No. 736,197. PATENTED AUG. 11, 1903.

H. BENTZ.

TELPHERAGE SYSTEM.

APPLICATION FILED FEB. 12, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.

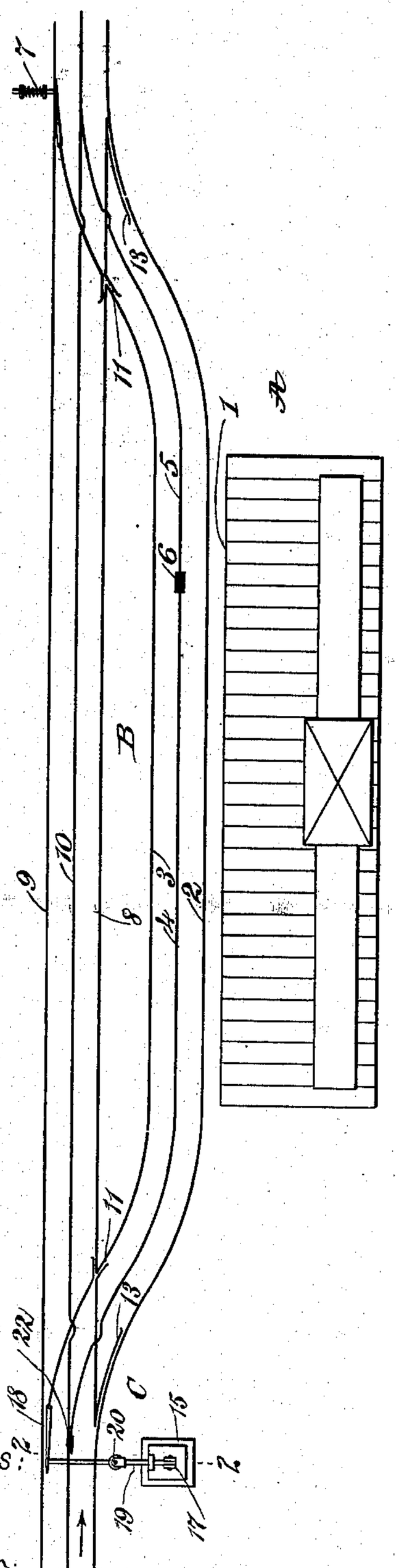

Fig. 2.

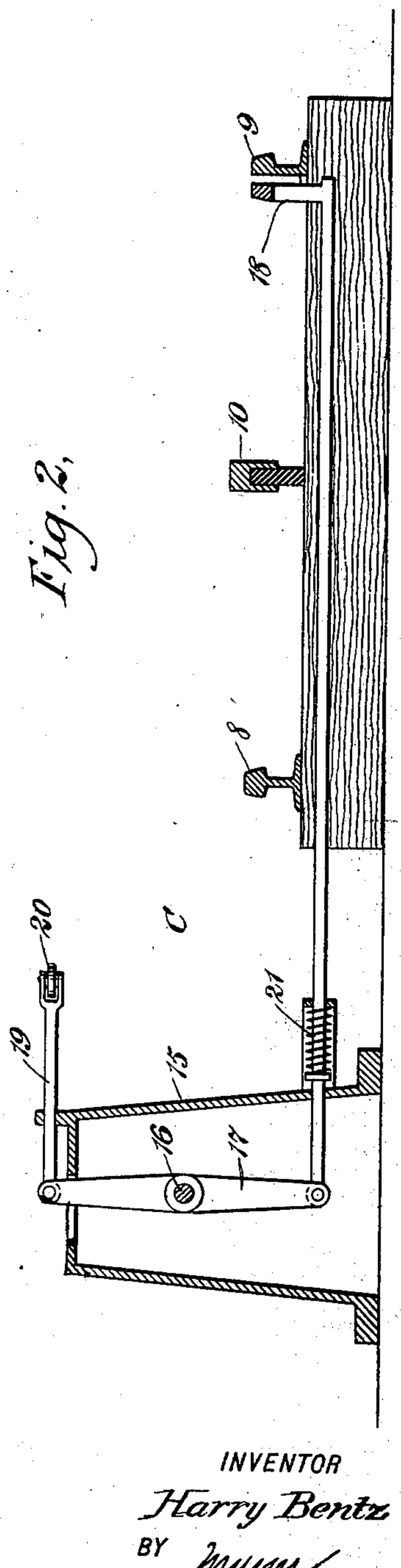

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Fig. 3.

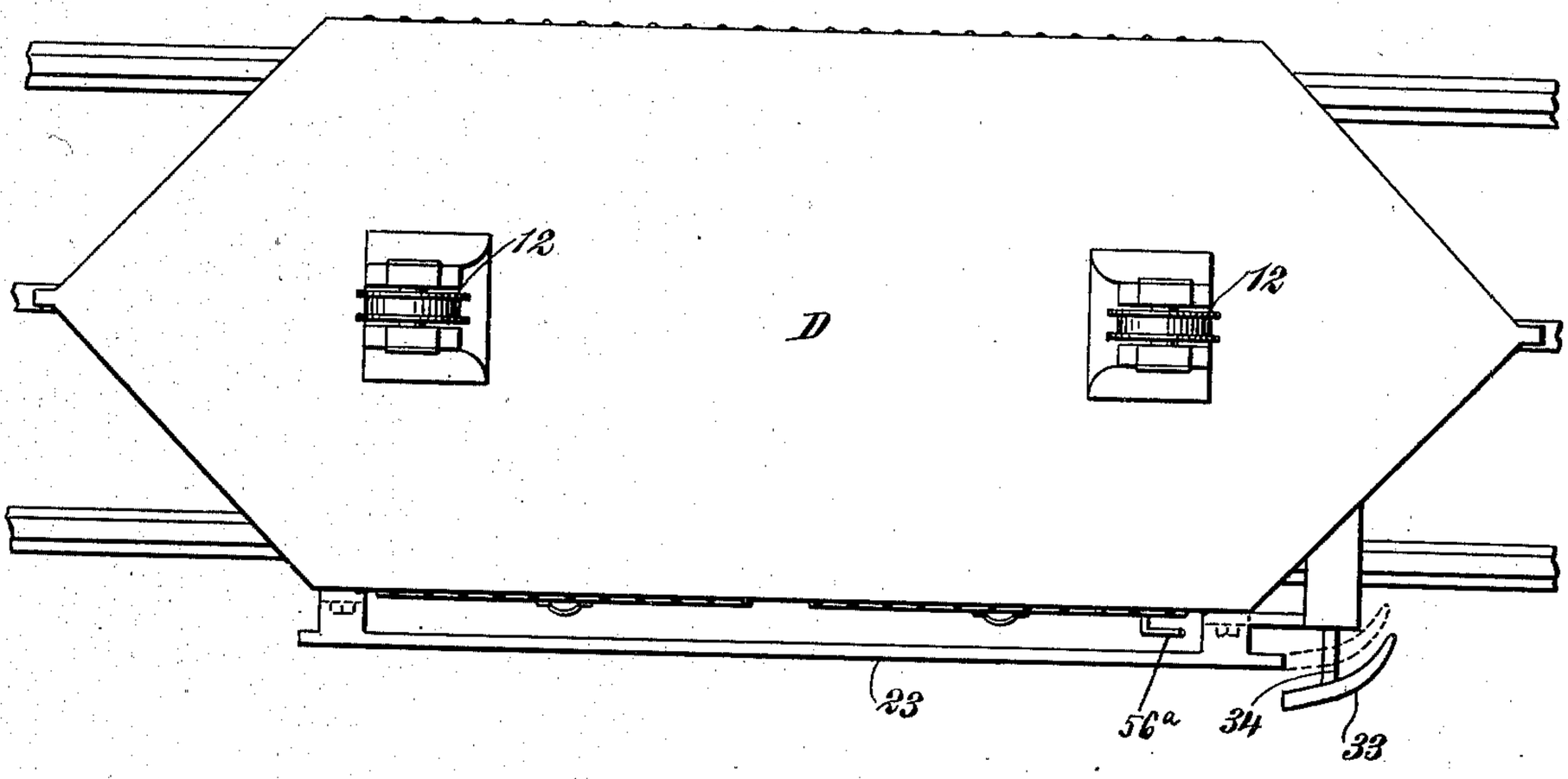

Fig. 4.

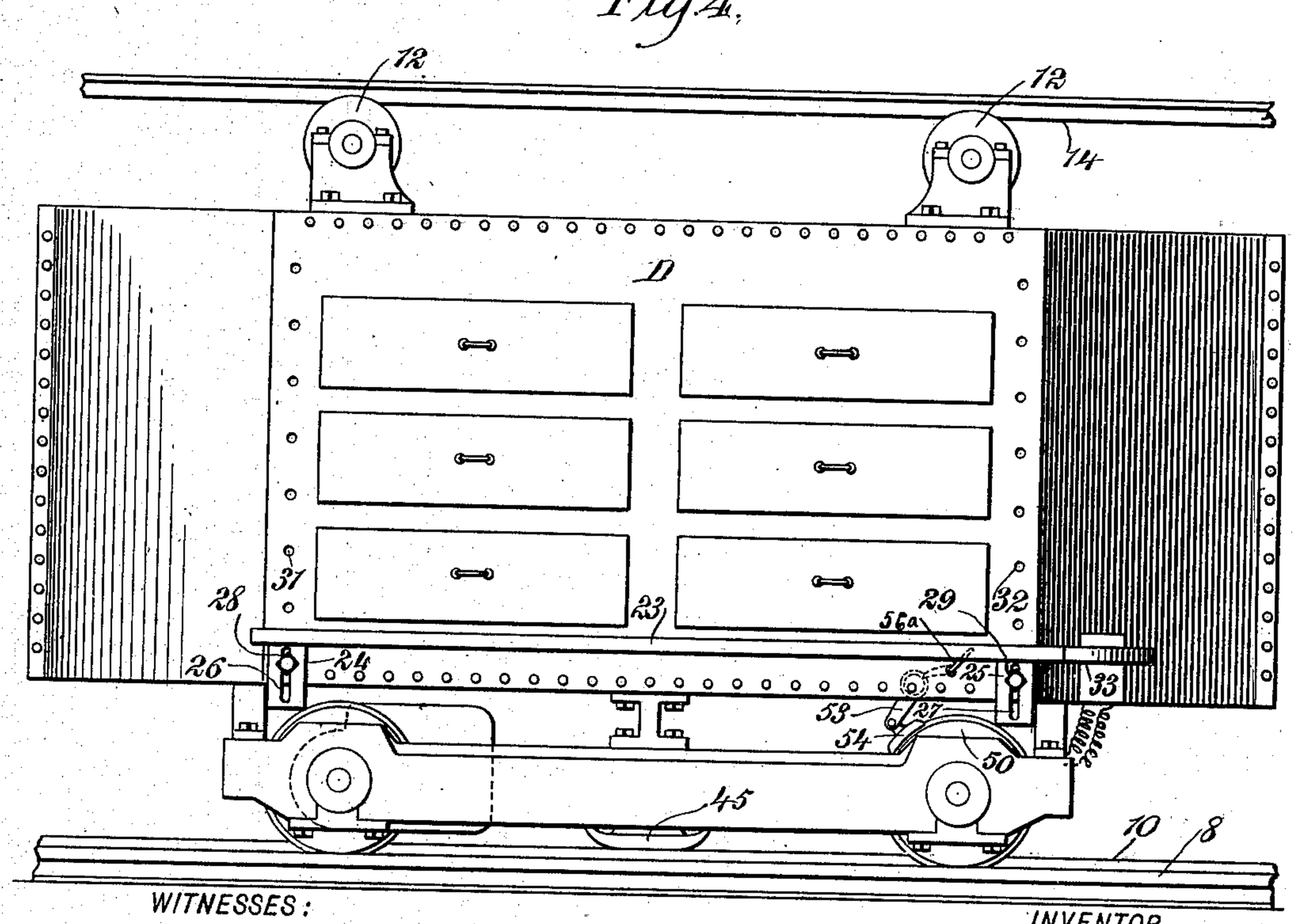

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Fig. 5.

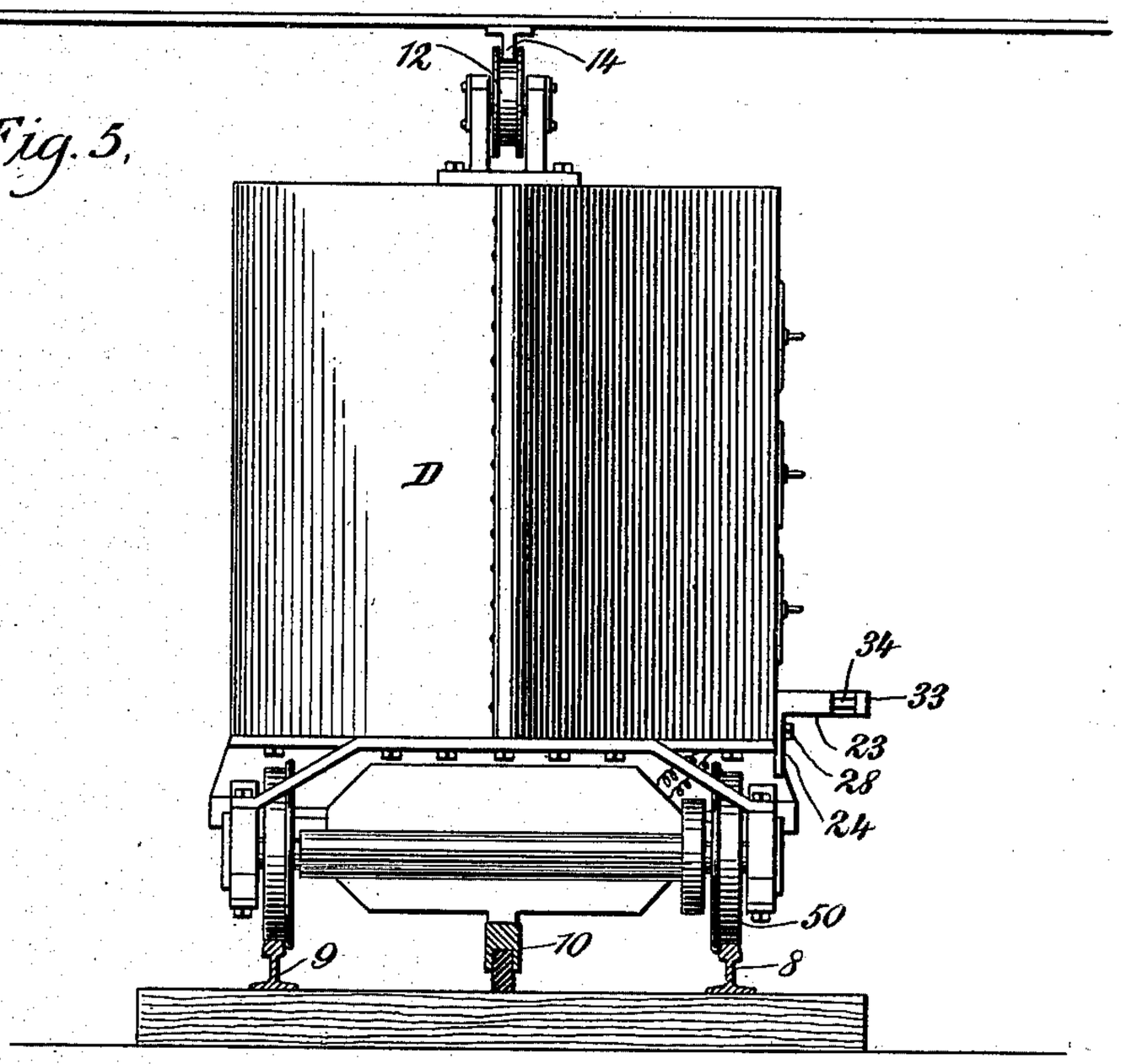
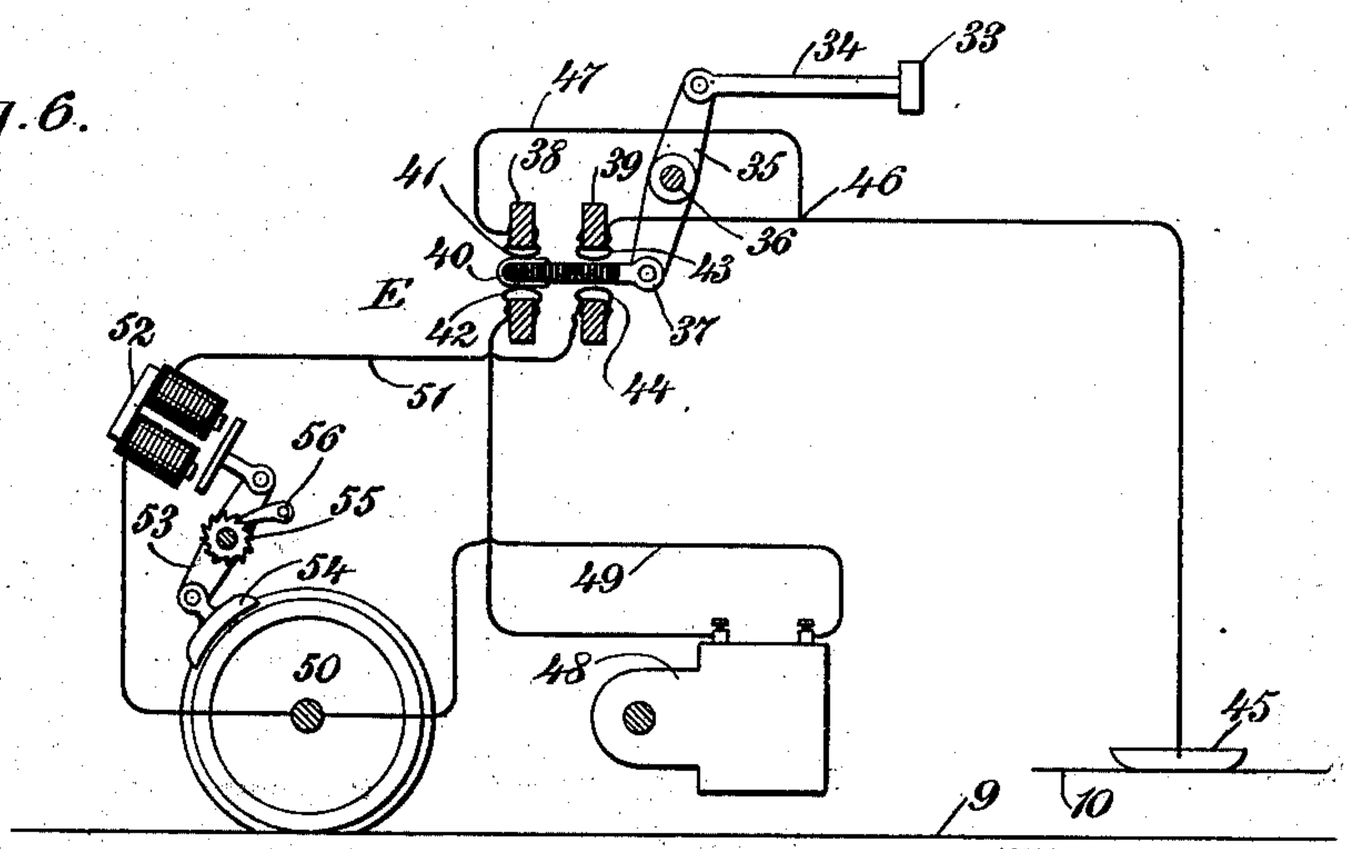


Fig. 6.



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No. 736,197. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

HARRY BENTZ, OF NEW YORK, N. Y.

TELPHERAGE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 736,197, dated August 11, 1903.

Application filed February 12, 1902. Serial No. 93,685. (No model.)

To all whom it may concern:

Be it known that I, HARRY BENTZ, a citizen of the United States, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Telpherage Systems, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a diagrammatic view of one of the stations. Fig. 2 is an enlarged section on the line 2 2 of Fig. 1 looking toward the left. Fig. 3 is a plan view of one of the cars used. Fig. 4 is a side elevation of the same. Fig. 5 is a rear view of one of the cars. Fig. 6 is a diagrammatic view of the electric switch, motor, and brake mechanism.

The station-house is shown at A.

B shows the main track and a side track.

C shows the track-switch-controlling connection between the main track and side track.

D shows the body of the car, and E shows the relation between the electrical motor and the electric brake, together with the switch for shifting the current from one to the other.

The front 1 of the station-house A faces the side track. This side track consists of ordinary rails 2 3, of a dead rail 4, and a live rail 5, disposed between the ordinary tracks and separated from each other by insulation 6. An ordinary track-closing switch 7 is provided and operates in the usual manner. The main track consists of ordinary rails 8 9 and a live rail 10. The frogs 11 are of the usual pattern. The trolley-wheels 12, mounted upon the tops of the cars, have no electrical connection and run upon the under side of the rail 14 for the sole purpose of serving as guides. The guide-rails 13 of the side track are for the purpose of directing the car from said track to the main track, and vice versa.

Within a casing 15 is mounted the track-switch mechanism. Upon the pivot 16 is a rocking lever 17, which is provided for the purpose of actuating the pivoted guide-rail 18 in the usual manner. The sliding arm 19 is provided with a roller 20, which roller is struck by a member upon the moving car, thus actuating the lever 17 and opening the switch. A spring 21 normally retains the switch in the position indicated in Fig. 1, the result of which is that cars passing in the direction of the arrow shown in said figure are kept upon the main track. When, however, the arm 19 is moved away from the track, the switch is so shifted that the car runs into the siding.

The insulation 22 separates the dead rail 4 of the side track from the live rail 10 of the main track, whereas the live rail 5 of the side track is connected directly with the live rail 10 of the main track.

Upon the car D is mounted a rail 23, which is provided with depending tongues 24 25, said tongues being provided with slots 26 27, engaged by bolts 28 29, whereby the rail 23 is rendered adjustable. By means of the threaded holes 31 32 the bolts 28 29 can be adjusted to any desired height relatively to the track and to the body of the car, so that the rail 23 can be adjusted at any point intermediate of the bottom and top of the body of the car D.

Upon the forward end of the rail 23 is mounted the electrical-switch mechanism for controlling the motor and the electric brake. A curved member 23 (shown best in Figs. 3 and 4) is mounted upon the outer end of a stem 34. This stem is pivoted upon the lever 35 and this lever rocks upon a pivot 36. At the lower end of this lever is pivoted a member 37, made of insulating material and situated just below the brackets 38 39, which are secured rigidly upon the rail 23. This insulated member is provided with a metallic contact 40, which normally engages the spring-contacts 41 42, connected with the motor, and which by being shifted connects the spring-contacts 43 44 for the purpose of controlling the electric brake. A shoe 45 serves as a contact for conveying the current from the live rail to the contacts 41 and 43. The junction 46 is provided for the purpose of throwing the current to either of these contacts, according to the position of the member 33.

The motor is shown at 48 and is connected by a wire 49 with the axle of the wheel 50, thus forming a ground connection. From the spring-contact 44 a wire 51 leads to the

magnet 52. This magnet actuates a lever 53, provided with a brake-shoe 54, and is tentatively held by the ratchet-wheel 55 and pawl 56.

The operation of my device is as follows: From one of the stations an operative desires to send a car loaded with packages to a certain other station. The casings 15 at the several stations are of different heights relatively to the track, so that the rollers 20 are at different elevations. The rails 23 upon the cars can be adjusted, as above explained, so as to correspond with the different elevations of the rollers 20 at the several stations. Suppose now that an operative desires to send the car D to the station A. He adjusts the rail 23 to the proper elevation necessary to cause this rail to encounter the roller 20. He next pulls the rounded head 33 outward, so that the electric-switch mechanism will assume the position indicated in Fig. 6. He now moves the car forward by hand upon the side track until a contact is made with the live rail 5. This causes the current to flow through the motor 48, and the car is therefore automatically propelled forward. Arriving at the station in question, the head 33 strikes the roller 20. This reverses the electric-switch mechanism, (shown in Fig. 6,) breaking connection between spring-contacts 41 and 42 and establishing connection between the spring-contacts 43 44. The effect is the current is thrown off the motor and onto the electric brake, the magnet 52 actuates the brake, and the pawl 56 holds the brake upon the wheel. At the same time the roller 20, by pressing the rod 19 in a direction away from the track, actuates the lever 17 and throws the track-switch into such a position that the car is side-tracked. As the car has more or less momentum it will move along the dead rail an appropriate distance before it is completely stopped by the brake. The brake is applied, however, before the car is shifted to the siding. The operative at the station A now removes the packages, loads the car for some other station, releases the pawl 56 by means of the handle 56[a], restores the electric-switch mechanism to the position indicated in Fig. 6, adjusts the rail 23 to an elevation appropriate for some other destination, and then pushes the car forward until contact is made with the live rail 5, whereupon the car proceeds upon its journey. In a large system in which many packages are carried the work of the operative at each station develops into a monotonous routine of adjusting the rails to different heights, restoring the members 33 to the position indicated in full lines in Fig. 3, throwing the pawl 56 over to the right, loading and unloading packages, restoring the pawl 56 to the position indicated in Fig. 1, and pushing the car forward.

I do not limit myself to any particular means for adjusting the rail 23 nor for restoring the switch mechanism to its normal position. It will be observed that when the member 33 encounters the roller 20 this roller rotates along the outer edge of the member 23 from one of its ends to the other, thus holding the guide-rail 18 of the track in its abnormal position until the car has passed well into the siding. This is for the purpose of preventing the rear wheels of the car from being derailed by the switch resuming its normal position too quickly.

My system admits of a great variety of uses. It can be employed in the transmission of mails, telegrams, and parcels and can be used in stores, factories, and all other places where it is desired to transport comparatively small objects from one point to another over predetermined routes. The system can also be used upon underground routes of every kind and in connection with pneumatic tubes. The number and variety of uses to which my system may be applied is practically without limit and will readily suggest themselves to persons skilled in the art.

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

1. A telpherage system, comprising a main track, side tracks, track-switches disposed at intervals for controlling connection between said main track and said side tracks, said track-switches being provided with levers disposed at different elevations relatively to said main track, cars for running upon said tracks and provided with vertically-adjustable members for engaging said levers, and automatic electric brakes connected with said members and actuated thereby for stopping said cars.

2. A telpherage system, comprising a main track, side tracks, track-switches disposed adjacent to said side tracks for controlling connection between the same and said main track, said track-switches being provided with operating members disposed at different heights relatively to said main track, cars provided with electric motors and electric brakes, members mounted upon said cars and vertically adjustable relatively thereto for the purpose of actuating said members of said switches, and provided with electric-switch mechanism connected with said motors and brakes and free to be actuated by said members of said track-switches.

3. A telpherage system, comprising a main track provided with a live rail, side tracks provided with both live rails and dead rails, track-switches exposed adjacent to said side tracks for controlling mechanical connection between the same and said main track, said track-switches being provided with members disposed at different elevations relative to said main track and free to move laterally from said track, cars provided with electric motors and electric brakes, rails mounted upon said cars and adjustable to different elevations relatively thereto for the purpose of engaging

said members of said track-switches, electric switches mounted upon the forward ends of said rails and provided with members for engaging said members of said track-switches, and means for energizing said live rails, the arrangement being such that the track-switches and the electric switches mutually actuate each other, thus shifting the cars upon the side tracks adjacent to the dead rails thereof and applying the brakes.

4. A telpherage system, comprising a main track, a side track, a track-switch for controlling connection between the same, a car provided with an electric motor and an electric brake, means for normally supplying a current to said motor, and means automatically controlled by said car for simultaneously actuating said track-switch and switching said current from said motor to said brake.

5. A telpherage system, comprising a main track provided with a live rail, a side track provided with a dead rail, a track-switch for controlling connection between said tracks, a car provided with an electric motor normally connected with said live rail, and also provided with an electric brake, and with ratchet mechanism for maintaining the grip of said brake, an electric switch controlling said electric motor and said brake, and means controllable automatically by the car for simultaneously shifting said track-switch and said electric switch.

6. A telpherage system, comprising a main track, a side track, a track-switch for controlling connection between said tracks, said track-switch being operated by a movable member, a car provided with electric-motor mechanism and electric-brake mechanism, and also provided with an electric switch for controlling said electric-motor mechanism and said electric-brake mechanism, said switch having a movable member for actuating it, and means for normally supplying an electric current to said car, the arrangement being such that said movable member of said electric switch automatically encounters said movable member of said track-switch, whereby said switches automatically actuate each other, thus shifting the car from the main track to the side track and shifting the electric current from the motor to the brake.

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

HARRY BENTZ.

Witnesses:
STUART BENTZ,
I. I. RILEY.