

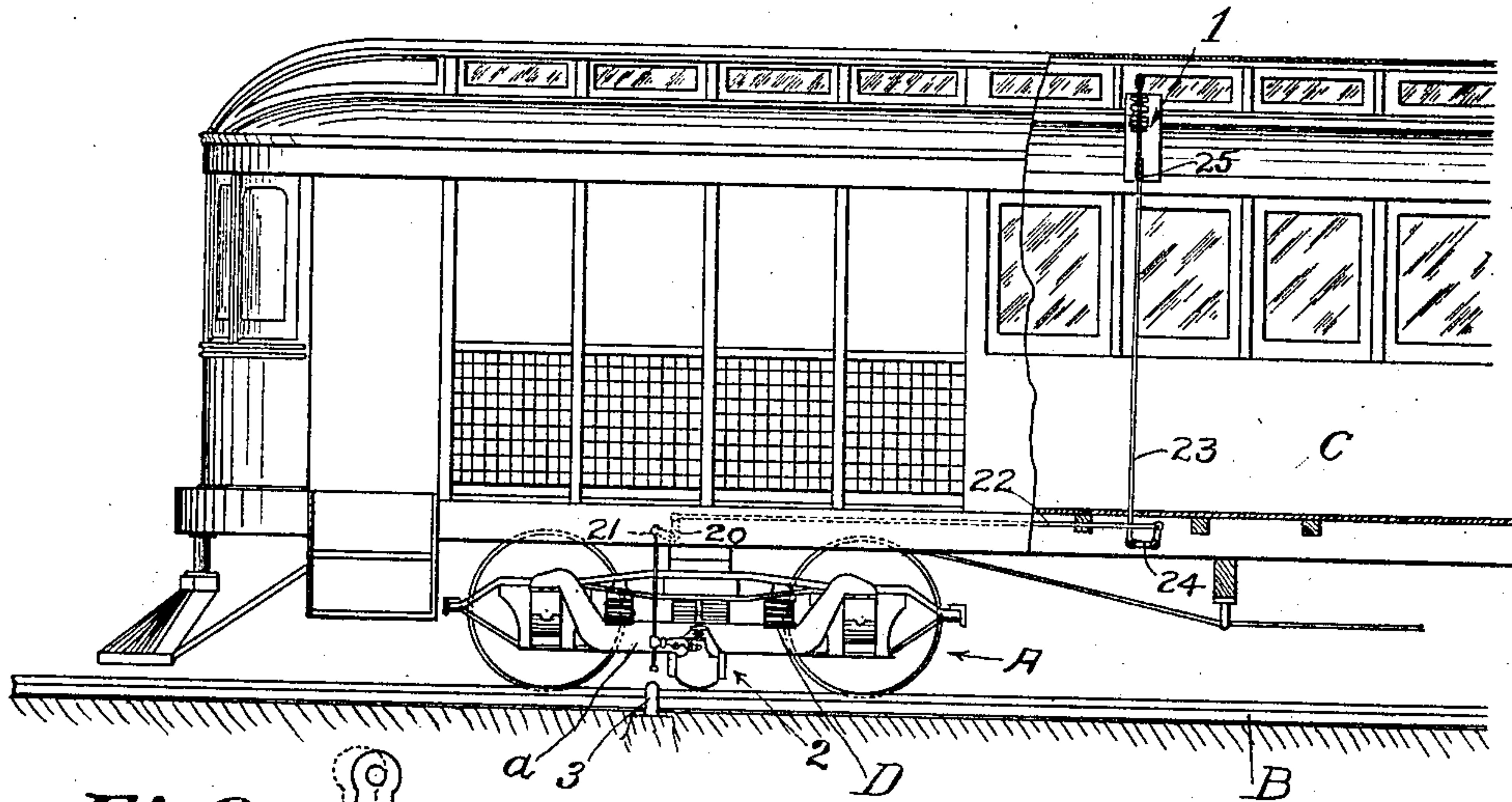
No. 848,249.

PATENTED MAR. 26, 1907.

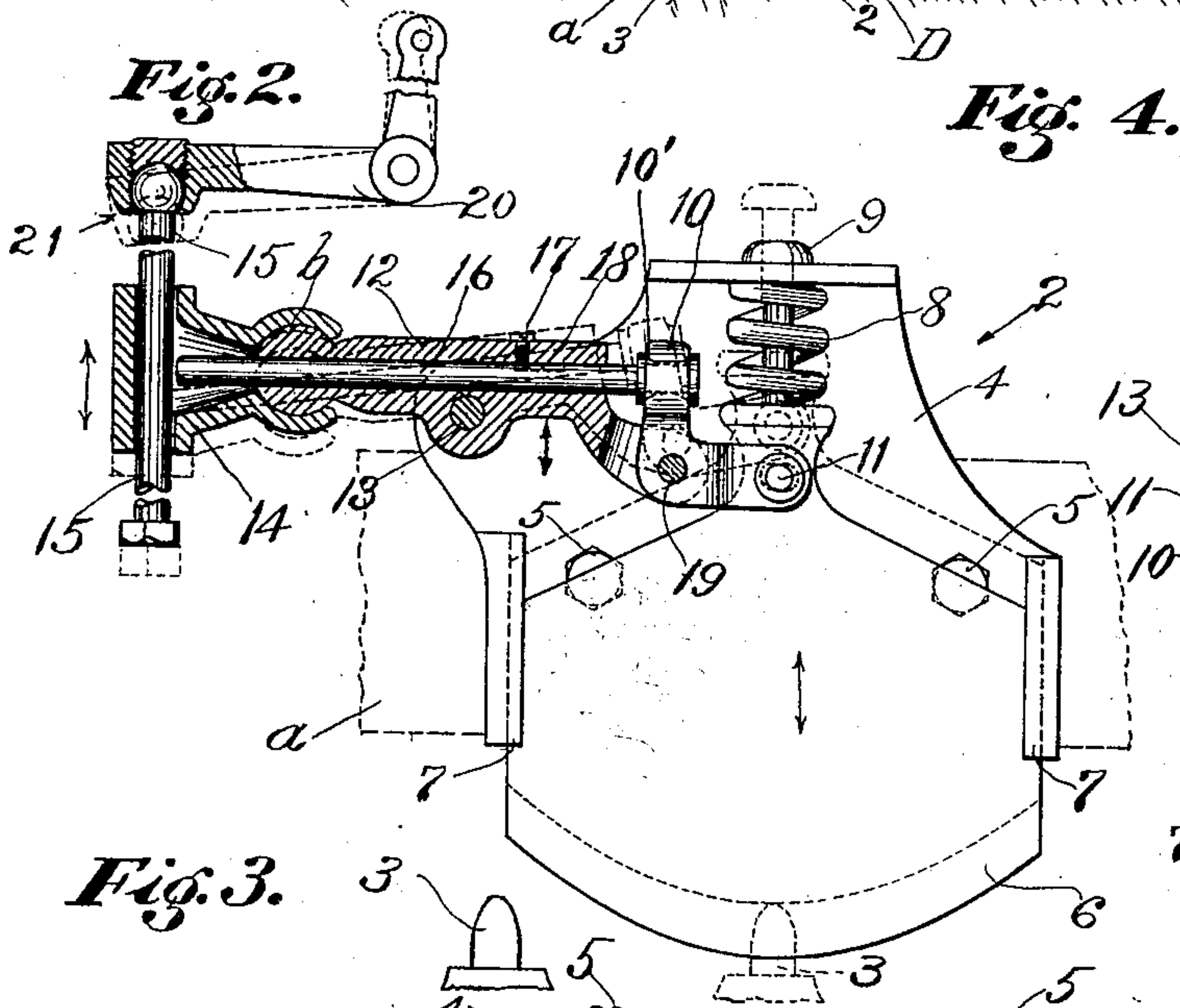
O. E. KELLUM.  
STREET AND STATION INDICATOR.  
APPLICATION FILED DEC. 26, 1905.

2 SHEETS—SHEET 1.

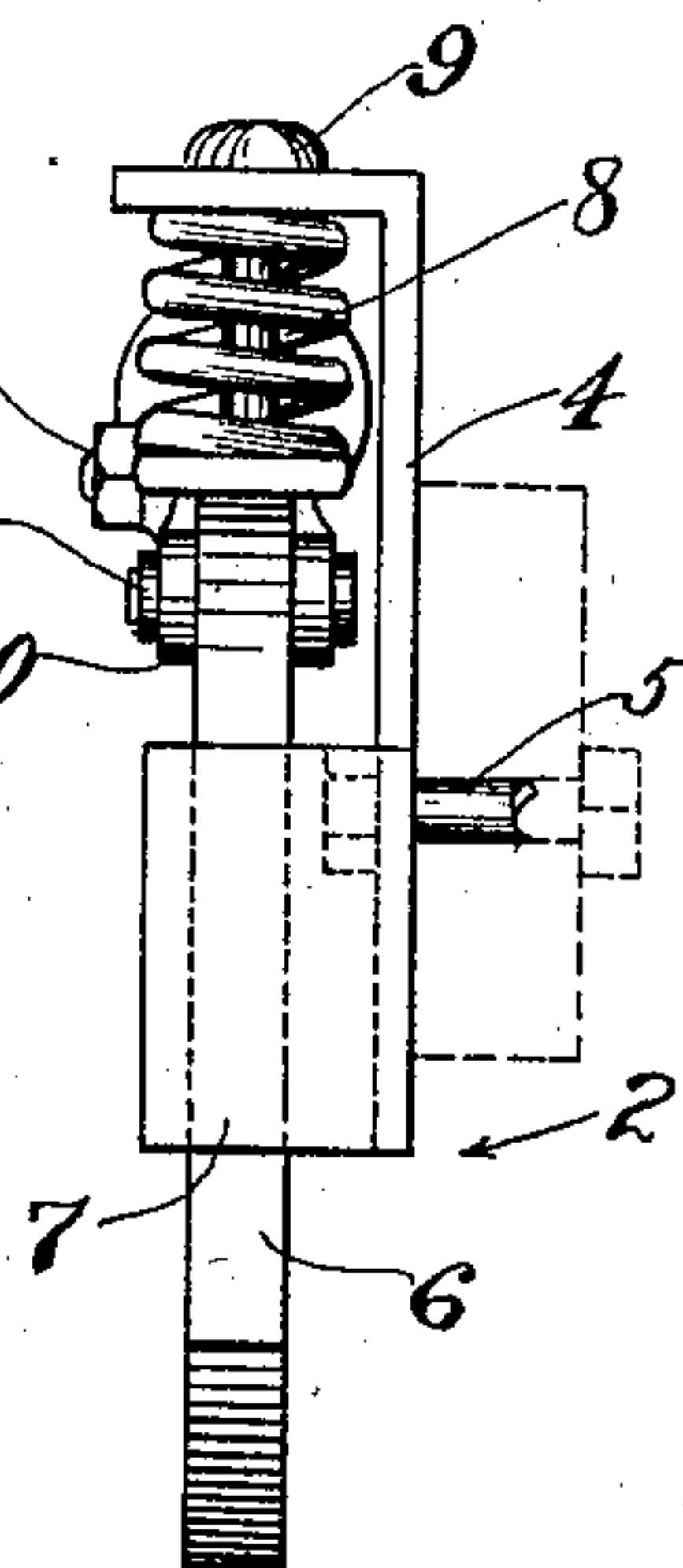
**Fig. 1.**



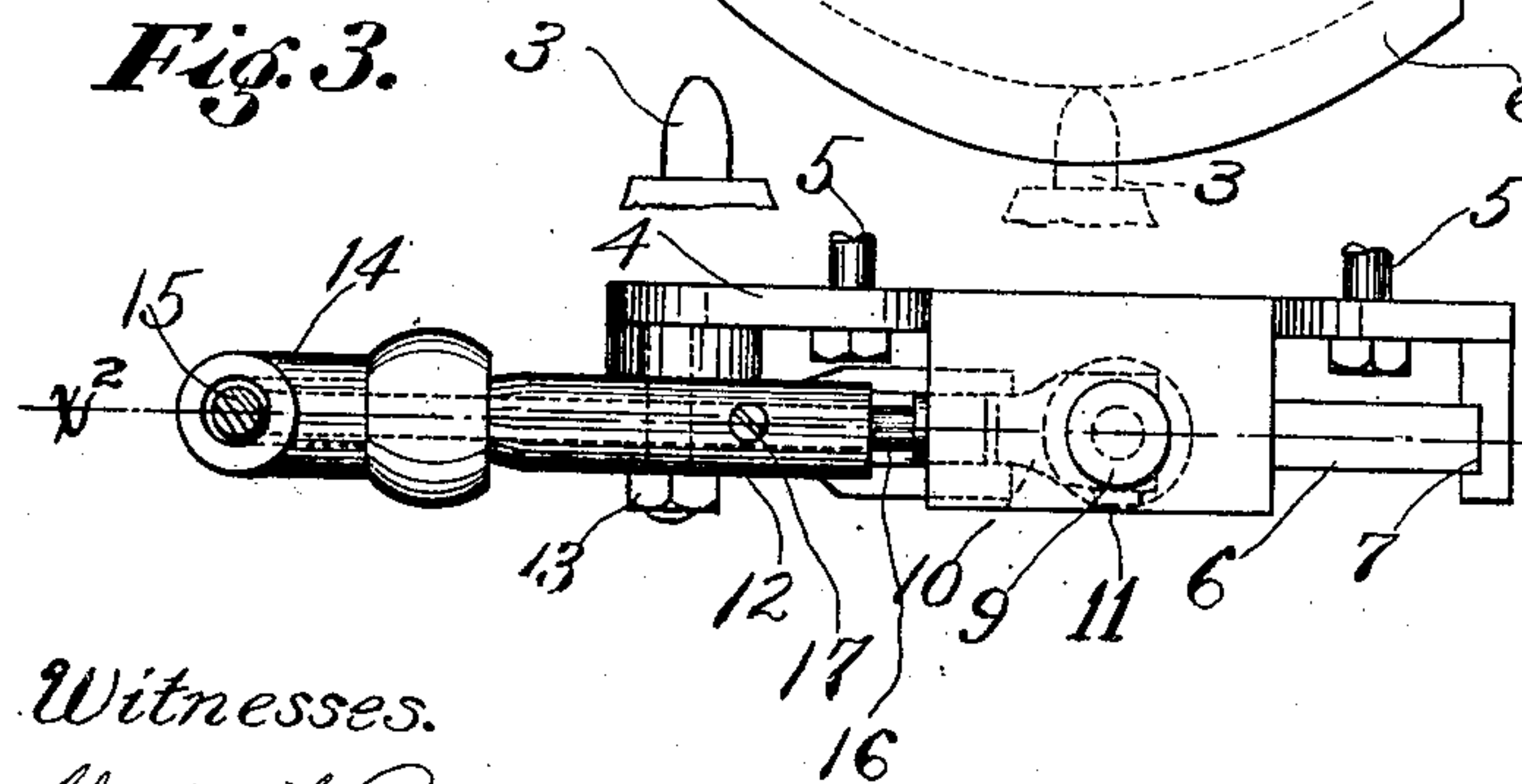
**Fig. 2.**



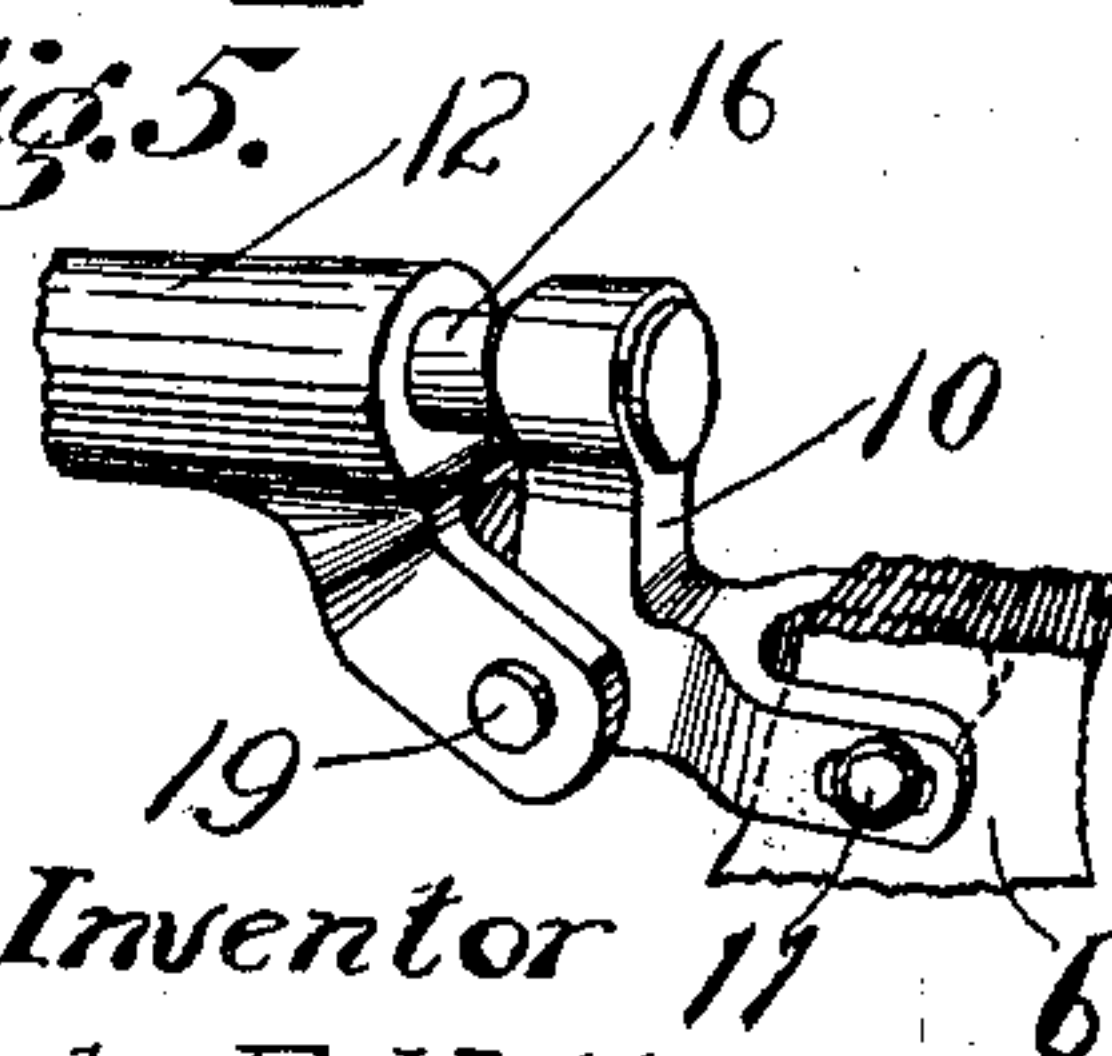
**Fig. 4.**



**Fig. 3.**



**Fig. 5.**



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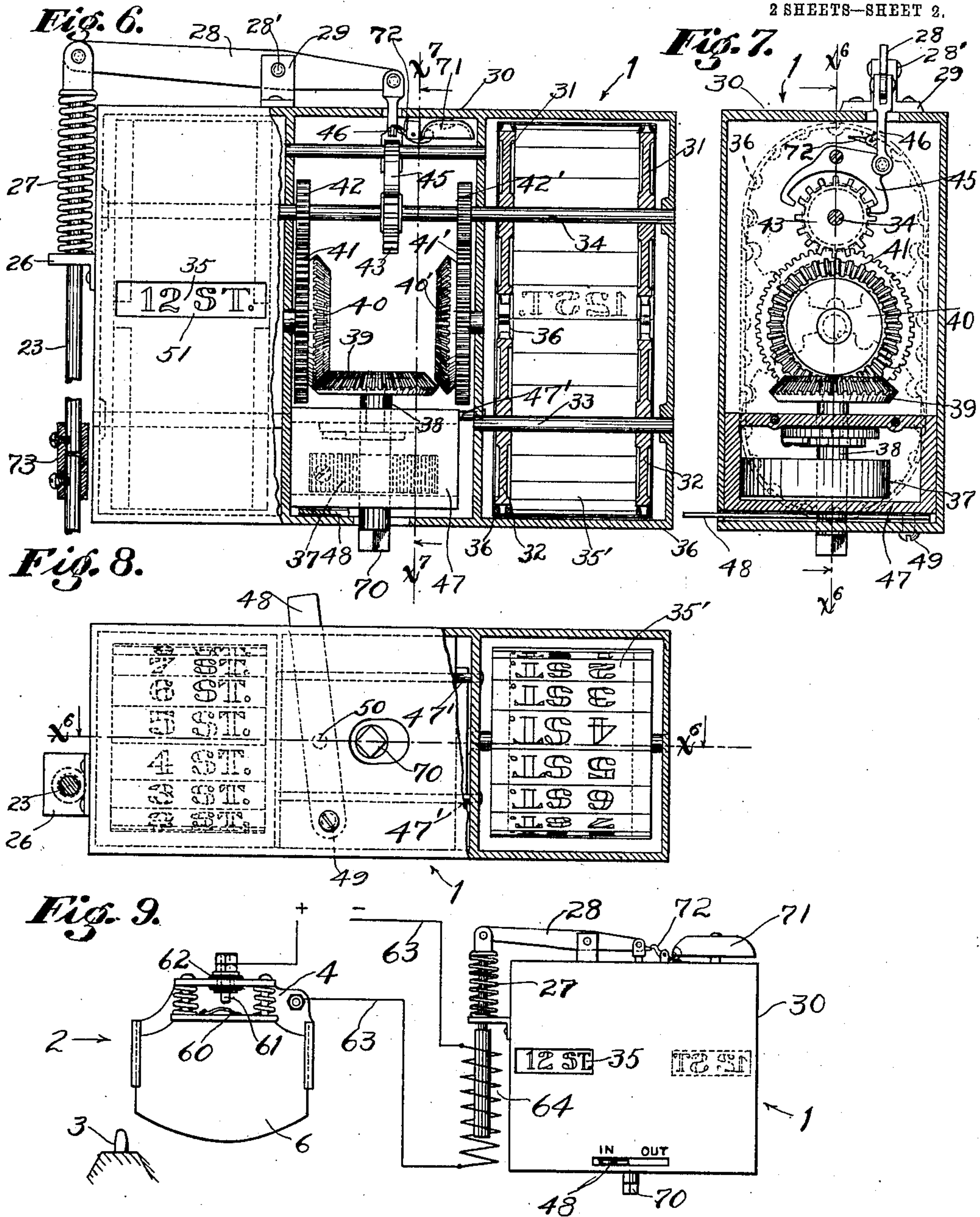
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2 SHEETS—SHEET 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ORLANDO E. KELLUM, OF LONGBEACH, CALIFORNIA.

## STREET AND STATION INDICATOR.

No. 848,249.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed December 26, 1905. Serial No. 293,390.

*To all whom it may concern:*

Be it known that I, ORLANDO E. KELLUM, a citizen of the United States, residing at Longbeach, in the county of Los Angeles and State of California, have invented a new and useful Street and Station Indicator, of which the following is a specification.

An object of this invention is to provide a street and station indicator which will be practical for use on trolley and steam roads. This indicator is especially designed for use on trolley-cars, but may be used on vehicles of any kind wherever it is applicable.

The difficulty in applying street or station indicators for practical use arises from the necessity in case of mechanical types for using stationary lugs or projections along the track to operate means carried by the car, the station-exhibiter being located within the body of the car, which is mounted in springs, and therefore has a vertical movement relative to the station-lugs which are to operate the tripping device.

This invention relates to means by which indicator name-plates inside a case mounted on the car-body can be invariably operated by lugs or projections at stations along the track. I accomplish this object by mounting a tripping device in vertical ways or guides carried by the car-truck and connecting the same with the street-exhibiting mechanism by connecting-rods and a clutch which engages the connecting-rod to operate the same when the tripping device is raised by the station projection.

An object of this invention is to make provision for accurately presenting in the sight-opening the name of each street at the appropriate time without liability of any divergence from proper presentation.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of a car provided with the invention, showing location of indicator, trip, and means of connecting the same. Fig. 2 is a side elevation of the trip having the connecting-lever sectioned on line  $x^3 x^3$ , Fig. 3. Dotted lines indicate the tripping position of parts. Fig. 3 is a plan of the trip. Fig. 4 is an end elevation of the trip viewed from the right of Fig. 2. Fig. 5 is a fragmental perspective view of the bent lever in position. Fig. 6 is an elevation, partly in vertical section, on line  $x^6 x^6$ , Figs. 7 and 8. Fig. 7 is a vertical section on line  $x^7 x^7$ , Fig. 6. Fig. 8 is a bottom view of the

exhibiter-case, a part of the case being broken away. Fig. 9 is an elevation showing means for operating the device electrically.

1 designates the exhibiter, 2 the tripping device, and 3 the lug or projection located near the rail used to operate the trip.

4 is a plate which is fastened to the frame  $a$  of the truck by bolts 5 and carrying a slide 6 in the guides 7.

8 is a spring used to hold slide 6 in its normal position and is stopped by bolt 9.

10 is a bent lever pivoted to the slide 6 by pin 11 and pivoted to and transmitting motion to clutch-lever 12, which is pivoted to plate 4 by bolt 13.

14 is a clutch-guide and cramping member for operating connecting-rod 15 to cause the operation of the exhibiter. The member 14 is pivoted to clutch-lever 12 by a ball-and-socket joint  $b$ .

16 is a clutch-rod which is carried by the clutch-lever and is operated by bent lever 10 and is held in position by a screw 17, working in slot 18 in rod 16.

19 is a pin pivoting lever 10 to clutch-lever 12.

20 is a bell-crank, to which connecting-rod 15 is joined by a ball-and-socket joint 21.

22 and 23 are connecting-rods transmitting power from the trip 2 to the exhibiter 1.

24 and 25 are bell-cranks at turns in the connecting-rods.

26 is a guide and stop for a spring 27 for returning rod 23 after actuation by the trip.

28 is an actuating connecting-lever connected to rod 23 and pivoted in angles 29 by pin 28'.

30 is the case of the exhibiter, in which are mounted sprockets 31 and 32, the latter of which are idlers mounted on a shaft 33.

34 is a driving-shaft for the sprockets 31.

35 designates the indicator-cards carried on the sprocket-wheels by suitable connections, as sprocket-chains 36, to which motion is imparted from the shaft 34, which is driven by a spring 37 through shaft 38, bevel-gears 39 40, and spur-wheels 41 and 42.

43 is the tooth escapement-wheel mounted on the shaft 34, and 45 a pallet for controlling the same. Said pallet is actuated by a trip through a link 46, connecting the pallet with the lever 28, which is operatively connected with the trip, as hereinbefore described.

There are preferably two sets of name-



plates, as 35 35', one facing forwardly and the other rearwardly in the car, the exhibiter being desirably placed at the middle of the car, although it is to be understood that the operation of the device is not dependent upon its location in the car.

The spring 37, its shaft 38, and bevel-gear 39 are mounted in a shiftable frame 47, sliding on ways 47' and two sets of gears for transmitting the power from the wheel 39 are provided, as indicated at 40 40' 41 41' 42 42'.

48 is a lever pivoted at 49 to the case 30 and at 50 to the frame 47 of the spring and driving-gear 39. By moving the lever 48 in one direction the driving-gear 39 will engage the transmitting-gear 40 to drive the indicating name-plates 35 in one direction during the outer trip, for instance, and when the end of the line is reached the lever 48 will be shifted to mesh the driving-wheel 39 with the transmitting-gear 40', so that on the return trip the shaft 34 and the name-plates will be driven in a direction reverse to that on the outtrip. It will be understood, however, that in the case of a belt line it will be unnecessary to shift the device. It is also to be understood that I do not limit the device to a set of name-plates which can be accommodated on only two sets of sprockets, as shown, as it is obvious that by the addition of other idlers any number of name-plates can be provided, ample space being at the top of the car for the accommodation of any length of sprocket-chain with cards attached, as may be found necessary to serve the line.

In practical operation as the car advances the tripping-slide 3 will engage the tripping-lug 3, a number of which are stationed appropriately along the line to operate the trip at such places as may be desired to change the reading of the card, which is shown through the sight-openings 51 in the case. When the tripping-slide strikes the tripping-lug, said slide will be moved upward against the pressure of the spring 8, thus operating the bent lever 10 and forcing the clutch-rod 16 to engage the connecting-rod 15, and upon further upward movement of the slide the lever 12 will draw down upon the connecting-rod 15, thus actuating the lever 28 and operating the escapement, allowing one step of the escapement to occur. The parts are so proportioned that each operation of the escapement will allow the advance of one name-plate of the station-exhibit device and that when the spring-carrying frame or box 47 is being shifted the wheel 39 will engage both the wheels 40 and 40' at the intermediate position, thus preventing the spring 37 from running down. The accurate presentation of the names at the sight-opening is effected by the employment of separate name-plates 35, carried on the continuous sprocket-chains 36 and their wheels 31, as shown, and operated by a step-by-step mechanism. This avoids any vari-

ableness in the presentation of the street-name at the sight-opening 51.

By referring to Fig. 2 it will be understood that when the car comes into position to cause the tripping-slide 6 to assume the position indicated in dotted lines that the first result would be to actuate the bent lever 10 to force the clutch-rod 16 against the upright connecting-rod 15 within the cramping member 14 and that a further upward movement of the slide 6 will swing the lever 12 on its pivot 13, thus forcing the connecting-rod 15 down, as hereinbefore stated. The bent lever 10 is connected with the clutch-rod 16 by a universal joint 10', and this joint, together with the ball-and-socket joint 6, allows the play for thorough practical operation.

A designates car-trucks, B railway-track, and C the car-body, carried by the springs D in the usual manner. The connecting means comprising the rod 15 and the clutch-guide 14 is practically extensible to accommodate the movement of the body of the car relative to the frame of the truck, said rod 15 playing freely in the clutch-guide at all times except when the clutch is being actuated.

The apparatus shown in Fig. 9 is applicable for operating the solenoid for actuating a lever 28. When the slide 6 moves up by reason of contact with the projection 3, the spring 60, carried thereby, contacts with the contact-point 61, which is insulated from the frame 4 by insulation 62. Said contact between 60 and 61 forms a circuit through the conductor 63, thus energizing the solenoid 64 to actuate the lever 28 against the force of spring 27, whereupon the operation of the elements shown in Figs. 6 and 7 will take place, as before described.

70 indicates a stem by which the spring 71 will be wound up.

71 designates a bell, rung by the trip 72.

The indicator-case 1 will be detachably mounted in the car in any desirable way, (not shown,) and the connecting-rod 23 may be separable by means of a union 73 to allow the same to be detached and replaced with the exhibiter having a greater or less number of name-plates for the longer or shorter route.

I do not limit the invention to the particular form of clutch shown, for a part of my invention, which is defined by the appended claims, may be embodied by the use of other forms of clutch, (not shown,) nor do I limit the invention to location at any particular part of the car.

Each set of cards and the sprocket wheels and chains for operating the same constitute an exhibiting device for exhibiting appropriately the names of the streets or stations along the given route, and the spring-driven shiftable bevel-gear 39 and the bevel-gears 40 40', the spur-wheels 41 41', the pinions 42 42', and their shaft 34 constitute single



means for simultaneously actuating both of said exhibiting devices, said means being adapted for alternatively actuating the one of said means in one direction and the other in the other direction, and vice versa.

The part referred to as the "track-frame a" is supported directly by the car-axle and carried at a determined height relative to the track upon which the car runs. By the construction shown the change in the height of the car by reason of heavier or lighter loads or compression or extension of the springs does not interfere with the position of the tripping device relative to the lug which operates the same. By providing extensible connecting means between the tripping device and the escapement the depression or elevation of the car by reason of heavier or lighter load or from any other cause has no effect on the operation of the device.

I claim—

1. A spring-actuated exhibiter, an escapement for controlling the same, a vertically-moving slide, a connecting-rod connected to operate the escapement and a clutch operated by the slide to operate the connecting-rod.

2. An exhibiter, means to cause the operation of the exhibiter step by step, a slide, a

connecting-rod for controlling the operation of said exhibiter, a pivotally-mounted clutch for operating the connecting-rod, and means pivotally connecting said clutch with said slide.

3. An exhibiter, a connecting-rod to permit the operation of said exhibiter, a cramping member for the connecting-rod, a pivoted clutch-lever for operating the cramping member, a clutch-rod carried by the lever to engage the connecting-rod and a lever pivotally connected with the clutch-lever and with the clutch-rod for operating said clutch-rod.

4. Reversely-arranged exhibiting devices, spur-wheels, one for each exhibiting device, a shiftable spring-driven gear adapted to alternatively drive one and the other of said spur-wheels, a shaft and pinions thereon connecting said spur-wheels, an escapement to allow step-by-step operation of the spur-wheels, and means for operating the escapement.

In testimony whereof I have hereunto set my hand at Los Angeles, California, this 2d day of December, 1905.

ORLANDO E. KELLUM

In presence of—

JAMES R. TOWNSEND,  
TILLIE E. ADAMS.