

J. C. & J. A. TISE.
Car-Coupling.

No. 218,339.

Patented Aug. 5, 1879.

Fig. 1.

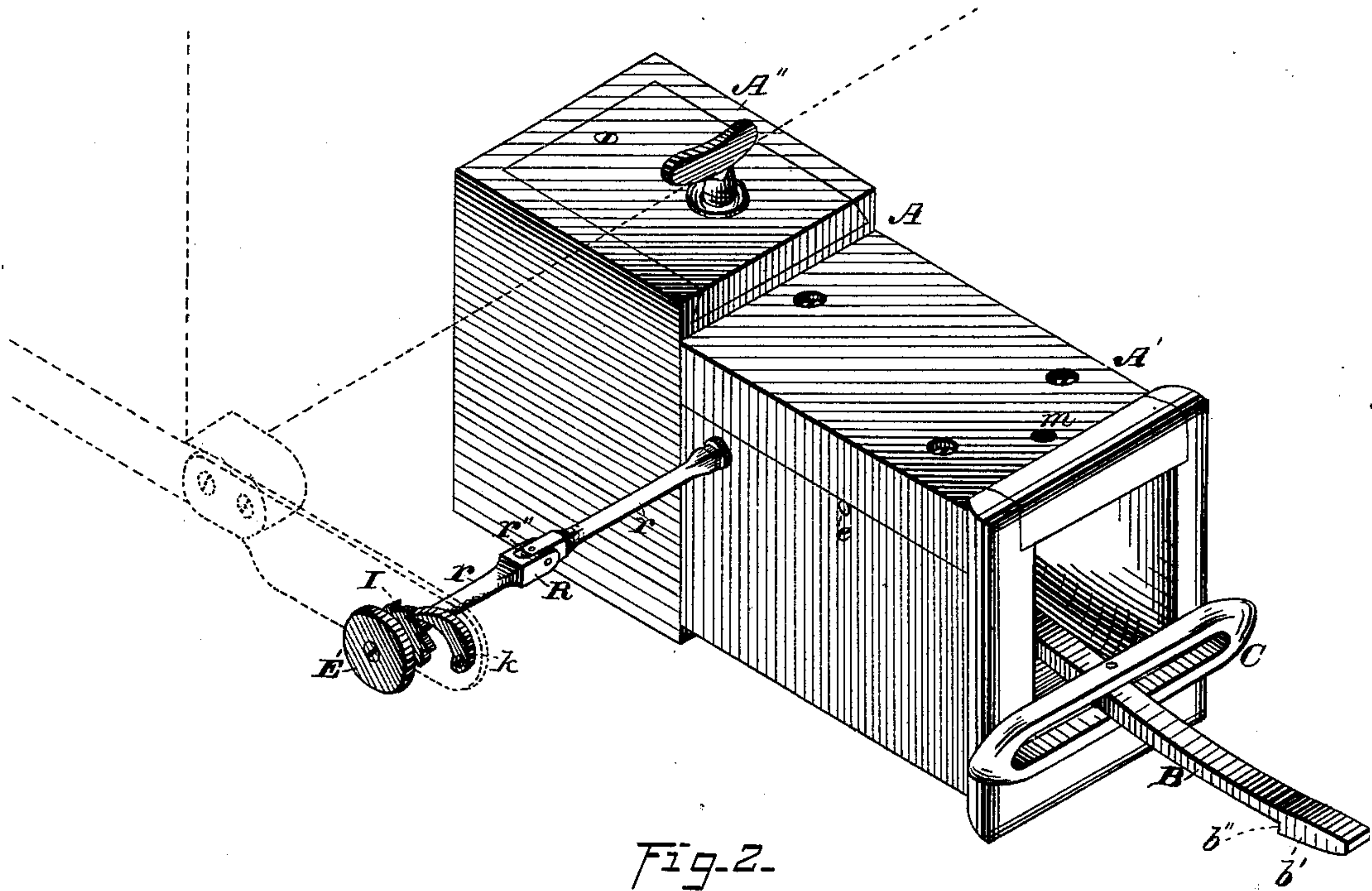
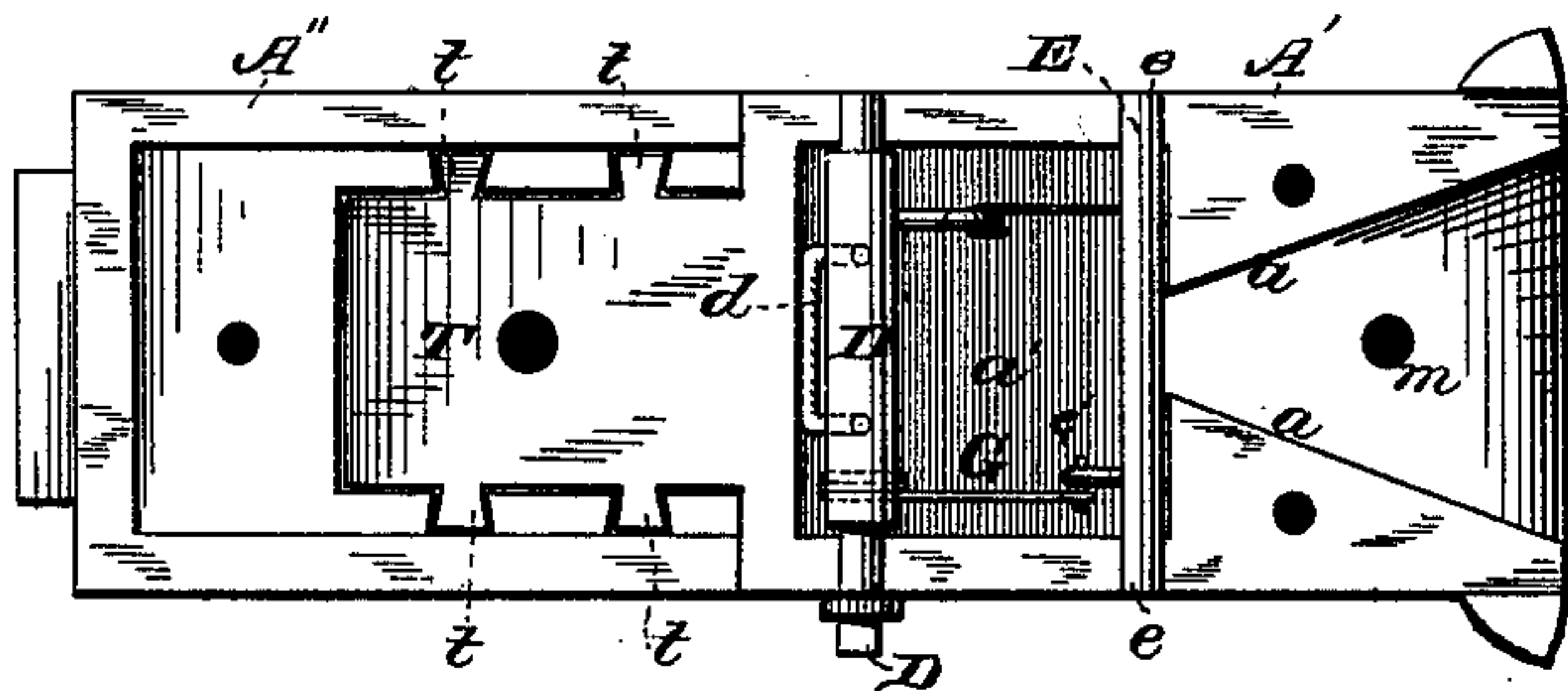


Fig. 2.



WITNESSES=

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Fig. 3.

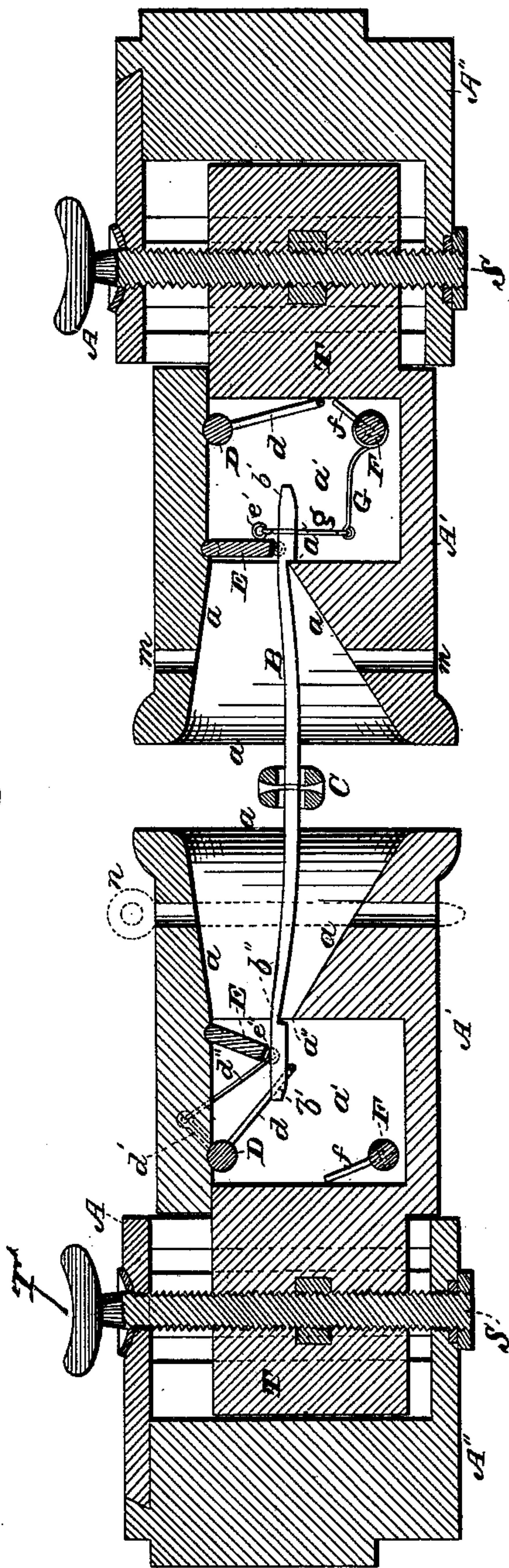
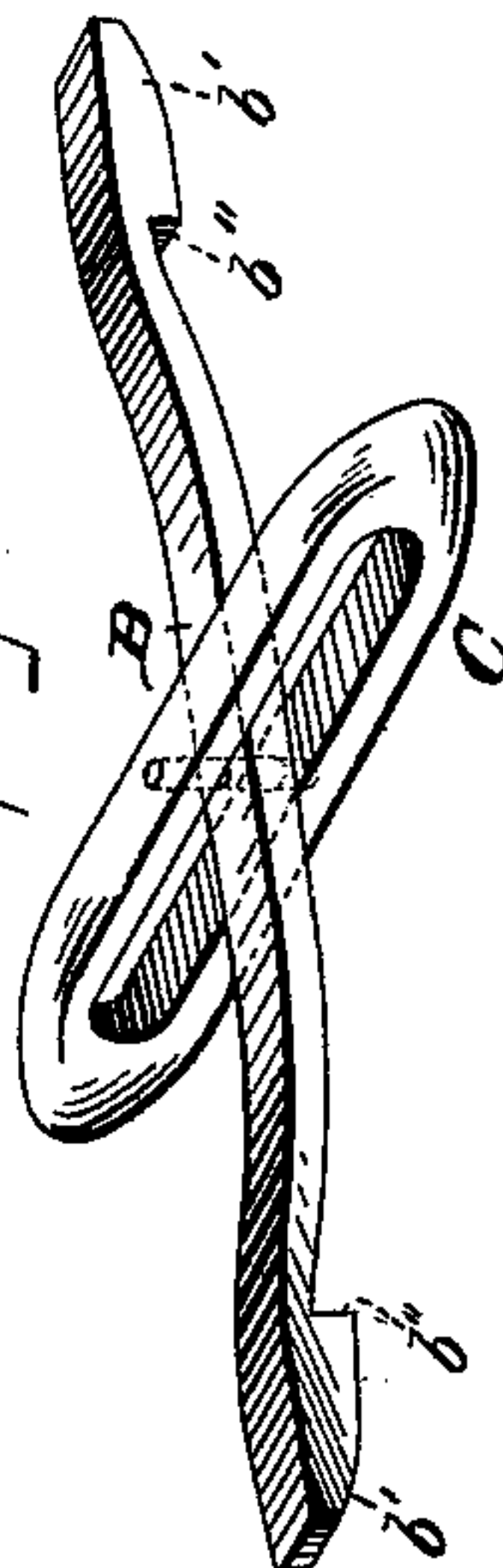


Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB C. TISE AND JOHN A. TISE, OF WINSTON, NORTH CAROLINA.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 218,339, dated August 5, 1879; application filed June 14, 1879.

To all whom it may concern:

Be it known that we, JACOB C. TISE and JOHN A. TISE, of Winston, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

Our invention relates to that class of devices which are used for the automatic coupling of cars on railroads; and its object is to simplify the construction of such car-couplings, and increase the security of connection between the cars.

The improvements will be fully hereinafter described, a preliminary explanation being deemed unnecessary.

In the accompanying drawings, Figure 1 is a view in perspective of one of the draw-heads with the coupling link or bar inserted, the end of a car being shown in dotted lines. Fig. 2 is a view of the draw-head with the top removed. Fig. 3 is a central longitudinal sectional view of the draw-heads. Fig. 4 is a view of the link.

The letter A designates the two draw-heads, each composed of the two sections A' A'', the front section, A', of which is provided with the flaring jaws *a*, to receive and guide the coupling-link to the point of its engagement. In rear of each of the jaws *a* are the recesses *a'*, one of the end walls of each forming the shoulder *a''*, which engages the coupling link or bar.

The coupling link or bar B is yoke-shaped, with its upper surface curving upward from the center to the ends, while its center passes through a slot in the buffer or fender C, which is pivoted to it, and prevents the ends of the coupling-link B from entering too far into the recesses *a'*.

The under surface of the coupling-link B is cut away at each end, forming the shoulders *b''*, which engage with the shoulders *a''* of the recesses *a'*, while each end of the coupling-link B is beveled, in order to slip readily up the inclines of the flaring jaws *a*.

The shafts D pass through the recesses *a'*, rocking in suitable bearings on journals, which are prolonged beyond the walls of the recess to receive the hand-wheels E', by which the device is operated.

Immediately behind the flaring jaws *a'*, and abutting against their shoulders *a''*, are placed the pivoted latch-plates E, which rock upon suitable bearings in the walls of the recess *a'*, upon the pivots *e*, which are formed by cutting away the plates. To the opposite ends and at the lower edge of each latch-plate are secured the eyes *e' e''*.

To each of the rock-shafts D is attached the yoke *d*, which projects from it, while the arm *d'* projects from the rock-shaft D at a point nearly opposite the eye *e''*, with which it is connected by means of the link *d''*.

Immediately below the shafts D are situated the shafts F, which rock in suitable bearings, and have at one end a circumferential series of sockets to receive a lever, *f*, which bears against the rear wall of the section, while the spring-arms G are secured to the ends of the shafts F, and have their opposite ends attached to the eyes *e'* on latch-plates E by means of the links *g*.

The lever *f* may be inserted in either of the sockets of the shaft F, so that the tension of the spring-arms G may be regulated at pleasure.

On the projecting end of each shaft D, and at the inner side of the hand-wheel E', is a ratchet-wheel, I; and pivoted to the draw-head or a bracket at the side of the car is a pawl, *k*, which engages with the teeth of said wheel, so that when the shaft D is turned to throw the yoke *d* up to strike the top of the coupling-link and disengage it from the shoulder *a''*, the said shaft and yoke will be retained in this position, so that when two cars of a train are to be uncoupled it is not necessary for a person to remain between the cars and hold the operating-lever until the cars are separated. If desired, the shaft D may be prolonged to reach beyond the side of the car, as shown in dotted lines, Fig. 1, and carry the hand and ratchet wheel in such position that the operator need not go between the cars.

In the upper and lower walls of the flaring recessed or jaw portion of the draw-head are formed vertical pin-passages *m*, adapted to receive the pin *n*, attached by a chain to the draw-head, so that if a car having our improved automatic coupling is shifted upon a road where our coupling is not used, the car may be readily coupled with another carrying

in its draw-head the ordinary loop-link and pin.

When the shaft D is prolonged to reach beyond the outer side of the car, we form the prolongation of the shaft D by a separate jointed rod, R, having its inner end provided with a socket to fit the squared end of the shaft D proper, and the two portions *r r* of the jointed rod R are connected by flexible joints *r''*, which may be formed as shown; or any of the ordinary universal joints may be used.

From the rear end of each of the adjustable front sections, A', of the draw-head projects a tenon, T, having its sides provided with vertical ribs *t*. The tenon fits into a socket in the rear section, A'', and the ribs *t* fit into grooves in the side walls of said socket. The vertical depth of the socket is about one-third greater than the height of the tenon, so that the said tenon has room for vertical movement within the socket. Through about the vertical center of the tenon is formed a screw-threaded aperture, through which passes a correspondingly-threaded screw, S, having its ends journaled in the top and bottom walls of the socket, the projecting upper end of said screw being provided with a suitable head or thumb-piece, T', by which the screw may be turned. By turning the screw in one direction the tenon and adjustable section A' are raised in the socket, and by turning in the opposite direction said tenon and section are depressed, so that the jaws of the coupling may be adjusted to correspond with the coupling devices of another car which may be arranged at a different elevation.

The rear sections of the draw-heads may be secured to cars by any of the ordinary means.

Having thus described the various portions of our device, we will now set forth the manner of its operation.

If one end of the coupling-link B is engaged in one of the draw-heads A of a car or truck, and the car or truck is brought near another one for the purpose of coupling them together, the inclined plane *b'* on the free end of the coupling link or bar B strikes the inclined plane of the flaring jaw *a*, and rises over it until the end of the coupling link or bar meets the pivoted latch-plate E, pushes it backward, rocking it upon its pivots until the shoulder *b''* passes under the latch-plate and beyond the shoulder *a''* of the draw-head jaw, when both the latch-plate and the coupling-link drop down simultaneously. The shoulder *b''* of the latter engages with and presses against the shoulder of flaring jaw, while the latch-plate E is shut down and kept shut by the resistance of the spring-arm G, and its lower edge, although at a sufficient distance from the coup-

ling link or bar B to allow sufficient play vertically for the motion of the car, prevents its end and shoulder from lifting out of place and becoming disengaged. The buffer or fender C, moreover, prevents the coupling-link from passing too far into the recesses *a'*.

When it is desired to uncouple the cars the hand-wheel of one of the shafts D is turned, which rocks the shaft D, swings the latch-plate E by means of the arm *d'* and link *d''*, while the rocking shaft D throws the yoke *d* upward and forward until it strikes upon the lower side of the coupling-link B and tilts it up, lifting the shoulder *b''* of the link clear of the shoulder *a''* of flaring jaw *a*, when, as the cars separate, it slips out from between the yoke and the latch-plate. The latch-plate will remain raised until the pawl *k* is disengaged from the ratchet-wheel.

The mode of adjusting the front section to different elevations has already been explained.

What we claim is—

1. The combination, with the draw-head having a flaring jaw, *a*, and recess *a'* in rear of the same, forming a shoulder, *a''*, of the shaft D, carrying the yoke *d* and arm *d'*, link *d''*, attached to said arm, pivoted latch-plate E, with which the said link is connected, rocking shaft F, having lever *f*, and spring-arm G, attached to the said shaft and connected with the lower portion of the latch-plate, all substantially as and for the purpose described.

2. The combination, with the shaft D and latch-plate E, suitably connected together for joint action, of a jointed rod, R, adapted to connect with said shaft at its inner end, the hand-wheel E' on the outer end of the jointed shaft, ratchet-wheel I, and pawl *k*, all substantially as and for the purpose described.

3. The sectional draw-head composed of the socketed rear section, A'', and movable front section, A', having a square tenon, T, adapted to the socketed section, and provided with a transverse opening, in combination with the adjustable screw-bolt S, passing through the draw-head and through the passage in said tenon, substantially as and for the purpose described.

4. In combination with the coupling-link B, the centrally-pivoted and vibrating buffer or fender C, substantially as and for the purpose described.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of two subscribing witnesses.

JACOB CICERO TISE.
JOHN ADISON TISE.

Witnesses:

J. H. MASTEN,
JACOB TISE.