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AERIAL TRAMWAY.

APPLICATION FILED APR. 16, 1908.

914,397.

Patented Mar. 9, 1909.

2 SHEETS—SHEET 1.

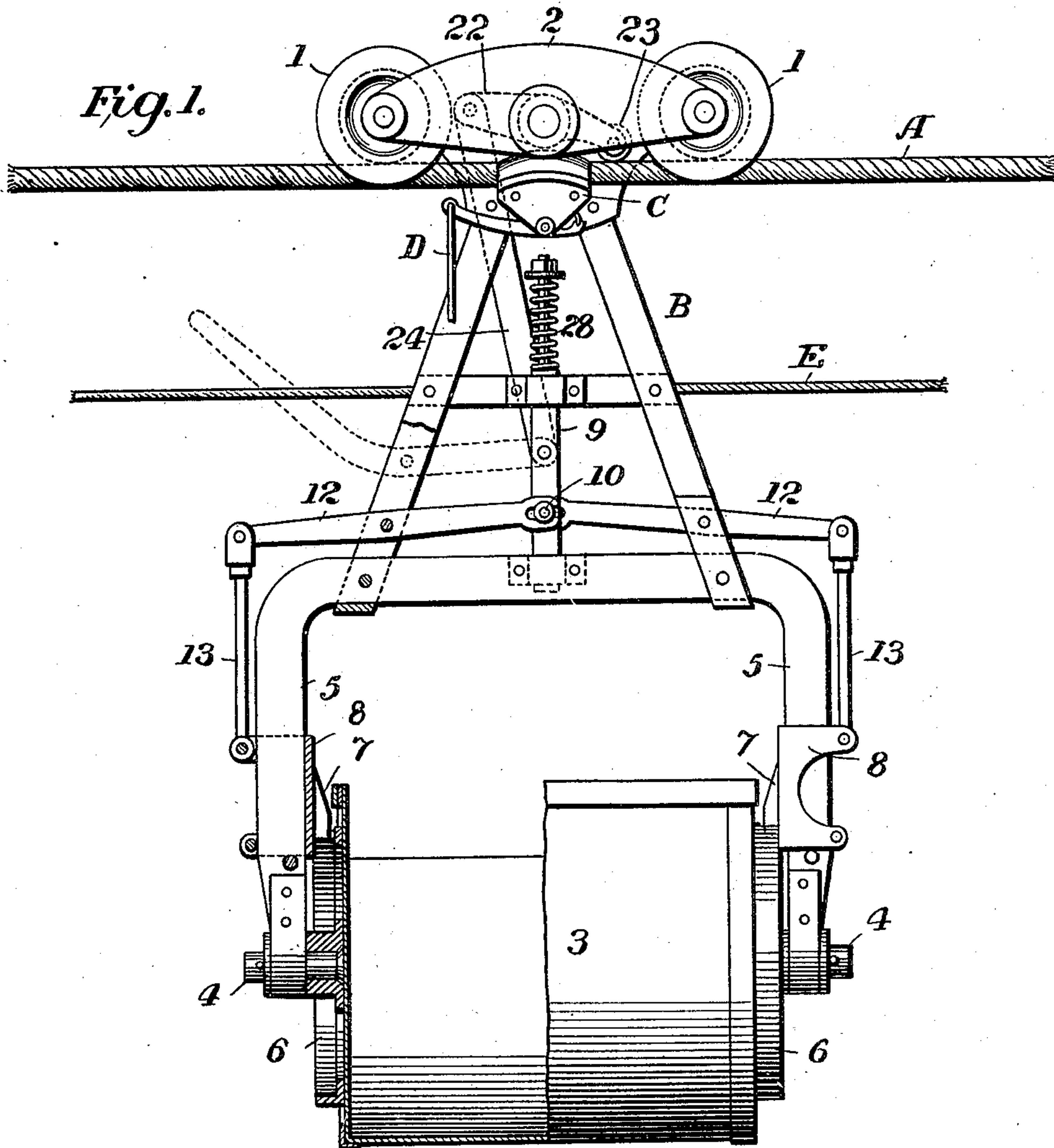


Fig. 2.

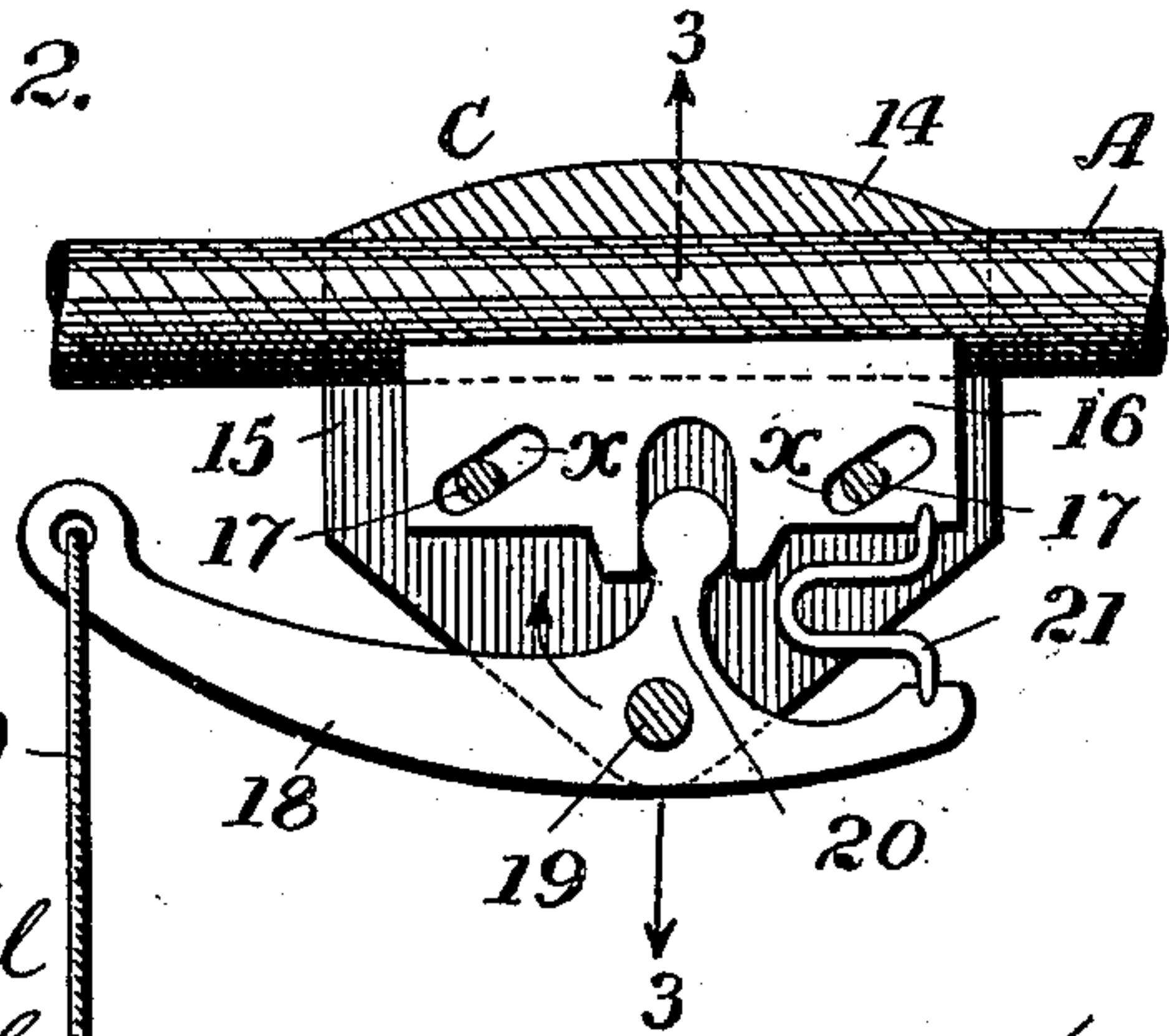
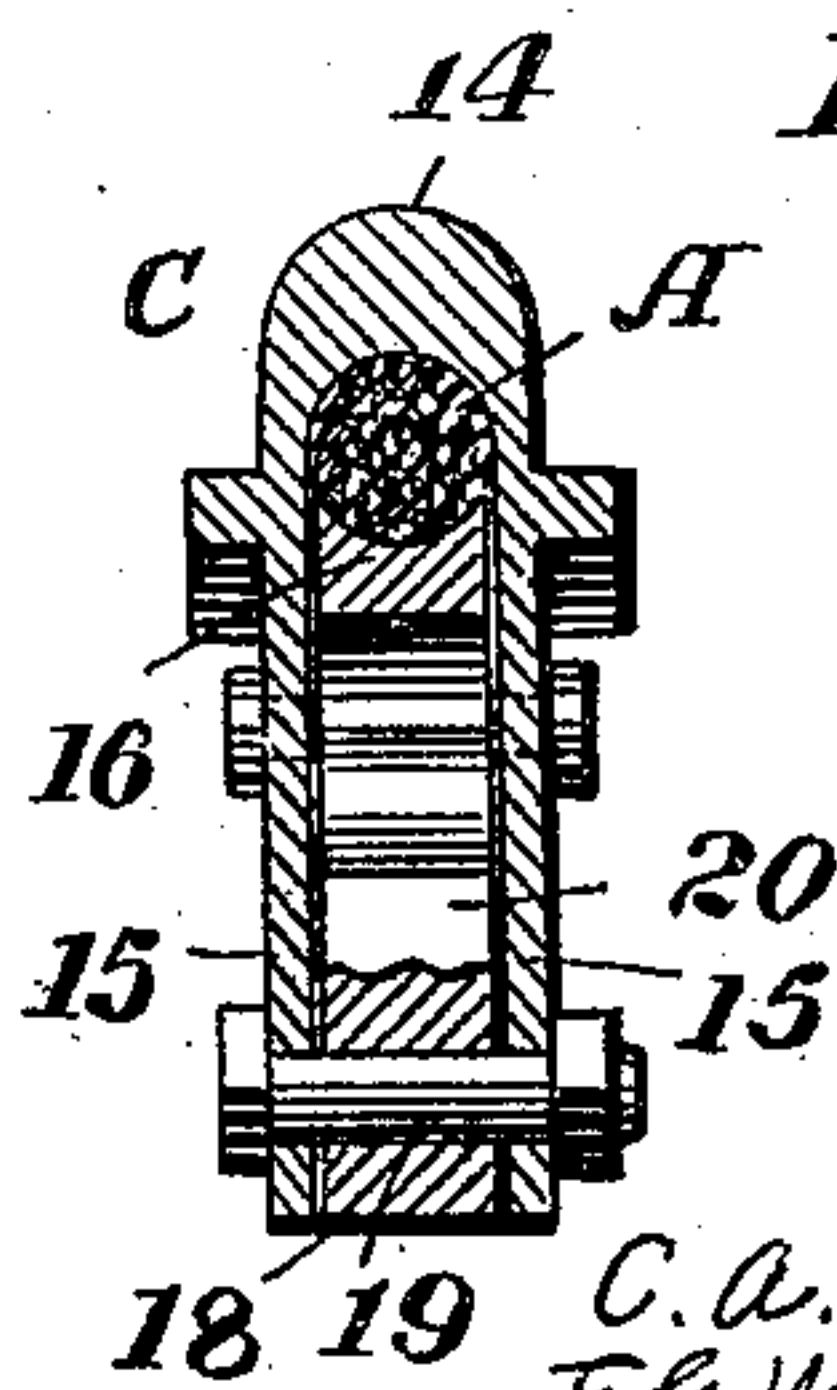


Fig. 3.



Witnesses
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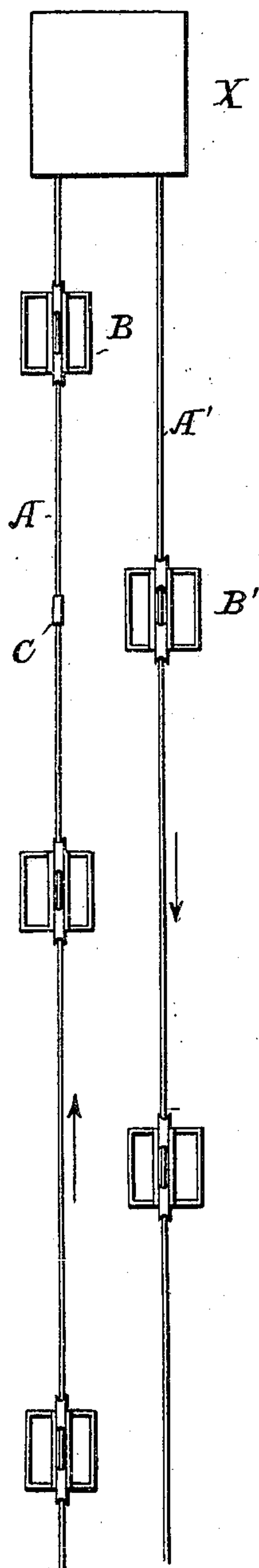
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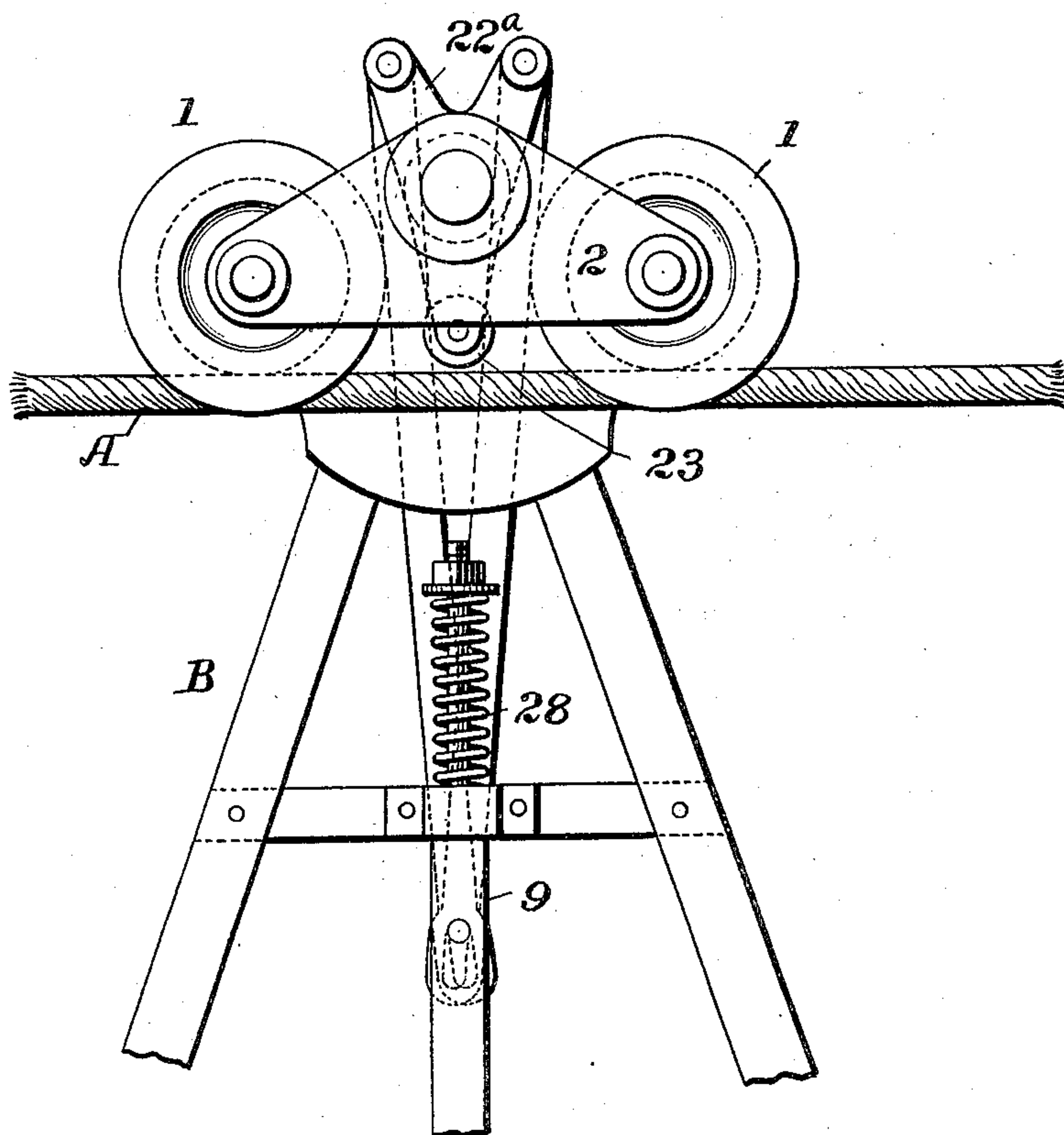
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Fig. 4.



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Fig. 5.



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UNITED STATES PATENT OFFICE.

CLINTON ARTHUR DUNLAVY, EDWARD G. W. FERGUSON, AND BURCHARD THOENS, OF NEW YORK, N. Y., ASSIGNORS TO SAID DUNLAVY.

AERIAL TRAMWAY.

No. 914,397.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed April 16, 1908. Serial No. 427,483.

To all whom it may concern:

Be it known that we, CLINTON ARTHUR DUNLAVY and EDWARD G. W. FERGUSON, citizens of the United States, and BURCHARD THOENS, a subject of the Emperor of Germany, and all residing at New York, N. Y., have invented certain new and useful Improvements in Aerial Tramways, of which the following is a specification.

Our invention relates to that class of tramways in which carriers are supported by elevated tracks, and consists in means whereby to cause the contents of the carriers to be dumped at any desired points below the tracks without the necessity of shifting the dumping means by the use of elevated structures in order to get access to the same, and in means whereby a succession of carriers may be successively dumped without the use of the usual tripping towers or stations, and in certain details of construction fully set forth hereinafter and illustrated in the accompanying drawing, in which:

Figure 1 is an elevation in part section showing part of a track and a carrier and adjustable stop embodying our invention; Fig. 2 is an enlarged sectional view illustrating one means whereby the stop may be clamped adjustably to the track; Fig. 3 is a transverse section on the line 3—3 Fig. 2; and Fig. 4 is a diagrammatic plan illustrating one feature of our invention; Fig. 5 shows a different form of devices for shifting the retaining and releasing devices.

The main supporting track A is of any suitable character, a cable being shown, which cable may be supported by towers or in any of the ways common in this class of apparatus, and upon this cable travel the grooved wheels 1, 1 of the carriage 2 of the carrier B, the latter being provided with a suitable receptacle 3 which may have a dumping bottom, or, as shown, may be supported by trunnions 4, turning in bearings of the yoke-frame 5, the trunnions being eccentric so that the load tends to turn the receptacle to dump its contents.

Any suitable retaining and unlocking devices or appliances may be employed. As shown the receptacle 3 is provided at one or both sides with a flange 6 having notches into which, when the receptacle is in its lowered position, extend bolts 7 upon slides 8 sliding vertically upon the side bars of the frame, and these bolts are normally carried toward

the flanges by the action of a spring 28 which tends to lift a suitably guided bar 9 having a pin 10 entering notches in two levers 12, 12, pivoted to the frame, the outer ends being connected with the slides 8 by connecting rods 13.

The apparatus is provided upon the track A with a suitable stop C which may be constructed in any suitable way so that it may be clamped to or released to slide upon the track A, and the clamping devices are so constructed that they may be operated from points below the track and carriers, as for instance from the ground, through the medium of a cable or other suspensory D, which is pendent from the said appliances and extends downward to such an extent that an operator upon the ground, or a distance below the carriers, can by manipulating this suspensory unlock the stop and draw it, by means of the suspensory, along the track to any desired position, and thereafter, by releasing the pull upon the suspensory, secure the locking of the stop in its new position upon the track.

Various different appliances for locking the stop may be employed but as shown the stop is in the form of a saddle having a comparatively thin but rounded portion 14 which rests upon the track, and two side flanges or cheeks 15 which extend below the track and receive between them the clamping jaw 16. This jaw has inclined slots *x*, *x*, through which extend the transverse pins 17 into the cheeks 15 so that by sliding the jaw longitudinally it may be carried to or from the track, and preferably a spring is arranged so as to act upon the jaw to carry it to and clamp it firmly against the track. As shown there is a lever 18 pivoted by a pin 19 which extends between the cheeks 15, and having an arm 20 extending into a vertical slot in the jaw 16, and a spring 21 tends to throw the lever in the direction of its arrow, Fig. 2, to thereby force the jaw against the track. At the outer end of the lever 18 is an eye from which is suspended the cable or other suspensory D, and it will be seen that by pulling upon this cable the lever may be swung to carry the jaw away from the track, and that the stop can then be drawn along the track to any desired position, and that upon releasing the pull upon the cable the spring 21 will carry the jaw firmly against the track and clamp the

stop in its new position. By rounding the upper face of the saddle the grooved wheels of the carrier can pass over the saddle and as the carrier thus passes the stop it may operate the retaining and releasing appliances through any suitable shifting means so as to dump the load. As shown the carrier is provided with a shifter consisting of a pivoted lever 22 having at one end a roller 23 which may pass in contact with the saddle and is thereby raised, and the other end of the lever is connected by a link 24 with the sliding bar 9 so that the lifting of the roller 23 and tilting of the lever 22 depresses the sliding bar and thereby elevates the bolts 7 and releases the receptacle, which will then swing upon its trunnions and dump the load. Preferably the receptacle is so overweighted that when unloaded it will swing back to its normal vertical position and in so doing bring the notches in the flanges 6 beneath the bolts 7, when the spring 28, operating through the intermediate devices, will carry the bolts through the notches and re-lock the receptacle in position.

It will be evident that the adjustable stop and means for shifting it from the ground, or from below the carriers may be used where it is desired to dump the load successively at different points below the track in that class of aerial tramways where the carriers reciprocate, but a stop which will cause the dumping of the loads of successive carriers and permit them to pass in succession is of special advantage in connection with that class of aerial tramways where the carriers travel in one direction upon the track A and are carried back upon a companion track and operated under the traveling action of a continuous driving cable E clamped to each carrier. Such an arrangement is indicated in Fig. 4 which shows the companion tracks A, A' and the carriers B, B' thereon, and the stop C which may be adjusted as described, or otherwise, to any desired point and the construction of which permits each carrier to travel past the same, dumping the contents and then moving to the shifting means X at the end of the line and traveling back upon the companion track, thus dispensing with the necessity of the erection of tripping towers or stations heretofore used in continuous aerial tramway systems, while a succession of carriers dump automatically at the same point.

In Fig. 5 we show a carrier adapted to turn short corners where the wheels are arranged closer together, and the shifter in this case consists of a lever with diverging arms each connected by a link with the bar 9, or other movable part of the retaining and releasing means. Normally the lever 22^a is in the position shown so that a movement in either direction, resulting from the roller at its lower end contacting either way with

the stop, will thrust one of the links down and release the receptacle.

Without limiting ourselves to the precise construction and arrangement of parts shown, we claim as our invention:

1. The combination with the elevated track of a tramway, of a stop movable on said track, means for locking the stop to and unlocking it from the said track and means pendent from the locking means for unlocking and also shifting the stop on the track, from positions below the track.

2. The combination with the elevated track and traveling carrier of an aerial tramway, of a stop movable on said track, means for locking the stop to and unlocking it from said track, means whereby the carrier is dumped by the action of said stop, and means pendent from the locking means for unlocking and also for shifting the stop on the track from positions below the carrier.

3. The combination with the elevated track of an aerial tramway, of a stop movable thereon, a clamping device carried by the stop, a spring for forcing the clamping device against the track, and means for shifting the clamping device and for adjusting the stop including a pendent cable.

4. The combination with the track of an elevated tramway, of a stop consisting of a saddle riding on the track, a clamping jaw movable between the sides of the saddle to and from the track, and means for shifting the said jaw including a pendent cable connected to actuate the jaw from a position below the track.

5. The combination with a stop consisting of a saddle riding on the track and a clamping jaw movable between the cheeks of the saddle, of a lever pivoted to the saddle and engaging the said jaw, a spring for moving the lever in one direction, and a pendent cable for moving the lever in the opposite direction.

6. The combination in an aerial tramway of an elevated track having a carriage 2 and grooved wheels 1 and receptacle dumping means and retaining and releasing devices, of a lever pivoted to the carriage substantially parallel with and in immediate proximity to the track and adapted to be swung away from the track by a stop upon the track, and connections between the said lever and the retaining and releasing devices.

7. The combination in an aerial tramway having forward and return tracks and series of carriers adapted to travel thereon in one direction, of a stop constructed to permit the carriers to pass successively over the same, dumping receptacles upon the carriers, and retaining and releasing devices constructed to be operated by the said stop to dump successive carriers traveling in the same direction for the purpose set forth.

8. The combination in an aerial tramway

of forward and return tracks, series of dumping carriers, a driving cable for carriers running continuously in one direction, a stop supported on the track and constructed to permit the carriers to pass the same, and releasing devices on the carriers arranged to contact with the stop and affect the dumping of the contents of the successive carriers.

9. The combination in an aerial carrier of a frame, grooved wheels, a receptacle carried by the frame, retaining and releasing means controlling the discharge from the receptacle, and a shifter on the carrier and connections whereby to operate the retaining and releasing means therefrom.

10. The combination in an aerial carrier

of a frame, grooved wheels, a receptacle carried by the frame, retaining and releasing means controlling the discharge from the receptacle, a shifter on the carrier, and links arranged one to act to operate said means to discharge the receptacle in traveling in one direction and the other when traveling in the opposite direction.

In testimony whereof we affix our signatures in presence of two witnesses.

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EDWARD G. W. FERGUSON.

BURCHARD THOENS.

Witnesses:

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