

No. 657,166.

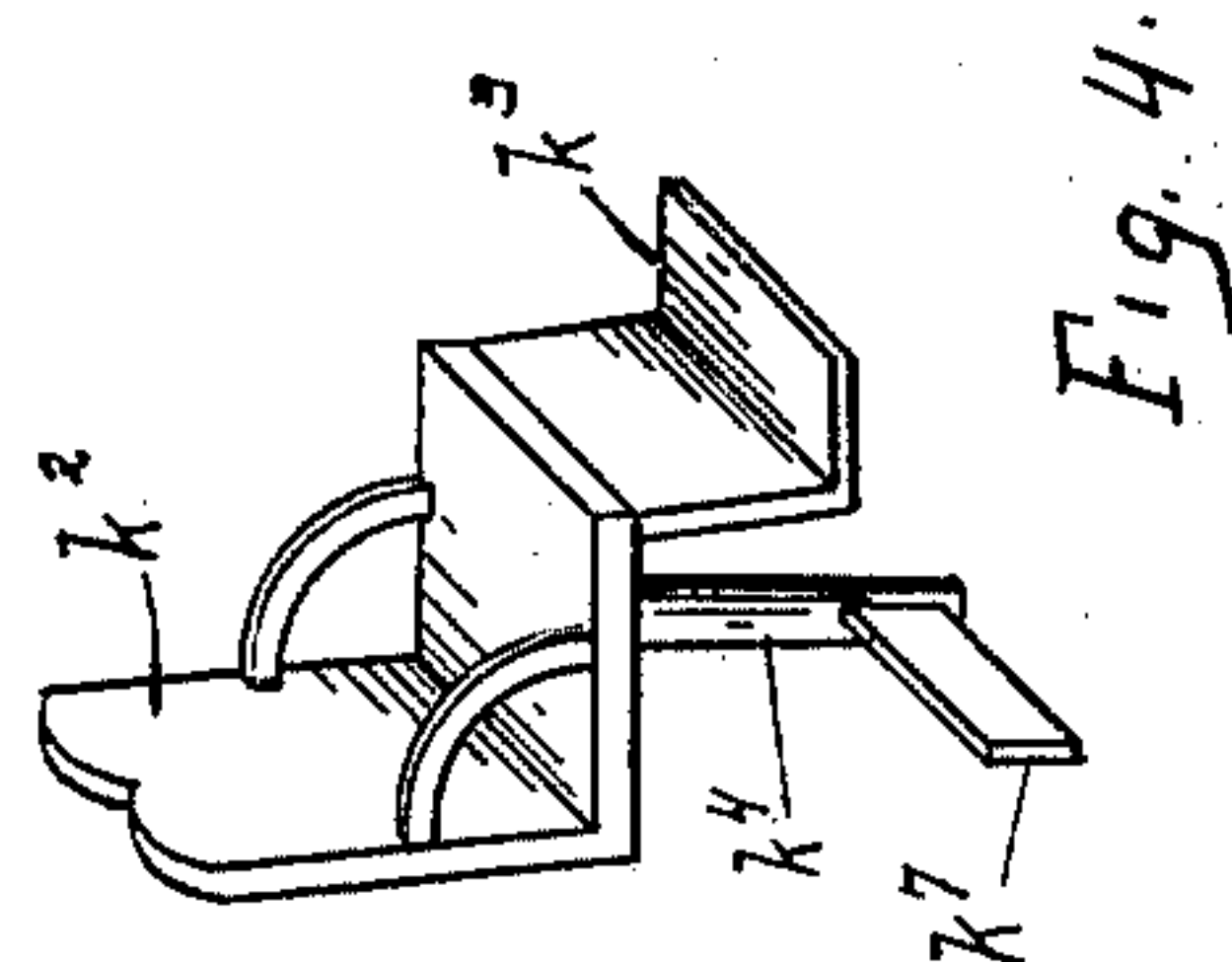
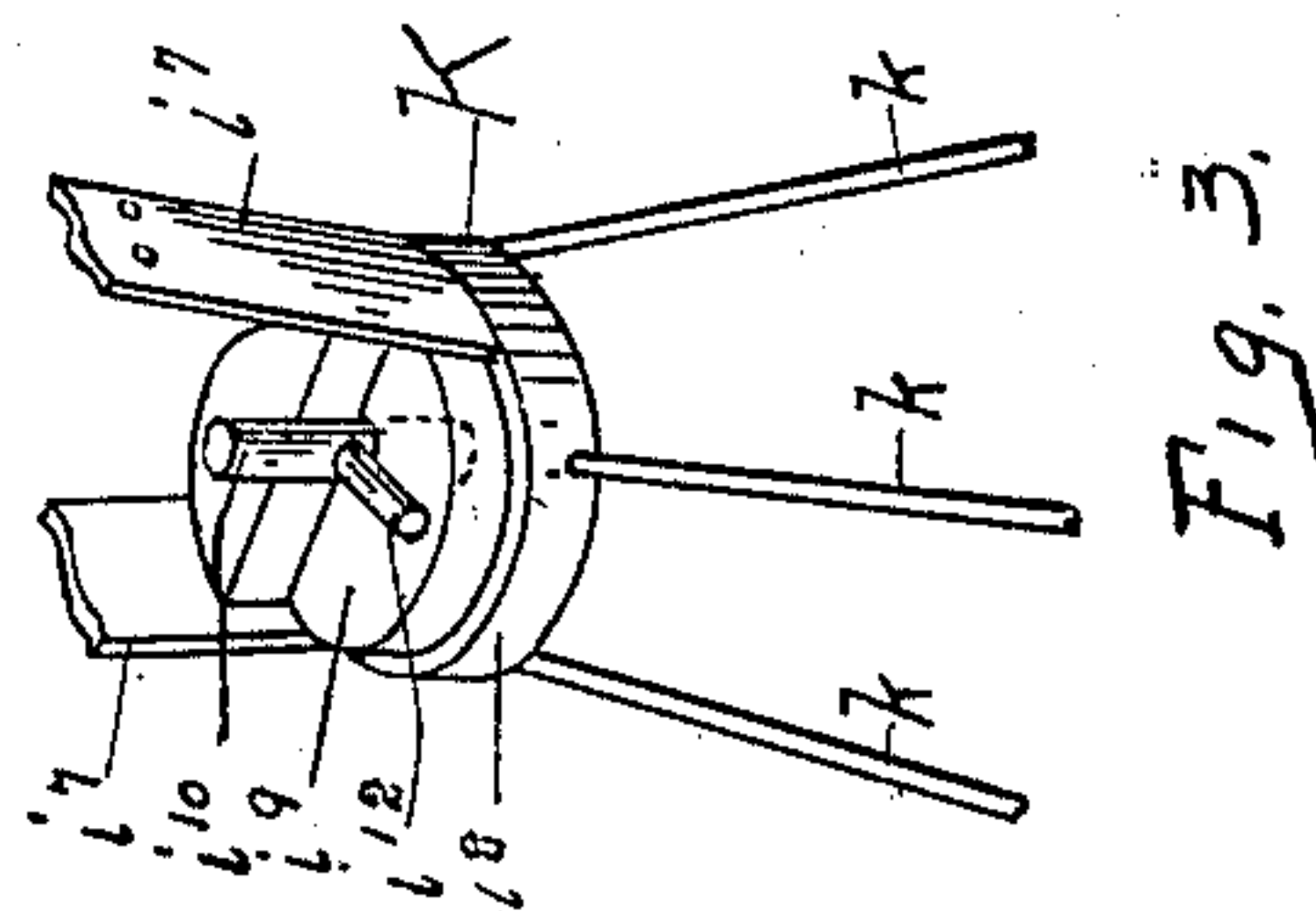
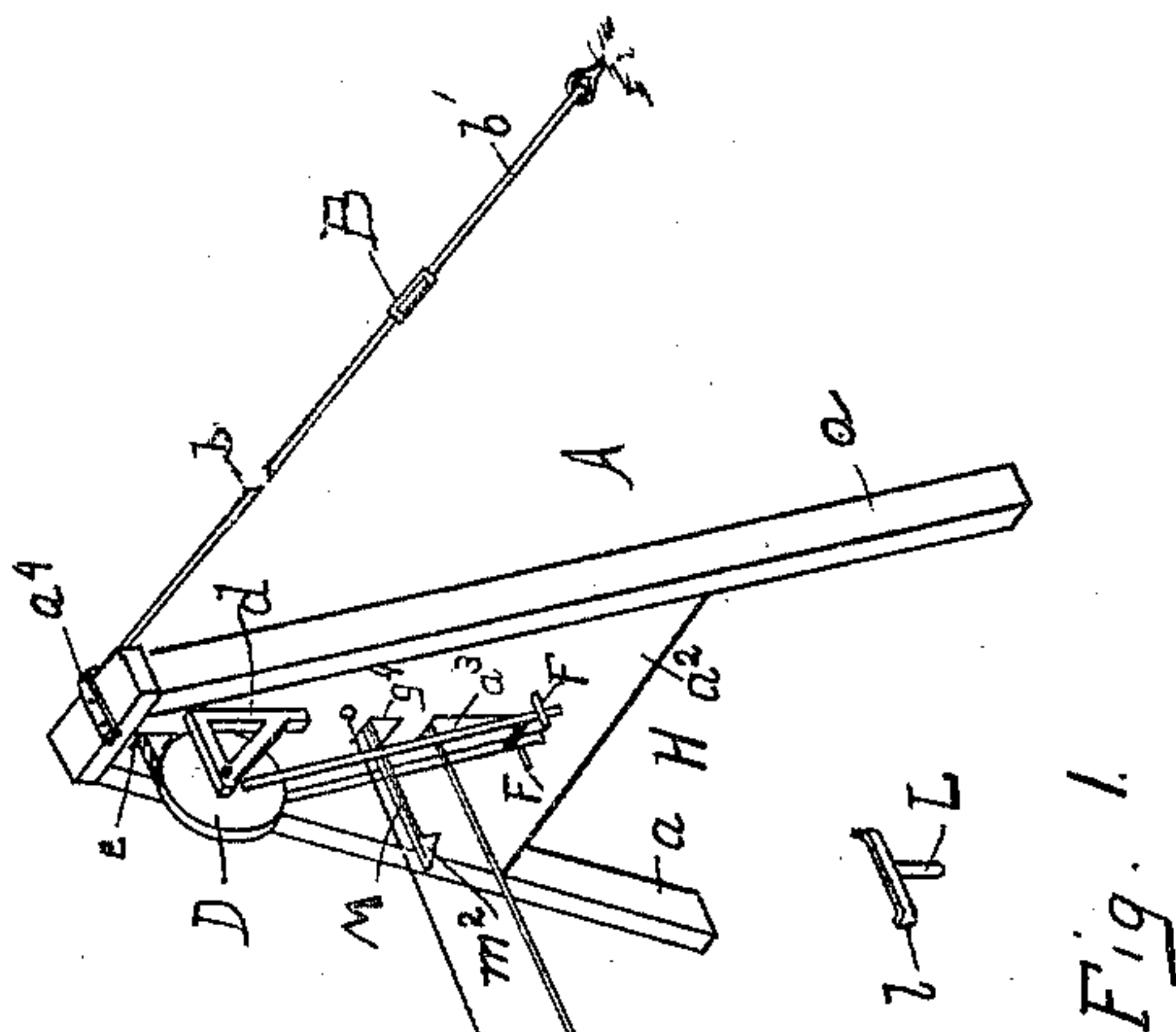
Patented Sept. 4, 1900.

E. C. JONES.
ELEVATED TROLLEY WAY.

(Application filed Sept. 19, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

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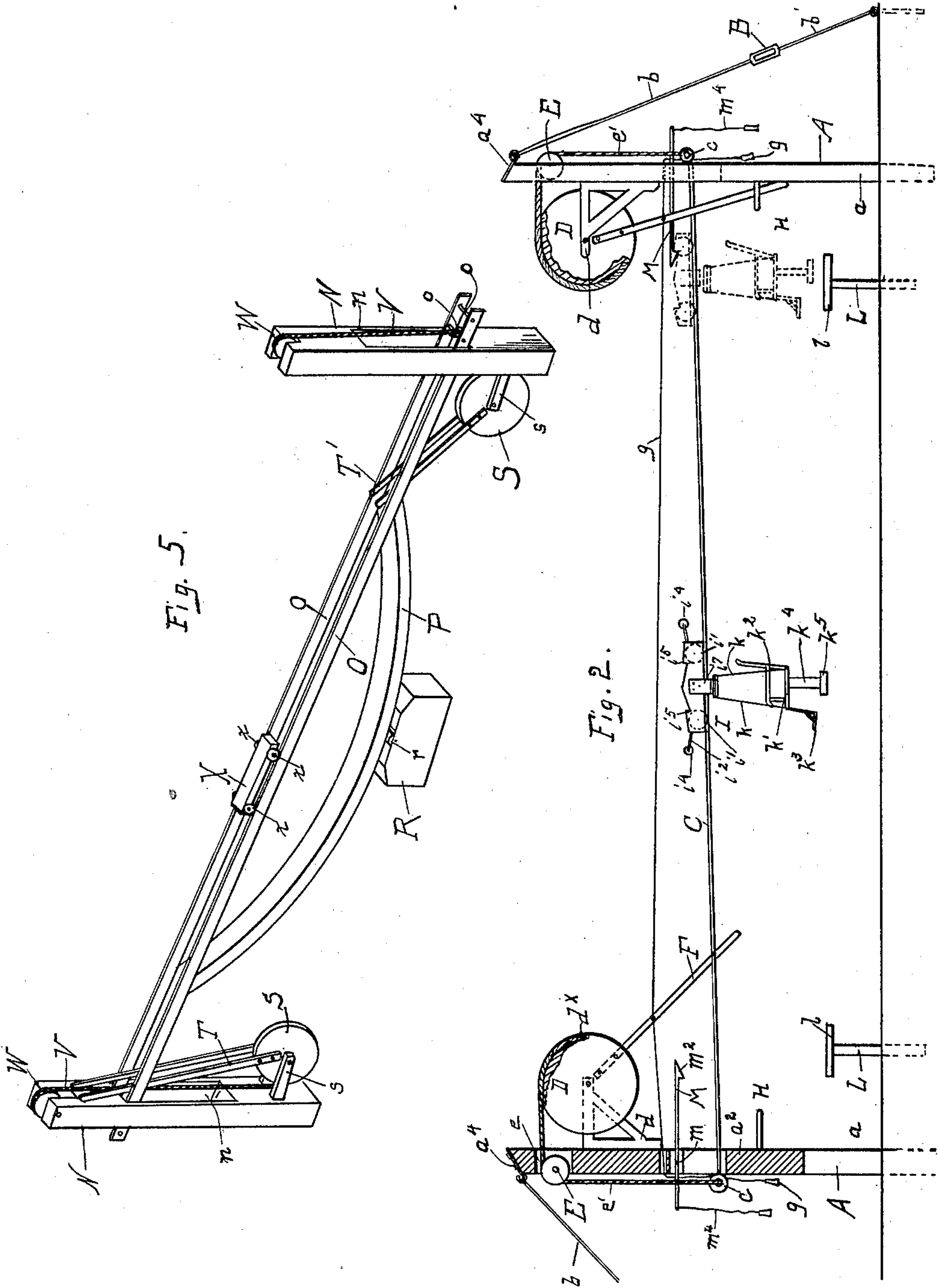
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WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD C. JONES, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO ANNIE MEANS MORGAN AND ARTHUR G. BARNHART, OF SAME PLACE.

ELEVATED TROLLEY-WAY.

SPECIFICATION forming part of Letters Patent No. 657,166, dated September 4, 1900.

Application filed September 19, 1899. Serial No. 731,031. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. JONES, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Elevated Trolley-Ways; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates specifically to that class of trolley-ways in which a trolley wire or cable is employed for the transmission of freight or pleasure trolleys, and has for its objects, first, to prevent shock to the trolley and check its speed gradually at the end of the cable; second, the release of one or the other of the separate levers operating the trolley-cable from either end of the cable; third, the retention temporarily of the trolley at each end of the cable from movement, and, fourth, the reversal automatically of the seat for the passenger near each end of the cable.

My invention consists in the novel construction and combination of parts, such as will first be fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a view in perspective of my improved portable pleasure-trolley and elevated cable, showing the stationary devices upon the ground for reversing the position of the suspended chair. Fig. 2 is a side view of the invention, showing one of the upright frames in vertical section; also showing the position of the trolley and chair before its release from the side of one of the frames in dotted lines. Fig. 3 is a detail view of the reversing-joint beneath the trolley for the suspended chair. Fig. 4 is a view of the bar on the under side of the chair, showing an alternate device for reversing the position of the chair. Fig. 5 is an alternate view of the invention.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A A represent separate portable upright frames or standards arranged the requisite distance apart and at each end of the cable. The portable frames

A A each consist of two standards or posts a , the lower ends of which standards a are placed a sufficient distance apart to afford a wide base and the upper ends inclined toward and connected firmly with each other, forming a triangular-shaped frame.

Extending from the inner side of the other standard a of the frames A A and from the upper ends of each standard downwardly a considerable distance is a web or plate a^2 . In said plate a^2 , at a point equidistant from the standards a and midway from the upper and lower ends of the plate, is a slot a^3 , which extends in a vertical direction and so far as necessary for the elevation of the cable, as hereinafter described.

The frames A A are supported in an upright position by the guy-rods b b' , which are screw-threaded at their inner ends and said screw-threaded ends connected with an ordinary turnbuckle B. The outer end of the rod b is connected with the plate a^4 on the upper end of the standards a , and the outer end of the rod b' is connected with a stake driven into the ground at a suitable distance in rear of the frames A A.

C is the trolley wire or cable, one end of which extends through the slot a^3 in the web a^2 of one of the frames A A, and the other end extends through the slot a^3 in the web of the other frame A, the length of each slot being the same and sufficient to give the desired elevation of the cable.

On the rear side portion of the frames A A of the web or plate a^2 , on each side of the slot a^3 , is a roller c . Extending in the transverse direction to the slot a^3 and journaled at each end in the rollers c is an axle c' , with which axles are connected in a suitable manner the respective opposite ends of the cable C, extending through the slots a^3 .

On the front side of each of the frames A A, opposite in position and a short distance above the slot a^3 , are brackets d d' , upon which is journaled the grooved wheel D of considerable size, the circumference being equal to the described distance traveled by the rollers c on the web a^2 of the frames A A.

In the upper part of the web or plate a^2 of each frame A, near the plate a^4 , is a transverse opening e , in which is pivoted a roller

E, the periphery of which roller extends outwardly beyond the surface of the rear side of plate a^2 . With the periphery of wheel D in the arms of said wheel is rigidly secured at
 5 d^x one end of an elevator-rope e' , the other end of which line is extended through the opening e over pulley E and said end connected with an eye e^4 , with which eye is connected separate ropes e^5 e^5 , connected with the axle
 10 c' , carrying the rollers c c on each side of cable C, so as to give steadiness to the rollers c c .

With one side portion of each wheel D at the axis of said wheel is connected one end of a longitudinally-extended lever F, the other
 15 end of which lever extends forwardly and downwardly upon one side of cable C. With the other side of said wheel D is connected near the axis of said wheel a separate lever F, which also extends forwardly and down-
 20 wardly in a parallel position with the first-mentioned lever F and upon the other side of the cable C, said levers F F being connected together beneath the cable C by a cross-bar f .

25 With one of the levers F on each frame A and a considerable distance from the periphery of the wheel D is connected the wire rope g , the ends of which rope extend through the respective transverse openings g^4 in the
 30 web a^2 a short distance above the opening a^3 in said frames A A, the levers on each frame being thus connected by the same rope, the ends of lever F F upon one frame being extended outwardly from the web a^2 and the
 35 ends of the lever F F in the other frame in a position close to the web a^2 of said frame.

Upon the front side of the web a^2 of the frames A A, opposite the lower end of each lever F, is a spring-clip H.

40 Upon the cable C is a trolley or carriage I, which consists of the parallel side plates i i , between which and at each end of said plates is a grooved roller i' , which rollers travel on said cable and are journaled in the side of
 45 said plates. In the upper edges and near each end of the plates i i is a transverse depression or notch i^5 for the purpose hereinafter described. With the outer side of each plate i i is connected at an intermediate point from
 50 the ends of said plates the U-shaped hanger i^7 , which hanger extends beneath the cable C a short distance. With the lower portions of the hanger i^7 is connected a circular plate or disk i^8 , in the upper side portion of which
 55 plate is a depression i^9 , which is semicircular in form. Through the axis of the plate i^8 and said depressed portion of the plate is extended a pivot i^{10} , with the upper end of which pivot is connected rigidly and at right
 60 angles one end of a pin i^{12} , which pin extends at right angles to the said pivot and is movable upon the depressed portion i^9 of the plate i^8 in about a half-circle and contacting with the elevated portions of plate i^8 upon the
 65 side of depression i^9 . Beneath the plate i^8 is a flat disk or plate K, with which the lower end of the pin i^{12} is rigidly connected. With

the plate K are connected the upper ends of the rods k k k k k , which extend downwardly a short distance, and with the lower ends of
 70 said rods is connected a seat k' , which is provided with a back k^2 and a foot-support k^3 . With the under side portion of the seat k' is connected the upper end of a bar k^4 , the lower
 75 end of which bar extends downwardly to within a short distance from the ground, and upon said end of said bar is a stationary circular plate or roller k^5 .

A short distance from the front side of each one of frames A A and extending within the
 80 ground is a post L, said post being arranged slightly at one side of the path described by the stationary roller k^5 on the post k^4 . Upon the upper end and front side of post L is a horizontal plate l of short length, each end of
 85 which is bent rearwardly in a single curved line.

In the web a^2 of the frames A A, at a point between the opening g^4 for the cord g and the upper end of slot a^3 in the transverse opening
 90 g^4 , is pivoted at m a horizontally-extended lever M. One end of the lever M is provided with a hook m^2 , and said end extended so far from the front side of the web a^2 as to engage with the depression i^5 of the plate i of the
 95 trolley I. The other end of the lever extends a short distance from the rear side of the web a^2 and is provided with an operating-cord m^4 . On the forward end of the trolley I and extending horizontally from each side i i in a
 100 forward direction and toward the frames A A are the arms i^2 i^2 . Between the forward ends of said arms is journaled a grooved roller i^4 .

In the operation of the invention the trol-
 105 ley I is placed near one end of the cable C and near the web of one of the frames A A and the lower ends of the elevator-controlling levers F F thrown rearwardly against the web of the frame, which action causes about one-
 110 quarter of a circle of rotation of wheel D and draws upon the end of the cable in the slot a^3 and raises it in position, the other end of the cable being near the lower end of the slot a^3 in the web a^2 , and the rope s drawing the
 115 lower ends of levers F F on the other frame A outwardly from the web of said frame to an inclined position. In this position of the cable an inclination is afforded which will enable the trolley I by gravity to attain a high
 120 degree of speed in traversing the cable C toward the opposite frame A. The trolley in the above position is held by the hooked portion m^2 of the lever M from movement and the chair or seat k' , which is directed toward the
 125 portable frame A, is ready for occupancy. Upon drawing down upon the rear end of lever M the hooked portion m^2 is released from engagement from the trolley I and the trolley glides along the cable C and with its
 130 weight gathering momentum in its passage, and in reaching the levers F F on the opposite frame A the roller i^4 on the forward end of the trolley strikes the forward edge of said

levers, which act as a cushion, and forces said levers rearwardly in the direction of web a^2 of the frame A. Power is then applied to the levers F F and the backward movement of the levers completed until the levers come into contact with the web a^2 , thus raising the end of the cable in the slot a^3 , and also the trolley I and its chair k' , and the hook m^2 of the lever M engages with the depression i^5 in the plate i of the trolley I, the lower end of the lever F being engaged by the clips H. In the same movement of the trolley I and soon after striking the levers F F the stationary roller k^5 on the bar k^4 of seat k' strikes one end and outer face portion of the plate l on post L and rotates upon said surface, thus reversing the position of the seat k' , the pin i^{12} in the depression of plate i^8 checking the rotation of the seat beyond the half-turn caused by passing over plate i^9 . The trolley is then in position to return to the former position upon the side of frame A, and upon operating the lever M the trolley is released to traverse the length of the cable and automatically engage with the lever M on the other frame A, the operation being repeated. In order to increase the speed and insure the proper inclination of the cable at a longer distance, the pulleys D D are increased proportionably in size. The same end may be accomplished in lengthening the levers F F. To approximately ascertain the proper degree of elevation of the ends of the cable, an ordinary given length of the cable C will require for the gravitation of the trolley on the cable about twelve inches elevation of one end above a horizontal line through the other end. Should the trolley I be found at one end of the cable, the person at the other end of the cable may operate the cord g and draw the lever F from the clips H on the said frame A, thus lowering the end of the cable at that point and elevating the end in the opposite frame A.

In place of the cable C, I may employ an oscillating track-rail, as seen in Fig. 5, in which N N represent separate standards, secured in an upright position in the ground and arranged at the proper distance from each other. In each standard is a longitudinal slot n . In standards N N extend the respective opposite ends of the parallel track-rails O O, which are secured in position a short distance apart at each end by the studs $o o$, and connected rigidly therewith is a curved bearing or rocker P, which rocker is mounted upon a pedestal R, placed in position at an intermediate point from the opposite ends of the track-rails O O. Between the pedestal R and the rocker is a roller-bearing r , journaled upon the pedestal P. At the lower end and front side of each standard N is a bracket s , upon which is journaled a grooved wheel S, which is the same as wheel D on the frame A and with the periphery of which is connected one end of the cable V, hereinafter described. With the sides of the

wheel S from each standard is connected one end of the bars or levers T T in the same manner as described of the lever F in Fig. 1, the levers T, however, being extended upwardly between the track-rails O O. With the studs o on the outer end of the track-rails is connected one end of a rope or cable V, the other end of which rope extends over the pulley W in the upper end of each standard N, and thence downwardly and is connected with the periphery of the grooved wheel S. Upon the track-rails O O is a trolley or carriage X, having the ordinary flanged car-wheels $x x$. When the trolley or vehicle on the track-rails O O strike the lever T, the levers act as a cushion, preventing any sudden shock to the trolley. Power being then applied to the levers to complete the movement the end of the track-rails in slot n is raised in position, thus changing the inclination of the track-rails, and the trolley X moves in the direction of the opposite standard N and contacts with the lever F on said standard. The opposite ends of the track-rails are then raised in position by any suitable power, and the operation is repeated.

The invention is applicable to the banks of streams for the carrying of passengers across the intervening water, for the transmission of freight, such as logs, in the timbered section of the country and from the cars to the mill, and for pleasure purposes as a trolley-rail.

Instead of the frames A A the standards N N may be used in lieu thereof as fixed supports for the trolley-cable. I may also employ a laterally-extended plate K^7 on the bar K^4 of the seat K' instead of the roller K^5 to reverse the chair.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. The combination with a suitably-supported vibrating track of fixed standards at each end of said track having guides for the vibrating ends thereof antifriction devices at the upper ends of said standards, brackets upon the front side of said standards and a wheel journaled in each bracket, an elevating-rope connected at one end with the periphery of each wheel and extending over the antifriction devices on said standards and connected with the outer ends of said vibrating track a suitable carriage on said track and levers connected rigidly at one end with said wheels and having the other ends extending in the direction of said track and in the path of said carriage.

2. In elevated trolley-ways the combination with the trolley-cable of fixed standards at each end of said cable having antifriction devices at their upper ends, brackets upon the front side and at the upper ends of said standards, and a wheel journaled on each bracket, sliding connections with each end of said cable on the rear side of each standard, an elevating-rope connected at one end with the

periphery of each wheel and having the other end extending over the antifriction devices in the upper ends of said standards and connected with the sliding connections to the cable on each standard, a trolley on said cable and a lever rigidly connected with each wheel on said brackets at one end, and having the other end extending in the direction of said cable and in the path of said trolley.

3. In a portable trolley-way, the combination with the trolley-cable, of separate movable frames, having suitable guys or supports and openings extending vertically in said frames, rollers on the rear sides of each frame, and on opposite sides of said slot in said frame, with which the respective ends of the cable are connected, a roller in the upper part of said frames above said cable, brackets upon the side of each frame, opposite to each other in position, and an elevator-rope connected with the periphery of said wheel at one end, and the other end extending over the roller in the upper part of said frame, and connected with the said rollers on the end of said cable, and levers rigidly connected with the opposite sides of each wheel at one end, the other end extending on opposite sides of said cable in the path of the said trolley.

4. In an elevated trolley-way, a cable having suitable supporting-standards at each end, means for raising and lowering the ends of said cable alternately, and a trolley upon said cable, and a seat connected with said trolley, and means for reversing said seat automatically.

5. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, means for raising and lowering the ends of said cable, and a trolley and a seat connected with said trolley, and reversing devices upon the ground in the path of the said seat.

6. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, and sliding connections with each end of said cable upon said standard, an elevator upon each standard for raising one or the other end of said cable, a trolley upon said cable, a seat connected with said trolley, a post upon said seat, and a stationary roller upon said post, and a stationary post having a friction-plate in the path of the stationary roller on the said seat.

7. In elevated trolley-ways, a cable having suitable supporting-standards at each end of said cable, sliding connections with each end of said cable upon said standards, brackets upon the side of said standards, opposite in position to each other, and an antifriction-roller upon said standards above the said brackets, a wheel journaled in each bracket upon the standards, and an elevator-rope connected with the periphery of said wheel and extending over the said antifriction-roller and connected with the sliding connections upon the end of said cable, a lever rigidly connected with each wheel at one end and having the other end extending in the direction of said cable, and in the path of said trolley, and a catch upon said standards for retaining the trolley in position.

8. In an elevated trolley-way, a cable having suitable supporting-standards at each end of said cable, sliding connections with each end of said cable on said standards, brackets upon the side of said standards opposite in position to each other, and an antifriction-roller upon said standards above the said brackets, a wheel journaled in each bracket upon the standards, and an elevator-rope connected with the periphery of said wheel, and extending over said antifriction-roller and connected with the sliding connections upon the end of said cable, a lever rigidly connected with each wheel at one end, and having the other end extending in the direction of said cable and in the path of said trolley, a rope connected with one of said levers upon one standard at one end and with the other lever upon the other standard at the other end, and clips upon the side of said standards adapted to retain the lower ends of said levers.

9. In a trolley-cableway, a cable and a trolley-carriage, a hanger on said carriage, a seat and a swiveled connection of said seat with said hanger pivoted to each other, and a pin at right angles to and upon the pivot, and means substantially as described for stopping the movement of said pivot in its circuit upon the hanger.

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