

No. 636,575.

Patented Nov. 7, 1899.

G. W. SMILLIE.
CAR COUPLING.

(Application filed Oct. 16, 1897.)

(No Model.)

2 Sheets—Sheet 1.

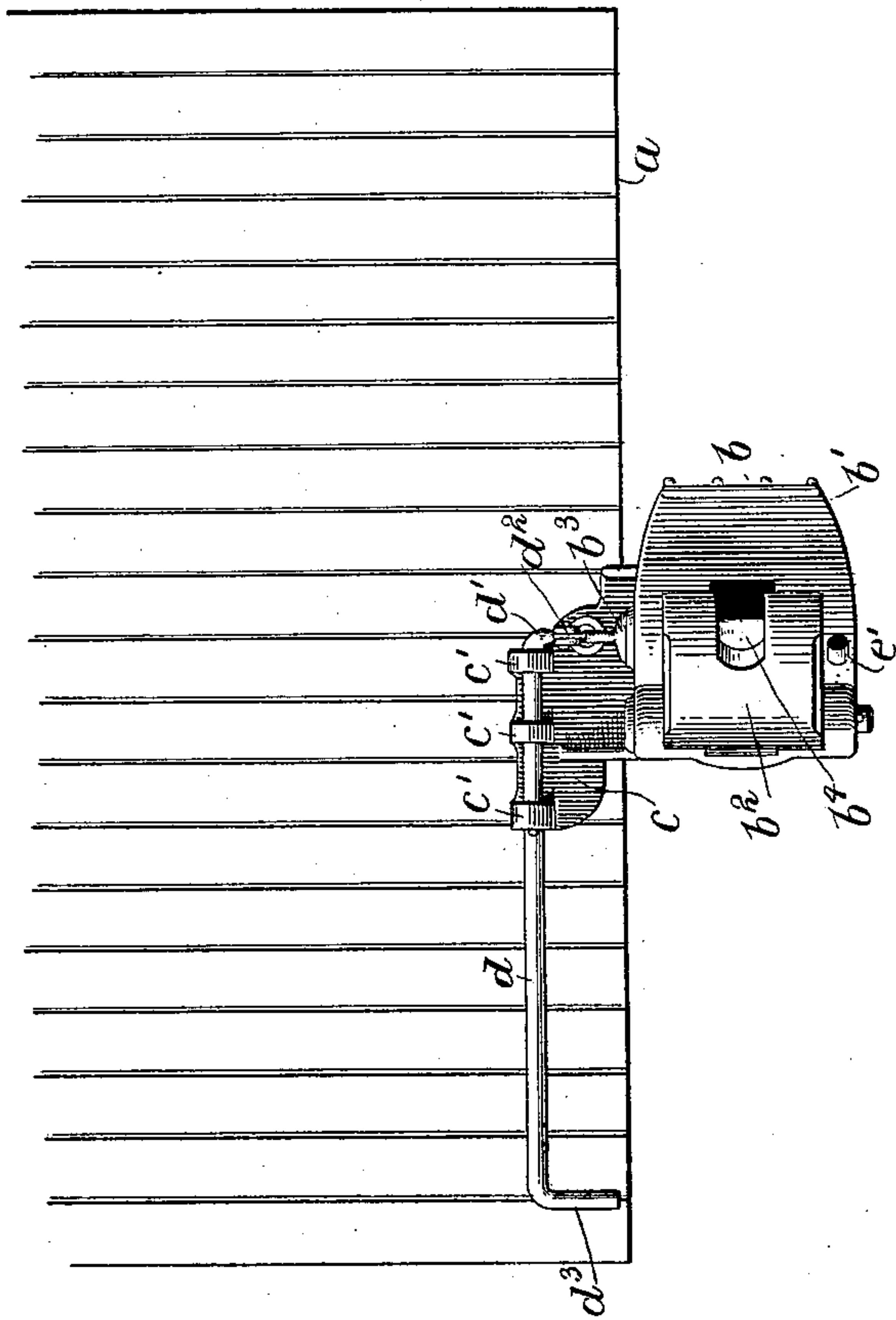


Fig. 1.

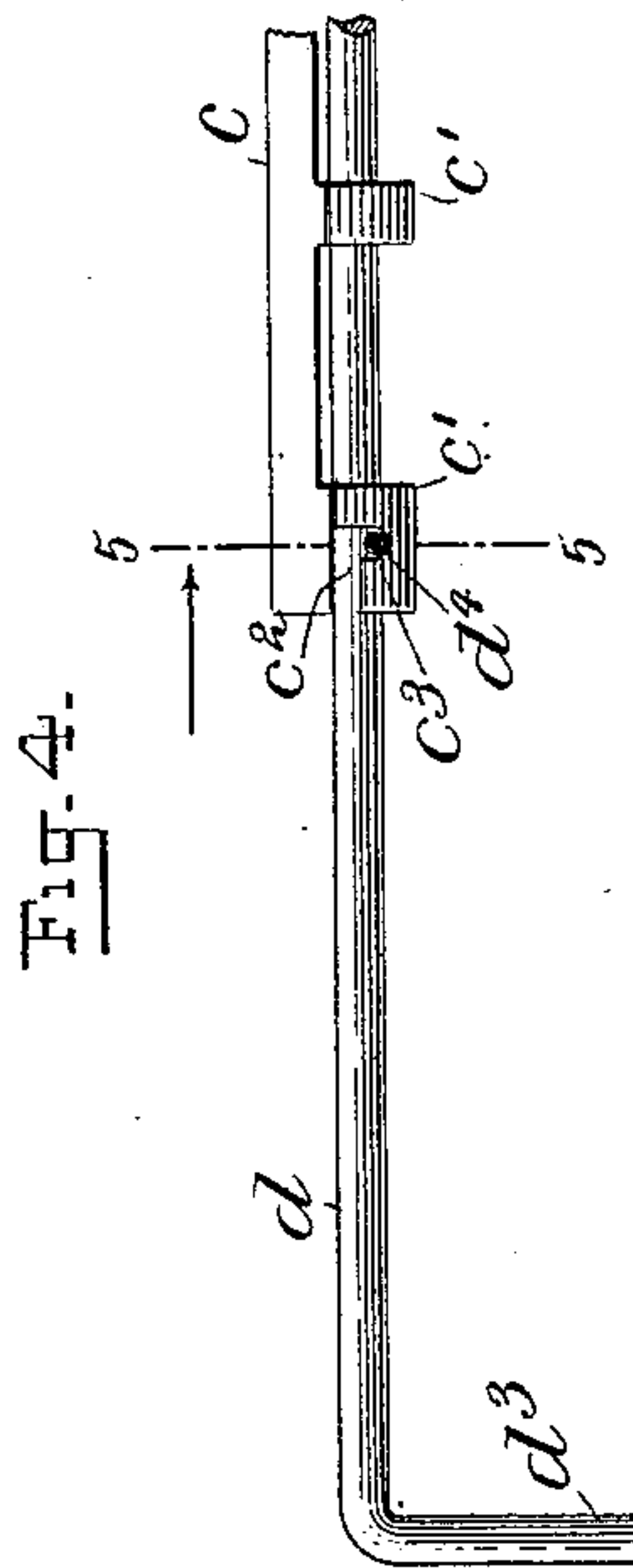


Fig. 4.

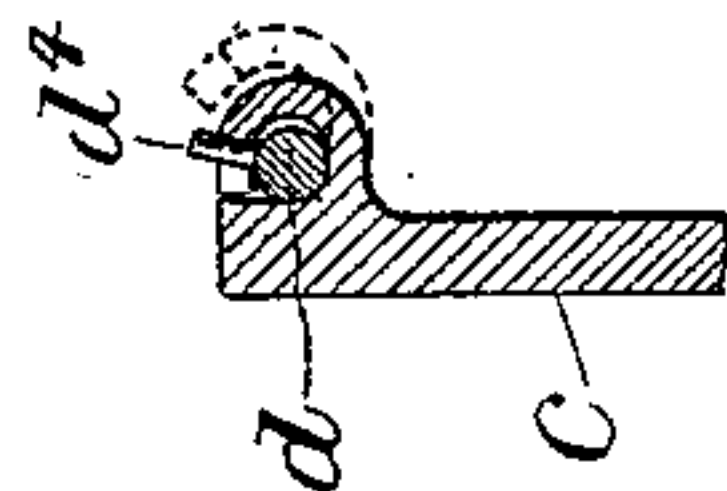


Fig. 5.

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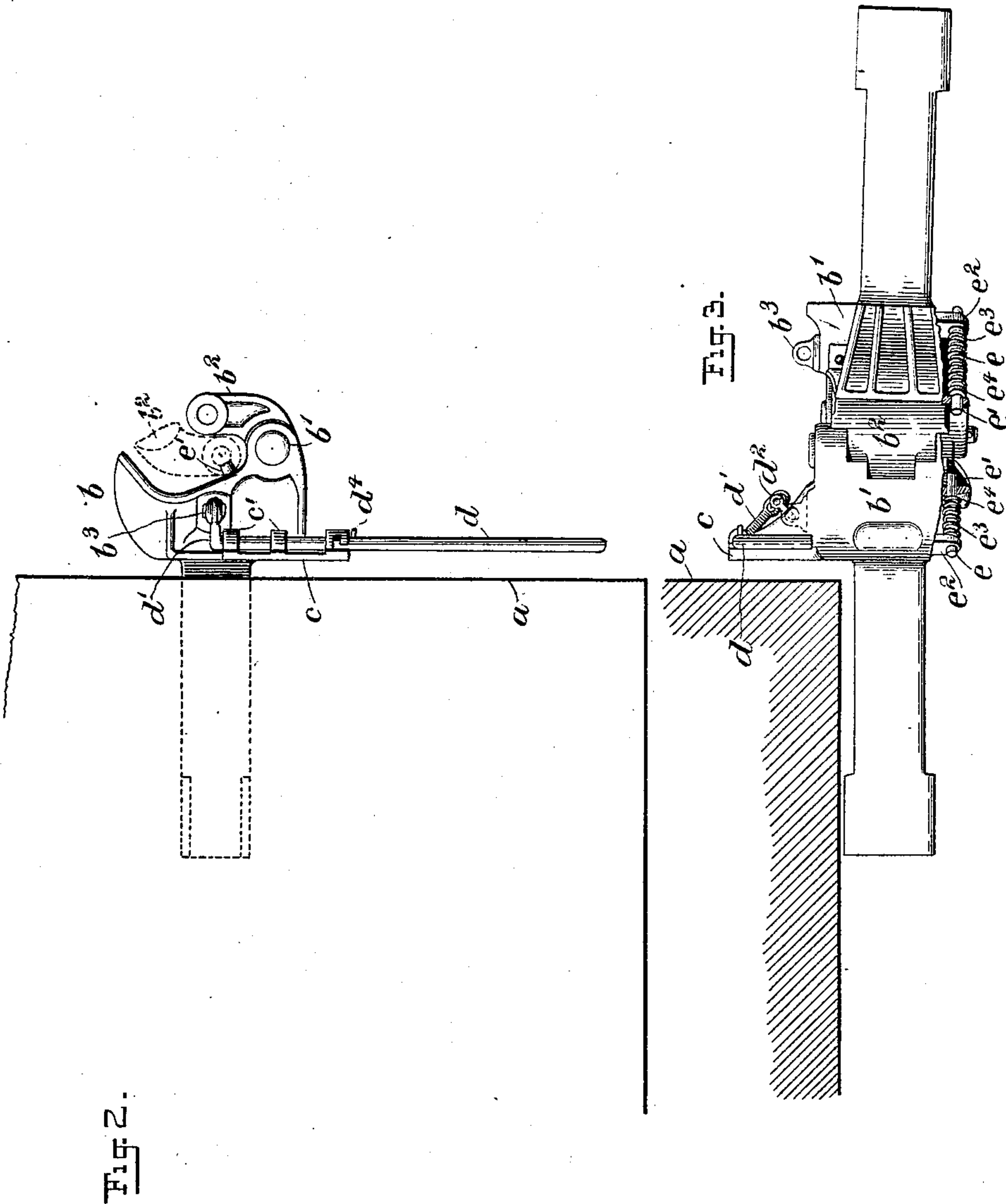
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 636,575, dated November 7, 1899.

Application filed October 16, 1897. Serial No. 655,396. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMILLIE, a citizen of the United States, and a resident of Newark, Essex county, State of New Jersey, have invented certain new and useful Improvements in Car-Couplers, of which the following description, taken in connection with the drawings herewith accompanying, is a specification.

Car-couplers, as well understood, are secured in connection with the car through the medium of a spring in a manner to be longitudinally movable relative thereto. This is necessary, so that the couplers may give or yield when brought together in the act of coupling or in the starting and stopping of the cars, as otherwise they would be liable to breakage or displacement. To provide for this independent movement of the coupler relative to the car, a chain or other form of loose connection is provided between the pin or other locking device of the coupler and its operating-lever upon the car of sufficient length to allow for such longitudinal movement of the coupler. After the spring with which the coupler is connected has become weakened, however, through more or less use it allows the coupler when in use to be drawn outward from the face or end of the car beyond its normal limit of movement and beyond the limit allowed by the connection between the coupling-pin and its operating-lever upon the car, in which event the weight or strain then comes upon the brackets on the car and either draws or breaks the same from the latter or else draws the coupling-pin from its locking position and so allows the cars to become uncoupled.

Having in mind such very objectionable features which are liable to occur from the usual arrangement of having the coupling-pin-operating lever supported in fixed bearings upon the end of the car, it has been one of the objects of my present invention to prevent possibility of the same. This I accomplish by supporting the operating-lever in connection with the coupler so as to be movable therewith, as will hereinafter be described.

A further object of my invention is to provide a simple and effective means for catch-

ing and holding a coupler in case of its accidental breakage or withdrawal from the car, so as to prevent liability of the same dropping upon or across the track, as in case of the latter event there is a possibility of its causing the car or train to become derailed. In carrying this part of my invention into effect I provide the coupler with a spring-pressed pin having one end projecting forward of its face and in a position to extend beneath the knuckle of an engaging coupler. The projecting end of the pin in this position serves as a means to catch and hold the connecting-coupler in case of its breakage or withdrawal from the car to which it is connected.

Referring to the drawings, Figure 1 represents an end view of a portion of a car with a coupler embodying my invention. Fig. 2 is a top view of the same. Fig. 3 is a side view of the same with another coupler in engagement therewith and both couplers being shown with their lower edges partly broken away, and Figs. 4 and 5 are detail views to be hereinafter referred to.

To explain in detail, *a* represents a portion of a car, and *b* a car-coupler embodying my invention. This car-coupler, as herein shown, is of the vertical plane type, and consists of the draw-head *b'*, the swinging hook or knuckle *b²*, having a hinged connection with said draw-head, and the coupling-pin *b³*, supported in a vertically-arranged opening in the draw-head for engaging with the inner arm of the knuckle *b²* to hold the latter in a closed locking position. The coupler as above described is of the usual well-known construction and arrangement found in the "Smillie" coupler.

According to my present invention I have provided the draw-head *b'* with an upwardly-projecting flange or extension *c* at or adjacent its rear edge, having lugs or projections *c'* thereon, which are provided with openings to receive and form bearings for a lever *d*. This lever *d* is supported in said bearings in a horizontal position and in a plane above the upper surface of the coupler, with one end *d'* having connection with the coupling-pin *b³* through the medium of a link *d²* and its opposite end extending to a position adjacent to the side of the car and being bent or turned

at an angle to form a handle d^3 for operating the same, as clearly shown in Fig. 1. The lever d being thus supported in connection with the coupler to be movable therewith and independent of the car, it is obvious that the same will be always free to turn or operate readily in its bearings, no matter how great the movement of the coupler beyond its normal limit, allowed through undue weakening of the spring or otherwise, may be. The advantage of thus insuring the free action of the lever d under all circumstances attendant upon the movement of the coupler is very great, for the reason, as before referred to, that the spring with which the coupler connects soon becomes so weakened as to allow the coupler to be pulled outward from the car beyond its normal limit of movement and cause the operating-lever, if supported in brackets on the car, to either draw the pin or bolt from its locking position and so allow the cars to become uncoupled or else draw the brackets from their connection with the car.

The flange or extension c for supporting the lever d may be connected with the draw-head in any suitable manner; but the same as herein shown is cast integral therewith and extends laterally beyond the same at one side thereof as a support for the lever d . The bearings for said lever being thus supported as a part of the coupler and the lever being supported in permanent connection with the latter, it avoids the use of separate parts, enables the coupler to be fitted up complete before being placed on the car, and lessens both the cost of production and the cost and labor of placing them in connection with the cars, the advantages of which are obvious.

The bearings for supporting the lever d may be formed or secured upon the plate c in any suitable manner, the same as herein shown being formed as follows: The plate c is cast with the lugs or arms c' projecting outwardly therefrom, as shown by dotted lines in Fig. 5, upon which the lever may be placed, after which the ends of said lugs are adapted to be turned back by a hammer or other tool to inclose and retain the lever in position, as clearly shown in Figs. 2, 4, and 5.

As a simple means for holding the coupling-pin b^3 in a raised position after being drawn upward to unlock the knuckle I have provided the end lug c' with a lateral opening or slot c^2 in its upper side, as shown in Fig. 4, into which a fixed pin d^4 on the lever d is adapted to be placed by moving said lever longitudinally in its bearings after being turned to raise the connected coupling-pin. In order to hold the lever d against any undue longitudinal movement in its bearings that might be caused by the jarring or jolting of the cars, after the pin d^4 thereon has been placed in engagement with the lug c' , I have provided the latter with a slot or recess c^3 , extending at right angles to the first slot c^2 therein, into which the pin d^4 is adapted to slip, as shown in Fig. 4, and hold the lever

from longitudinal movement with the pin raised until released by the trainman.

In order to prevent a coupler from dropping upon the road-bed or track in case of its accidental breakage or withdrawal from the car, I have supported a pin e on the under side of the draw-head with one end e' projecting through an opening in the face-wall of the coupler at the lower flange-like portion of the same and with its opposite end supported within an opening in a hanger or projection e^2 adjacent to the rear side of the coupler, as clearly shown in Fig. 3. This pin e is movably supported in a normal position with its end e' projecting forward of the face-wall of the coupler, as shown in the drawings, by means of a coiled spring e^3 thereon, which has its bearing at one end against the stationary hanger e^2 and at its opposite end bears against a fixed collar e^4 on said pin to hold the same against the rear side of the coupler-wall and with the end of the pin in its normal projecting position. The said projecting end e' of the pin e is in a position to extend beneath the knuckle of an engaging coupler, as shown in Fig. 2, in which figure a portion of a connecting-coupler is shown in dotted lines. The projecting end of the pin occupying such position, it will be obvious that it would engage with the under side of the knuckle in case the coupler should break or be withdrawn from its support and hold the same in connection with the coupler of which it forms part, as shown in Fig. 3.

In case the coupler of one car is hung lower than the other with which it is to connect, so that the projecting end of the pin will be engaged by the knuckle of the opposing coupler, the pin will be moved back against the pressure of the spring, and then in the event of the coupler becoming broken or disconnected from its support it will drop until the link-opening b^4 in the knuckle comes opposite the pin e , at which time the latter, being released, will be projected forward by the spring and engage with the knuckle at such point to hold the coupler from falling.

Having thus set forth my invention, it will be understood that the same may be more or less materially modified without departure from the spirit of the same.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupler, the combination, of a draw-head provided with an upwardly-extending plate or extension projecting laterally beyond one side thereof, a knuckle, a locking pin or bolt, and a horizontally-arranged lever supported in bearings on said plate or extension with one end having connection with said bolt, substantially as and for the purpose set forth.

2. In a car-coupler, the combination, with a draw-head having a knuckle and a locking pin or bolt, of a lug or bracket carried by said draw-head, provided with an opening extend-

ing therethrough and with a slot in its wall
arranged with a part thereof extending at
right angles to the said opening therein, and
a lever having a loose bearing in the opening
5 in said lug or bracket provided with a pin
thereon for entering the said slot in the lat-
ter, and an operative connection between the

bolt and lever, substantially as and for the
purpose set forth.

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Witnesses:

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