

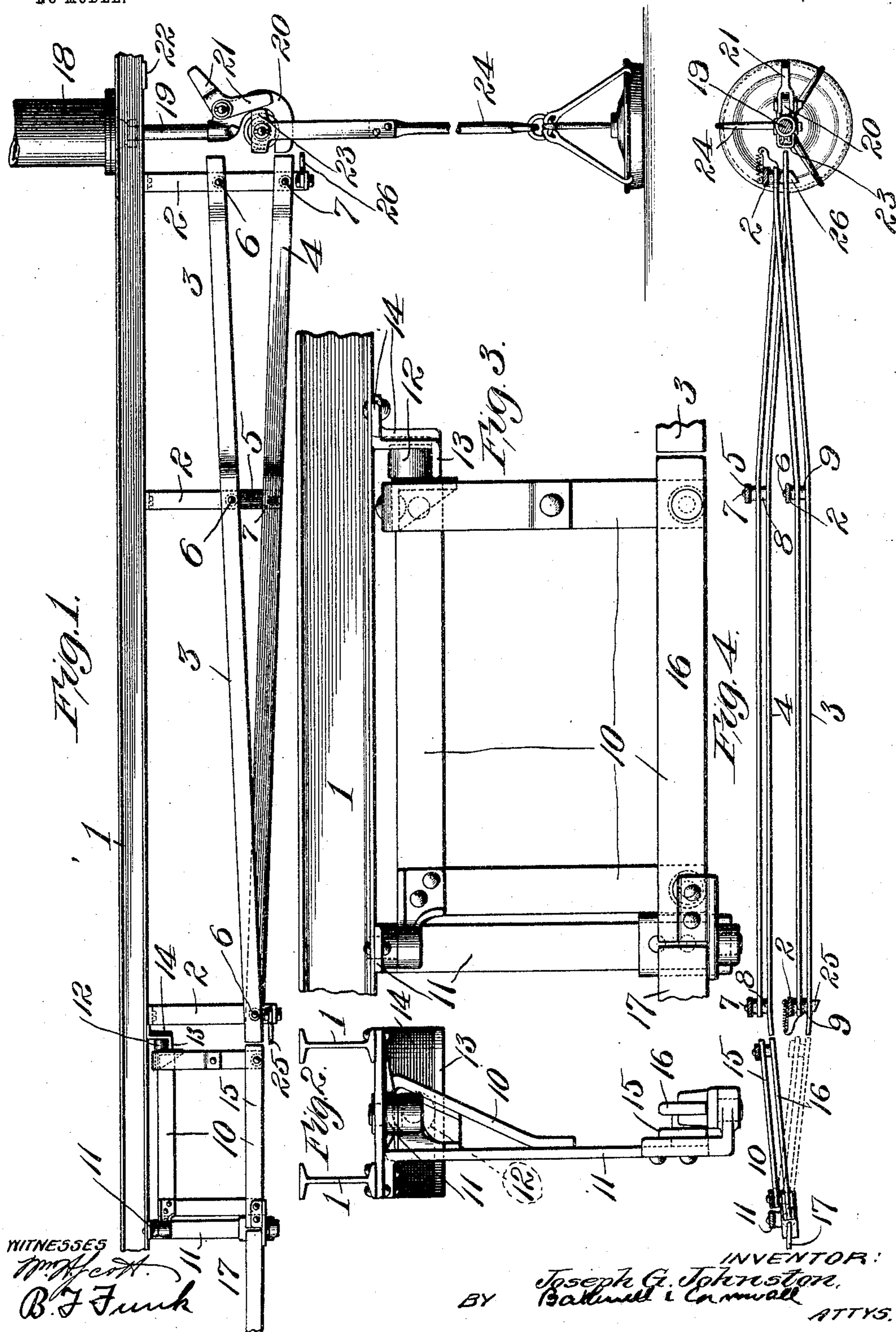
No. 775,627.

PATENTED NOV. 22, 1904.

J. G. JOHNSTON.
OVERHEAD TROLLEY.
APPLICATION FILED SEPT. 9, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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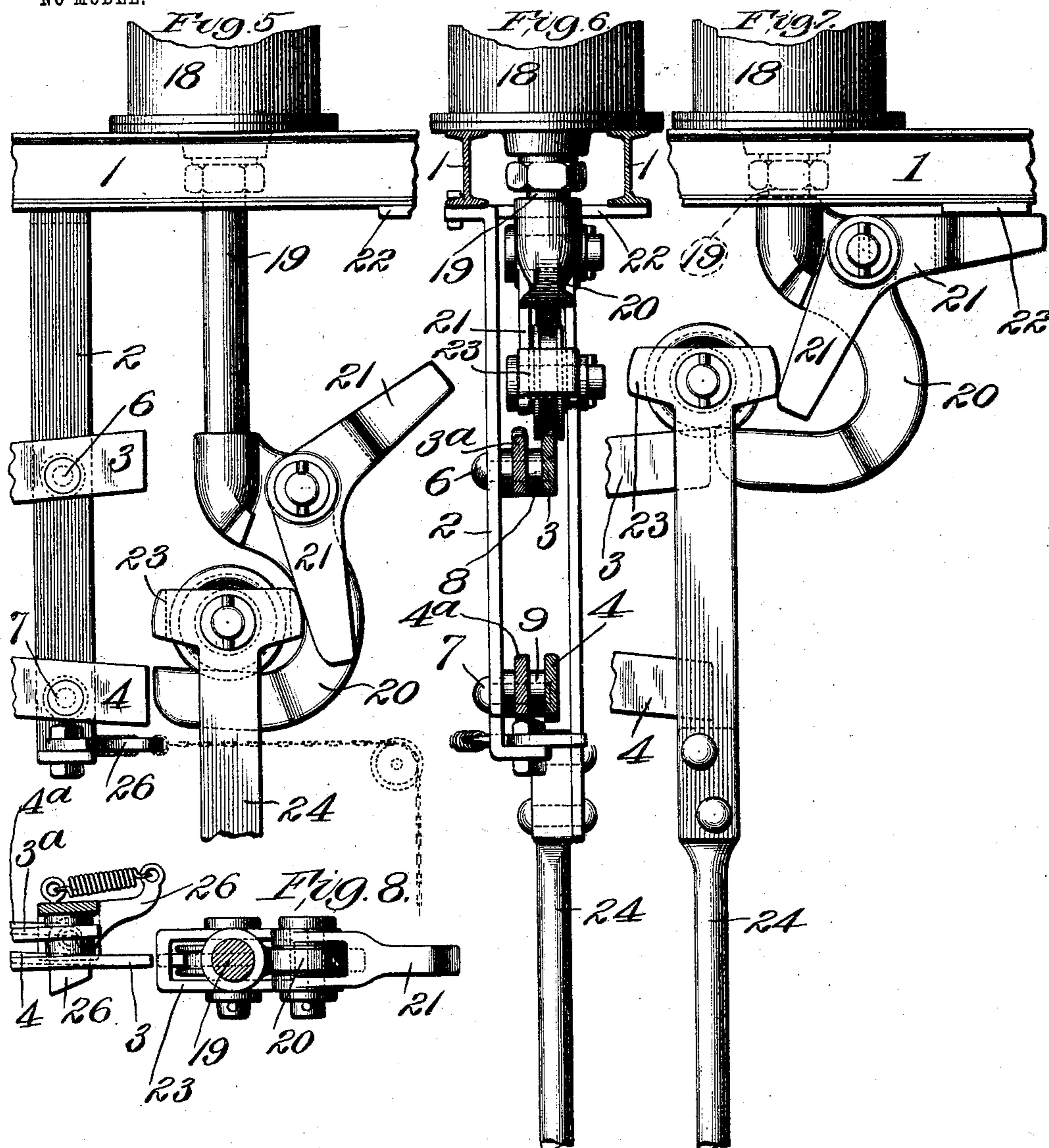
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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH G. JOHNSTON, OF DETROIT, MICHIGAN, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

OVERHEAD TROLLEY.

SPECIFICATION forming part of Letters Patent No. 775,627, dated November 22, 1904.

Application filed September 9, 1904. Serial No. 223,867. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. JOHNSTON, a citizen of the United States, residing at Detroit, Michigan, have invented a certain new and useful Improvement in Overhead Trolleys, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of an overhead-trolley system constructed in accordance with my invention. Fig. 2 is an end view, the trolley being removed. Fig. 3 is an enlarged detail sectional view of an intermediately-arranged switch. Fig. 4 is a top plan view of the trolley system. Fig. 5 is an enlarged view of the ends of the tracks and the trolley-elevating device. Fig. 6 is a sectional view through the tracks, the trolley and its elevator being illustrated in end elevation. Fig. 7 is an enlarged view of the ends of the tracks, the trolley, and the elevator, showing the position of the trolley as it is about to receive its forward impetus from the elevator; and Fig. 8 is a cross-sectional view through the stem of the elevator and showing a top plan view of the receiving end of the upper track and the trolley.

This invention relates to overhead trolleys in which a conveyer is employed for moving objects from a determined point to some distant point, which conveyer is mainly actuated by gravity.

The invention is particularly applicable to use in molding plants in connection with molding-machines, where it is necessary to move the casting or castings into an annealing-pit after it has sufficiently solidified in the flask.

One of the objects of the invention is to provide an inexpensive, durable, and efficient means for conveying articles from place to place by a conveyer which will be caused to gravitate from one end of the track to the other.

Another object of the invention is to provide means for initially starting the conveyer or trolley from one end of a track and for

permitting the automatic return of the trolley after the article has been deposited at the properly designated place.

A further object of the invention is to provide means whereby the trolley may be stopped at a determined point on either of two tracks which are employed in connection with this device.

Another object of the invention is to provide means whereby a plurality of trolleys may be manipulated on the system without interfering with each other.

Other objects and advantages as well as the novel details of construction of this invention will be specifically described hereinafter, it being understood that changes in form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages thereof.

In carrying out the preferred embodiment of my invention as illustrated in the drawings I find it convenient to utilize anchor-beams 1 of I construction, which may be supported by suitable means near the roof of the structure in which the system is to be installed. Depending from these anchor-beams are spaced hangers 2, which support a downwardly-inclined track 3, the highest point of the track being adjacent to the point from which the casting is to be conveyed. The hangers for the track 3 are secured to one of the anchor-beams 1, while the oppositely-inclined track 4 is supported from the adjacent beam by the hangers 5. The tracks 3 and 4 are preferably coextensive with each other. The track 4, being the return-track, is inclined from a point adjacent to the discharge end of the track 3 toward the receiving end of the track 3, at which point it terminates. Each of these tracks 3 and 4 is provided with a complementary rail, (designated by the reference-numerals 3^a and 4^a, respectively.) Each rail 3 and 4 is rigid with its complementary rail and is connected thereto by means of rivets or bolts 6 and 7, around which sleeves 8 and 9 are placed, so as to space the complementary rails away from the rails 3 and 4.

10 designates a switch which is pivotally se-

cured to a bracket-hanger 11, supported by the beams 11. The free end of this switch is provided with an antifriction-roller 12, which moves over the flange 13 of the supporting-bracket 14, also carried by the beams 11. The lower bracket of this switch is formed of two rails 15 and 16, spaced apart, as are the rails on the tracks 3 and 4, so that the switch, which has a lateral swinging movement, may be positioned so that the trolley-rail 16 may be alined with the trolley-rails of either of the tracks 3 and 4. From the pivoted end of the switch 10 leads a single rail 17, which extends to a suitable point to which the trolley is to travel, usually the annealing-pits in the casting plant. As a part of this system, I prefer to employ an elevator or hoisting device for the trolley, which is clearly illustrated in Figs. 1, 5, 6, and 7. This elevator or hoisting device is illustrated as comprising a cylinder 18, in which is a piston carrying a depending stem 19, having a hooked end 20, capable of being moved adjacent to either of the tracks 3 or 4. Pivotaly secured upon the hook 20 is a trigger 21 in the form of a bell-crank lever, one arm of the lever being adapted to contact with an abutment 22 on either or both of the beams 11, the other arm of the lever being adapted to contact with the frame 23 of the trolley from which the conveyer 24 depends.

In actual practice the switch 10 will be actuated or moved so that its trolley-rail will initially aline with the trolley-rail of the track 3. Suppose now it is desired to convey a casting from a suitable point—for example, from a point adjacent to the flask—the casting will be engaged by the conveyer 24, and by suitable means (not shown) fluid-pressure will be admitted into the cylinder 18, so that the elevator or hoist will be actuated to raise the hook 20 until the trolley is adjacent to the receiving end of the track 3, as illustrated in Fig. 7. As the hook rises, the trigger 21 will strike against the abutment 22, causing the lower arm of the trigger to force the trolley away from the hook onto the track 3. This movement of the trigger will cause an impetus to be given to the trolley, and the angle of inclination of the track 3 will cause the trolley to travel from the point adjacent to the hoist toward the discharge end of said track 3. The momentum obtained by the trolley due to its gravitation down the track 3 will cause it to pass over the switch onto the track 17, where an operator will be stationed to convey the trolley to the proper point to release the casting. In returning the trolley it will be moved on the track 17 toward the hoist or elevator over the switch 10, which may be swung so that the trolley-rail thereon will aline with the trolley-rail on the track 4. As soon as the trolley moves onto the track 4 the angle of inclination of the track will cause the trolley to gravitate toward the hoist, and if the hook

is in proper position the trolley may enter, so as to be in a position to receive another casting and be transferred to the track 3.

At the discharge ends of the respective tracks 3 and 4 are spring-pressed gates 25 and 26, which are pivoted beneath the respective tracks and normally lie in the path of travel of the trolley. The reason for this is to prevent accidents or the jumping of the trolley from the track in the event that either the switch or elevator-hook are not in receiving position when the trolley moves down either of the tracks. Thus it will be seen that when the trolley moves down the track 3 it will be stopped adjacent to the end of the track by the gate 25, and before it can move onto the switch the gate must be opened or swung out of the path of the movement of the trolley, which actuation will not be accomplished until the switch is in proper position to receive the trolley. The same operation, just described, will apply to the gate 26 and the hook of the hoist or elevator. Hence it will be apparent that accidents due to the improper positions of either the trolley or hook will be avoided.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. An overhead track comprising a plurality of sections, each section having spaced parallel rails, one rail in each section being a connected rail and the other a trolley-rail, a trolley-rail spaced from the first-named rails and adapted to receive the trolley from any one of the first-named rails, and a swinging transfer-switch, one end of which is in alinement with the last-named rail, and the other end having movement into and out of alinement with any one of the first-named rails; substantially as described.

2. An overhead track comprising a plurality of sections, each section having spaced parallel rails, one rail in each section being a connected rail and the other a trolley-rail, a trolley-rail spaced from the first-named rails and adapted to receive the trolley from any one of the first-named rails, a swinging transfer-switch, one end of which is in alinement with the last-named rail, and the other end having movement into and out of alinement with any one of the first-named rails, and means for retarding movement of the trolley on one of the first-named rails when the transfer-switch is out of alinement therewith; substantially as described.

3. In an overhead trolley, two oppositely-inclined trolley-rails, one of which is a return-rail, a rail spaced from the first-named rails, a transfer-switch having its pivot at one end of the last-named rail, the other end of the switch having movement into and out of alinement with the first-named rails, a trolley to travel on the rails, and a trolley-hoist adapted to receive the trolley from one of the rails

and transfer it to another rail; substantially as described.

4. In an overhead trolley, the combination with two inclined rails having alining ends in
5 different horizontal planes, a hoist adjacent the ends of the rails to receive the trolley from one rail and transfer it to the other rail, a trigger for forcing the trolley from the
10 hoist, and an abutment against which the trigger strikes when the trolley is in position to be transferred to one of the rails; substantially as described.

5. In an overhead trolley, the combination with two rails, one of which is a return-rail,
15 a rail adapted to receive the trolley from one of the first-named rails, a flanged bracket, a swinging switch having its pivot adjacent to the last-named rail, a roller on the opposite
20 end of the switch and movable across the face of the flange of the bracket to aline the switch

with either of the first-named rails, and a trolley-hoist at the opposite ends of the first-named rails; substantially as described.

6. In an overhead trolley, the combination with two oppositely-inclined trolley-rails, a
25 gate near one end of one of the rails, a gate near the opposite end of the other rail, a trolley-hoist contiguous to the ends of both of the rails, a third rail common to both of the first-named rails, and a switch between the first-
30 named rails and the third rail, one end of which is adapted to aline with either of the first-named rails; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, 35
this 6th day of September, 1904.

JOSEPH G. JOHNSTON.

Witnesses:

ARTHUR F. AMESLEY,

DAVID W. HAWKSWORTH.