each other; and on moving the engine forward any car or number of cars may thus be left standing on the track. We have shown the detacher formed of two metal plates fastened together at the ends and passing through two slots, H, in the coupling-bar, either of which plates may act against an opposite coupling-bar, B, thus permitting the coupling of cars whose draw-heads or coupling-bars do not meet in the same horizontal plane. As shown in Fig. 3, the faces E' enter recesses h formed in the inner face, B³, of the coupler-bar, which act to steady the detacher in position. When the detacher is in such position, as in Fig. 3, to the opposite coupling-bar B, two meeting cars cannot be coupled together, as the point B⁴ of the opposite coupling-bar will slide over the inclined back e^2 of the detacher E, which will not allow said opposite coupling-bar to connect with the coupling-bar in which the detacher is pivoted. We also provide means whereby the detacher E may be operated without going between the car-buffers, which consist, first, of the cord or chain J, which is attached to the outer

end of the arm e' and passes over a sheave, K, supported on an axle held in the bearing K' , and from thence to the hand crank-axle L, which is journaled in the frame L' . The cord
 5 J is secured to the axle L, which may be reached from the ground at the side of the car and may be turned either way to draw the detacher E into the uncoupling position shown in Fig. 3. The other means provided for oper-
 10 ating said detacher consist of the upright M, which is journaled in the coupling-bar, and is rigidly connected with the detacher E at its lower end and with the hand-lever M' at its upper end. Two crank-arms, N and N' , are
 15 pivoted to the lever M' , and are connected by the horizontally-movable rod N^2 . The pivoted link connects with the crank-arm N' and also with the bolt n^2 , which is guided in the bearing n' , so that on the reciprocation of the le-
 20 ver N, conveniently located on the lever M' , said bolt n^2 may be either raised from or lowered into a hole bored in the coupling-bar B to release or lock the detacher E.

If so desired, the body of our detacher E
 25 may be formed of a single plate, passing through one slot in the coupling-bar B, and have a vertically-bored eccentrically-faced head to insure its uncoupling cars whose draw-heads are out of line. The slots h are also not
 30 essential to the proper action of the detacher in uncoupling or preventing a coupling of the cars; but they may be used in combination with the eccentric face E' to advantage.

Our coupling and detaching devices may be thus operated from the ground at the side of 35 the car, or from the car-platform, without requiring railway employes to stand between the car-buffers, and by their use a loss of life and limb may be prevented.

Having thus fully described our invention, 40 we claim as new and desire to secure by Letters Patent—

1. The combination, with a draw-head, substantially as described, of the hook B, having a fulcrum, e , and shoulder e' , arranged as speci- 45 fied, whereby the shock of the cars in coming together is taken by the shoulder.

2. The combination, with the rear arm of lever-hook B and the spring D, of the pin d , loosely connected with bar B by tongue and 50 pivot at d' , and having a pivotal connection with the draw-head at its upper end by the horizontally-movable collar d^2 , pinned at d^3 , as shown and described.

3. The hook-lever B, slotted at H, and hav- 55 ing a cam-lever, E, pivoted in said slot at e , to act against the inclined face of the draw-bars B, as and for the purpose specified.

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Witnesses:

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