(No Model.)

2 Sheets—Sheet 1.

# D. E. KEMPSTER.

## CASH AND PARCEL CARRIER.

No. 332,539. Patented Dec. 15, 1885.

Fig. 1.

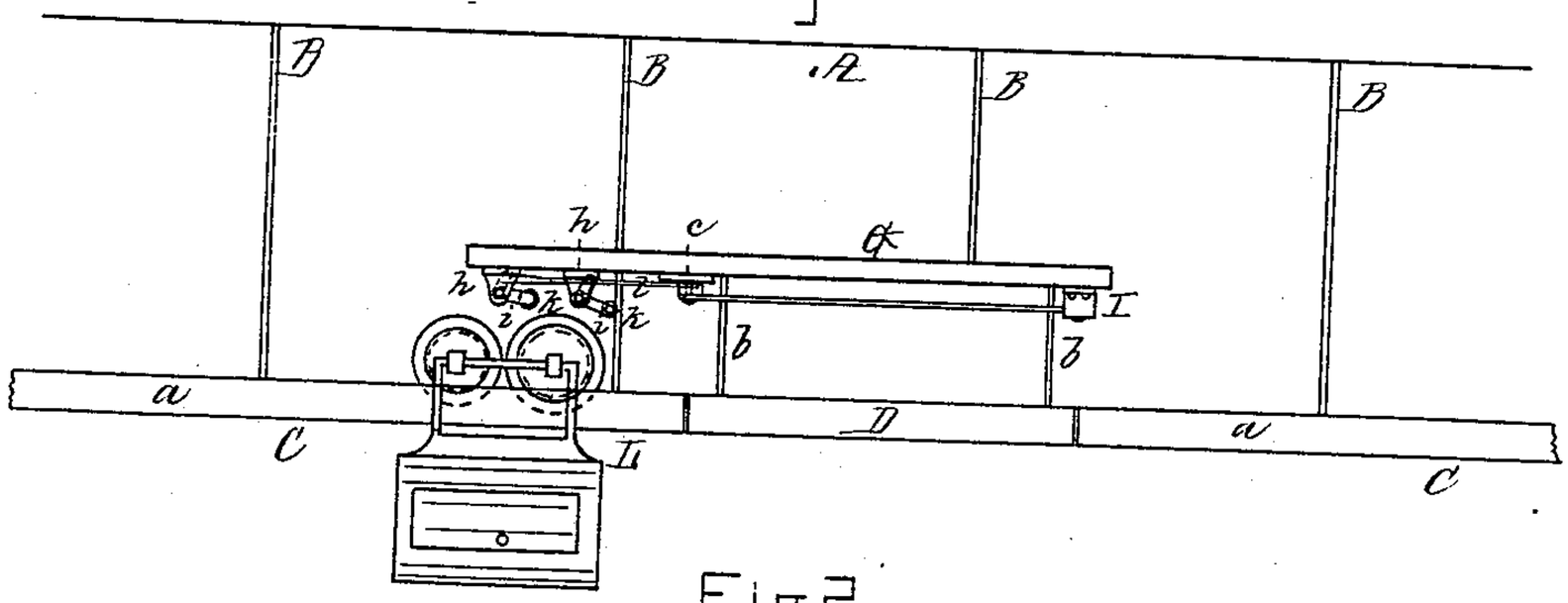



Fig. 2.

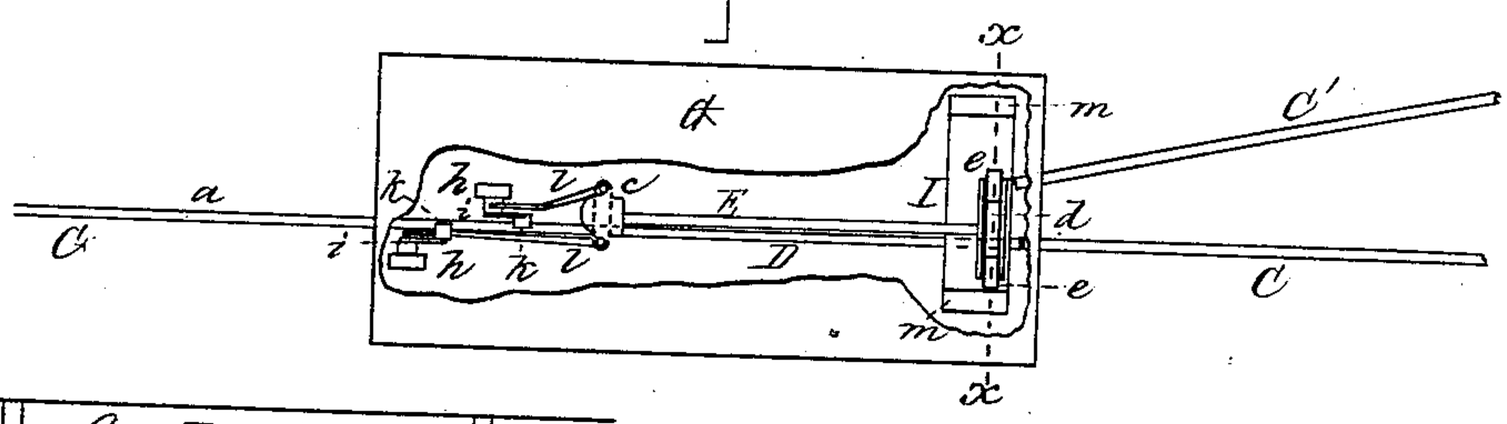



Fig. 3.

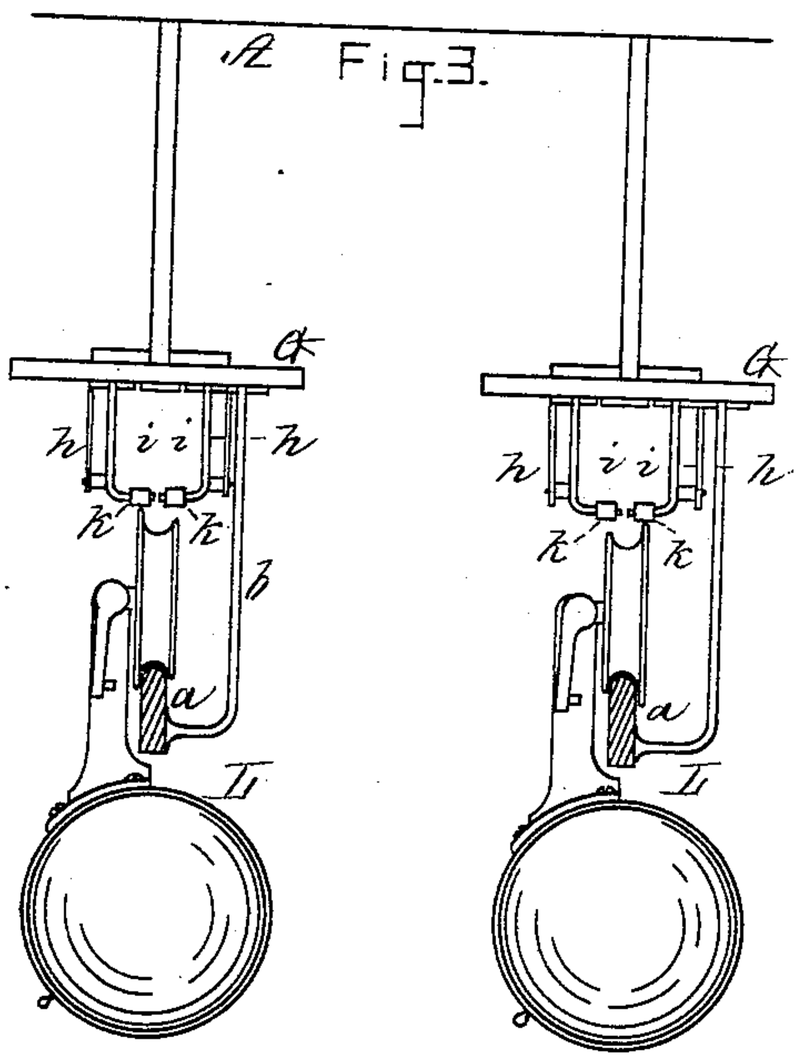



Fig. 4.

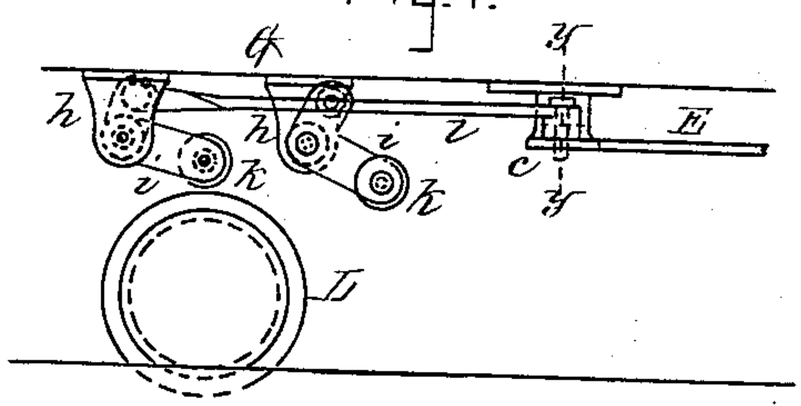
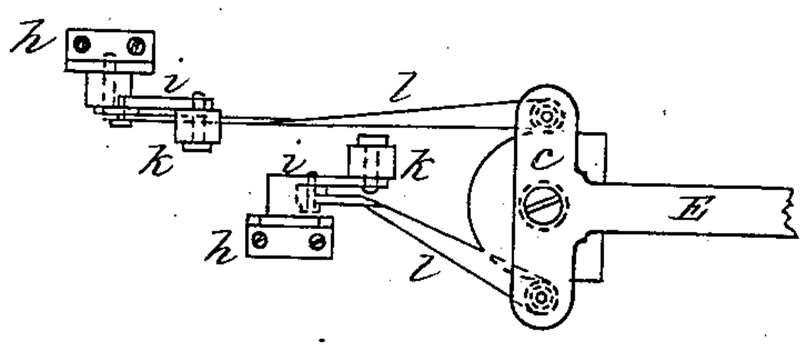



Fig. 5




WITNESSES.

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pr Norman W. Stearns,
Atty.

(No Model.)

2 Sheets—Sheet 2.

# D. E. KEMPSTER.

## CASH AND PARCEL CARRIER.

No. 332,539. Patented Dec. 15, 1885.

Fig. 9.

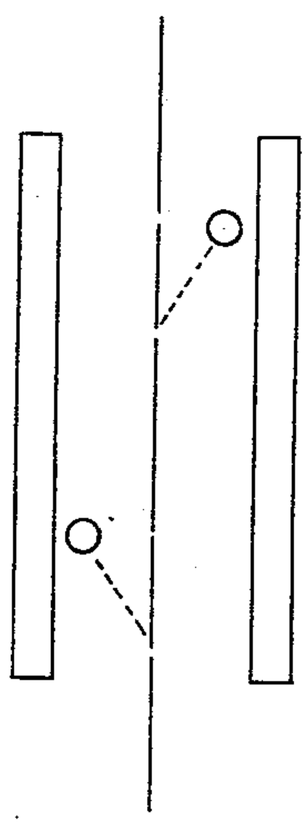


Fig. 6.

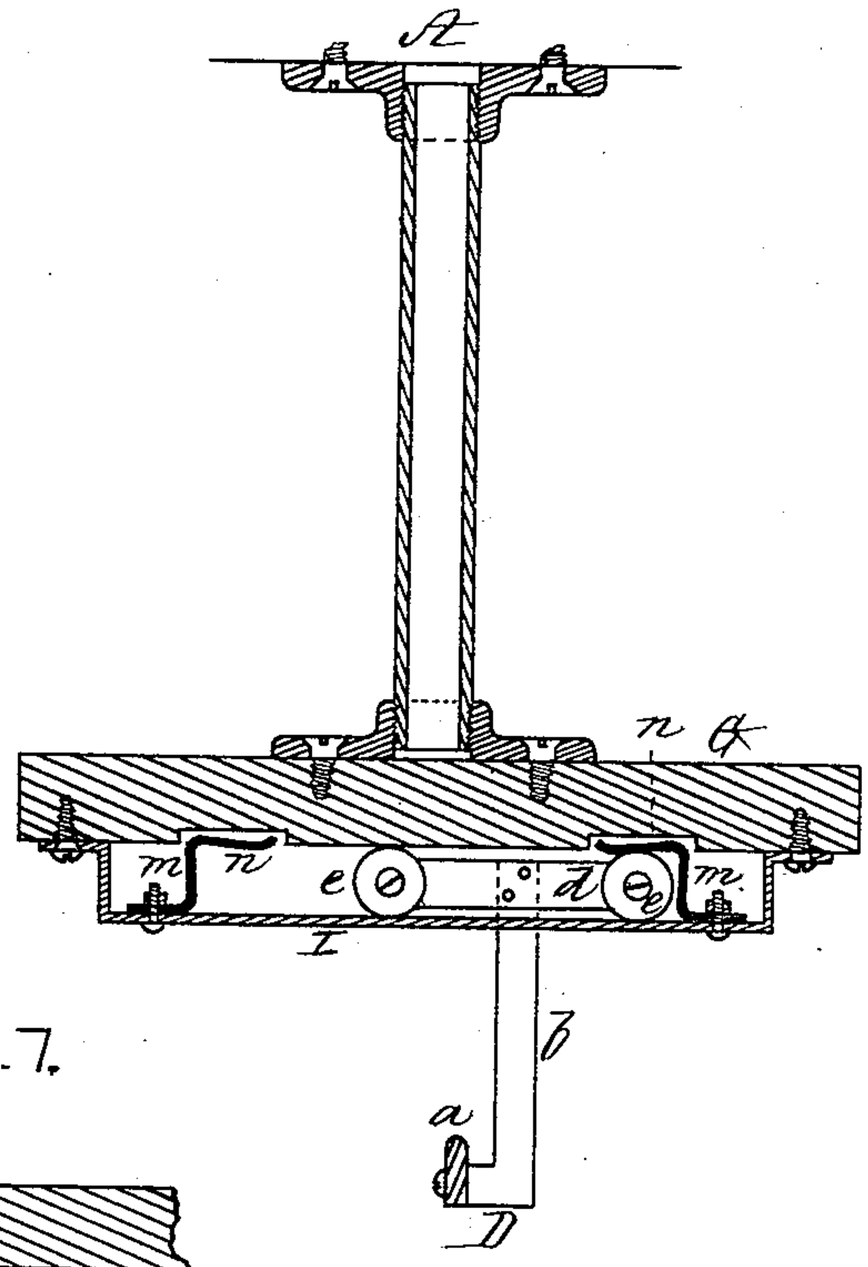



Fig. 7.

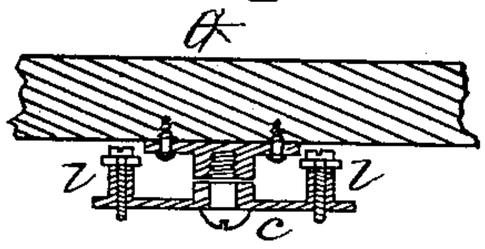
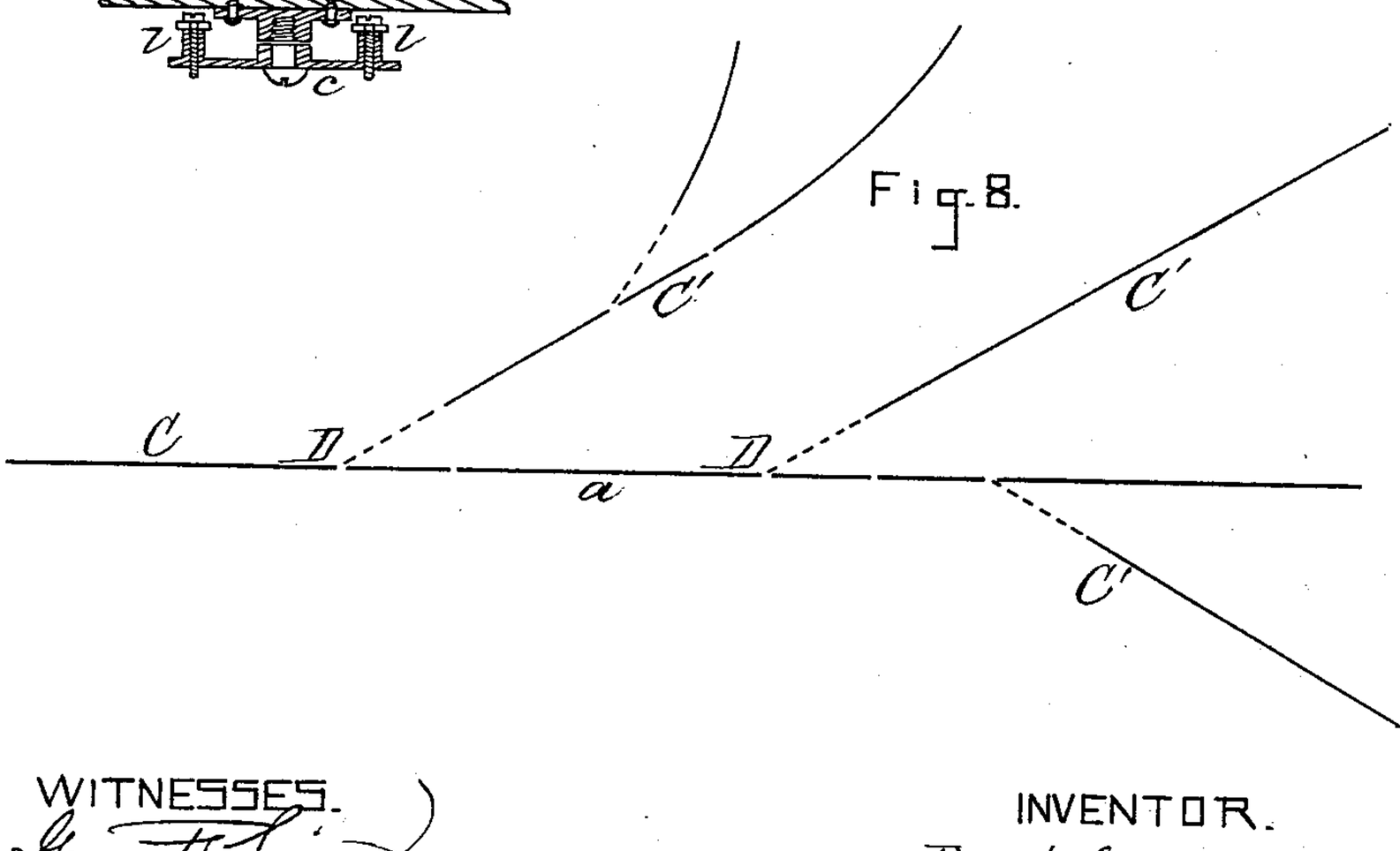



Fig. 8.




WITNESSES.

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per Norman W. Stearns

Atty.

# UNITED STATES PATENT OFFICE.

DANIEL E. KEMPSTER, OF BOSTON, MASSACHUSETTS.

## CASH AND PARCEL CARRIER.

SPECIFICATION forming part of Letters Patent No. 332,539, dated December 15, 1885.

Application filed November 13, 1885. Serial No. 182,662. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL E. KEMPSTER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Cash and Parcel Transmitting Apparatus for Store-Service, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of a single-rail track having my single-rail switch applied thereto. Fig. 2 is a sectional plan of the same with a portion of the supporting-frame broken away; Fig. 3, two end elevations, (enlarged.) Fig. 4 is an enlarged representation of the tripping devices connected with the switch, in elevation. Fig. 5 is a plan of the same enlarged. Fig. 6 is a transverse section on the line *x x* of Fig. 2. Fig. 7 is a transverse section on *y y* of Fig. 4. Fig. 8 is a plan on a reduced scale, showing a single-rail track having a main or direct line—branches and side tracks; Fig. 9, a plan showing a main track only, with switches leading directly to the stations.

My present invention has special reference to a single-rail track for store-service, having a direct or main line—branches diverging therefrom, and side tracks leading from the branches—the aim of this invention being to provide prompt and reliable switches for the passage thereover of wheel-carriers to the stations to which they respectively belong; and this invention consists in a switch for a single-rail track formed of and by a section of the main or branch line, moved automatically by the carriers or mechanism actuated thereby just previous to their arrival thereto, in such manner as to intersect and make continuous connection with a certain other portion of the track over which the carrier which last operated the switch is to pass to its individual station, or having said switch lead directly to a carrier-station, the switch remaining in this position until a carrier belonging to another line arrives at the point on the track just in advance of the near or contiguous end of the switch, when the switch-connecting mechanism extending into the path of said carrier is struck and actuated thereby, causing the return of the switch to its original position.

My invention also consists in the devices which are connected with the switch and extend into the path of and are actuated by contact of the carriers or mechanism connected therewith.

My invention also consists in the mechanism interposed between the switch and the tripping devices actuated by the carriers.

My invention also consists in a certain switch-frame and in stops for limiting the lateral throw of the free end of the switch-frame to arrest the switch when in line with the portion of the track desired, and also consists in a retaining-spring for locking the switch-frame when the switch is so located, all of the features referred to in the foregoing being hereinafter fully described and claimed.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the ceiling of a store, from which depend a series of rods, B, to which is secured an inclined single-rail track, *a*. (Seen in section in Figs. 3 and 6.) This single-rail track is composed of a main trunk or direct portion, C, branches C′, and minor or side tracks, C², having the several salesmen's stations located thereunder, Fig. 8. The switch D is a short section of the main or direct track, entirely disconnected at both ends therefrom, and is supported in line therewith by a pair of vertical standards, *b b*, extending down from the ends of a horizontal or nearly horizontal beam, E, having at one end and at right angles thereto, a cross-head, *c*, pivoted to the under side of a shelf, G, secured to posts reaching down from the ceiling, the beam and the standards forming a switch-frame adapted to swing on the cross-head pivot as a center. The opposite or free end of the beam E terminates in a cross-piece, *d*, provided at its ends with a pair of rolls, *e*, which move on a track or way formed by the bottom of a bent metal plate, I, secured to the under side of the shelf G, this construction being designed to reduce the friction to a minimum. To the under side of the shelf are also secured two brackets or hangers, *h*, to each of which is pivoted a bell-crank lever, *i*, in the end of the lower arm of which is pivoted a friction-roll, *k*, which in

its normal position is free to project down into a path of a two-wheel carrier, L, one only of said rolls being at the same time in this position, and one alternating with the other—*i. e.*, one being up above and the other down into the path of the carrier, as the switch is to be shifted from one portion of the track to another. To the upper end of the upper arm of each bell-crank lever is secured one end of a connecting-rod, *l*, the other end of which is fastened to one extremity of the pivoted cross-head *c*. The peripheral flanges of the front wheels of carriers of different stations are of different diameters, those belonging to the same station are of the same diameters, and the flange of the wheel of a carrier having the longest route to traverse to its station is of the least diameter, so as to pass by the bell-crank tripping devices without coming into contact with any but the last, which controls the switch of the branch on which its station is located.

Near each end of the way or track on which the friction-rolls *e* of the switch-frame move is a stop, *m*, which limits the lateral throw of the switch-beam E in both directions, so as to insure the exact registration or intersection of the free end of the switch with the two portions of the track with which it is intended to connect, a spring, *n*, being also located near each stop to prevent the recoil of the beam E when it comes against a stop, and for locking the switch it its registering position.

I have herein referred to an inclined single-rail track; but it is evident that my single-rail switch-section may be used with a horizontal single-rail track, providing the carriers be actuated by any suitable power to propel them thereon; and my switch can be used with a single rail having a different form in cross-section than that herein shown and described.

The connecting-rods between the bell-cranks and cross-head *c* may be dispensed with, and cords passing around pulleys be substituted for transmitting to the free end of the switch the motion imparted by the change of position of the bell-cranks.

I do not limit myself to the graduated peripheral flanges of the wheel-carriers for actuating the graduated bell-cranks, as the carriers may have some other graduated mechanism secured thereto. For instance, rods of varying height may project up from the carrier-frames into the path of the graduated bell-cranks or other tripping device.

By the application of my invention the stationary frogs at the junctions of tracks, as also the objectionable switch-pieces outside the rails proper now in use, are dispensed with.

One way (perhaps the preferable way) of graduating the carriers to operate the graduated bell-crank levers is to have the near or front peripheral flanges of the front wheels of carriers of different diameters and perform the function of tripping the bell-cranks set for and belonging to the main or direct track-stations only, while the off or rear peripheral flanges of the front wheels of carriers of branch tracks are also of different diameters and exclusively operate the graduated bell-cranks belonging to or set for the branch-track stations. (See Fig. 3.)

A single-rail track may be provided with switches leading directly from its main or branch line to the carrier-receiver of a station, Fig. 9 showing a main line only having switches in two positions, the full-line switches showing the main line closed for the passage of a carrier from one end to the other, and the switches in dotted lines showing the path a carrier would travel from the main line upon switch directly to and terminating at its station without first passing over any interposed branch between the switch and the station.

I claim—

1. As an improvement in cash or parcel transmitting apparatus for store-service, &c., a single-rail track composed of a main or direct line and one or more branches, and having a switch formed of a single-rail-track section operated automatically by a carrier which must traverse the switch to reach its station, for the purpose set forth.

2. A single-rail track having a switch composed of a single-rail-track section disconnected from the main track and operated automatically by the carrier or carriers, which must pass over said switch to reach the station to which it or they belong, for the purpose described.

3. A single-rail track having a switch composed of a single-rail-track section formed of a portion of the main or branch line, said switch being disconnected from its major portion and operated automatically by a carrier which must pass over the switch to reach its station, for the purpose specified.

4. A single-rail track, in combination with one or more switches formed of movable single-rail sections leading directly to a station, for the purpose set forth.

5. A single-rail track composed of a direct line, one or more branches or side tracks, and one or more single-rail switches, each formed of a disconnected track-section, in combination with tripping devices and their interposed switch-connecting mechanism actuated by carriers having graduated peripheral flanges or other devices connected therewith, for the purpose set forth.

6. The bell-crank levers *i*, the cross-head lever *c*, the interposed connecting-rods *l*, the single-rail switches D, the graduated wheel-carriers L, for operating the latter, and suitable stops, *m*, for limiting their lateral motion, in combination with an elevated single-rail track, substantially as and for the purpose stated.

7. A pivoted switch-frame, in combination with and for supporting a single-rail switch, operating substantially as specified.

8. In combination with a single-rail switch

and its supporting-frame, the friction-rolls *e* and the track or way on which they move, as and for the purpose set forth.

9. The combination, with the graduated peripheral flange-wheel carriers L and graduated bell-cranks *i*, of the friction-rolls *k*, pivoted to the latter, as and for the purpose described.

10. The retaining-springs *n*, in combination with the switch-frame, its friction-rolls *e*, and stops *m*, and the way formed by the plate I, constructed to operate as specified.

Witness my hand this 6th day of November, 1885.

DANIEL E. KEMPSTER.

In presence of—
N. W. STEARNS,
H. W. STEARNS.