

(No Model.)

2 Sheets—Sheet 2.

S. D. KING.
CAR COUPLING.

No. 395,750.

Patented Jan. 8, 1889.

Fig. 3.

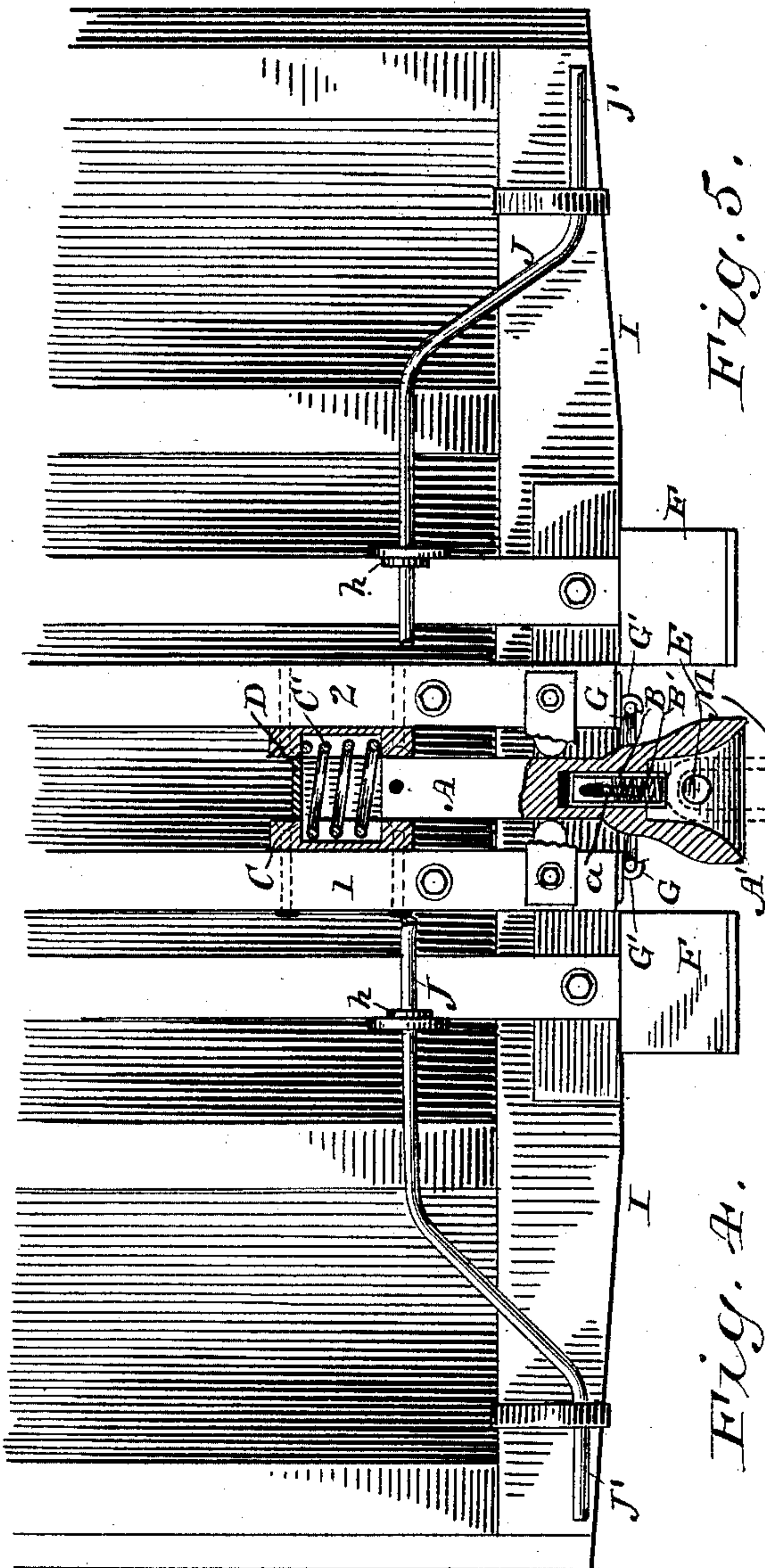


Fig. 5.

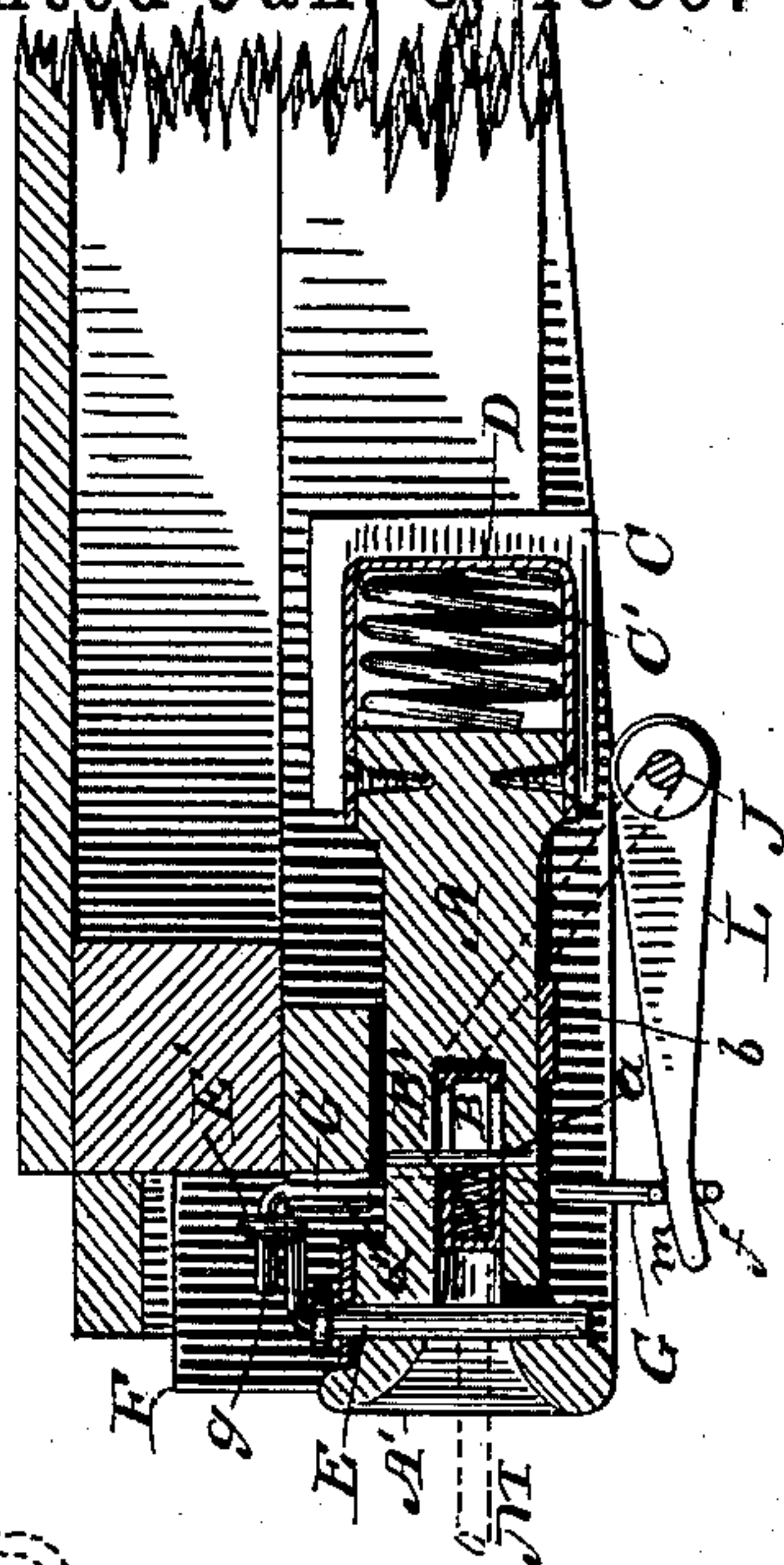


Fig. 4.

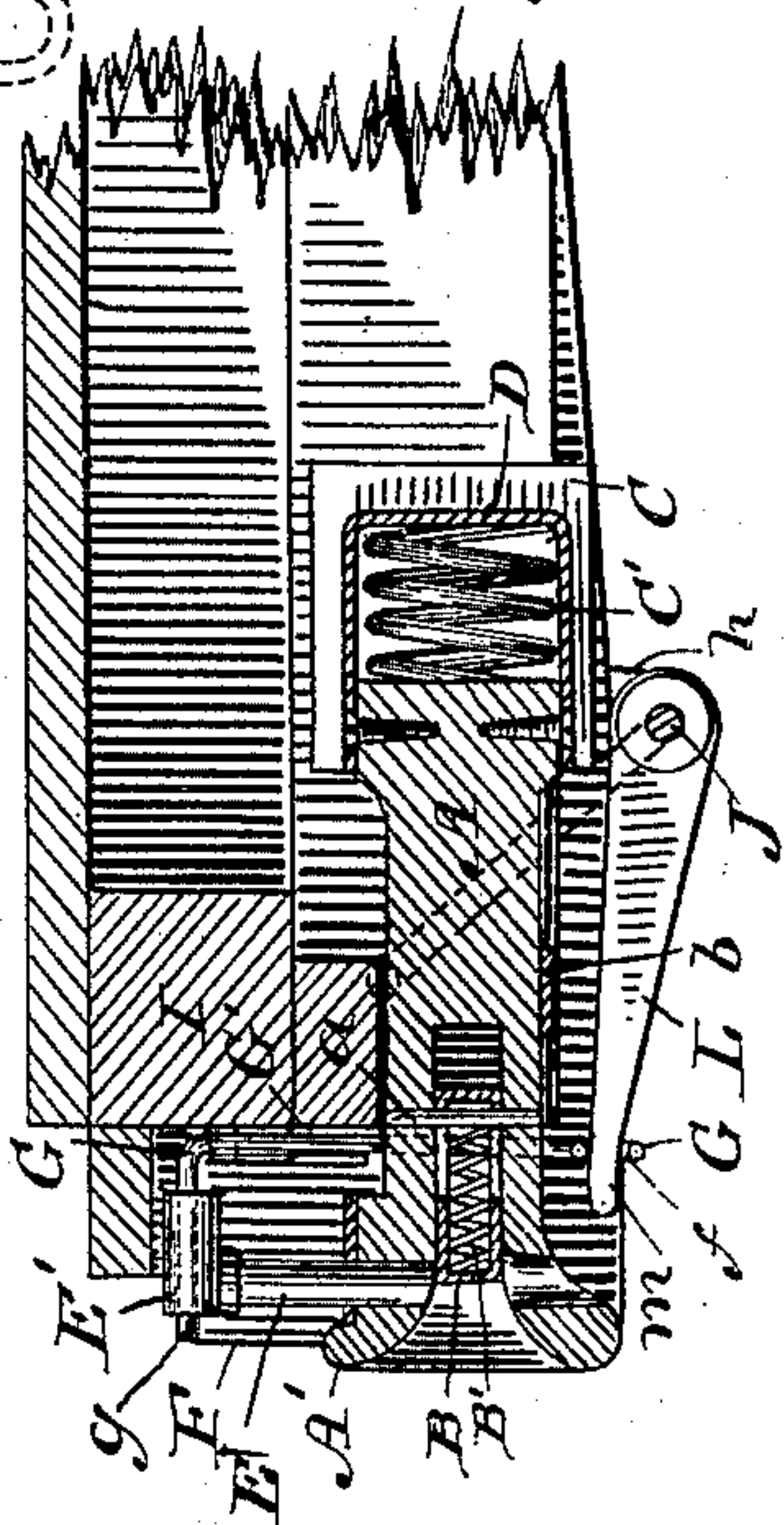
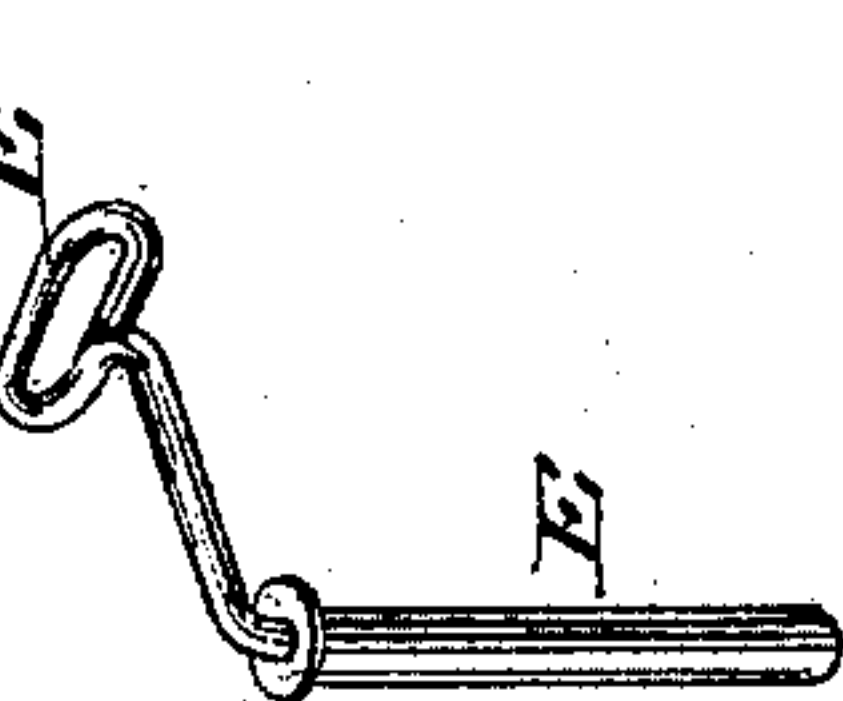


Fig. 6.



WITNESSES

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 395,750, dated January 8, 1889.

Application filed January 10, 1888. Serial No. 260,329. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY D. KING, of Pittston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I 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.

My invention relates to an improvement in car-couplers, and more particularly to a class of car-coupling devices in which the draw-bar is constructed having a slide-bolt that is moved longitudinally by a spring to hold the coupling-pin in elevated position to receive and engage a link, the jar of forcible contact of the car-bumpers when they are brought together effecting a release of the pin to allow it to drop, and thus couple the cars together.

The object of my present invention is to provide a car-coupling mechanism of the spring bolt and pin type that will be simple in construction, practical in operation, and perfectly reliable under all the varying exigencies of the service to which it is applied.

A further object is to construct an automatic car-coupler that may be coupled without jar or concussion of the dead-wood or bumper; also, that may be coupled on curves, and that will permit cars of varying heights to be unfailingly coupled automatically.

A further object is to provide an automatic car-coupler that may be operated to couple or uncouple cars by hand without danger to the operator, and that from its peculiarities of construction may be produced complete by cheap processes in quantity at a low cost and be readily applied to ordinary freight or passenger cars without any alteration of their timbers or platforms being necessary.

With these objects in view my invention consists in certain features of construction and combinations of parts, that will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 represents an end elevation of a car-body with the car-coupler and operating device in position on it. Fig. 2 is a bottom perspective of a car-platform with the car-coupler and operating-lever in position. Fig. 3 is a bottom plan view of one end of a car-frame with the car-coupler and

its operating-lever in position, with part of the draw-head removed to show its interior. Fig. 4 is a central section through the draw-head. Fig. 5 is a like section of a modified form. Fig. 6 is a modified form of the coupling-pin.

A is the draw-head or body of the car-coupling, this being preferably made of cast-iron. It may be made of low-grade cast-steel—such as is employed for machine-casting—or by modification of form it may be forged from wrought-iron. The front end, A', of the draw-head is formed so as to produce flaring walls usually provided in this type of coupler, so as to admit the coupling-link at different angles laterally and vertically.

In the body of the draw-head A a slide-bolt, B, is placed, that rests against a spiral spring, B', which projects the bolt forward a limited distance that is determined by the set-screw bolt a, which engages an open slot formed on the lower surface of the bolt, the shoulders of the slot abutting against the body of the set-bolt and preventing it from being projected out of the cavity in which it slides.

The draw-head A is supported in position between the sills 1 2 of the car by a transverse bar, b, and two guide-plates, C, which are attached to the car-sills to hold in position a spiral spring, C', which bears against the rear end of the draw-head A to neutralize the percussion due to abutment of cars while being coupled or when moving and suddenly arrested in their progress, this spring being held in operative position with regard to the draw-head A by the bent strap D, which has its sides parallel and secured at the ends by rivets or bolts to the rear portion of the draw-head, so as to loosely embrace the spring C' and support it to engage the draw-head, as has been stated.

The forward end of the draw-head A is perforated vertically at or near its center and at such a distance from the front edge as to afford a proper strength of material between the hole and this front edge. The perforation just described is intended to receive the coupling-pin E, which is made of such a size proportionately as to loosely fit it and be permitted to rise and fall therein freely by gravity when allowed to do so.

The usual dead-wood or bumper blocks, F F,

are made to project in front of the cross-timber I of the platform, to which they are firmly affixed on each side of the draw-head A, the normal position of which locates its front edge about in a line with the outer faces of these blocks F F', which are generally faced with metallic plates to prevent splintering of the wood.

The coupling-pin E has its upper end made with a flattened tubular piece, E', formed at a right angle to its body, and when it is in position in the draw-head it projects rearwardly a short distance. The rear end of this hollow head of the coupling-pin is preferably flared sidewise.

The body of the coupling-pin E is serrated on its side or portion of the body that will be in contact with the forward end of the slide-bolt B when in position, these transverse notches producing a series of teeth that have a tendency to lock upon the upper corner of the spring-actuated slide-bolt B when the pin is elevated, this engagement causing the pin to be held in elevated adjustment when it is raised, as will presently be explained.

Upon each side of the draw-head A, between it and the adjacent dead-wood blocks F F', the loop G is secured to slide vertically in guides G' G', which are bolted to the front face of the cross-timber I. The loop G is bent out of round iron of proper thickness for strength, so as to produce an eye, *f*, at or near its center of width and a proper distance below the draw-head A, the sides being made parallel to engage the guides G' G', above which the ends of the loop are each bent horizontally toward the center of the draw-head and then outwardly in a line with the longitudinal center of the draw-head A, thus forming by these contiguous projecting ends *g* of the loop G a short arm which is made to enter the tubular head E' of the coupling-pin E. The arm *g* of the loop G fits neatly between the top and bottom walls of the head E', but has considerable lateral play afforded by the peculiar construction of this tubular head to avoid rigidity in the joint, and yet permit the loop to operate the pin vertically when it is made to slide upward in its guides G' G'.

Upon the sides of the sills 1 2 the depending hangers *h* are bolted. These are perforated to give rotative support to the shaft J, which is extended across the car at this point. At points *i i* the shaft J is bent to extend forwardly and upwardly to enter the depending loops K, which are secured to the front cross-timber, I, of the platform.

The outer ends, J', of the shaft J are bent at points just inside of the loops K to cause these ends J' to lie in a plane parallel to and directly below the cross-timber I, so as to permit the free ends of the shaft to be grasped by a party desiring to operate the coupling-pin E.

At a point near the center of the shaft J, between the sills 1 2, the arm L is fixed to the shaft and made to extend toward the loop G

and enter the eye *f* of this loop, the free end *m* of arm L, that enters the loop, being extended through it a proper distance to insure its retention therein, so that the arm will not be withdrawn from the eye by a reciprocating movement of the loop.

The link M, which is employed to connect cars, is of the ordinary pattern, being simply an oblong ring of round bar-iron of proper width and length to suit the purposes for which it is employed.

In operation the pin E is elevated by a partial rotation of the shaft J, which will raise the pin by a vertical elevation of the loop G. The pin will be retained in elevated adjustment by the tension of the spring that pushes forward the slide-bolt B and causes its top edge to engage one of the transverse grooves or notches cut in the adjacent surface of the body of the pin. This exposes the face of the slide-bolt, and by a forcible insertion of the link the bolt will recede and allow the pin E to fall by gravity, this being aided by the weight of the loop G and arm L, which have also been supported by the engagement of the pin and slide-bolt, as has been previously mentioned. When the link M is engaged by the pin on its inner surface and pushed against by the slide-bolt B at its end which is in contact with this bolt, the body of the link will be held extended outwardly and may be set to incline either up, down, or on either side to enter an opposed draw-head of an approaching car, which has previously been adjusted to allow the link to enter by elevating its pin. When the cars collide with their bumpers or dead-wood, the jar will dislodge the pin of the approaching car, and, as the link has entered the draw-head to effect this dislodgment, an automatic coupling of the cars is thus effected, which may be made on a curve with the same facility as on the straight track. It is also apparent that the facility with which the link may be inclined upward or downward will afford a means of coupling cars whose platforms are of different heights.

A modified form of the pin E is shown in Figs. 5 and 6, the tubular head being replaced by loops of different forms that will effect the same result as is attained by the form shown in the other figures.

Other slight changes might be made in the forms of the loop and pin without departure from the spirit or exceeding the scope of my invention. I do not, therefore, desire to restrict myself to the exact forms shown; but,

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

1. The combination, with a draw-head, a spring-actuated slide in the draw-head, and a coupling-pin adapted to be held in an elevated position by the slide, of a yoke loosely mounted in the end of the car, said yoke having a sliding connection with the coupling-pin, substantially as set forth.

2. The combination, with a spring-cushioned

draw-head, a spring-actuated slide therein, and a coupling-pin adapted to be held in an elevated position by the slide, of a yoke loosely mounted in loops secured to the end of the
5 car, said yoke having a sliding connection with the coupling-pin, and an actuating-shaft having loose engagement with the yoke, substantially as set forth.

3. The combination, with a spring-cushioned
10 draw-head having a spring-actuated slide therein, and a coupling-pin adapted to be held in an elevated position by said slide, said pin having a loop in its end, of a yoke arranged to slide in loops secured to the end of the car,

this yoke having a loop in its lower end and 15
an arm in its opposite end having a sliding connection with the loop in the coupling-pin, and an actuating-shaft provided with an arm having sliding connection with the loop in the yoke, substantially as set forth. 20

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SIDNEY D. KING.

Witnesses:

C. C. KING,
JOSIAH SIGLIN.