

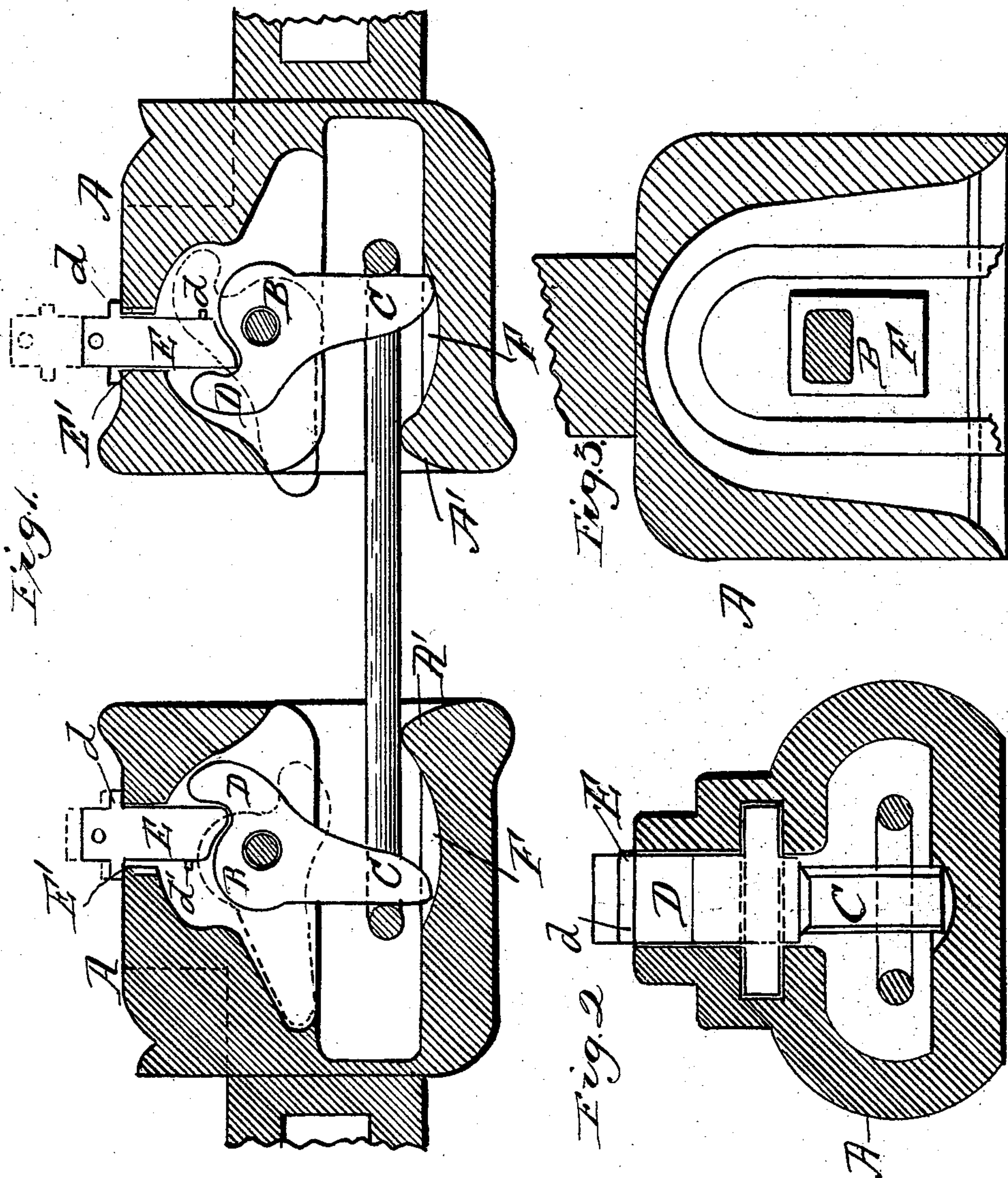
(No Model.)

2 Sheets—Sheet 1.

F. W. RUPPMAN & G. I. LOVATT.
AUTOMATIC CAR COUPLING.

No. 540,459.

Patented June 4, 1895.



Witnesses
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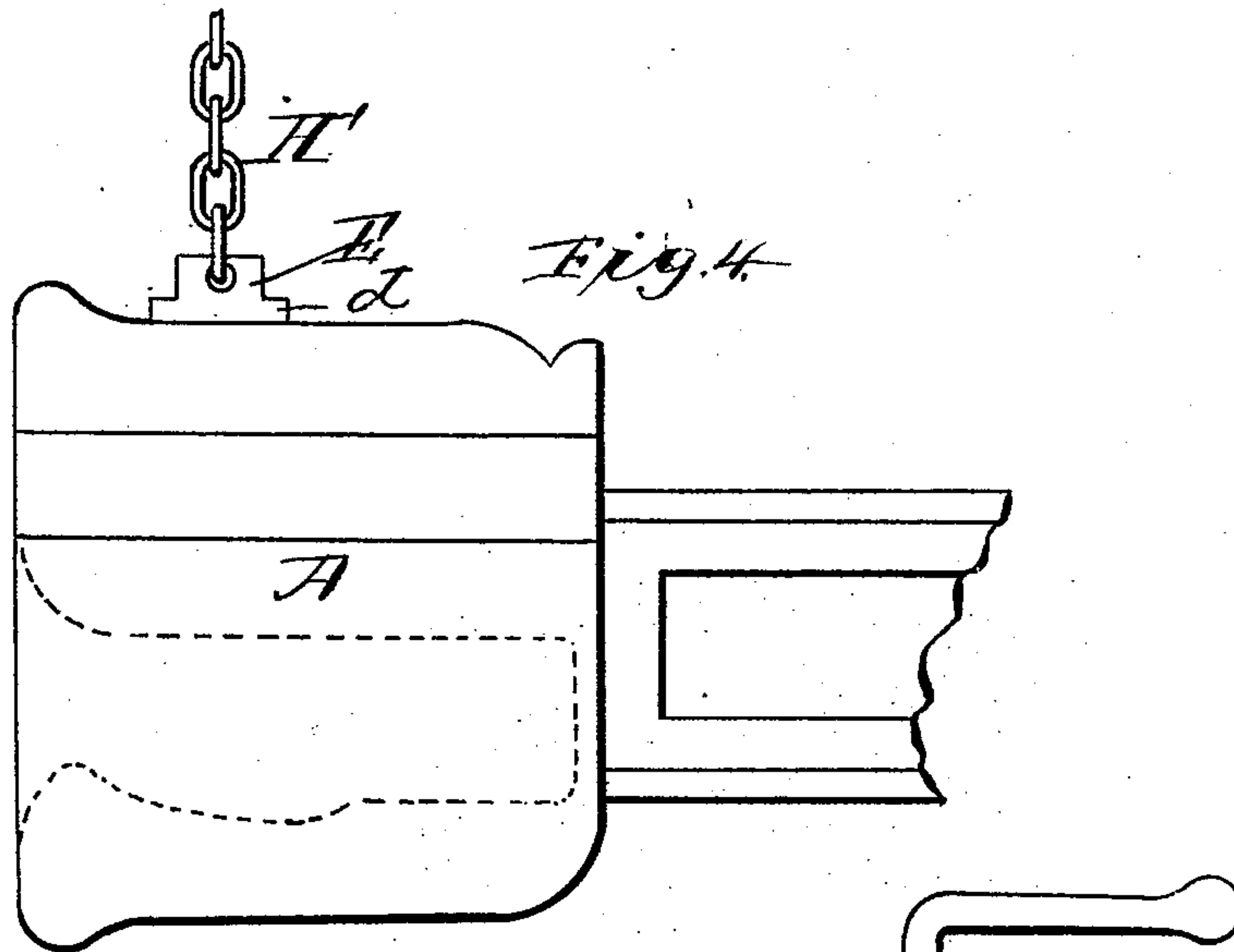


Fig. 4.

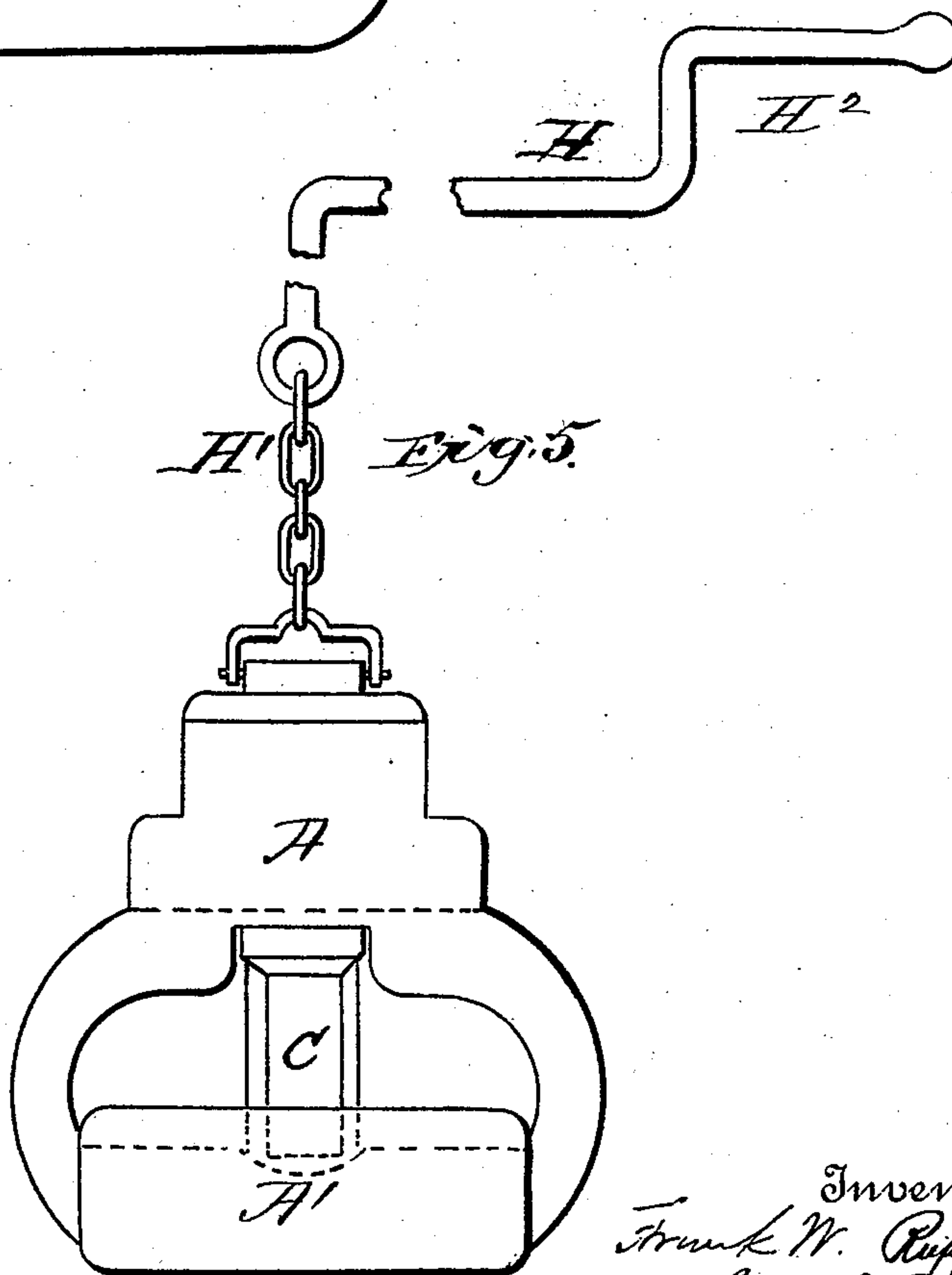


Fig. 5.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 540,459, dated June 4, 1895.

Application filed January 15, 1895. Serial No. 534,979. (No model.)

To all whom it may concern:

Be it known that we, FRANK W. RUPPMAN and GEORGE I. LOVATT, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Car-Couplers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in automatic freight car couplers and has for its object to provide a coupler whereby the cars can be coupled or uncoupled upon curves; where no slack is required to uncouple, and generally to facilitate the shifting of the cars either of the same or different heights, and without the necessity of the hands working between the cars or to permit the operation of the same from the side of the car, and to these ends our invention consists in the combination with the draw head of a double acting gravity latch adapted to be swung or moved forward or backward in the head in engaging or releasing the link, and a drop bolt or pin for engaging the latch to hold or lock the same when engaged with the link and to certain other novel features and combination of parts all as hereinafter described.

In the accompanying drawings, Figure 1 is a longitudinal section of two draw-heads, showing the parts in their locked or coupled position; Fig. 2, a transverse section; Fig. 3, a horizontal section; Fig. 4, a side elevation; Fig. 5, a front view showing the lever and crank for raising the drop bolt or pin to release the gravity-latch.

The draw-heads "A" are preferably formed as shown in cross section Figs. 3 and 4, with the mouth or opening for the link made in oblong form in a transverse direction and of a width to permit a free play of the link. The upper and lower inner faces are concaved, or each face formed in the arc of a circle of which the pivot of the gravity latch hereinafter described is the center and having the upper face in rear of the concave portion recessed in general outline corresponding to the shape of the toe or locking arm of the latch. The forward

face of the lower wall of the draw head as shown at "A'" is made in convex or curved form inclining upward and backward in such manner as to act to guide the link into the mouth of the head. The latch "B" is pivotally mounted in the head about centrally in a longitudinal direction but above the upper edge of the opening for the link as hereinafter described.

The gravity latch is provided with the arms "C" and "D," extending from the hub "B," the one "C," adapted to engage the link and the one "D," to be engaged by a bolt "E," hereinafter referred to. The arm "C" extends from the hub and is made of such length as to move in close contact with the lower concave face "F," while the arm "D," is made shorter than the one "C," and extends out from the hub in angle form to form a locking lug or face.

A drop bolt or pin "E," passes through an opening "e'" in the head with its lower face made in curved form to lie closely against the hub of the latch with the forward face to engage the arm "D," when the latch is in position to or has engaged the link or when the latch is in its position of rest. This pin is preferably made square in horizontal cross section and is provided with projecting ribs or flanges "d'" which engages the upper face of the draw head, and is also provided near its lower end with a pin or projection "d'," to engage the inner face of the head, which flanges and projections act to prevent the pin from passing into the head beyond the proper position to engage the gravity latch and to prevent the entire withdrawal of the pin from the head when being raised to permit the swinging of the gravity latch to uncouple the cars. A lever "H" mounted in suitable bearings on the front of the car is connected to the drop bolt or pin "E," by a chain "H'," and by means of a crank or handle "H²," the lever is rocked to raise the drop bolt or pin.

By the construction of latch and the configuration of the inner portion of the head it will be seen that the gravity latch may be swung forward when released from engagement from the drop bolt or pin and is adapted to swing or to be forced backward by the link and to swing forward to engage said link.

It will also be seen that by this construction and arrangement of parts that the coupling of the cars is entirely automatic and that to uncouple the cars the train hands are not required to go between the cars, but by simply raising the drop pin that the link will act on the gravity latch and draw the same forward and release said link therefrom, no slack being required to uncouple.

It will also be seen that by the form of mouth and the arrangement of latch that the cars can be coupled on curves; that no slack is required to uncouple, and also that should a box car come in contact with a coal car which is sometimes lower than the box car, an automatic coupling can be easily effected by placing the link in coupler attached to high car.

It will also be seen that the coupler can be placed on cars so as to give increase in yard room, and that by holding or locking the drop bolt elevated to give the latch free action, that the shifting of the cars is greatly facilitated.

Having now described the invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a car coupler, the combination of a gravity latch adapted to swing forward or backward in the head provided with a locking lug, and a drop bolt or pin to rest upon the hub of the latch and engage the lug, substantially as described, whereby the latch is held from swinging forward but is adapted to permit the automatic coupling of the cars as set forth.

2. In a car coupler, the combination with the draw head, of a gravity latch provided with the pendent toe piece to engage the link, an upwardly extending locking lug in advance of the pivot, and a drop bolt or pin to engage the lug and hold the toe piece in a vertical line with the pin when engaging the link, substantially as described.

3. In a car coupler, the draw head provided with the concaved upper and lower inner faces, a gravity latch provided with a toe piece to engage the link, and a locking lug or face, the concave faces formed on the arcs of circles of which the pivot of the latch is the center of each respectively, and a drop bolt or pin to engage the lug on the gravity latch above the pivotal point, substantially as and for the purpose set forth.

4. In a car coupler, the combination with the draw head a gravity latch provided with an upwardly extending locking lug having its locking face parallel with and in advance of the locking face of the toe, and an automatically acting drop bolt or pin arranged over the pivot of the latch to engage the locking lug, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK W. RUPPMAN.
GEORGE I. LOVATT.

Witnesses:

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