

No. 706,405.

Patented Aug. 5, 1902.

E. FOSTER.
CAR COUPLING.

(Application filed July 14, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

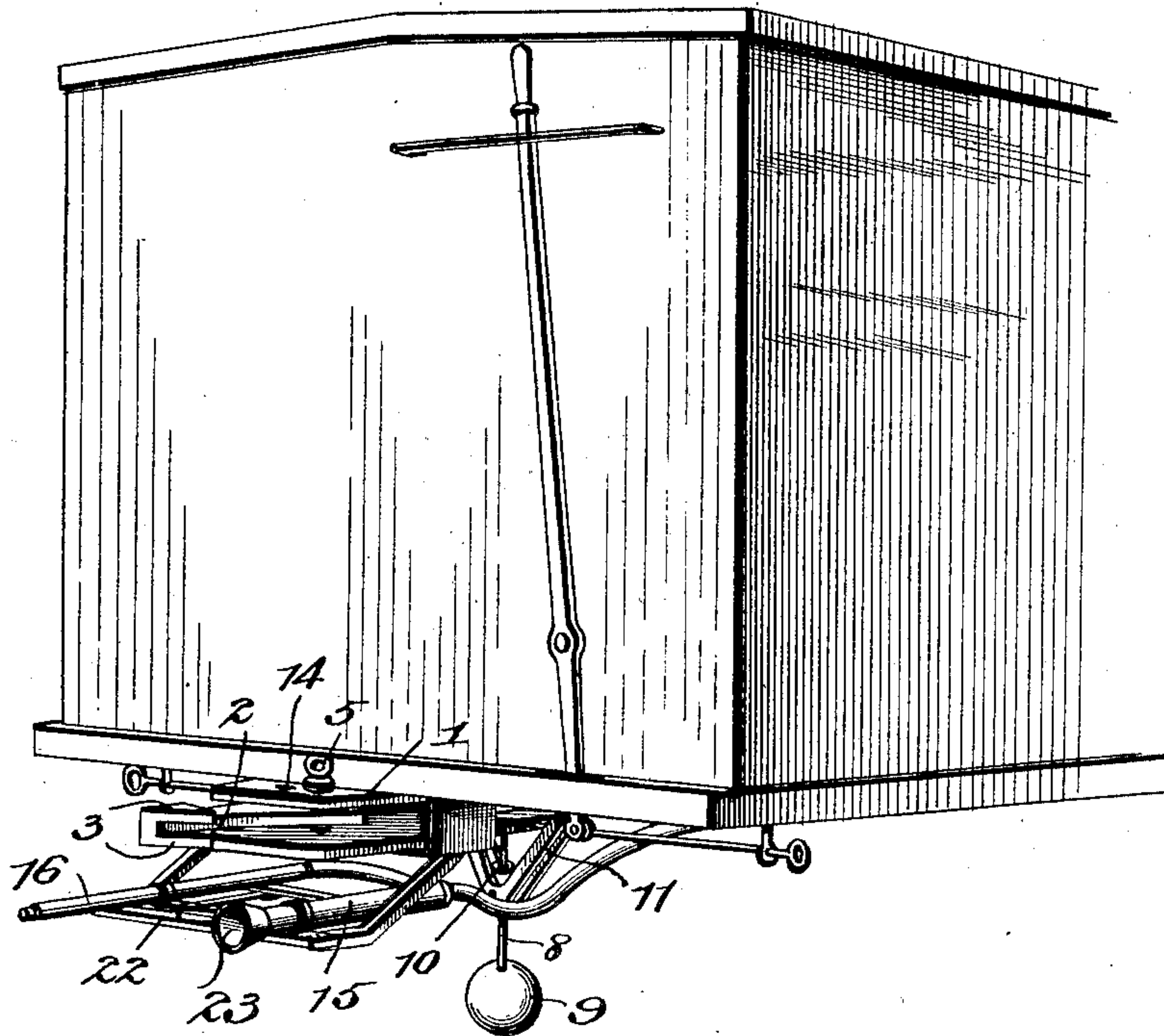


Fig. 2.

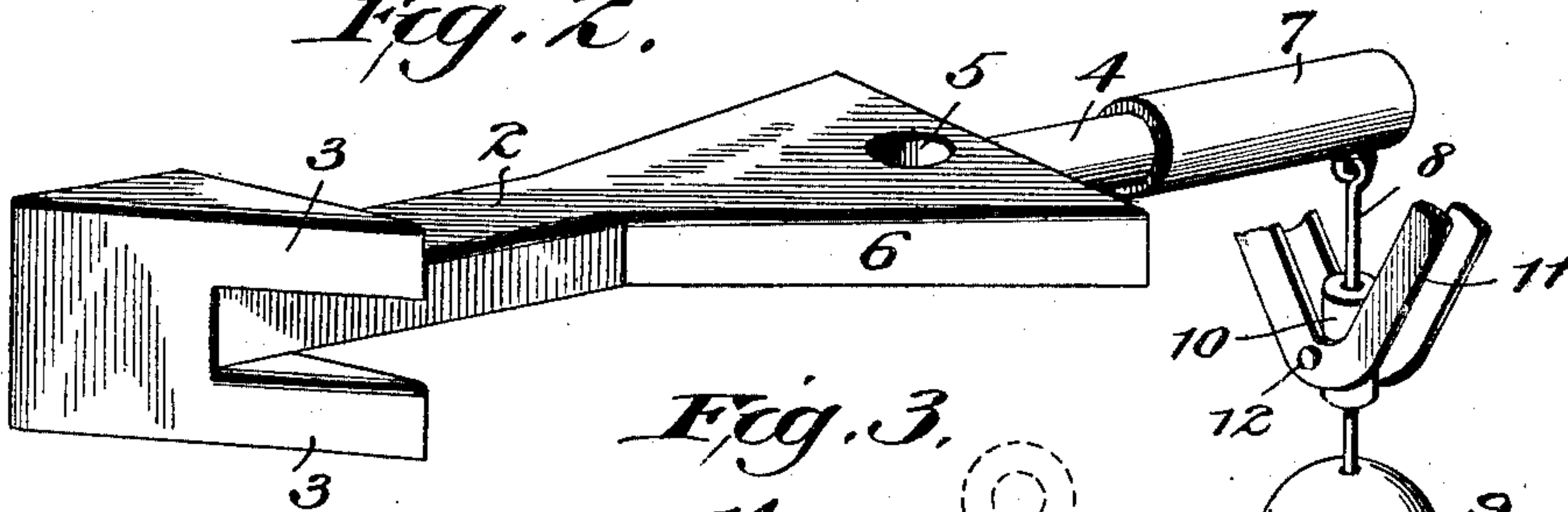
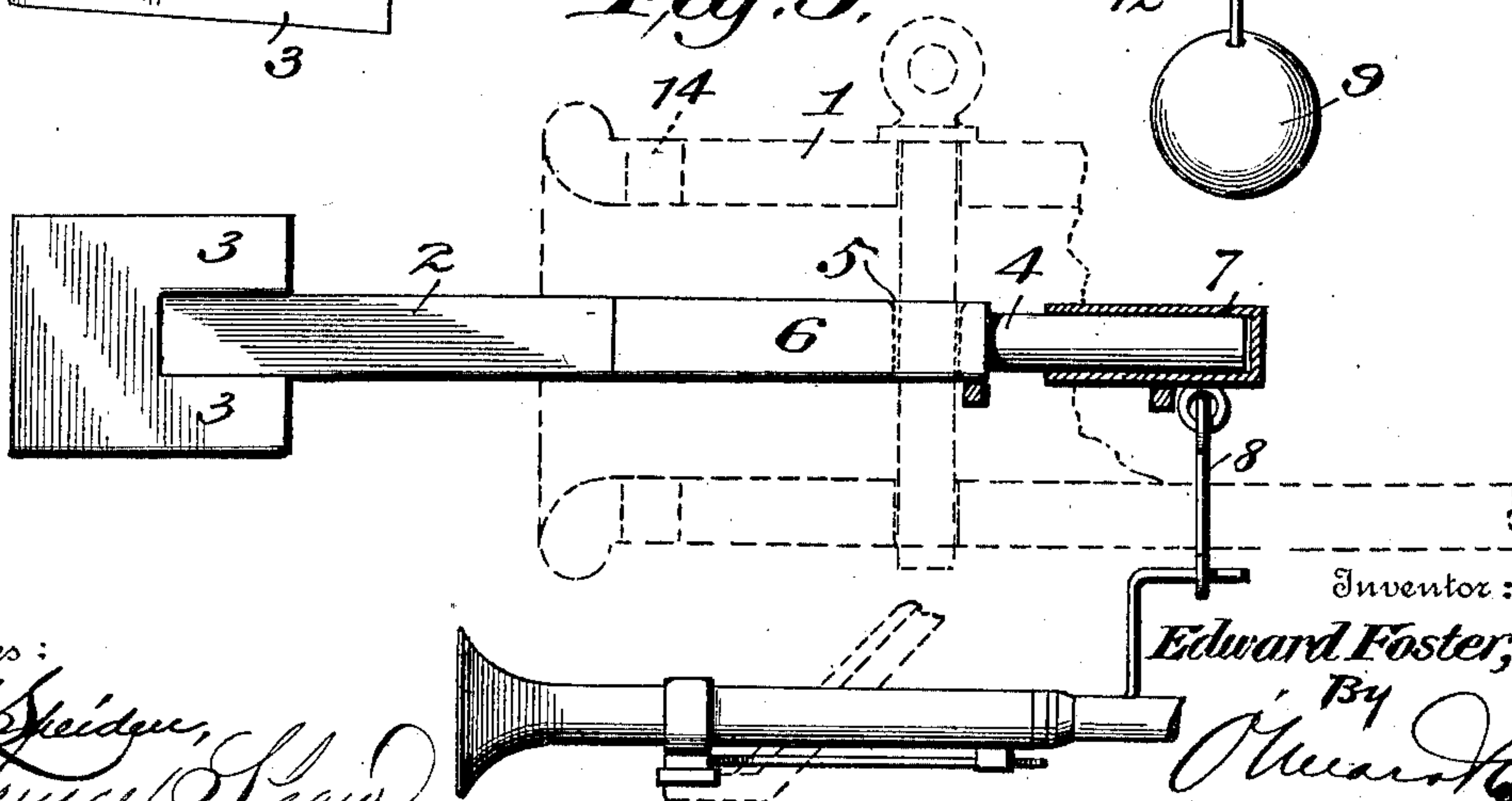


Fig. 3.



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Fig. 4.

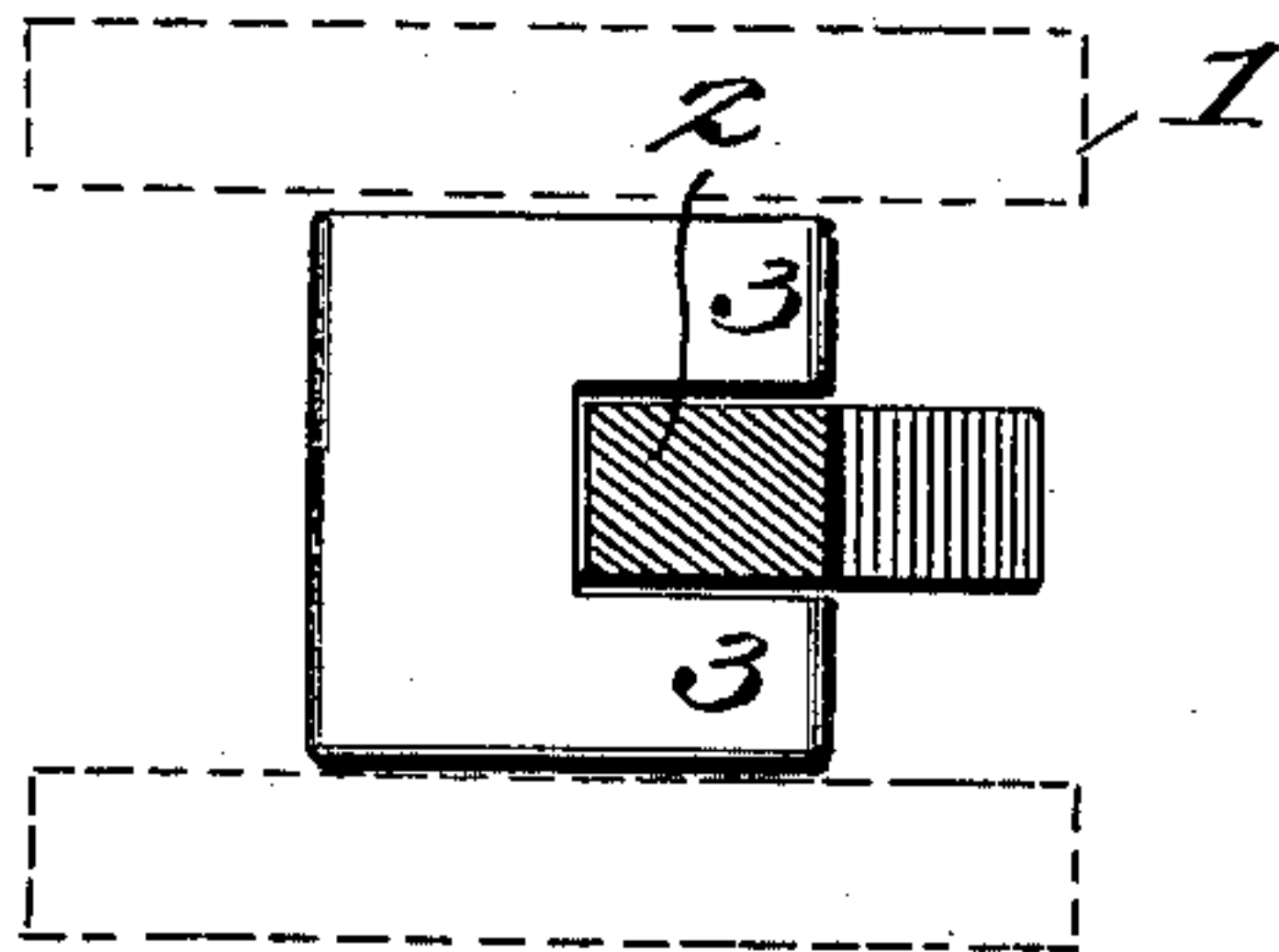


Fig. 5.

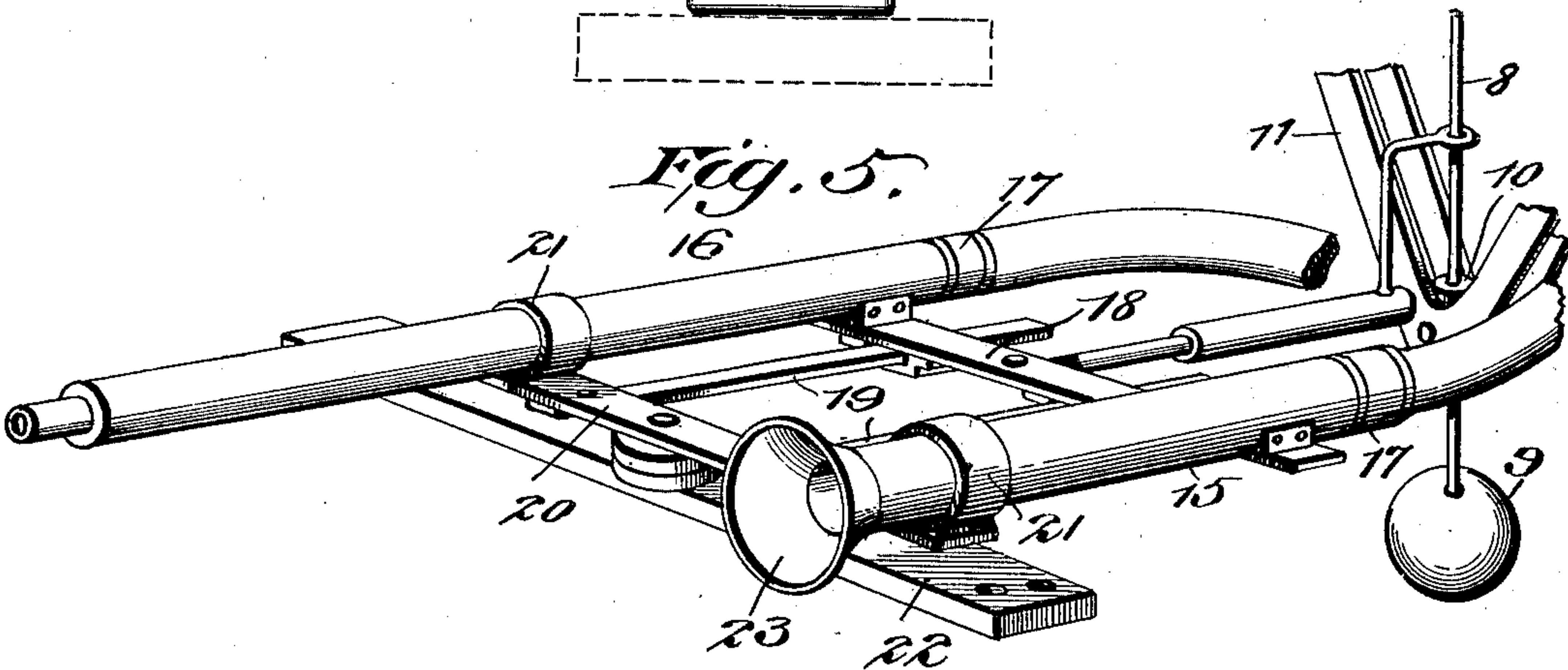


Fig. 6.

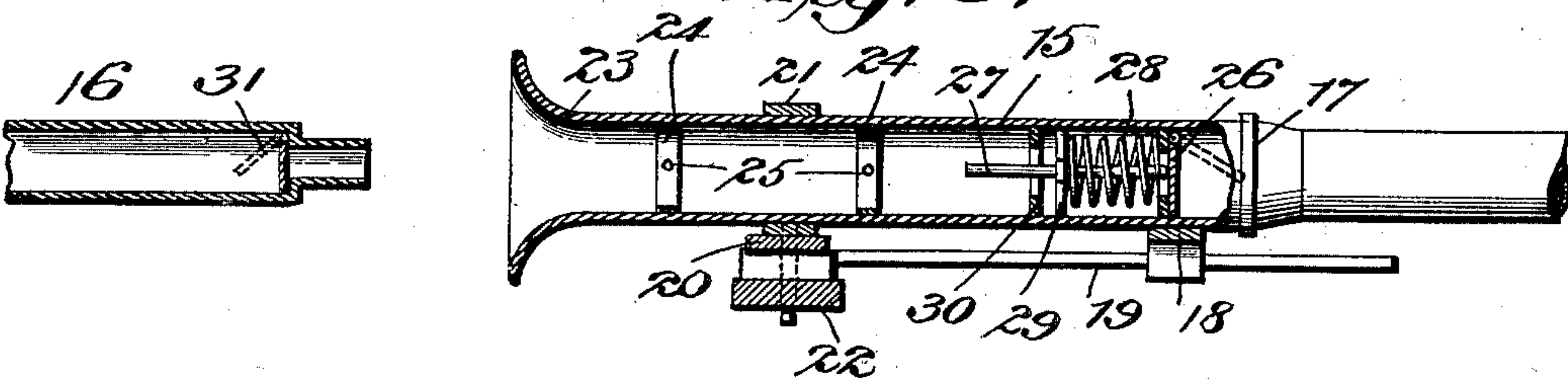
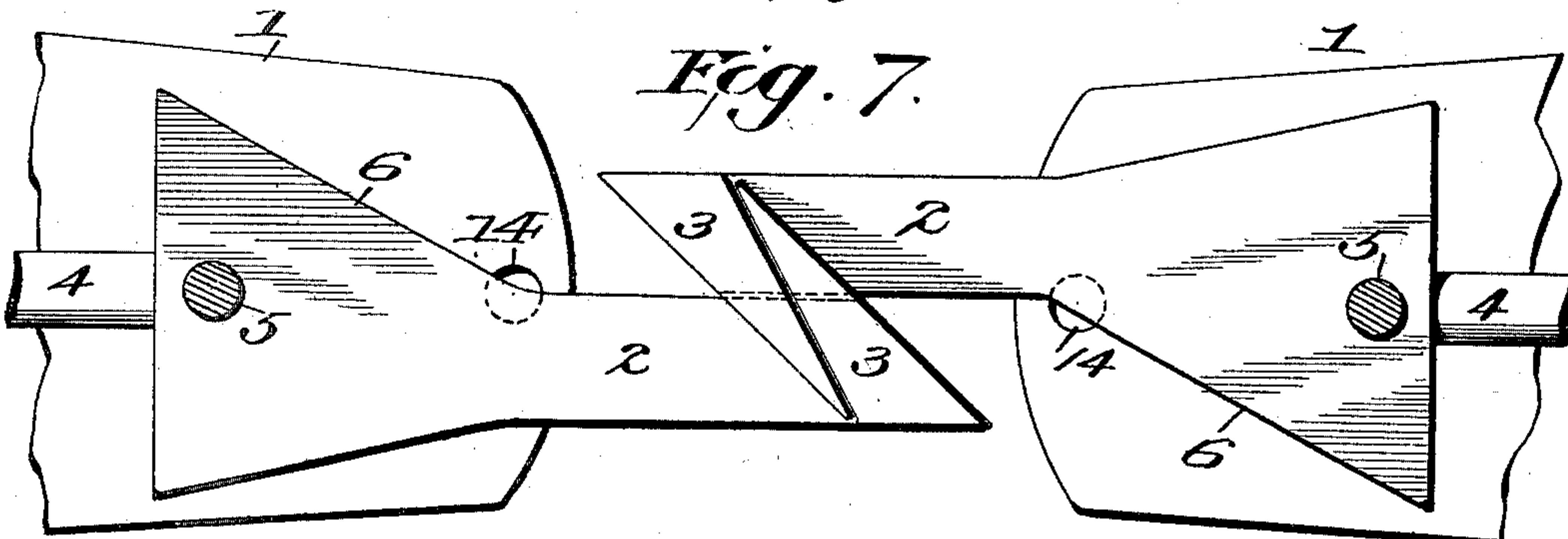


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD FOSTER, OF CLEVELAND, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 706,405, dated August 5, 1902.

Application filed July 14, 1900. Serial No. 23,672. (No model.)

To all whom it may concern:

Be it known that I, EDWARD FOSTER, a citizen of the United States, residing at Cleveland, in the county of Oswego and State of New York, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention relates to car and brake couplings, and it has for its object to produce couplings of this description which will be simple, strong, and efficient; and it consists in the improved construction and novel arrangement of parts of the same, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of one end of a car provided with my improved coupling. Fig. 2 is a perspective detail view of the car-couplings. Fig. 3 is a longitudinal sectional view of the same. Fig. 4 is a transverse sectional view of the same. Fig. 5 is a perspective view of one end of the brake-coupling. Fig. 6 is a longitudinal sectional view of the parts of two couplers uncoupled. Fig. 7 is a top plan view of the adjacent bumpers of two cars with the couplers in engagement with each other.

Referring more particularly to the drawings, 1 indicates the bumper of a car, within or beneath which is secured my improved coupler, which comprises a bar 2, the forward end of which is provided with two hooks 3, extending from one side thereof upon the top and bottom, and the rear end is formed substantially cylindrical, as shown at 4. The intermediate portion of the bar is perforated near the cylindrical portion, through which passes a pin 5 to pivotally secure the bar to the bumper. The side of the bar upon which the point of the hook projects is preferably extended laterally upon an incline, as shown at 6. The fronts of the hooks at the forward end of the bar are inclined or barbed, and the hooks at the opposite ends of the car extend in opposite directions, so that whenever two cars are brought into engagement with each other their contacting barbs will be inclined in opposite directions, so as to pass readily over each other. If desired, the upper and lower plates of the bumper may be so far

apart that the barbs of the coupling upon the other car may pass in between them. The forward end of each bar will engage with the inclined portion of the opposite bar and be moved over to such an extent that its barbs will not engage with the pin 5 when the bumpers come together. By extending the points of the barbs beyond the side of the bar and arranging them at the top and bottom of the bar they will straddle the opposite bar or pass upon opposite sides of it, and thus hold the two bars in the same horizontal plane and prevent the possibility of the cars becoming uncoupled in that manner. The rear end of the bar fits within a thimble or sleeve 7, from which depends a rod 8, the lower end of the rod being preferably provided with a weight 9. The intermediate portion of the rod passes loosely down through a thimble or sleeve 10, which is pivotally mounted between supporting-braces 11, which are secured to the under side of the car in any suitable manner, the pivotal points 12 for the thimble 10 being arranged in alinement with the bar 2 and thimble 7.

In making a coupling between two cars provided with my improved coupler, as above described, it is evident that as soon as the inclined points or noses of the hooks at the ends of the bars engage with each other the bars will be forced laterally at both ends, utilizing the pin 5 as a fulcrum or pivot. As the ends swing in this manner the thimbles at the rear ends will be carried laterally, which will cause the rods 8 to be moved out of their vertical positions. As soon as the barbs of the hooks pass each other the weight at the lower end of each rod will instantly swing the rod back into its vertical position, and thereby carry the thimble at its upper end back into its normal position, which in turn will swing the bar 5 upon its pivot and cause the hooks to be moved over into position to engage with each other as soon as the cars are moved to separate them.

Each bumper is preferably provided with an additional hole or opening 14 near its forward edge by means of which coupling may be effected by the ordinary link-and-pin mechanism. To use the link, the pin 5 is removed, which will permit of the forward end of the bar 2 being moved around to one side to pre-

vent its engagement with the opposite bumper, thereby permitting of the bumpers being brought close enough together to be connected by the ordinary link.

5 My improved brake-coupling consists of a pair of tubes 15 and 16 at each end of the car, one of which is longer than the other and arranged in the reverse order to each other. The inner ends of the tubes are provided with
 10 ordinary hose-couplings 17, which are connected with the ordinary brake mechanism in the usual manner, but which are not shown, as said mechanism forms no part of my invention. The intermediate portions of the
 15 tubes are secured upon a cross-bar 18, which is arranged to move freely upon two slides or bars 19. A swivel spring-plate 20 is provided with a sleeve or collar 21, within which the tubes are loosely mounted so as to slide
 20 back and forth during the process of coupling. The plate 20 is pivotally mounted upon a plate or bar 22, which is secured to the platform of the car underneath the bumper in any suitable manner. The shorter tube 15 is
 25 provided with a funnel 23 or flaring mouth at its forward end and is provided upon its interior intermediate its length with one or more packing-rings 24, each of the rings being adjustably secured in its position by
 30 means of screws 25. The rear end of the tube is provided with a valve 22, which is preferably hinged at its upper edge, and a rod 27 is suspended centrally within the tube in position to engage with the valve at its rear
 35 end. A spring 28 is secured within the tube in front of the spring and is adapted to engage with the cross-bar 29 upon the rod 27 and normally hold the rod out of engagement with the valve. A suitable annular valve or
 40 packing 30 is secured within the tube at a short distance in front of the cross-bar and spring.

The long tube 16 of the coupling mechanism of one car is adapted to enter the short
 45 tube of the opposite car and be telescoped thereinto until its nose or forward end passes through the annular valve or packing 30. A suitable valve 31 is pivotally secured within the long tube adjacent to its nose in position
 50 to be engaged by the forward end of the rod 27, when the long tube has nearly reached the limit of its inward movement. As soon as the valve has been raised the nose engages with a suitable projection upon the rod 27
 55 and forces it against the action of the spring 28 and causes its rear end to open the valve in the short tube. As soon as the coupling has been effected communication is thus established the entire length of the train and
 60 the air-brakes can be operated in the usual manner.

By arranging the parts of the two couplers as above described it is evident that the cars can be automatically coupled and the mechanism will operate as successfully upon a
 65 curve as upon a straight line, the pivotal con-

nections of the couplings with the platform or bumpers of the cars permitting of the necessary lateral movements to effect the coupling. The spring-support of the brake-coupling will permit of the vertical movement of
 70 the two tubes to accommodate them to the movement of the cars, and the longitudinal movement of the tubes through the collars upon the swivel-plate being sufficient to prevent any injury to the parts when the coupling is being effected. 75

In uncoupling the cars any ordinary means may be connected with the draw-bars of the car-coupling, which may extend to either side
 80 or to the top of the car, by means of which the forward ends of the bars may be moved laterally a sufficient distance to permit of the barbs or hooks passing each other without engaging. With the brake-coupling it is only
 85 necessary to withdraw the longer tubes from the shorter ones, which will permit of the valves being closed automatically, for as soon as the rod 27 is disengaged from the valve
 90 31 said valve will close, and as soon as the pressure is removed from the rod the spring 28 will withdraw its rear end from the valve 26, and thereby close both valves before the tubes have been separated, thus preventing
 95 the passage of the air to the brake mechanism after the tubes have been separated.

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

1. In a car-coupler, the combination of the
 100 draw-bar pivotally secured at one end of the car, a coupling head or member on the end, and a weighted box secured to the other end passing through a sleeve pivotally mounted in brackets on the under side of the car whereby to correct any lateral deviation of the draw-bar from a line with the car. 105

2. In a car-coupler, the combination of the draw-bar pivotally secured at one end of the car, a coupling head or member on the front
 110 end, a collar slidably mounted on its rear end and a weighted rod secured to the other end passing through a sleeve pivotally mounted in brackets on the under side of the car whereby to correct any lateral deviation of
 115 the draw-bar from a line with the car.

3. In a car-coupler, the combination of the draw-bar pivotally secured at one end of the car, a barbed coupling head or member on the forward end, and a weighted rod secured
 120 to the other end passing through a sleeve pivotally mounted in brackets on the under side of the car, whereby to correct any lateral deviation of the draw-bar from a line with the car. 125

4. In a car-coupler the combination of the draw-bar, pivotally secured at one end of the car, a barbed coupling head or member in the forward end, a loose collar on its reduced cylindrical rear end, and a weighted rod secured
 130 to the other end passing through a sleeve pivotally mounted in brackets in the

under side of the car, whereby to correct any lateral deviation from a line lengthwise of the car, substantially as described.

5 In a car-coupler, the combination, with the bumper, of a bar pivotally secured thereto to swing in a horizontal plane the forward end of which is provided with an inclined hook, and the rear end is cylindrical in form, a thimble upon said cylinder, a weighted rod 10 secured thereto, and a fulcrum for said bar in alinement with the coupling-bar and the thimble, substantially as described.

15 6. In a car-coupler, the combination, with the bumper, of a bar pivotally secured thereto to swing in a horizontal plane, the forward end of which is provided with an inclined hook and the rear end is cylindrical, a thimble upon the cylindrical portion, braces se-

cured to the under side of the car, a sleeve pivotally secured between said braces and a 20 weighted rod secured to the thimble and extending down through said sleeve, substantially as described.

7. In a car-coupling a bar provided at one end with two spaced and laterally-projecting 25 hooks having beveled faces a reduced portion at its other end a vertical opening adjacent to the reduced portion and an intermediate inclined portion projecting from the same side of the car as the hooks, as set 30 forth.

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