(No Model.)

# L. MULLENHOFF.

## Car Coupling.

No. 230,804. Patented Aug. 3, 1880.

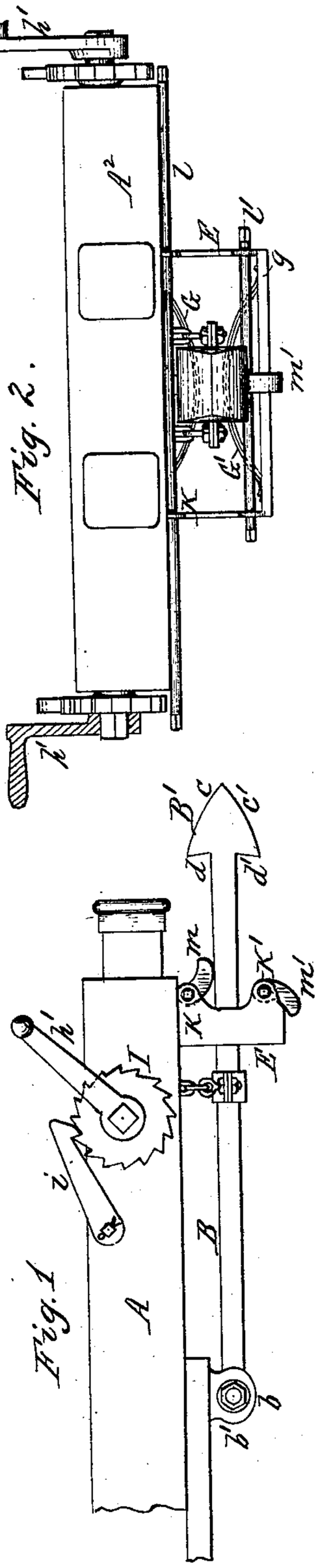

Fig. 2.

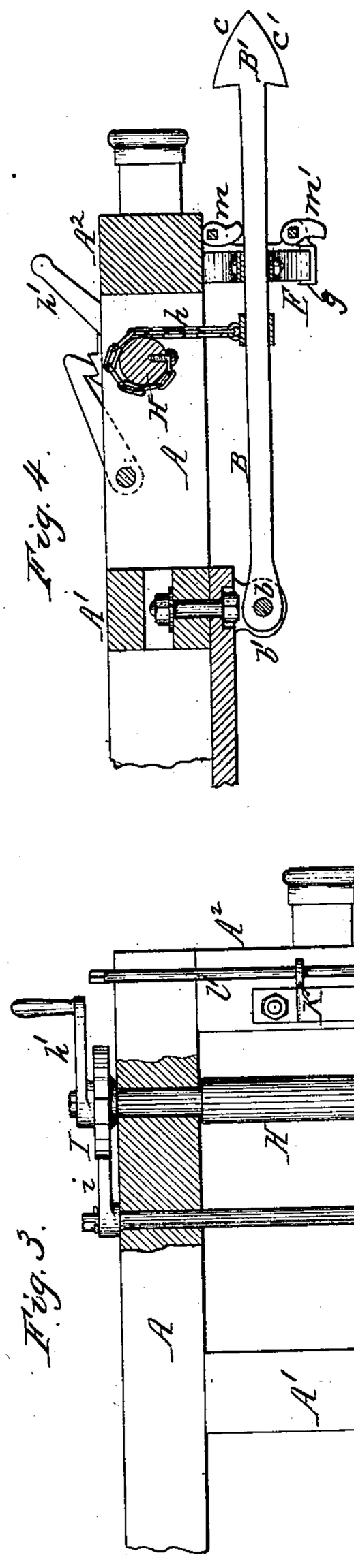

Fig. 4.

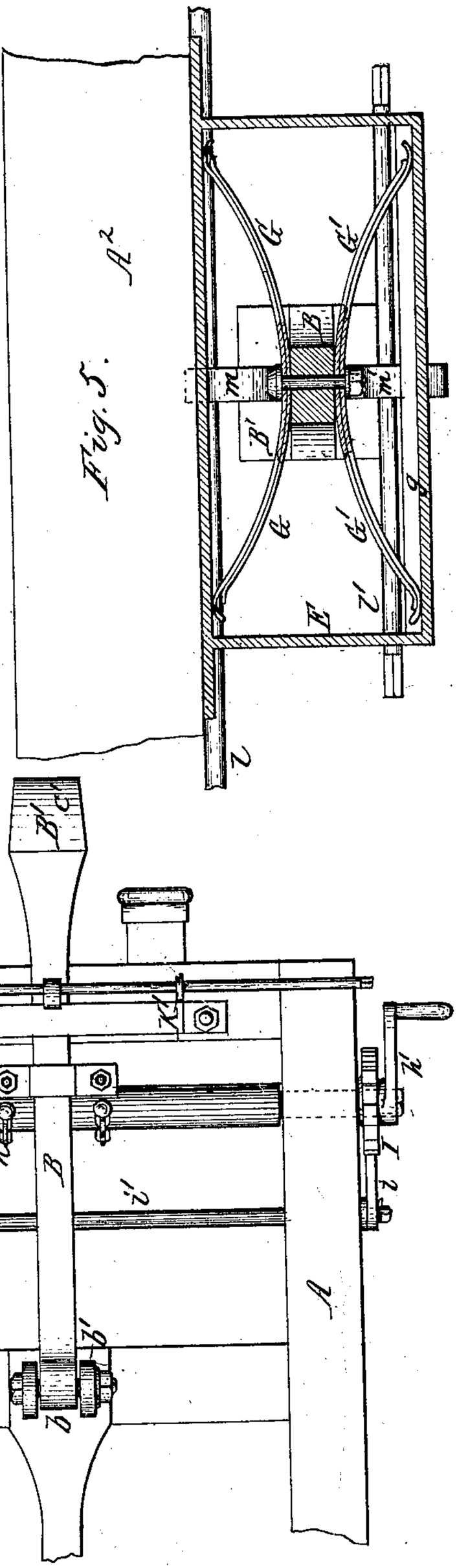

Fig. 5.



Fig. 1



Fig. 3.

Witnesses
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# UNITED STATES PATENT OFFICE.

LEOPOLD MULLENHOFF, OF BUFFALO, NEW YORK.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 230,804, dated August 3, 1880.

Application filed June 25, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, LEOPOLD MULLENHOFF, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of car-couplings which contain a draw-head provided with a hook-shaped head, so that when two cars approach each other the hook of one car will ride over the inclined face of the hook of the other car and engage over the abrupt shoulder thereof, thereby coupling the cars together automatically.

The object of my invention is to construct a car-coupling of this class which can be easily locked when the cars are coupled together to prevent accidental disengagement of the cars, and which can be easily disengaged when the cars are to be separated.

My invention consists of the particular combination of elements which constitute my improved car-coupling, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of my improved coupling. Fig. 2 is a front elevation, and Fig. 3 is a bottom-plan view, thereof. Fig. 4 is a longitudinal section of the car-coupling. Fig. 5 is a cross-section through the spring-frame, looking forward.

Like letters of reference refer to like parts in all the figures.

A represents the frame-work of the car-body, and B the draw-bar, pivoted with its rear end at *b* to a bearing or bracket, *b'*, secured to the under side of the cross-piece A', and provided with a wedge-shaped draw-head, B'. The latter is constructed with two inclined faces, *c c'*, which form the upper and lower sides of the draw-head, and two abrupt shoulders, *d d'*, between the rear ends of the inclined faces *c c'* and the upper and lower sides of the draw-bar.

E represents a supporting-frame, which is secured to the under side of the front cross-beam, $A^2$, and which surrounds the draw-bar B, which latter plays vertically in the frame E. G G' are two half-elliptical springs, secured transversely at their middle to the upper and lower sides of the draw-bar B, within the frame E. The ends of the upper spring, G, bear against the upper part of the frame E, so as to resist any upward movement of the draw-bar, and the ends of the lower spring, G', bear against the lower part of the frame, so as to resist a downward movement of the draw-bar. The portions of the frame against which the ends of the springs G G' bear are provided with projecting marginal flanges *g*, whereby the lateral displacement of the ends of the springs is prevented.

H is a shaft arranged transversely above the draw-bar B, in rear of the front cross-piece, $A^2$, and turning in bearings attached to the side beams of the frame-work. *h* represents one or more chains or ropes connecting the draw-bar with the shaft H. The ends of the latter project beyond the sides of the car, and are provided with cranks *h'*, by which the shaft can be rotated.

I is a ratchet-wheel secured to each end of the shaft H, on the outer side of the car, and *i* are detent-pawls, adapted to engage with the ratchet-wheels I, and prevent the same from turning in the direction in which the chain *h* is unwound from the shaft H and the draw-bar lowered. The detent-pawls *i* are secured to the ends of a shaft, *i'*, which extends across the car, so that both detents are operated simultaneously. The detents are held in contact with the ratchets by their own weight or by suitable springs, as may be preferred.

K K' represent projecting bearings secured to the front side of the frame E, above and below the draw-bar B. *l l'* represent two horizontal shafts, supported in the bearings K K', respectively, above and below the draw-bar B, and at such a distance therefrom that they will not interfere with the ordinary movements of the draw-bar. *m m'* are cams or projections formed on the shafts *l l'*, respectively, in such manner that when either shaft is so turned that its cam engages against the draw-bar it will prevent the latter from rising or falling, as the case may be, while, when the cams are turned out of the way, the draw-bar will be unrestricted in its movements. The outer ends of the shafts *l l'* project beyond their bearings in the frame E, and are made square, or of any other suitable form which adapts them to engage with a suitable key or

wrench, which is provided on each side of the car, and whereby the shafts *l l'* can be turned.

When two cars provided with my improved coupling are brought together the draw-heads engage with each other in an obvious manner. By turning the cam *m'* of the lower draw-bar and the cam *m* of the higher draw-bar against their respective draw-heads the draw-heads are locked together and prevented from separating. If it is desired to uncouple the cars the cams *m m'* are released, and the higher draw-head is raised out of engagement with the lower draw-head by turning the shaft H in the proper direction. When the higher draw-head has been sufficiently raised to permit the withdrawal of the lower draw-head it is locked in its elevated position by the detent-pawls *i*, and when so locked it is prevented from coupling to any other car. Upon releasing the pawls *i* the draw-head is returned to its normal position by the springs G G' and made ready for coupling.

In my improved draw-head the necessary adjustment of parts for the coupling and uncoupling of cars is effected from the side of the car without necessitating the operator to enter between the cars.

I claim as my invention—

1. The combination, with the draw-bar B, pivoted with its rear end to the car-body, and provided with a draw-head having two inclined faces, *c c'*, and abrupt shoulders *d d'*, of the half-elliptic springs G G', secured to the upper and lower sides of the draw-bar, respectively, and bearing with their ends against the upper and lower sides of the supporting-frame E, the transverse shaft H, connected with the draw-head by a chain, *h*, and provided with ratchet-wheels I and cranks *h'*, and the detent-pawls *i*, secured to a transverse shaft, *i'*, substantially as set forth.

2. The combination, with the draw-bar B, pivoted with its rear end to the car-body, and provided with a draw-head having two inclined faces, *c c'*, and abrupt shoulders *d d'*, of the half-elliptic springs G G', secured to the upper and lower sides of the draw-bar, respectively, and bearing with their ends against the upper and lower sides of the supporting-frame E, the transverse shaft H, connected with the draw-head by a chain, *h*, and provided with ratchet-wheels I and cranks *h'*, and the detent-pawls *i*, secured to a transverse shaft, *i'*, and the shafts *l l'*, arranged above and below the draw-bar, respectively, and provided with locking-cams *m m'*, substantially as set forth.

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Witnesses:

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