(No Model.)

4 Sheets—Sheet 1.

J. F. DOWNING.

CONVEYER APPARATUS.

No. 310,393. Patented Jan. 6, 1885.

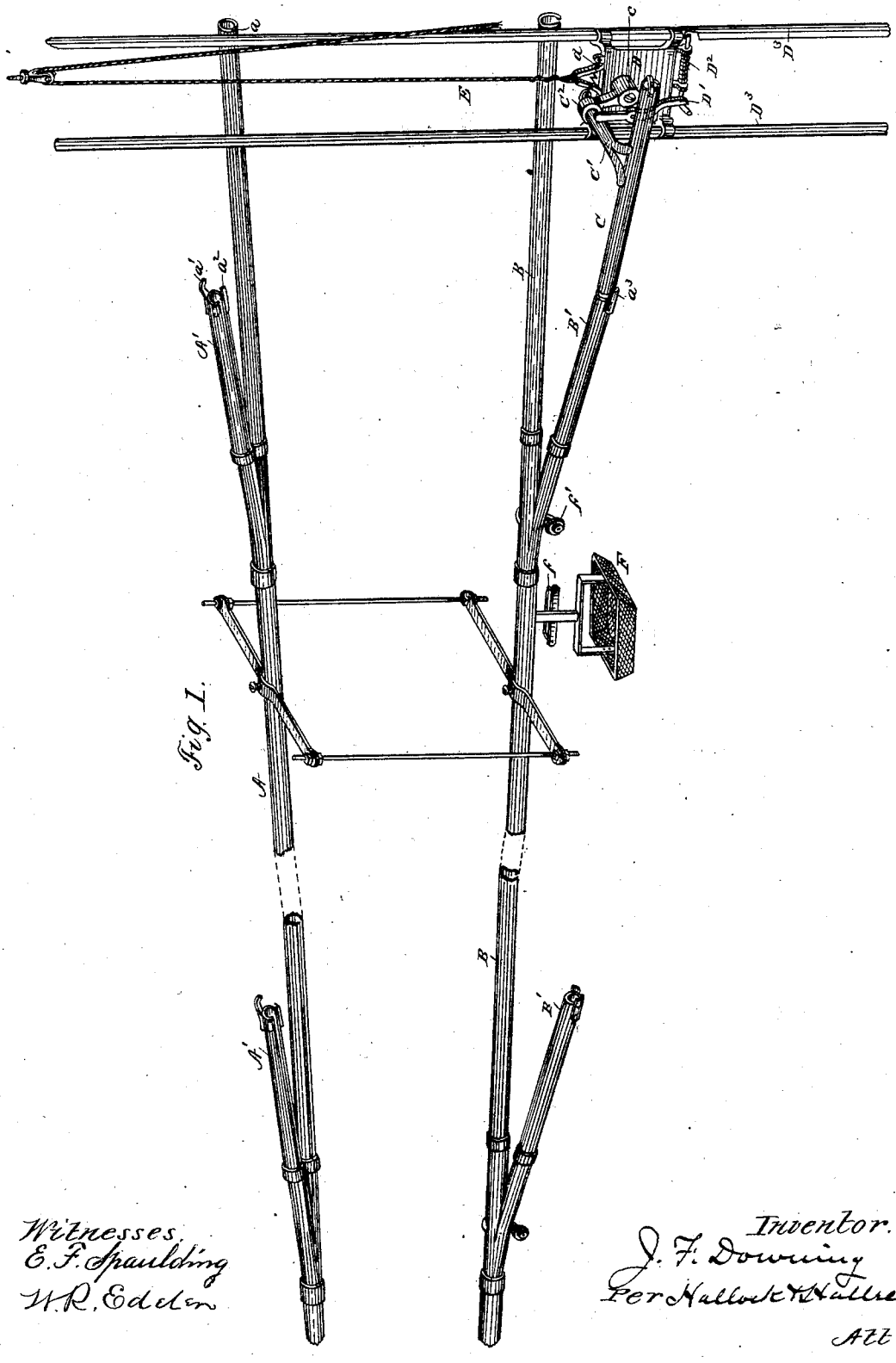


Fig. 1.

Witnesses
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N. PETERS. Photo-Lithographer, Washington, D. C.

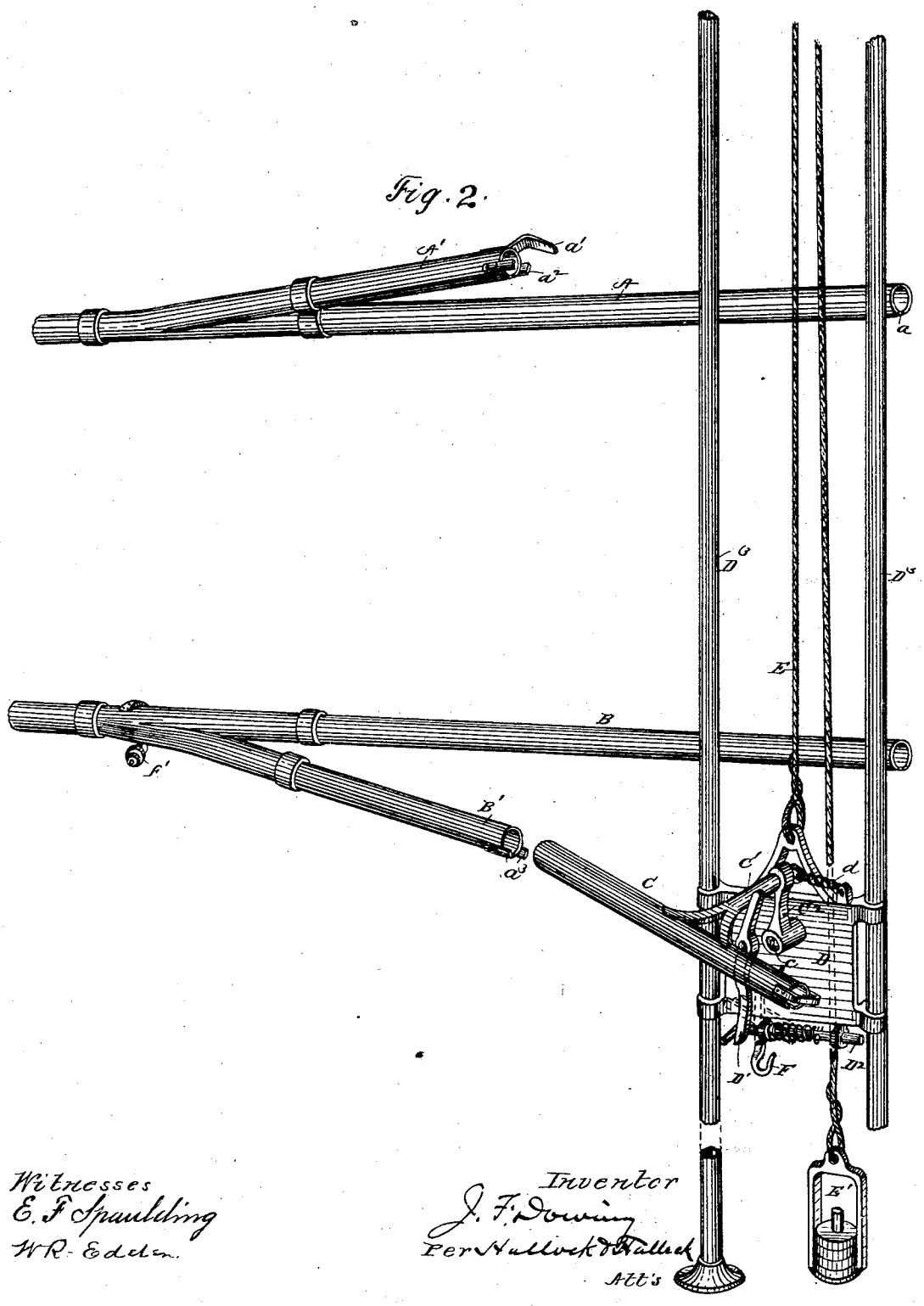
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No. 310,393. Patented Jan. 6, 1885.

Fig. 2.



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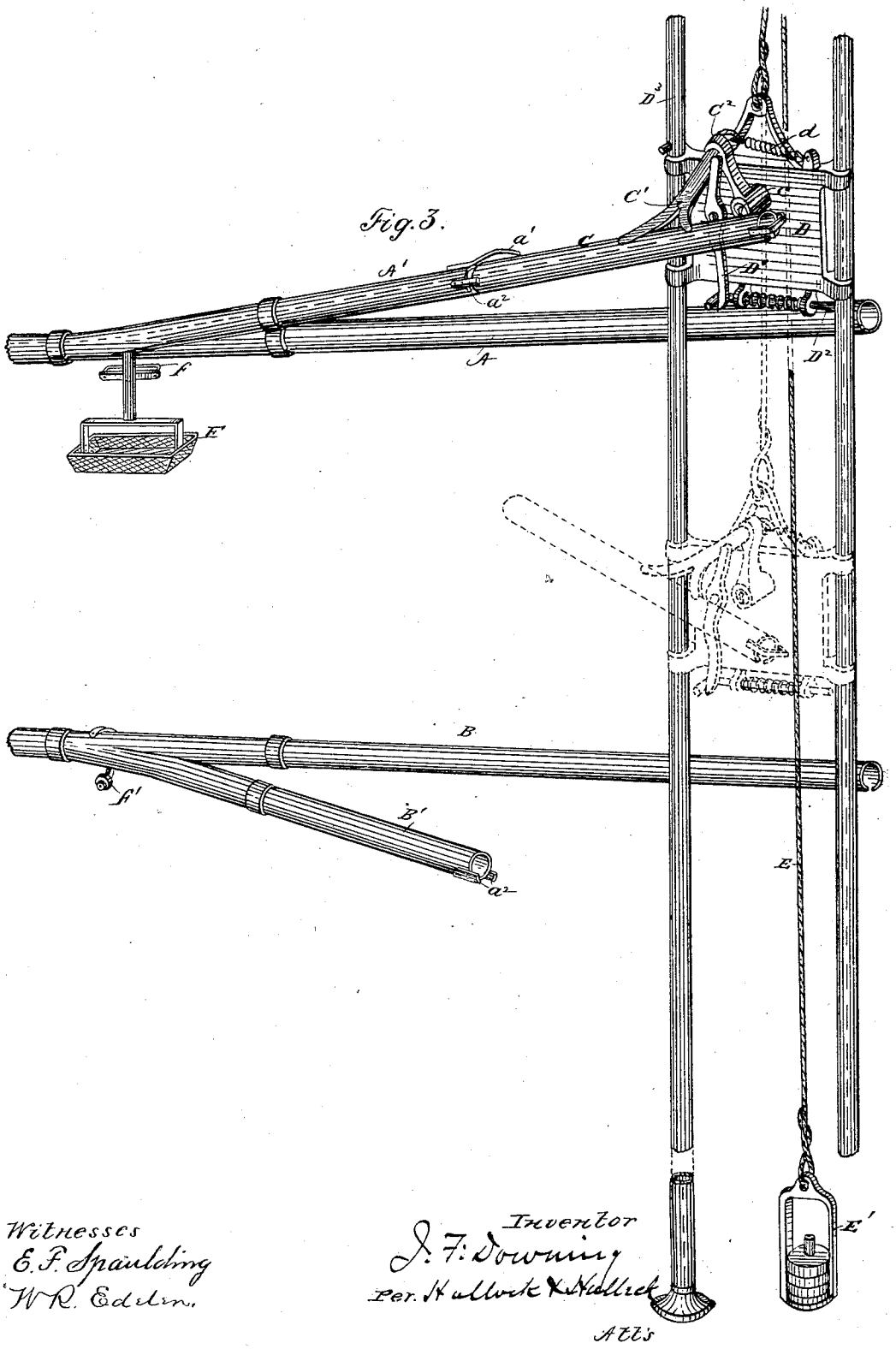
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CONVEYER APPARATUS.

No. 310,393. Patented Jan. 6, 1885.

Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

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CONVEYER APPARATUS.

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Fig. 5.

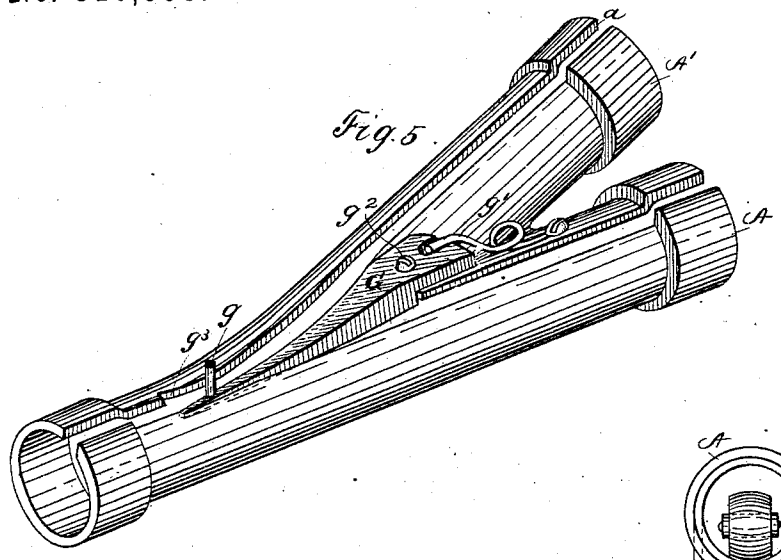


Fig. 4.

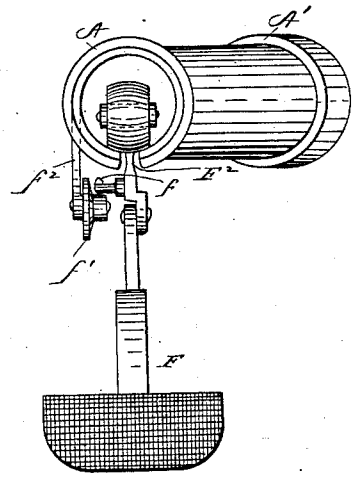


Fig. 6.

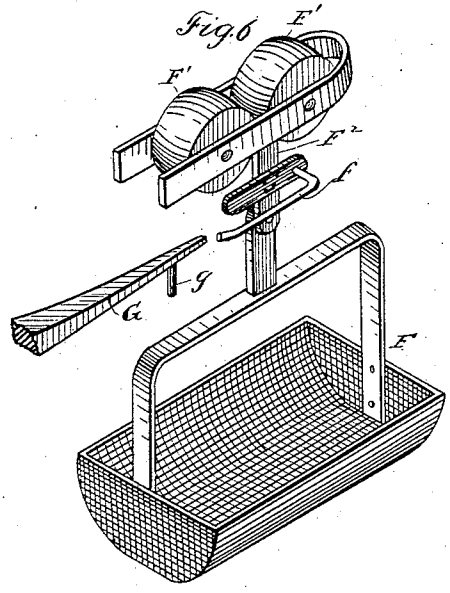
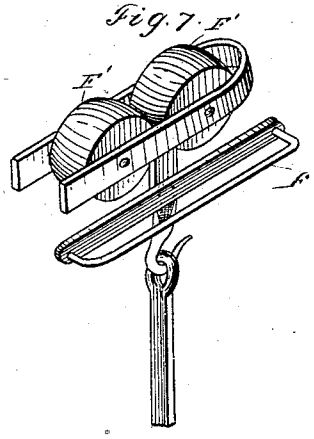


Fig. 7.



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UNITED STATES PATENT OFFICE.

JEROME F. DOWNING, OF ERIE, PENNSYLVANIA.

CONVEYER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 310,393, dated January 6, 1885.

Application filed November 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, JEROME F. DOWNING, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Conveyer Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of conveyers in which the track is elevated and the article to be carried hangs pendent, and particularly to that type of conveyers which is shown in Letters Patent issued to me on September 16, 1884; and it consists in providing suitable means for receiving and dispatching cars at the stations, and also in various improvements on the construction there shown, as will fully appear hereinafter.

My invention is illustrated in the accompanying drawings as follows: Figure 1 is a perspective view showing two lines of track, one grading to and the other from a station, and also shows an elevator for receiving, lowering, elevating, and dispatching cars. The line of vision in this and the two following figures is from a point where the eye looks up at one track and down at the other at an angle. Fig. 2 is a like view showing the elevator as in the act of descending from the receiving-switch to the counter. Fig. 3 is a like view showing the elevator in the position it occupies when discharging a car onto the dispatching-switch. Fig. 4 is an end view of the track, showing a car in the act of passing a switch. Fig. 5 is a perspective view of the under side of a switch-point. Fig. 6 is a perspective view of a car. Fig. 7 is a like view of a car running-gear provided with a hook to support the article to be carried, in place of a basket, as shown in Fig. 6.

In the former patent to me, above referred to, I showed a track consisting of a tube having a slot underneath, and a car having a running-gear which traversed the inside of the tube, with a stem extending through the slot adapted to support the article to be carried. The track herein shown is the same as there shown, and the car is substantially the same, the difference being that in this instance I show a car with two wheels in place of one.

The leading feature of my present invention consists in the means for receiving, elevating, and dispatching cars.

A is the track, which grades from the way stations to the central or main station.

A′ is a switch-track leading from the way station onto the main track A, and I call it a "dispatching-switch."

B is the track which grades from the main station to the way stations.

B′ is a switch which leads from the track B to the said way stations, and I call it a "receiving-switch." These tracks A and B and A′ and B′ stand one above the other, or at least the ends of the switches should be in a vertical line.

D^3 D^3 is an elevator-way, and is vertical. On it slides an elevator-frame, D, which is operated by a cord, E, and is counterweighted by the weight E′.

C is a section of track attached by an arm, C′, to a lever, C^2, which is pivoted to the elevator-frame at *c*. The track-section C is so attached to the arm C′ with relation to its center of gravity that it will hold the lever in the position shown in Fig. 1. When a car runs onto this track-section from the switch B′, it will run past the bar C′ to outer end of the track-section C, and its weight will overbalance the long end of the track-section C and tilt it on the pivot *c* into the position shown in Fig. 2. This action not only tips the track-section C up, but, by reason of the crank form of the lever C^2 and arm C′, it is drawn back from the inner end of the switch B′ far enough for it to descend without interference from the lugs a^3 on the end of the switch B′.

D′ is a lever pivoted on the elevator-frame, with one end in contact with the arm C′, and the other with a spring-catch, D^2, which engages with a catch on one of the elevator-ways D^3, and holds the elevator in the position shown in Fig. 1. When the track-section C is tilted by the reception of a car, as above stated, it causes the lever D′ to draw back the spring-catch D^2, and thus automatically disengage the elevator and allow it to descend to the counter. This position of parts is shown in Fig. 2.

When a car is to be dispatched, the elevator is drawn up by the cord E.

In Fig. 3 the position of parts as the eleva-

tor is going up is shown by dotted lines, and the position which the parts assume when the elevator has been fully drawn up is shown by full lines.

The change in position of parts is effected as follows: On the end of the switch A′ there is a stop-arm, a', which reaches out far enough to engage the end of the track-section C before the elevator is fully drawn up, and as its upward action is completed the track-section C is tilted, and it is pushed forward by the lever C^2, so that its end is brought against the end of the switch, and the car runs from the part C onto the switch A′, and so on onto the main line A. The car having been discharged, the overbalancing-weight of the long end of the track-section C keeps the parts in the position shown in full lines, and the elevator can be lowered into the position shown in Fig. 1, where it is ready to receive an incoming car. The cars are directed from the main line B into the switches B′ at the stations by the following means: On the side of the stem F^2 of the car-frame which passes through the slot in the tubular track is a fender, f, and on the side of the track opposite the point of the switch, on an arm, f^2, is a flanged roller, f', which will, if brought in contact with the fender, throw the car sufficiently to one side to cause the stem F^2 to enter the switch-slot. The said rollers f' or the fenders f, or both, as desired, are graded as to height or as to lateral extension, or both, as desired, and by whatever standard they are graded the gradation is in serial succession along the whole line, so that cars destined for a certain switch will pass all the intermediate switches without diverting devices coming in contact, (Fig. 4 shows a car passing a switch without said devices coming in contact;) but when said car reaches its destined switch said devices come in contact and the car is diverted.

If desired, the switches may be provided with movable points or tongues, and the fenders f be made to move them. This arrangement is shown in Figs. 5 and 6. G is a tongue, pivoted at g^2, and kept in place over the branch slot by a spring, g'. At its point there is a downwardly-projecting pin, g, by which it can be moved against the action of the spring and thrown over across the main slot, so as to open the branch slot. This movement is effected by the fender f coming in contact with the pin g, and the forward movement of the car causes the fender to push the pin to one side and thus open the switch. The pins along the line at the stations are graded as to length, or the fenders on the several cars are graded in position on the car-stems as to distance from the track, or both the pins and the fenders can be graded, as desired. Where this construction is used, the friction-rollers f' are not required, the pin g and movable tongue G taking its place; but in each instance the fenders are used.

What I claim as new is—

1. In a conveyer apparatus, the combination, substantially as set forth, of two main tracks formed of slotted tubes, as shown, and graded in opposite directions, switch-tracks branching from said main track, formed of like tubes, and arranged one above the other, a vertical elevator-way, an elevator-frame moving on said way, a section of slotted tubular track-section pivoted on said elevator-frame by a crank-arm, whereby it will be moved endwise as it is tilted, and whereby it will be brought in conjunction with said vertically-arranged switch-tracks as it is moved vertically by said elevator, and, finally, means, substantially as shown, for tilting the said track-section automatically.

2. In a conveyer apparatus, the combination, substantially as set forth, of the slotted tubular tracks A and B, graded in opposite directions, the switch-tracks A′ and B′, arranged in vertical line, the elevator-way D^3 D^3, the elevator-frame D, the pivoted crank-arm C′ C^2, the track-section C, attached to said crank-arm, so as to be in vertical line with the said switch-tracks, and so as to be tilted in one direction by its own weight and in the other direction by the weight of a car, and, finally, a stop at the dispatching-switch for tilting the track C against the weight of the car thereon as the elevator is moved up.

3. In a conveyer apparatus, the combination, substantially as shown, of a receiving and a dispatching track arranged in vertical line, a vertical elevator-way arranged in proper relation to said tracks, an elevator-frame moving vertically on said way, and, finally, a section of track pivoted on said elevator-frame by a crank-arm in a manner substantially as described, whereby as it is tilted it is moved lengthwise, for the purposes named.

4. In a conveyer apparatus, the combination, substantially as described, of the elevator-way D^3 D^3, the elevator D, the crank-arm C′ C^2, the track-section C, the lever D′, and spring-catch D^2.

5. In a conveyer apparatus, the combination, substantially as set forth, of a track or way consisting of a tube having a longitudinal slot on its under side, a switch-track consisting of a similar tube with its slot branching from the main-track slot, a car having a running-gear which runs in the interior of said tubes, and has a stem or frame-piece extending down through the slot, a fender adjusted on said stem below the tracks, and means, substantially as set forth, at the switch-point or branch-slot opening to act upon said fender and divert the said stem or frame-piece from the main slot into the branch slot, and thereby cause the car to run onto the switch-track.

6. In a conveyer apparatus, the combination, substantially as set forth, of a track or way consisting of a tube having a longitudinal slot on its under side, a switch-track consisting of a similar tube, with its slot branching from the main-track slot, a movable switch point or tongue, G, with projecting

pin *g*, a car having a running-gear which moves in the interior of said tubes, and has a stem or frame-piece extending down through the slot, and a fender, *f*, on the said stem below the track, which will come in contact with said pin *g* and move the said switch-tongue G across the main-track slot, and thus divert the said stem or frame-piece into the branch slot, and thereby cause the car to run onto the switch-track.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME F. DOWNING.

Witnesses:

JNO. K. HALLOCK,

WELLINGTON DOWNING.