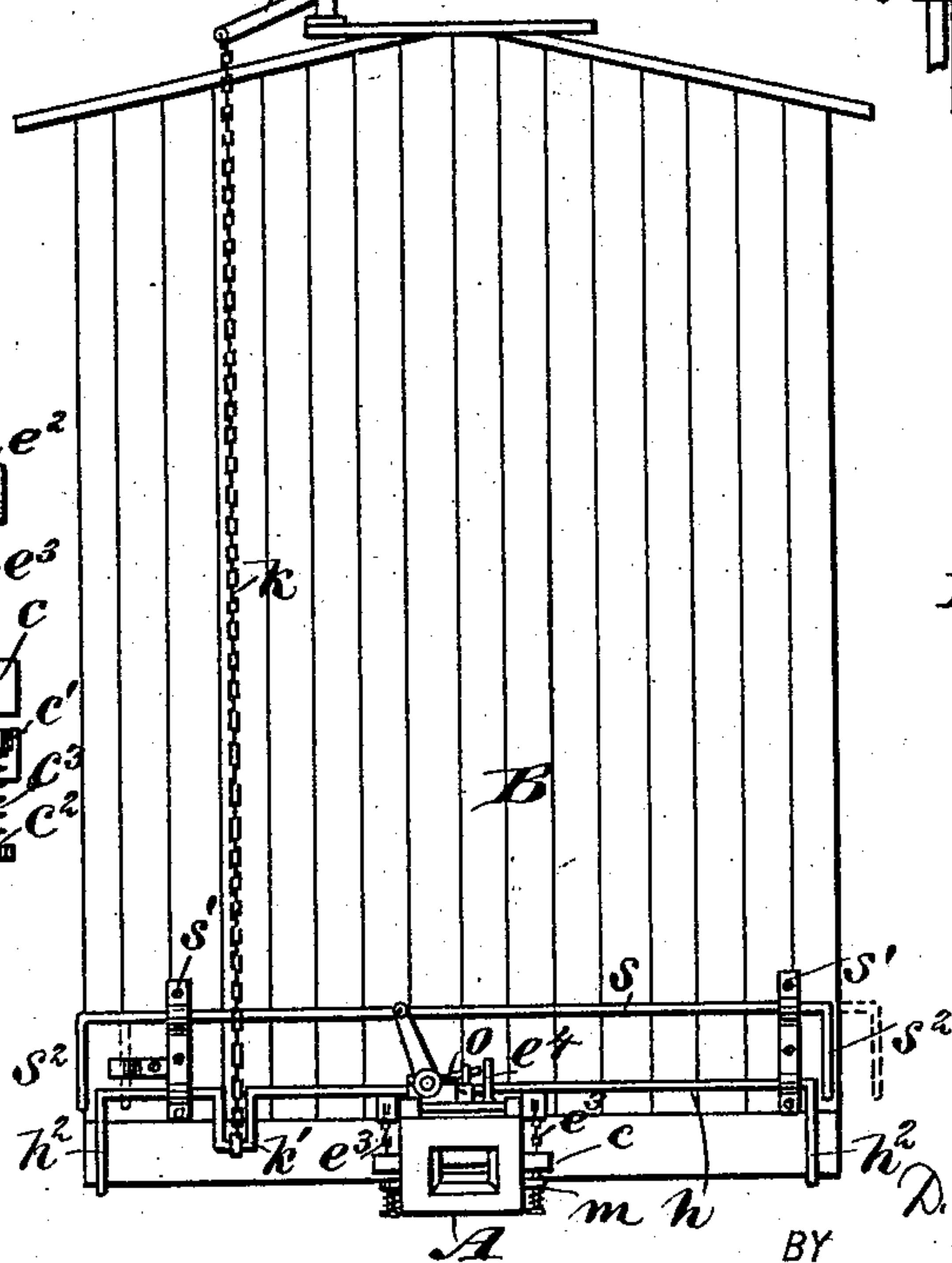
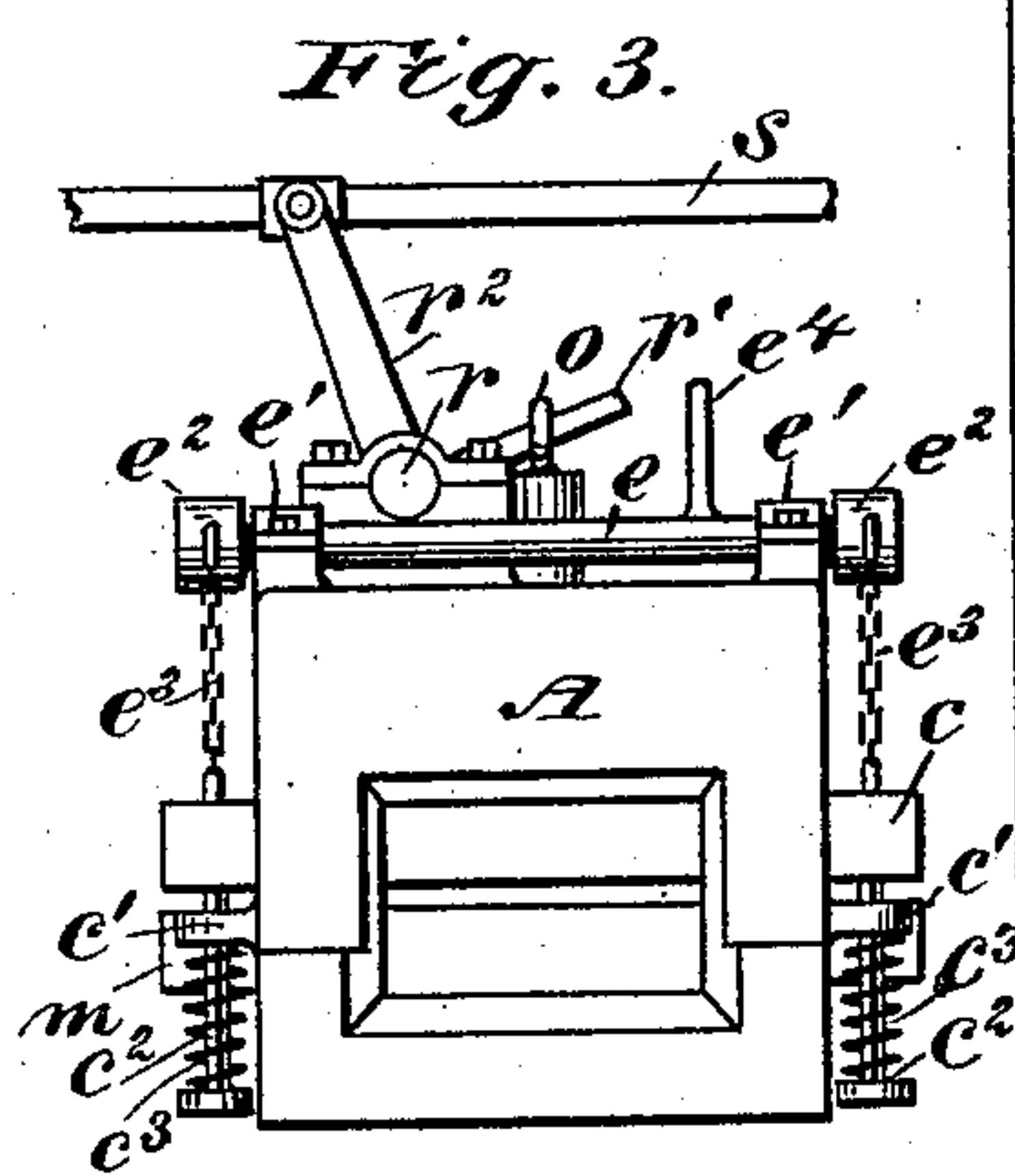
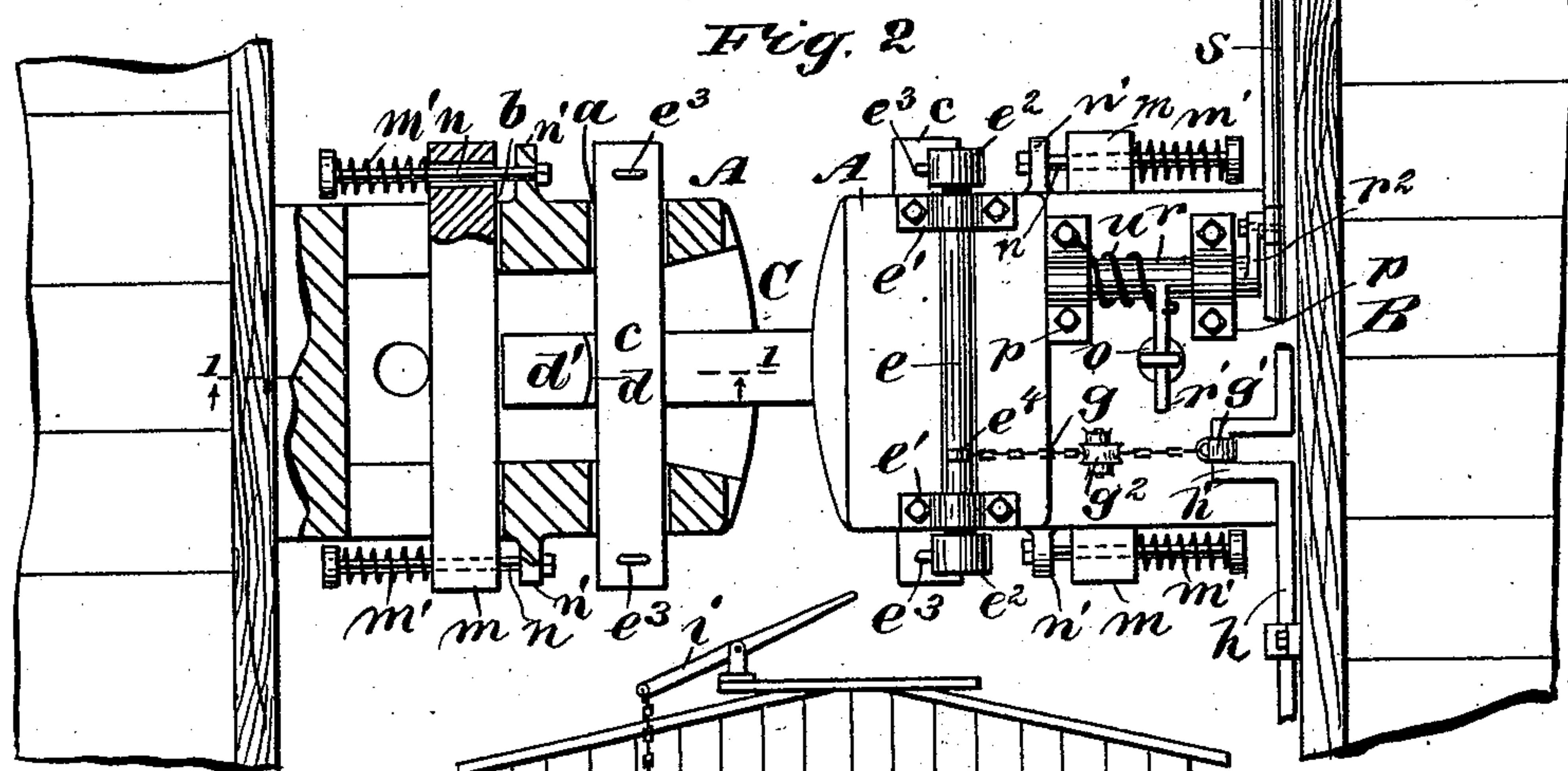
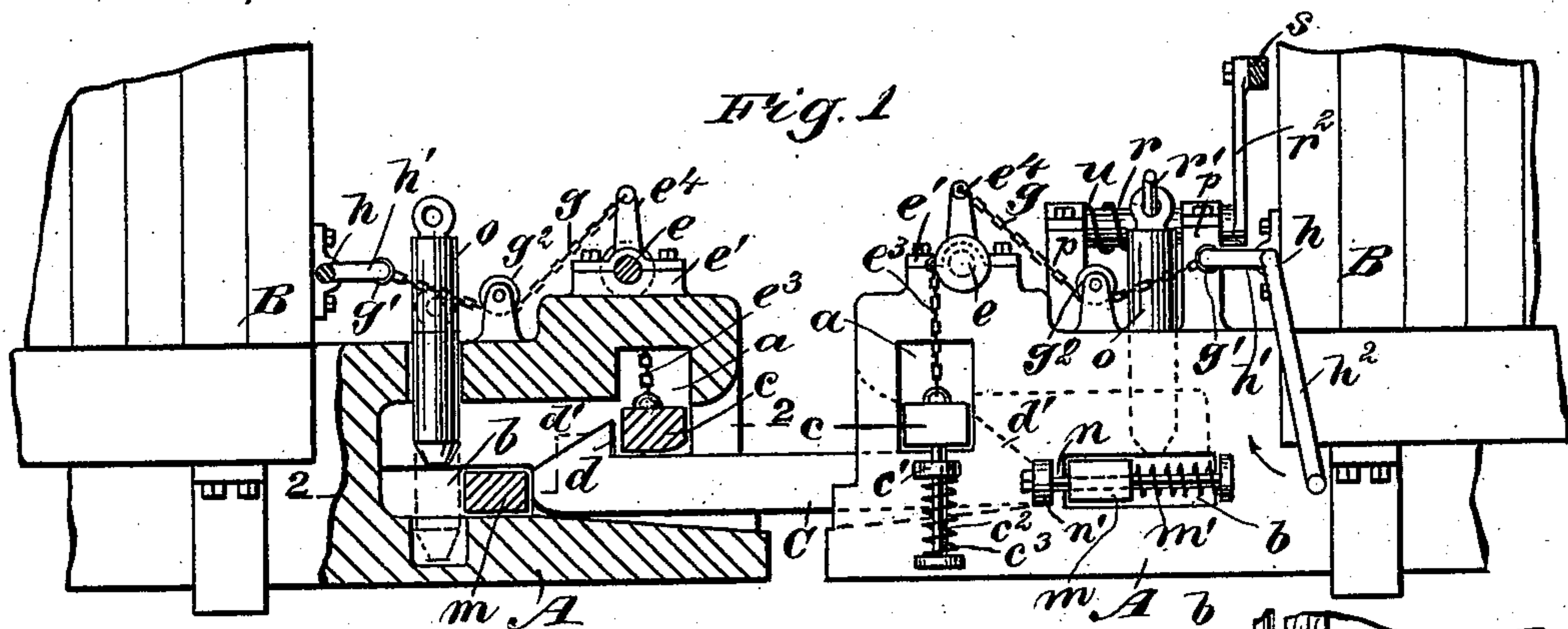


D. A. McCOLLUM.
CAR COUPLING.

Patented Nov. 15, 1892.



J. A. Burdett
C. Sedgwick

²
D. A. M. Colburn

Murray
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DAVID A. McCOLLUM, OF EAGLEVILLE, MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 486,291, dated November 15, 1892.

Application filed June 8, 1892. Serial No. 435,935. (No model.)

To all whom it may concern:

Be it known that I, DAVID ALEXANDER McCOLLUM, of Eagleville, in the county of Harrison and State of Missouri, have invented a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

This invention relates to improvements in car-couplings of the automatic type, and has for its object to provide a coupling which will be adapted to connect cars provided therewith and avoid the danger incidental to the employment and manipulation of ordinary car-couplings by affording novel means to sustain the draw-bar of the improved device locked within and projected in advance of the draw-head, so as to interlock with another similar coupling draw-head.

A further object is to provide efficient means for manipulating the working parts of the improved device from either side or the roof of a car to release a draw-bar, and thus uncouple two cars having the improvement applied.

To these ends my invention consists in the peculiar construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken side elevation, partly in section, of two cars having the improved couplings thereon and in coupled condition, the section being taken on the line 1 1 in Fig. 2. Fig. 2 is a broken plan view of the same with the improved couplings thereon in coupled condition, one coupling being in section on the line 2 2 in Fig. 1. Fig. 3 is a front end view of the improved coupling detached and a push-bar that is an attachment thereto shown in part, and Fig. 4 is an end view of a car and the improved coupling device thereon.

The draw-head A is preferably cast into form and is provided with ordinary means for attaching it to the end of a car B, so as to project therefrom at its transverse center. The draw-head body is apertured forwardly, so as to produce a recess of suitable depth longitudinally considered, and near the front edge the four walls of said aperture are flared sufficiently to permit the free insertion of the draw-bar C and allow the latter to swing lat-

erally. The slope on the bottom wall, being longer, extends a proper distance within the recess, as shown in Fig. 1. Across the draw-head A two slots *a b* are formed. The forward slot *a*, that is located near the front terminal of the draw-head, is made of such vertical dimensions as will permit the latch-bar *c* to slide in it in a plane parallel with the lower wall of the draw-head. Upon the side walls of the draw-head A, below the slot *a*, an ear *c'* projects from each wall a depending guide-rod *c²*, affixed on each end of the latch-bar *c*, passing loosely through perforations in said ears. On each side rod *c²* a spiral spring *c³* is located, which springs engage with heads on the rods and by their contact with the lower sides of the ears *c'* draw the latch-bar *c* toward the lower surface of the recess *a* in the draw-head A. The latch-bar *c* is rounded on the lower front edge of its body, that is substantially rectangular in cross-section, said bar being designed to interlock with the draw-bar C, as shown in Figs. 1 and 2.

The draw-bar C consists of an elongated metal billet having a hook-like shoulder *d* formed on the normally-top side at a proper distance from each end, the end portion being sloped, as at *d'* in Fig. 1, and the lower side slightly rounded to allow the hooked ends of the draw-bar to be pushed below the latch-bars *c* and interlock with their rear edges when a coupled connection of two similar draw-heads is effected. As indicated in Fig. 2, at one end of the draw-bar therein shown the shoulders *d* are curved to project their central portions beyond the side edges of the same, which will permit the draw-bar to rock laterally on the rear edges of the latch-bars when two coupled cars are running on curves of a railroad. It is essential that means be provided to elevate the latch-bar *c* from either side of a car and also from the roof of said car, so as to release the draw-bar when two coupled cars are to be detached. To this end a rock-shaft *e* is provided, which is rotatably supported in two boxes *e'*, that are located along each side edge of the draw-head A, nearly over the slot *a*. On the projecting ends of said shaft enlargements *e²* are formed, to which one end of each of the lifting-chains *e³* is attached, the lower ends of the chains having connection with the trans-

verse latch-bar *c* outside of the draw-head, as shown plainly in Fig. 3. An arm *e*⁴ projects upwardly from the rock-shaft *e* between the box-bearings *e'*, and to the outer end of this arm a flexible connection, that may be a chain *g*, is affixed, which chain is extended toward the end of the car B, whereon the coupling is secured, and has its other terminal attached to a clip-band *g'* or like device on a double crank *h'*, that is a part of a transverse crank-shaft *h*. Said shaft is loosely sustained in a horizontal position across the car end wall at a proper distance above the draw-head A, crank-handles *h*² depending from its ends to permit a rocking movement of the crank-shaft to be effected, which, if produced in a proper direction, as indicated by the curved arrow in Fig. 1, will lift the latch-bar *c*. The chain *g* is by preference passed below an idler-pulley *g*², that is loosely supported on a bracket-stand which projects from the upper side of the draw-head.

As a means to raise the latch-bar *c* and detach the draw-bar C by manipulation from the roof of a car there is a lever *i* furnished that is pivotally supported above the car-roof, as shown in Fig. 4, one end of said lever being secured to the upper end of a depending chain *k*, that is connected at its lower end to a double crank *k'* on the shaft *h*, so that a depression of the free end of the lever *i* will rock the crank-shaft *h* and lift the latch-bar.

In order to enable an operator to hold the draw-bar C horizontally projected while effecting a coupling of two draw-heads A, there is a presser-bar *m* placed in the transverse slot *b* of the draw-head, this slot being horizontally elongated rearward of the slot *a* a sufficient degree to permit the presser-bar named to have contact with the terminal of the draw-bar when said presser-bar is forwardly pressed by the springs *m'*.

As represented in Fig. 2, there is a horizontal guide-rod *n* projected rearwardly from each side of the draw-head A, which rods are attached to lugs *n'*, that are formed upon the sides of the draw-head oppositely and extend rearwardly through holes in the end portions of the presser-bar *m*, that are exterior of the draw-head. A sufficient length is afforded to the guide-rods *n* for reception of the springs *m'*, that are forwardly in contact with the rear edge of the presser-bar *m*, their rear ends bearing upon heads on the rods, so that the bar named will be held by spring-pressure against the end of the inserted draw-bar C. A vertical perforation is made in the draw-head at its transverse center and near to the rear edge of the presser-bar *m* for the introduction of a locking-pin *o*, that when depressed will have contact with said edge of the bar *m*, as indicated by dotted lines in Fig. 1. Upon the top wall of the draw-head A two bracket-boxes *p* are secured at a proper distance from the side edge of the draw-head for the rotatable support of a trip-shaft *r*, that is thus loosely sustained parallel with the top

and sides of the draw-head. An arm *r'* projects from the trip-shaft *r* toward the pin *o* and is inserted loosely through a ring-eye on its upper end, so that a vibration of the arm will reciprocate the pin. On the end of the trip-shaft *r* that is nearest to the end of the car B a lever *r*² is formed or secured, which has its outer end loosely secured upon a transverse pusher-bar *s*, which latter is held by boxes *s'* free to slide in a horizontal plane on the end wall of the car. The pusher-bar *s* is of such a length as will allow its ends *s*² to be grasped by an operator and the bar horizontally moved, so as to rock the trip-shaft *r* and depress the pin *o*, there being a torsion-spring *u* placed on the trip-shaft and secured by its ends to one of the boxes *p* and to the shaft or its arm *r'*, so that the force of the spring will be exerted to lift the pin *o* and maintain it in elevated adjustment until the pusher-bar is moved in the right direction to coil the spring and depress the pin.

In service the draw-bar C may be held projected by a trainman after its end is hooked fast to the latch-bar *c* if the operator presses or pulls, as may be necessary, upon one end of the pusher-bar *s*, that when moved sufficiently in the proper direction will depress the pin *o* and thus secure the presser-bar *m* in forward adjustment, so that the horizontally-projected draw-bar may thus be held to freely enter an approaching coupling of the approved type and effect a coupled connection of two cars having the improvement.

It will be seen that the presser-bar *m* will normally engage the end of the draw-bar C in a yielding manner, and the latch-bar *c* has a like contact therewith, so that vertical and lateral play is allowed to compensate for any difference in the height of the car-couplings on connected cars, and also for the curvature of the railroad-tracks.

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

1. In a car-coupling, the combination, with a draw-head forwardly recessed and transversely slotted at two points, of a spring-actuated latch-bar in the forward recess, a spring-pressed presser-bar in the rear transverse slot, means for lifting the latch-bar, and a device for locking the presser-bar, substantially as described.

2. In a car-coupling, the combination, with a recessed draw-head flared in front and having a transverse vertically-elongated slot in its forward end and a horizontally-elongated transverse slot rearward of the front slot, of a latch-bar in the forward slot, springs adapted to draw said bar downwardly, means for elevating the latch-bar from either side of a car and from its roof, and a spring-pressed presser-bar in the horizontal rear slot of the draw-head, substantially as described.

3. In a car-coupling, the combination, with a draw-head forwardly recessed, flared at the front end, and transversely slotted at two

points near the front end, the forward slot being vertically elongated and the rear slot horizontally elongated, a latch-bar in the forward slot, a presser-bar in the rear slot, springs adapted to depress the latch-bar, and springs adapted to forwardly actuate the presser-bar, of a vertical locking-pin adapted for elevated adjustment by a spring, means for lowering the pin from the sides of a car, and a device for elevating the latch-bar from the sides or roof of a car, substantially as described.

4. In a car-coupling, the combination, with a draw-head forwardly recessed, flared at the front end, and transversely slotted at two points in sequence, a vertically-movable latch-bar in one slot and projected through the same, guide-rods on the ends of said bar, spiral springs on said rods, a presser-bar projecting through the other slot, guide-rods on said bar,

springs on said rods that press the bar forwardly, a trip-shaft rotatable on the draw-head, a vertical locking-pin for the presser-bar, adapted to reciprocate in the draw-head and loosely connected with the trip-shaft, a torsion-spring on said shaft that normally elevates the locking-pin, a device adapted to depress the pin when manipulated at either side of the car, and mechanism connected with the latch-bar wherewith this bar may be elevated by manipulation from the sides or roof of a car, of a draw-bar provided with a latching-shoulder at each end, substantially as described.

DAVID A. McCOLLUM.

Witnesses:

IRA L. McMULLEN,
W. S. McCOLLUM.