

No. 843,445.

PATENTED FEB. 5, 1907.

J. & H. LE R. DALE.
TROLLEY CONTROLLING DEVICE.

APPLICATION FILED JULY 9, 1906.

2 SHEETS—SHEET 1.

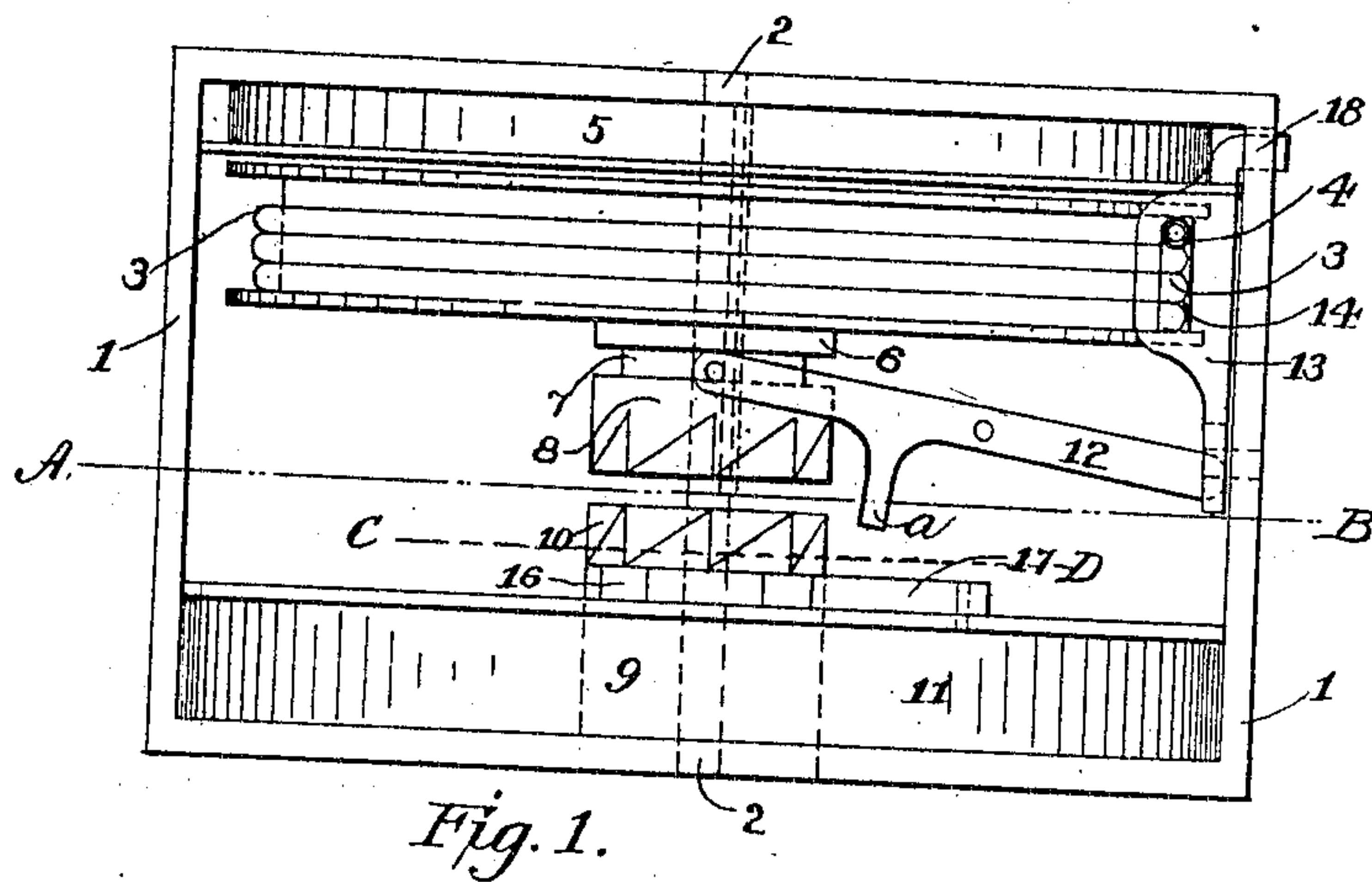
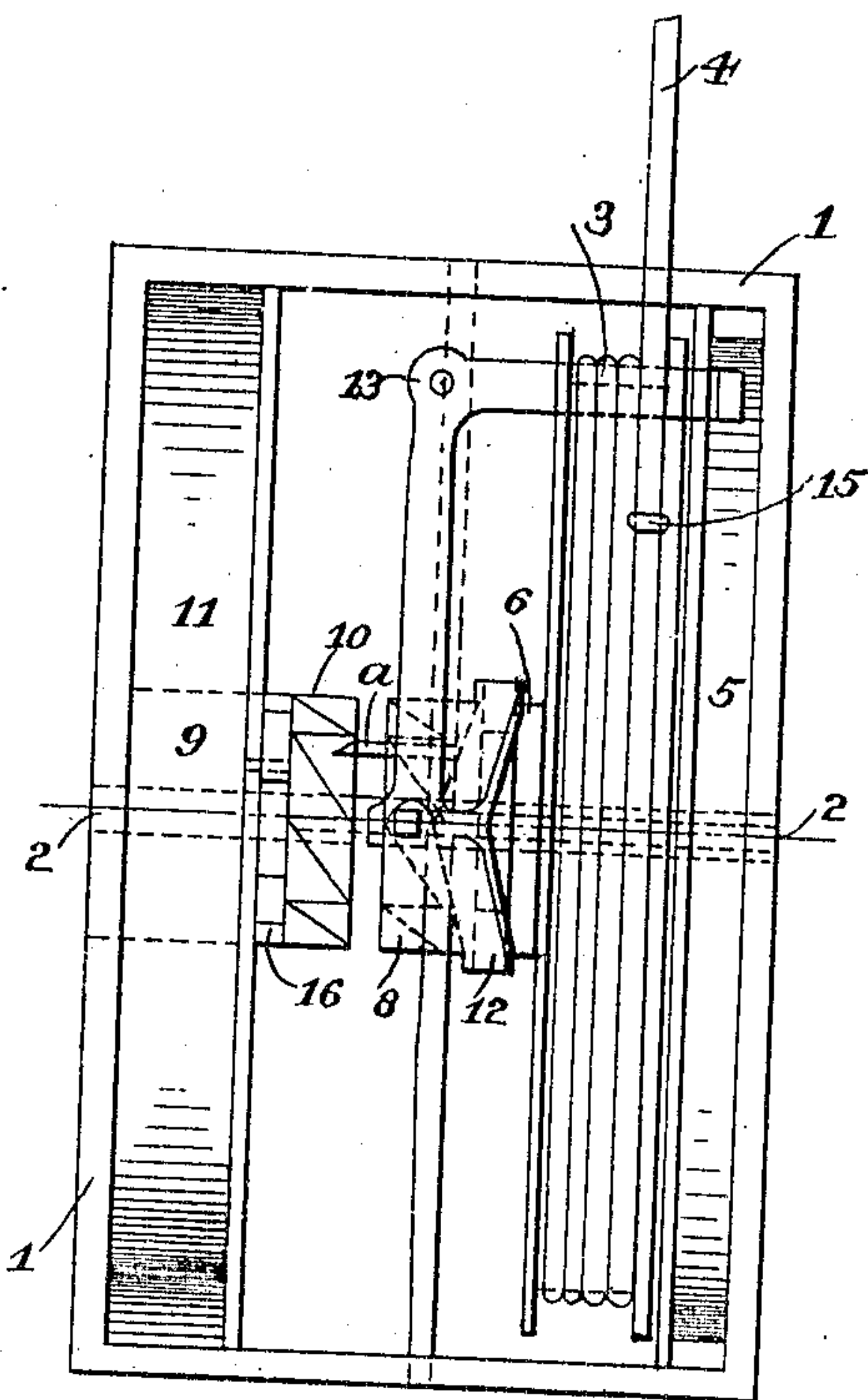


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

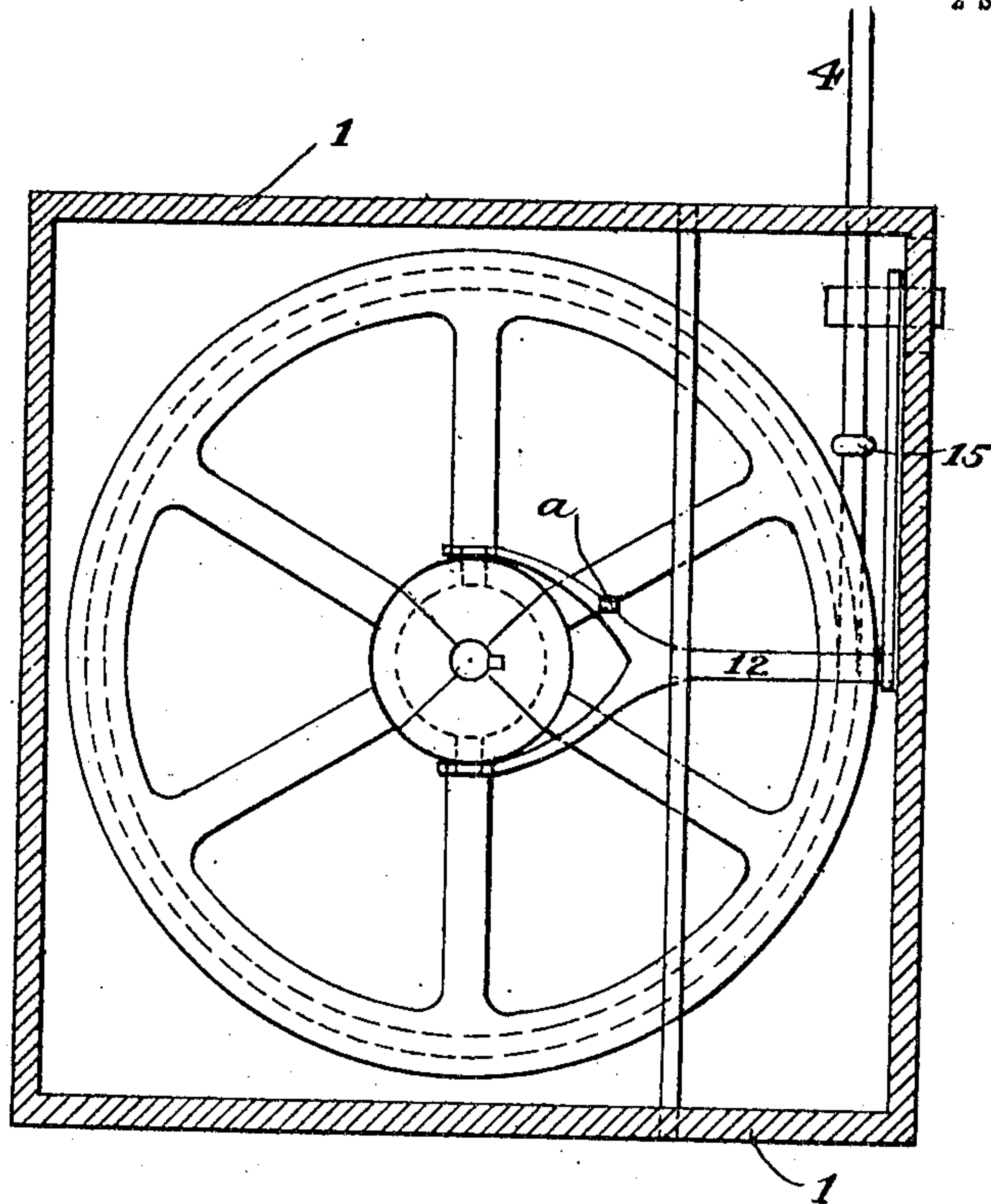
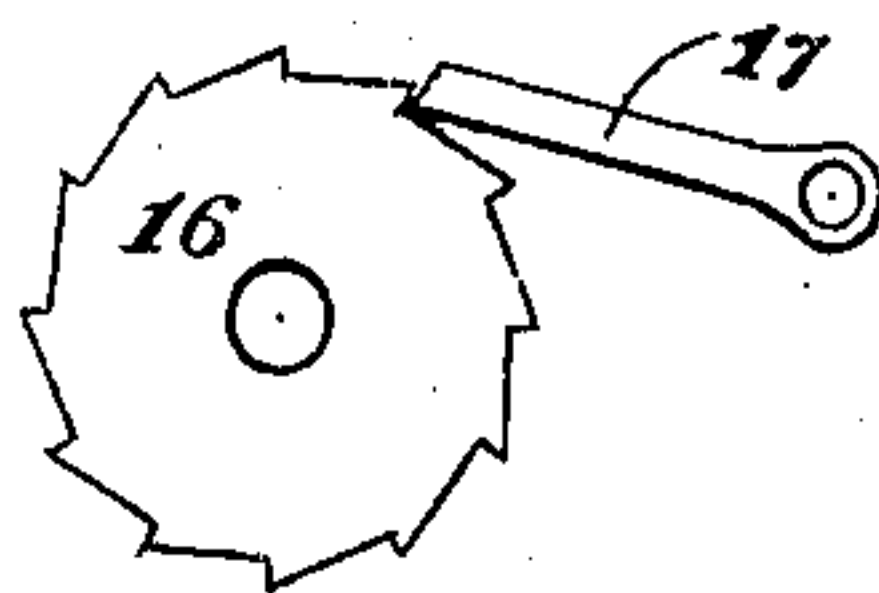


Fig. 4.



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UNITED STATES PATENT OFFICE.

JONATHAN DALE, OF KINSTON, NORTH CAROLINA, AND HARVEY LE ROY DALE, OF NEWPORT NEWS, VIRGINIA.

TROLLEY-CONTROLLING DEVICE.

No. 843,445.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed July 9, 1906. Serial No. 325,371.

To all whom it may concern:

Be it known that we, JONATHAN DALE and HARVEY LE ROY DALE, citizens of the United States, residing, respectively, at Kinston, in the county of Lenoir and State of North Carolina, and Newport News, in the county of Warwick and State of Virginia, have invented certain new and useful Improvements in Trolley-Controlling Devices, of which the following is a specification.

Our invention pertains to improvements in trolleys for electric railways generally, more especially controlling devices therefor. Its object is to provide for automatically controlling the action or movement of the trolley in event of the derailment of its wheel or pulley and to do this in a simple and effective manner.

Said invention consists of certain structural features or instrumentalities substantially as hereinafter fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of our invention, Figure 1 is a plan view thereof. Fig. 2 is a front end elevation of the same. Fig. 3 is a vertical section produced upon the line A B, and Fig. 4 is a detailed side view of a ratchet and pawl employed in connection with a clutch-faced collar fixed upon the shaft of the trolley-pole line-winding drum.

In carrying out our invention we arrange the several constituent parts or instrumentalities thereof in a suitable inclosure or casing 1, fastened, say, to the end of the car directly under the overhanging portion of the car-roof.

Carried by and slidable upon the shaft 2 is the usual drum 3, having a feathered or spline connection therewith, as indicated, and around which is coiled or wound a number of times the line 4, connected to the trolley-pole (not shown) for the convenient shifting of the latter, as well understood.

A spring 5, preferably of the coiled type and having one end secured to the inclosure or casing 1, delivers its stress or tension to the shaft 2, carrying the drum 3, and is effective to provide for the rewinding of the coils or layers of the rope or line 4 upon said drum for automatically compensating the usual slack of the line as the trolley is manipulated or shifted by the carman or conductor. To one side of said drum is fixed a collar 6, hav-

ing, in addition to an annular groove 7, the purpose of which will presently be apparent, a clutch face or surface 8, and opposed to said clutch-face 10 is a second collar 9, sleeved upon the shaft 2 and to which latter collar is delivered the stress or tension of a spring 11, having a fixed connection with the inclosure 1, the purpose of which will also be presently seen.

A centrally-fulcrumed shipping-lever 12, equipped with a stud or projection *a*, has the prongs of its bifurcated end provided with inward-extending studs or projections entering or engaging the annular groove 7 of the collar 6 and its opposite end engaged by and received between prongs upon the lower end of the vertical arm of a bell-crank lever 13, suitably fulcrumed in position. The horizontal arm of the lever or bell-crank 13 has an elongated slot 14 in its free end portion, the latter standing directly above the drum 3, and through said slot passes the trolley-pole-manipulating line 4, said line having a ball 15 or knot thereon effective to engage and elevate said end of lever, as presently seen.

A ratchet-pinion 16 is secured laterally to the collar 9 and engaged or retained in initial position by a dog or pawl 17, suitably pivoted in position for initially holding said pinion, together with said collar, against rotation by the recoil action of the stressed or tensioned spring 11.

It is noted that while the normal spring action of the drum 3 will compensate the usual slack in the trolley-pole-manipulating line when released from the pull of the conductor after engaging the wheel or pulley of the trolley with the overhead wire or track, yet in event of the derailment of said wheel or pulley the upward thrust which would thus be imparted to the trolley-pole would not be controlled by the spring tension of said drum, which would be necessary to prevent involvement or contact of the pole with the wires. In such an emergency, however, in the use of our invention the upward movement of the trolley-pole, carrying with it, of course, the line 4, will engage the ball or knot 15 with and swing the lever 13, which will move the lever 12 so as to bring the clutch-faces 8 and 10 into initial engagement and cause the stud or projection *a* to engage and lift the dog or pawl 17, disengag-

ing it from the ratchet 16. The recoil action of the stressed spring 11 will be thus transmitted to the drum 3 and compensate the additional slack in the pole-manipulating line or rope. The parts may be readily restored to initial position manually by suitably retracting the pawl or stud *a* of the lever 12 from the dog or pawl 17, when the latter will by gravity reengage the ratchet-pinion 16 and by rewinding or stressing the spring 11 by suitably actuating the ratchet-equipped sleeve 10, as is apparent.

The lever 13 has one end initially resting in an opening in the inclosure 1, as at 18, to permit of the actuation of the device manually when desired.

It is noted that any minor structural changes as related to the exact details and arrangement of the parts may be made without departing from the spirit of our invention.

We claim—

1. A device of the character described, comprising a spring-actuated drum for initially controlling the trolley-pole-manipulating line, a lever actuated by said line, a second lever operated by the aforesaid lever, itself adapted to impart a sliding movement to said drum, a spring-actuated collar arranged upon the shaft of said drum and effective

for imparting additional spring action to said drum, and a dog-and-ratchet retaining means for said collar said lever having an offset or stud for tripping said collar-retaining means.

2. A device of the character described, comprising a spring-actuated drum for initially controlling the trolley-pole-manipulating line provided with a collar having a clutch-face, a lever actuated by said line, a shipping-lever actuated by the aforesaid lever and provided with an offset or stud, a spring-operated collar arranged upon the shaft of said drum and having a clutch-face, said clutch-faces adapted for mutual engagement, a ratchet-pinion attached to the latter collar, and a pawl or dog engaging said ratchet, said shipping-lever having its offset or stud engaging or tripping said dog.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JONATHAN DALE.

HARVEY LE ROY DALE.

Witnesses as to Jonathan Dale:

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