

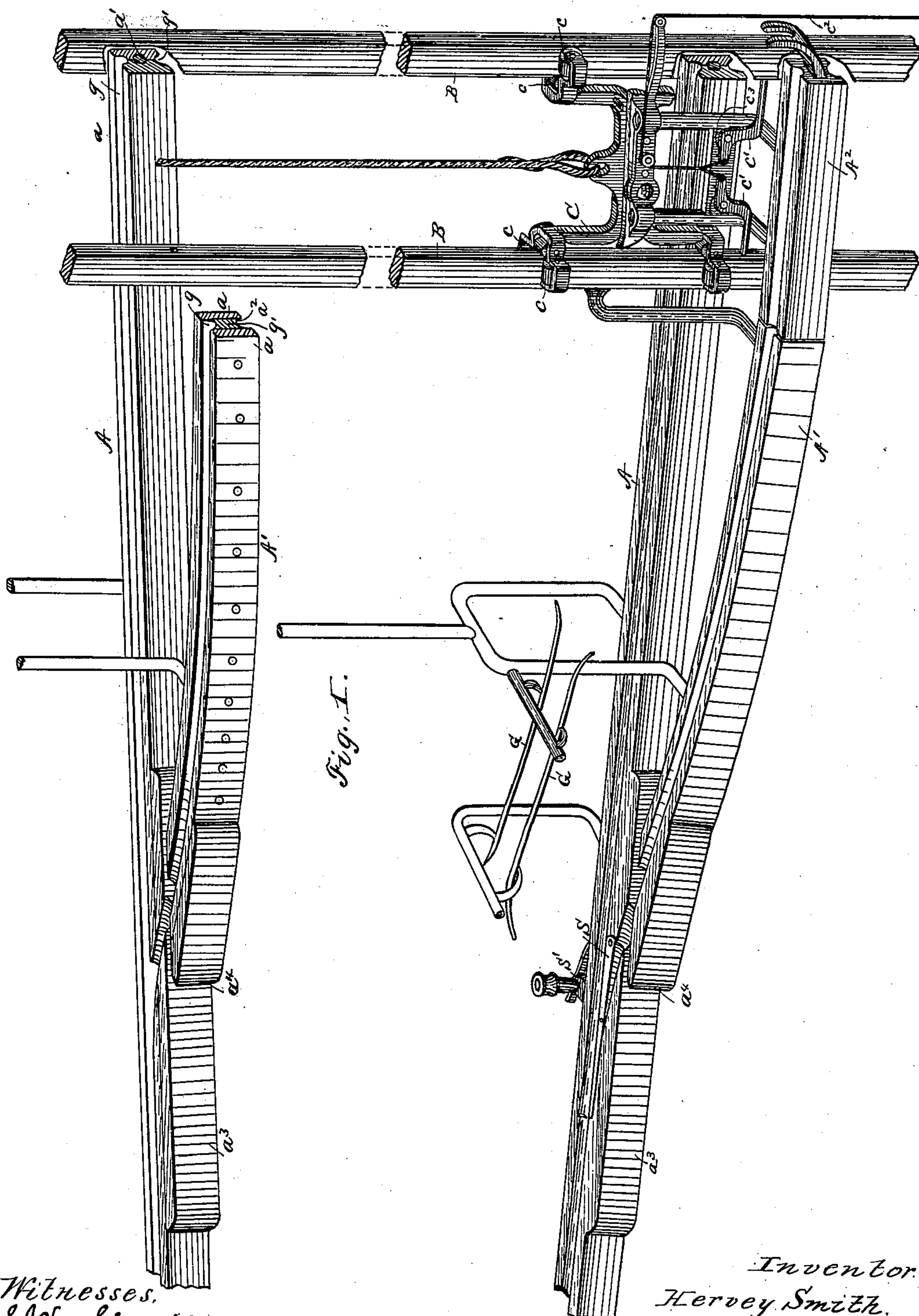
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4 Sheets—Sheet 1.

H. SMITH.
CARRIER APPARATUS.

No. 332,959.

Patented Dec. 22, 1885.



Witnesses,
S. J. War Stavoren
Geo. R. Byington.

Inventor.
Hervey Smith.

Per. *Halimys halim*

At 7:15

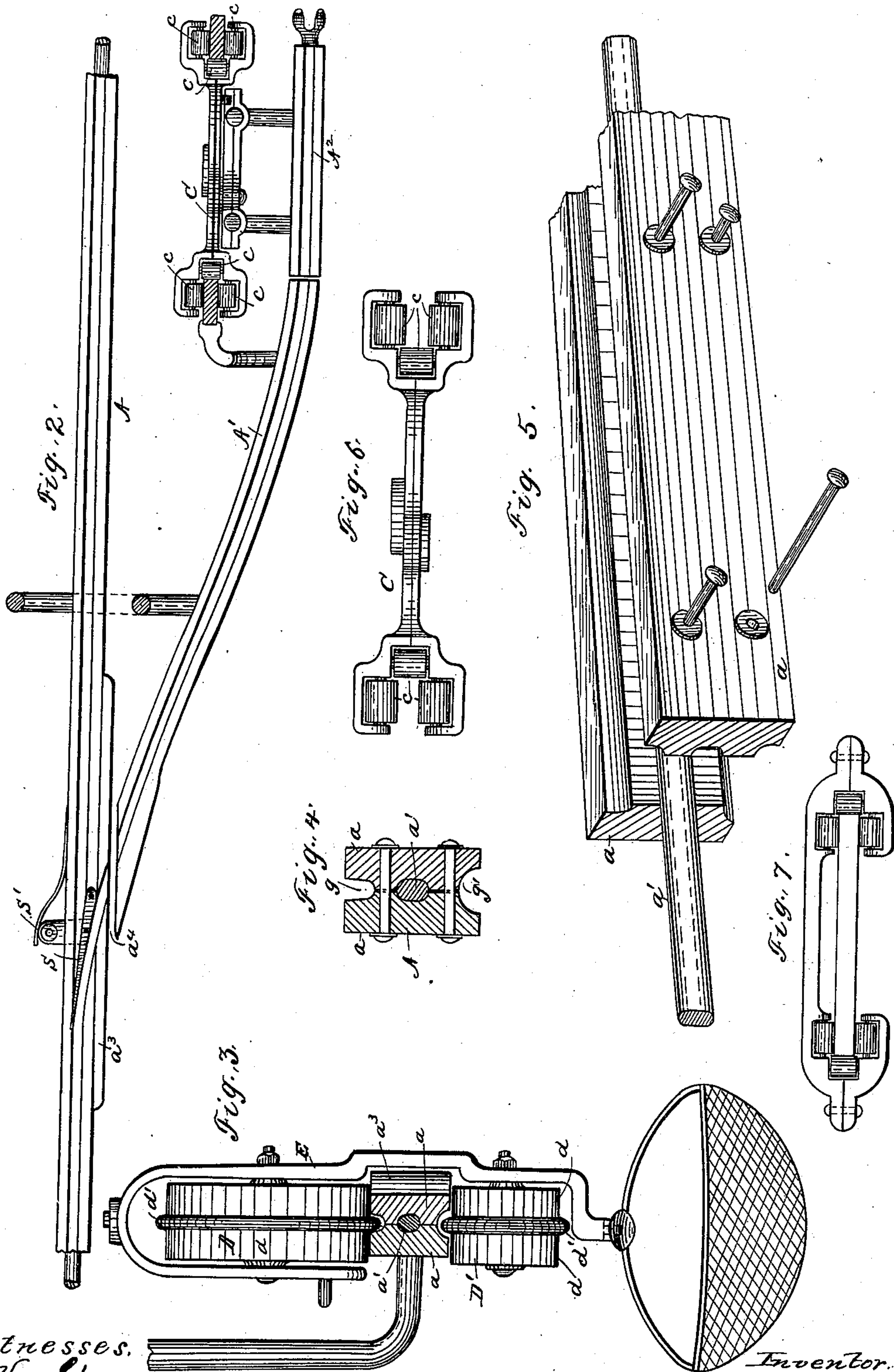
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Per. Haller & Haller
ATT'YS

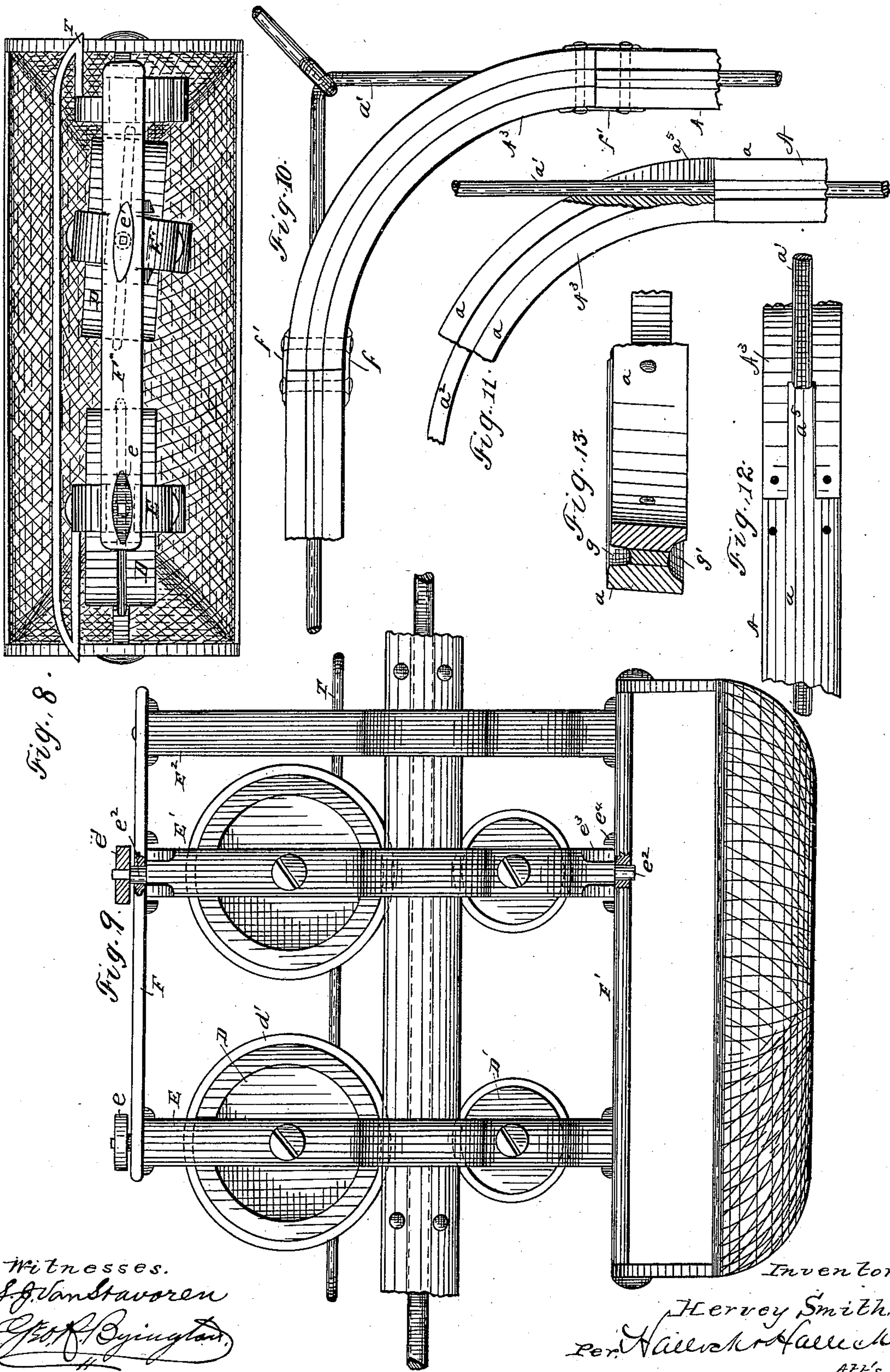
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Geo. R. Dymington.

Inventor.
Hervey Smith.
Per. Hailshof & Hall
ATT'YS.

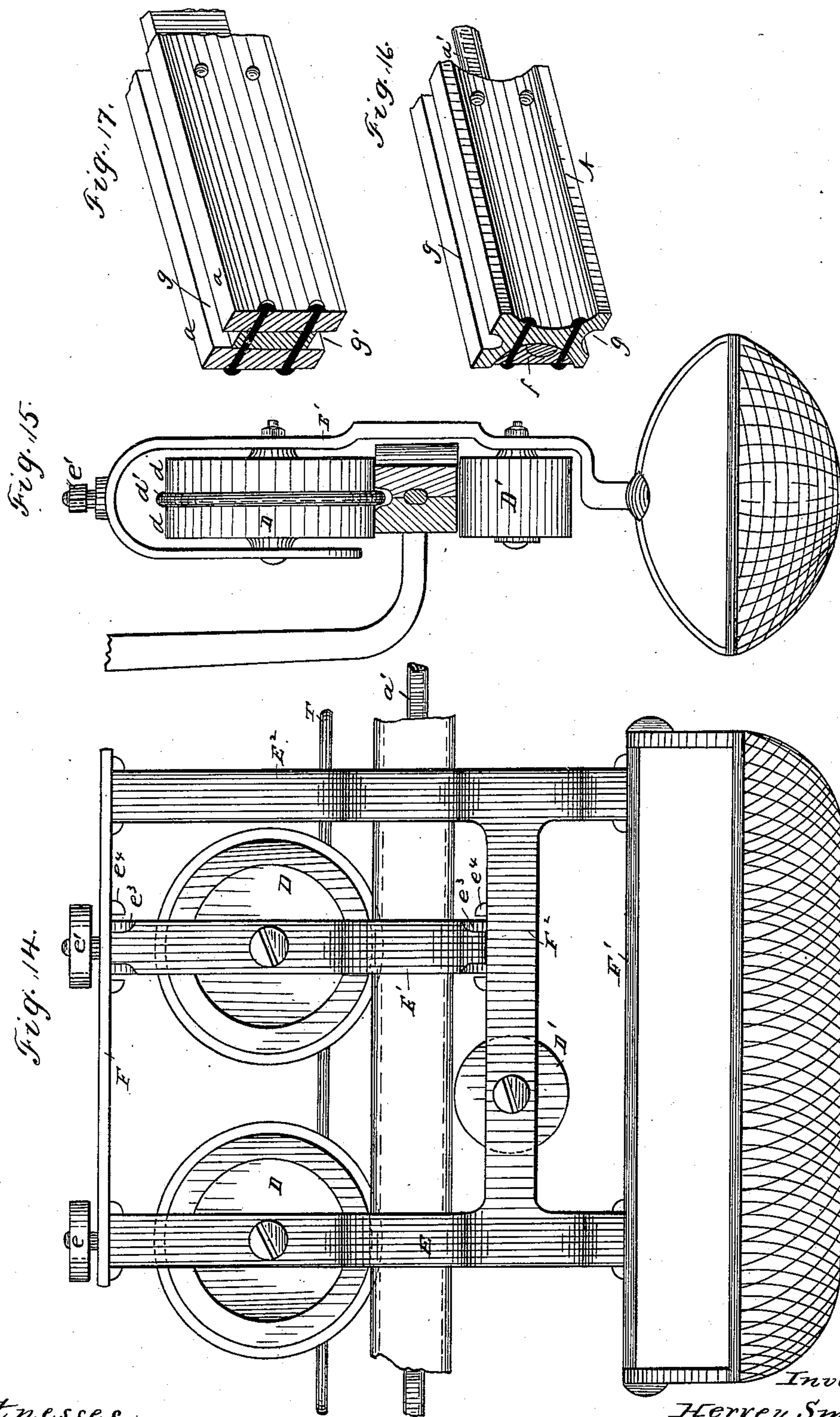
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 Inventor,
Herrey Smith.
Per. Hallock & Hallock
Att's

UNITED STATES PATENT OFFICE.

HERVEY SMITH, OF ERIE, PENNSYLVANIA.

CARRIER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 332,959, dated December 22, 1885.

Application filed October 13, 1885. Serial No. 179,813. (No model.)

To all whom it may concern:

Be it known that I, HERVEY SMITH, 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 Carrier 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 conveyer devices such as are used in stores for carrying packages, cash, &c., and for other like purposes; and it consists in certain improvements in the construction thereof, which will be hereinafter fully described, and pointed out in the claims.

My invention is illustrated in the accompanying drawings, as follows:

Figure 1 is a perspective view of a receiving and dispatching station on a conveyer-line. It shows the upper track, which grades toward the central station; the lower track, which grades from the central station; the dispatching-switch, by which cars are sent from the way-station onto the upper track; the receiving-switch, by which cars are shunted from the lower track at the salesman's station, and the elevator, by which cars are let down onto the counter and raised up and transferred onto the dispatching-switch. Fig. 2 is a plan view of the lower main track, and the receiving-switch and elevator at one of the way-stations. Fig. 3 is an end view of a car on the track, the track being in vertical section. Fig. 4 is a transverse vertical section of the track. Fig. 5 is a perspective view of the parts forming the track. Fig. 6 is a plan or top view of the elevator-carriage frame. Fig. 7 is a like view of an elevator-carriage frame adapted to a single bar, while the one shown in Fig. 6 is for two bars. Fig. 8 is a top or plan view of a car. Fig. 9 is a side view of a car. Fig. 14 is a like view to Fig. 9, showing modifications of construction. Fig. 15 is a like view to Fig. 3, showing modifications of construction. Fig. 10 is a top view of a curve in the track. Fig. 11 is a like view, showing details of construction. Fig. 12 is a side view of the curve. Fig. 13 is a perspective view of a piece of curved track. Figs. 16 and 17 show modifications in the construction of the track.

The first part of my invention relates to the construction of the track.

The second feature of my invention relates to the construction of the car.

The third part of my invention relates to the construction of the elevator, and there are further minor features.

A conveyer-track for store-service, which is formed of a taut wire, possesses the advantage of being easily supported, as it does not require so many supports as a track formed of bars; but, on the other hand, a bar-track is often more desirable than a taut-wire track, because it can be cut at the switches to admit of the passage across it of the wheel-flanges as the car goes onto the switch.

In a pending application for a patent filed by me I have shown a switch for a taut-wire track which has two pieces clamped upon the wire at the switch-point, on which is formed a track above the wire; but I did not in that application illustrate the formation of a whole line of track by bars clamped upon a taut wire, as I now do; nor did I claim, broadly, such a track, as I shall now do.

In the drawings, A marks the main tracks, and A' the switch-tracks. There is a slight difference in the construction of these tracks. The main track, however, may be made the same as the switch-track. The main track is formed of a taut wire, a' , and two bars, a , which are bolted together upon the wire a' . (See Figs. 4 and 5 for details of construction.) The central wire may be flattened, as shown, or otherwise formed to prevent the two bars a turning on it.

In Figs. 10, 11, and 12 the method of forming a curve is shown. It will be seen that the taut wire a' marks the turn by an angular bend, and a curved piece of track, A^3 , is put in and connected with the straight track. These curves A^3 and the switches A' may be made of a single bar bent to proper form; but I prefer to use a central bar of iron, a^2 , bent to proper form, with the side pieces, a , of wood, bolted to it. (See Figs. 1, 11, and 13.)

Figs. 10, 11, and 12 show clearly the manner of attaching a curve track to the wire a' . It is cut out on the side at the ends, so as to slip onto the wire, and fish-plates f' are bolted onto the sides of the track at the joint between the

curved and the straight bar. A tongue, a^5 , may be left on the straight track to fill the groove cut in the side of the curved track, as seen in Figs. 11 and 12.

5 In Figs. 16 and 17 I show modified constructions. In Fig. 16 the track A is of one piece properly formed to receive the car-wheels, and is cut out on the side to receive the wire a' , and then a fish-plate, f , is bolted
10 over the wire outside the track-bar. In Fig. 17 the track is all of wood, or may be.

If the track is to be used with cars having double-flanged wheels, the central piece will be wider than the outside pieces; but when the
15 car is provided with a double tread and a single flange, as shown in the drawings, the central piece will be narrower than the outside pieces, as shown.

When a track is made all of wood, it will
20 be far less liable to warp and break if made of three parts than when made of one piece.

In a conveyer apparatus of this type it is very desirable to construct the track with a groove and provide the cars with wheels hav-
25 ing a central flange, as shown, and I prefer to have the track grooved both on top and on the bottom, and use upper and lower wheels on the cars. When thus constructed, I prefer to make the lower groove, g' , wider than the
30 upper one, g , or else make the flanges on the lower wheels narrower than those on the upper wheels, which would produce the same effect. The object in this variation in size is to allow the car a chance to swing a little.
35 The advantages of a grooved track and centrally-flanged wheels over a track which is embraced by the flanges of the wheels is that the wheels can have a wide-faced tread and will run with less friction on the rail. When
40 the wheels are grooved and embrace the track, there is a constant friction on the inside of the flanges of the wheels; but the principal advantage is that at the switches the track does not have to be cut across for the outside flanges
45 on the car-wheels to get across it, and hence cars will run over the switch-frog when passing a switch without jar or noise.

By reference to Figs. 1 and 2 it will be seen that only one of the faces of the rail has to be
50 cut across at the switch-points, and this may be filled with a switch-tongue, S, as shown; but if it is preferred to switch the car by some other means than a switch-tongue and the cut is not filled it will make no difference, for the
55 passing cars will have an unbroken track-face on both sides of the wheels, and hence will run perfectly smooth over the frog. I prefer to widen the track on the side next the end of the switch-track, as at a^3 . This is for the purpose
60 of giving good length to the branch groove before the space a^4 between the main and the side track is reached, and also to give a bearing for wheels when passing by the switch, which construction is the same as is shown and
65 claimed in a companion application filed October 5, 1885. I also put an enlargement on the outside of the side track, so as to widen

the face of the track on that side at the diverging point.

The construction of the car is illustrated in
70 Figs. 3, 8, 9, 14, and 15. It will be seen to consist of a frame with wheels, which is varied somewhat in the two forms shown; but this variation is of small account, the difference
75 being to illustrate that there may be one or two wheels below the track, and also that the wheels below the track need not be flanged.

The novel features in the construction of the car are—

First, that its trolley embraces the three
80 unobstructed sides of the track, and that its wheels are made with a central flange, d' , and side tread-faces, d d , and it will be observed that the side treads, d d , are wide. The rule of construction should be to make the
85 side treads so wide that each of them, together with the flange, shall be considerably wider than the widest point in the groove in the track at the switch-frogs, so that a car in running onto a switch will have its wheels
90 always bearing on each side on the track-faces. Where a switch-tongue is used, this is not so important; but when the switching is effected by other means than a switch-tongue it is very
95 important.

Second, that the standard E' , on which the forward wheels are journaled, is pivoted in the frame of the car, as seen at e^2 e^2 in Fig. 9. There are lugs e^4 on the frame-pieces F' and faces e^3 on the standard E' , for limit-
100 ing the pivotal movement of the standard. The object in having this standard pivoted is to make the car take to the switch and curves more easily. On the top of the standard E' is a bar, e' , and over the switches are guards G
105 G, (see Fig. 1,) between which this bar has to pass as the car runs onto the switch. The object of these parts is to prevent the forward wheels being turned into the space a^4 when the car is running off onto the switch. I put
110 another similar bar, e , on the back end of the frame, which operates in the same manner when the car is sent from a switch onto the main track. On the car is a tender, T, for opening the switch; but this forms no part of
115 the present invention, it being shown in a pending application.

The third part of my invention relates to the elevator-carriage, and consists in provid-
120 ing it with friction-rollers, so it will not bind on the elevator-tracks B. In Figs. 1, 2, and 6 I show an elevator-carriage adapted to two upright tracks, and in Fig. 7 I show it adapted to a single upright track. C is the frame of the carriage, and c are the friction-rollers,
125 which are arranged in the part of the carriage-frame C which embraces the track B. There are three friction-rollers on each side of the carriage at each bearing-point, one bearing on the edge of the track and the
130 other two on the sides. It will thus be seen that there cannot possibly be any binding of the carriage on the track, nor will there be any friction in moving it upon the track.

A further improvement in the elevator is the device for stopping the elevator opposite the end of the switch-track. It consists of the two pivoted catches $c' c'$, which will enter holes in the sides of the elevator-track B. They are kept depressed by springs c^3 , and are moved against the springs by the cord c^2 , which passes over pulleys on the elevator, as shown. The cord is long enough to be within reach when the elevator is at the point shown in Fig. 1.

What I claim as new is—

1. In a carrier apparatus, the combination, with a track having its supports attached to only one of its vertical sides, leaving its other three sides unobstructed, and having its upper face grooved centrally, of a car-trolley which embraces the three unobstructed sides of said track, has its upper wheels centrally flanged, and operates against both the upper and lower faces of the track, substantially as and for the purposes set forth.

2. In a carrier apparatus, substantially as shown, the combination, with a car having two sets of centrally-flanged wheels, one for running on the top and the other on the bottom of the track, of a track having upper and lower centrally-grooved faces.

3. In a carrier apparatus, substantially as shown, the combination, with a car having two sets of centrally-flanged wheels, one for running on the top and the other on the bottom of the track, of a track having a narrow groove in upper face and a wide groove in its lower face.

4. A carrier-apparatus track consisting of three parallel parts clamped together, the central part being of such a width and so placed as to give the track-faces the proper form to receive the flanges of the car-wheels.

5. A carrier-apparatus track consisting of three parallel parts clamped together, of which one is of metal.

6. In a carrier apparatus, substantially as shown, the combination, with a main track, of curved sections of track for switches or bends in the main track, which are made of a bent bar of iron with side pieces of other material clamped thereto.

7. In the track of a carrier apparatus, sub-

stantially as shown, the combination, with a taut wire, of bars having thereon the tread-faces for the car-wheels, which are clamped upon the said taut wire.

8. In the track of a carrier apparatus, substantially as shown, the combination, with a taut wire, of two parallel wooden bars clamped upon said taut wire, said bars being properly shaped to form the tread-faces for the car-wheels.

9. In a carrier apparatus, substantially as shown, the combination, with a track having a central groove and branch grooves at the switch-points, of a car with wheels having a central flange, d' , and side threads, $d d$, each of which, together with the flange d' , is wider than the widest point in the track-groove at the switch-point.

10. In a carrier-apparatus car, substantially as shown, the combination, with the frame of the trolley, of a pivoted standard having thereon one of the wheels of the trolley, whereby said wheel can be turned at an angle to the other wheel of the trolley.

11. In a carrier apparatus, substantially as shown, the combination, with a car having the pivoted standard E' , bearing one of the wheels of the car, and the bar e' at the upper end of said standard, of the guards $G G$ at the switch-points, substantially as shown, and for the purposes mentioned.

12. In a carrier apparatus, substantially as shown, the combination, with a switch-track having adjusted thereon the guards $G G$, of a car having on its frame the guide-bar e' , substantially as shown, and for the purposes set forth.

13. In a carrier apparatus, substantially as shown, the combination, with the elevator-track, of an elevator-carriage frame which embraces said track, and is provided at the embracing-points with friction-rollers $c c c$, arranged substantially as and for the purposes set forth.

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

HERVEY SMITH.

Witnesses:

JNO. K. HALLOCK,
ROBT. H. PORTER.