

(No Model.)

2 Sheets—Sheet 1.

D. J. MILLER.

CABLE RAILWAY.

No. 332,934.

Patented Dec. 22, 1885.

FIG. I.

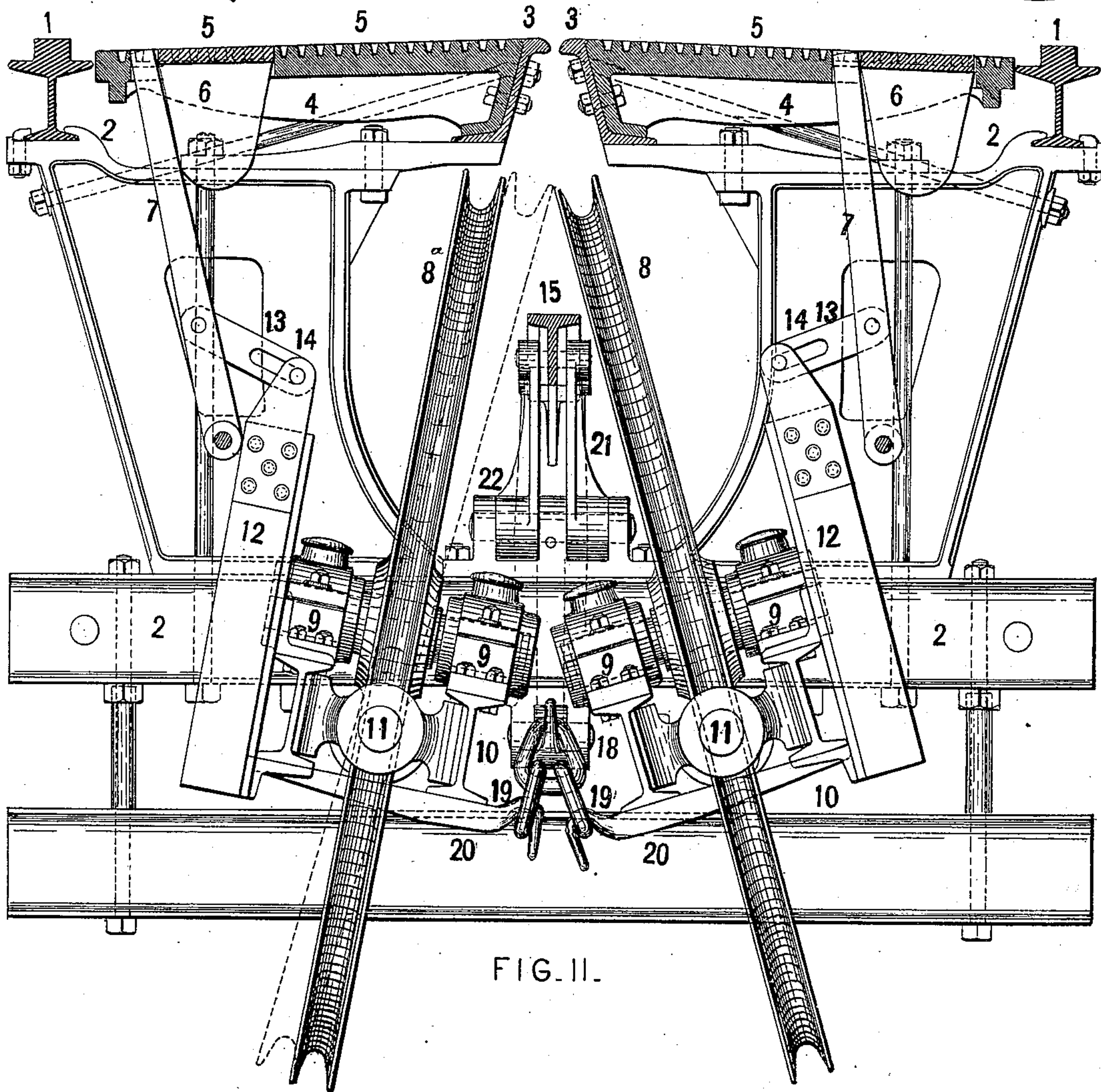
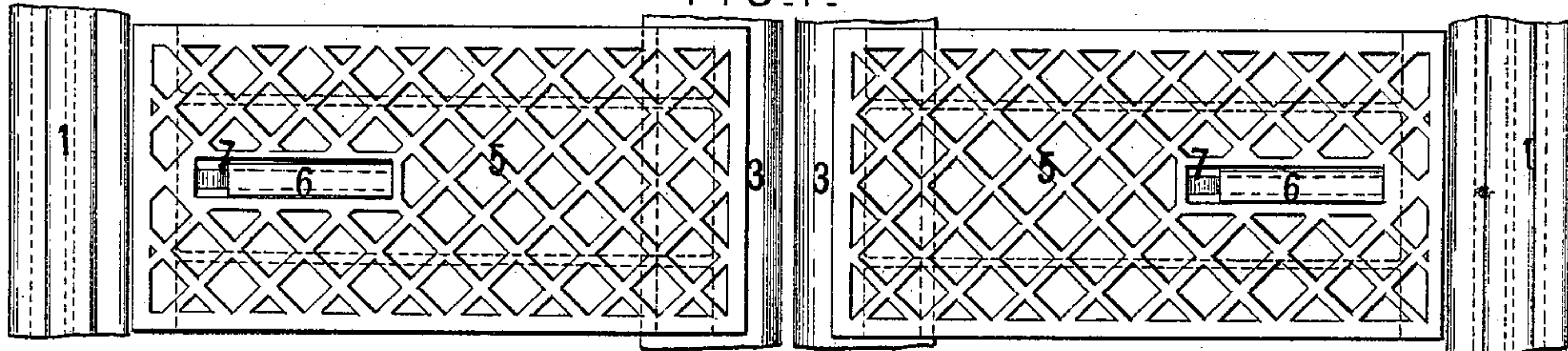


FIG. II.

Attest

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By H. S. Knight
attys.

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FIG. III.

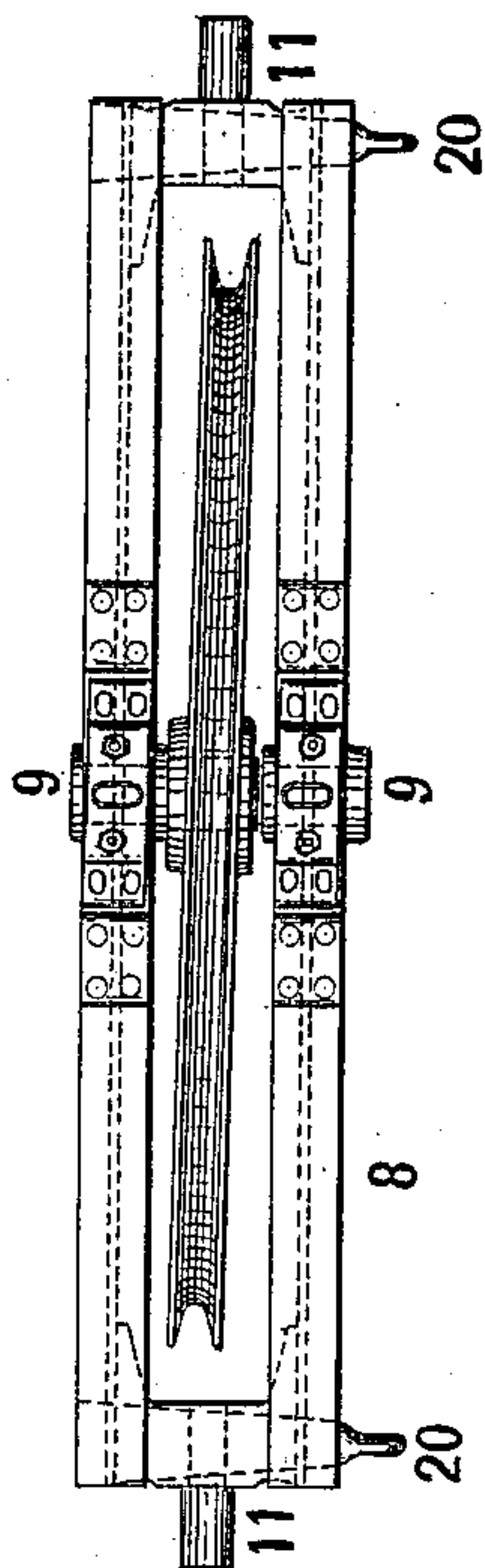
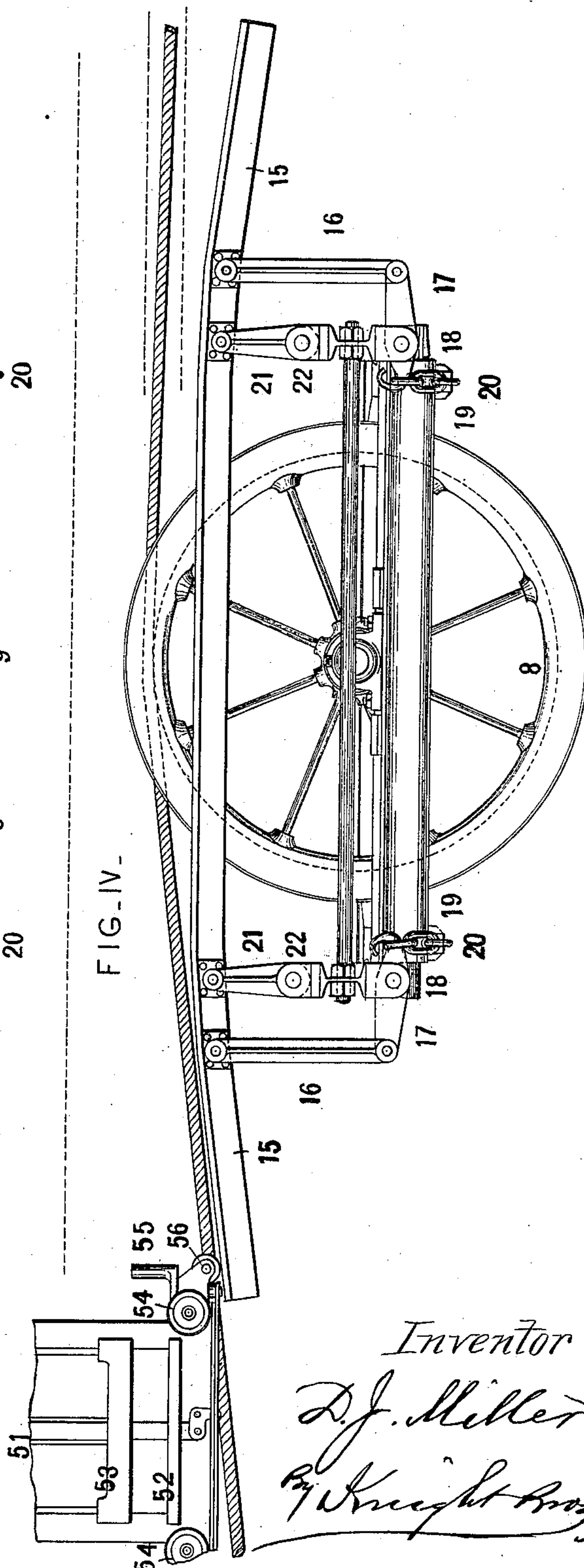


FIG. IV.



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UNITED STATES PATENT OFFICE.

DANIEL J. MILLER, OF NEW YORK, N. Y.

CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 332,934, dated December 22, 1885.

Application filed July 23, 1884. Renewed August 5, 1885. Serial No. 173,657. (No model.)

To all whom it may concern:

Be it known that I, DANIEL J. MILLER, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Cable Railways, of which the following is a specification.

My invention relates in part to a mode of supporting paired traveling cables within the tunnel of a cable railway, and means for placing either or both of the said cables into or out of operative position at will, and, further, to mechanism by which the grip is made to deflect the carrying-sheaves by vertical pressure, so as to move them out of its own way in passing and permit them to fall behind it in position to again receive the cable.

In the accompanying drawings, Figure I is a plan of a short section of track and slot rails, with road-grating between them, containing slots and operating-levers for setting the carrying-sheaves in either advanced or retracted position, as hereinafter described. Fig. II is a vertical transverse section of the track and slot rails and grating, and an elevation of the carrying-sheaves and the mechanism for operating the same. Fig. III is a plan or top view of one of the carrying-sheaves and its tilting frame. Fig. IV is a side elevation of the same, showing the cable and the lower portion of the grip with its jaws open in readiness to receive the cable.

1 represent the track-rails, constructed with flanges by which they are secured to the tunnel-yoke 2. The slot-rails are shown at 3 3, securely fastened to the yoke and braced by tie-rods 4 4, extending through the risers of the yoke, as I have described in my application filed on the 23d day of July, 1884, Serial No. 138,594.

Between the track-rails 1 and slot-rails 3 are road-gratings 5, slotted for the reception of flanged stop-blocks 6, which fill the said slots in width and in length, with the exception of the space occupied by levers 7, the upper ends of which are about flush with the roadway, and when the stop-blocks 6 are removed may be placed at either end of their respective slots and there secured by replacing the stop-blocks 6, in order to set the tilting sheaves 8 8^a, by which the cable is carried or elevated, be-

neath the grip-slot 3 3 or otherwise, accordingly as it is desired to place the cable in or out of the reach of the grip.

In Fig. II the sheave 8 is shown in working position and the sheave 8^a in retracted position, dotted lines indicating the position occupied by the sheave 8^a when in working position. It will thus be seen that the carrying-sheaves may either or both be advanced or retracted laterally as required, so that paired cables can be used either optionally or both together.

The bearings 9 of the carrying-sheaves 8 8^a are in tilting frames 10, mounted on trunnions 11 and connected, by arms 12 and links 13, with the levers 7, by which the frames 10 are tilted in either direction. The tendency of the carrying-sheaves, especially under the strain of the cable, is to gravitate to the advanced or working position shown by the sheave 8.

The connection between the arms 12 and links 13 is by a pin and slot, 14, permitting the carrying-sheave and its tilting frame when in working position to be deflected without moving the lever 7, and to return by gravity and the strain of the cable to operative position when released. This deflection of the carrying-sheaves is produced by vertical pressure from the grip or other attachment to the car upon a rail, 15, (shown in section in Fig. II and in side elevation in Fig. IV,) and connected by rigid links or rods 16 with the outer ends of levers 17, fulcrumed at 18, and connected at their inner ends by links or chains 19 with the adjacent ends of tilting bars 20, fixed to the respective tilting frames 10. The rail 15 is formed, as shown in Fig. IV, with downwardly-inclined ends to receive the rollers 56. It is supported on standards 21, hinged to the bottom flange of the rail 15 and at 22 to the I-beam of the tunnel-yoke 2. The standards 21 are forced over in the direction in which the grip is approaching by the horizontal pressure of the said grip against the inclined ends of the rail 15, while the inclination of the said rail ends causes the depression of the entire rail and the thrust-links 16 by the vertical pressure of the grip. The standards 21 serve as struts to support the weight of the rail 15 and its attachments until hori-

zontal or endwise pressure is applied to the sail rail, as explained. The grip is shown at 51 constructed with a fixed jaw, 52, and a moving jaw, 53, each made double to engage 5 with twin cables. The fixed lower jaw is provided with supporting-rollers 54, on which the cables run when the jaws are open and the car at rest, and with adjustable deflecting arms or spools 55, for ejecting or excluding either one 10 of the twin cables from the grip-jaws at the will of the operator, as described in Letters Patent No. 281,256, granted to Chas. F. Findlay and myself the 17th of July, 1883. The said grip is furthermore provided with rollers 56, project- 15 ing downward from its extremities for applying pressure to the rails 15, to depress the same and to tilt the frames 10, in order to deflect the carrying-sheaves 8 or 8^a out of the way of the passing grip.

20 It is preferable to mount the depressing-rollers 56 on the ends of the grip, as here represented; but it is manifest that this part of the invention may be carried into effect by another and special attachment to the car for 25 the purpose.

In order to reduce the amount of pressure required to tilt the sheave, the oscillating parts are all balanced or nearly balanced upon the trunnions of the tilting frame.

30 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A swinging carrying-sheave for a traveling cable and an oscillating or tilting frame 35 in which it is journaled, in combination with a vertically-movable bar connected to said oscillating frame and a projection from the car for depressing said bar, as explained.

2. The combination of the tilting frame, a 40 sheave mounted therein for carrying a traveling cable, and the levers operating, substantially as set forth, to tilt the frame and deflect the carrying-sheave by vertical pressure from the grip or other attachment to the car.

45 3. A cable-carrying sheave mounted in a tilting frame operated by a lever for holding the said sheave in either position to permit or prevent the engagement of the cable by the grip.

50 4. The combination of the carrying-sheave,

the tilting frame in which it is mounted, the levers, connecting-links, and stop-block to fix the adjusting-lever, and consequently the tilting frame and sheave, in either position in which they are placed.

55 5. A carrying-sheave for a traveling cable, mounted in a tilting frame operated by connections to fix in its retracted position or permit it to fall into operative position at will and capable of automatic deflection while in 60 operative position, substantially as and for the purposes set forth.

6. The combination of the carrying-sheave, the tilting frame in which it is mounted, the levers and connections for controlling the po- 65 sition of the sheave relatively to the grip and slot, and the slot-and-pin connection between the operating-levers, permitting free movement to the tilting frame when the sheave is tipped to bring the cable within reach of the 70 grip.

7. The combination, with a pair of sheaves for supporting twin cables and independently-oscillating frames in which they are respect- 75 ively journaled, as described, of a tilting device common to both, whereby either may be brought into active position at the will of the operator, and a projection from the car for engaging with said tilting device, sub- 80 stantially as set forth.

8. The combination of one or more carrying-sheaves for traveling cables, the tilting frame or frames in which they are mounted, the tilting levers and links, the vertically-moving frame, and the grip provided with 85 rollers for tilting the frame and carrying-sheaves by vertical pressure, as herein set forth.

9. In combination with a sheave for supporting a traveling cable, an oscillating or 90 tilting frame in which said sheave is journaled, having trunnions whose axis passes through or near the center of gravity of the oscillating parts, as and for the purpose set forth.

D. J. MILLER.

Witnesses:

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B. M. KROHN.