(No Model.)

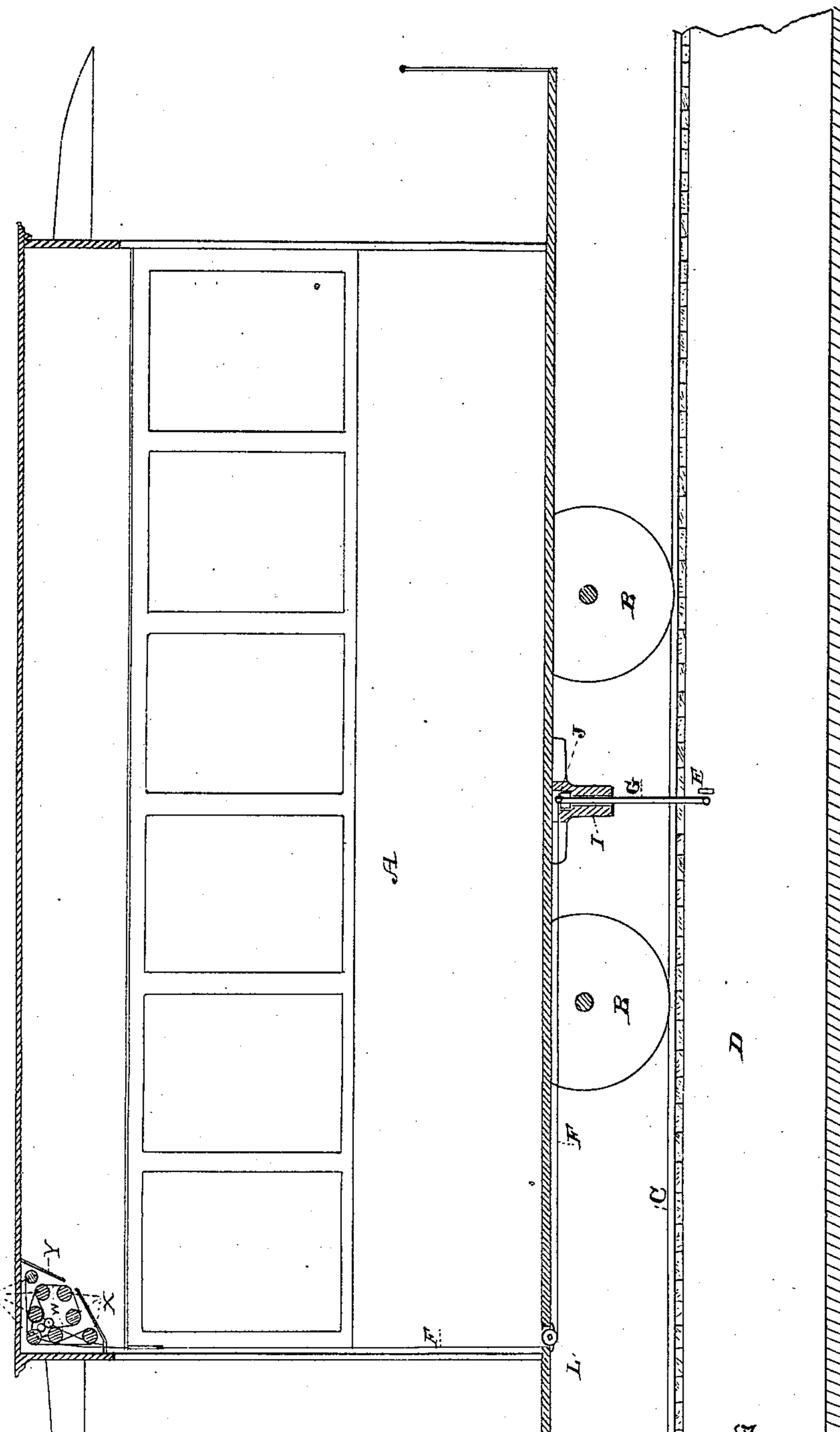
4 Sheets—Sheet 1.

W. W. CAMPBELL.

STATION INDICATOR.

No. 287,094. Patented Oct. 23, 1883.

FIG. 1.



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(No Model.) 4 Sheets—Sheet 2.

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FIG. 2.

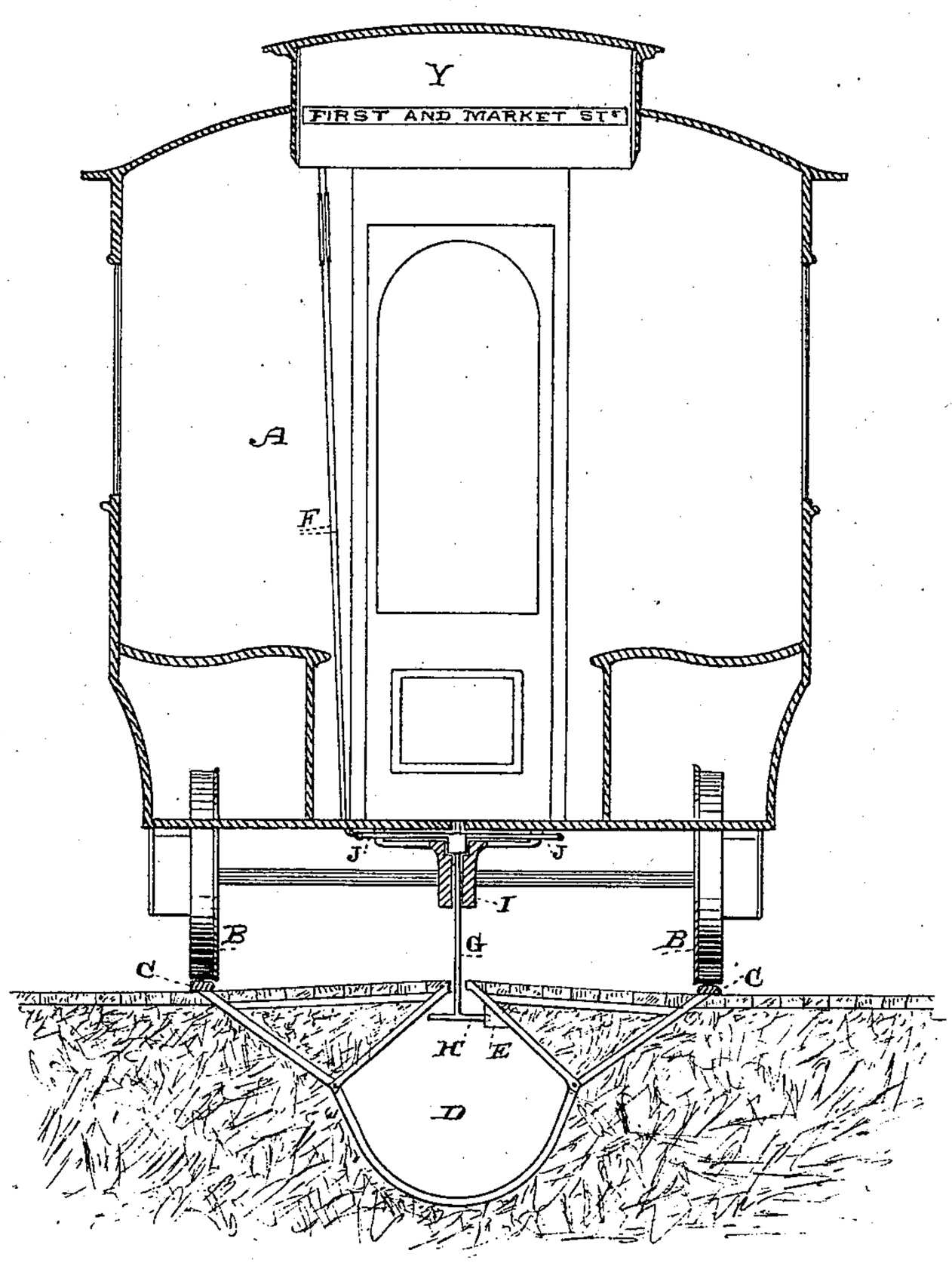

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FIG. 3.

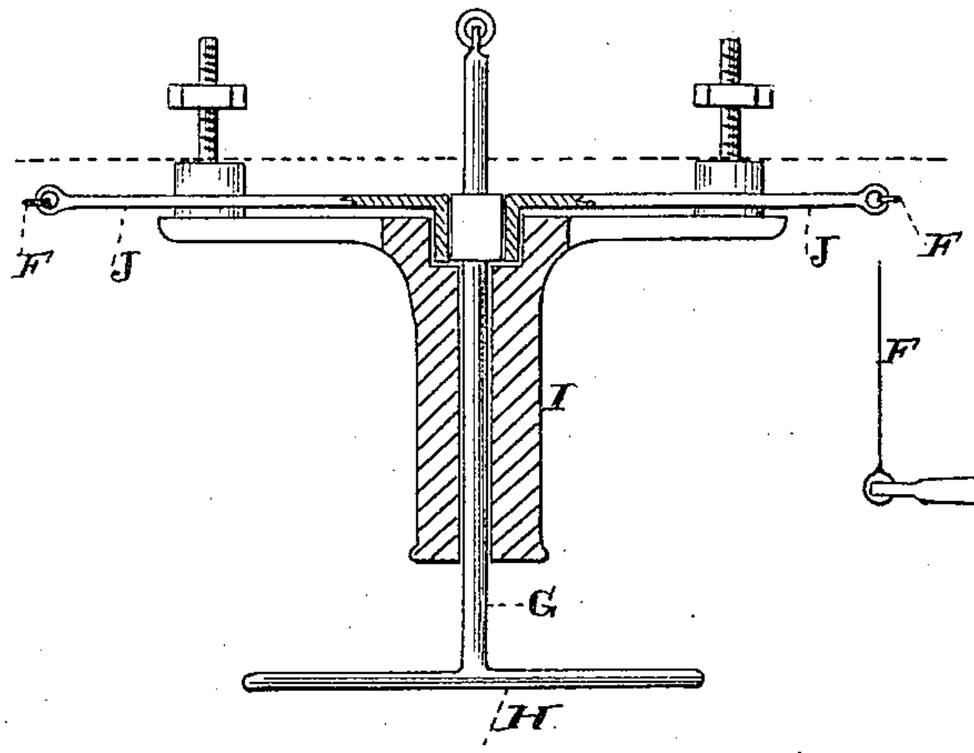

FIG. 4.

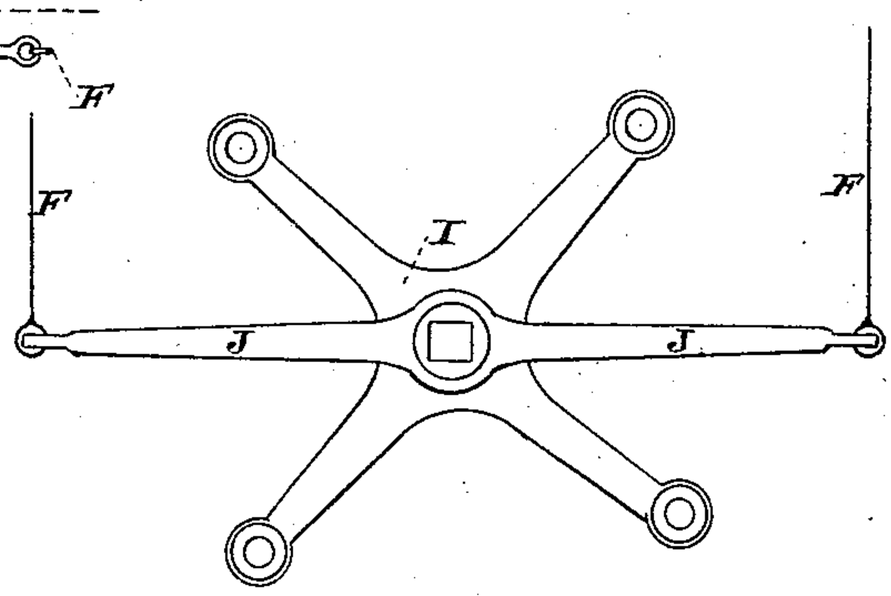

FIG. 5.

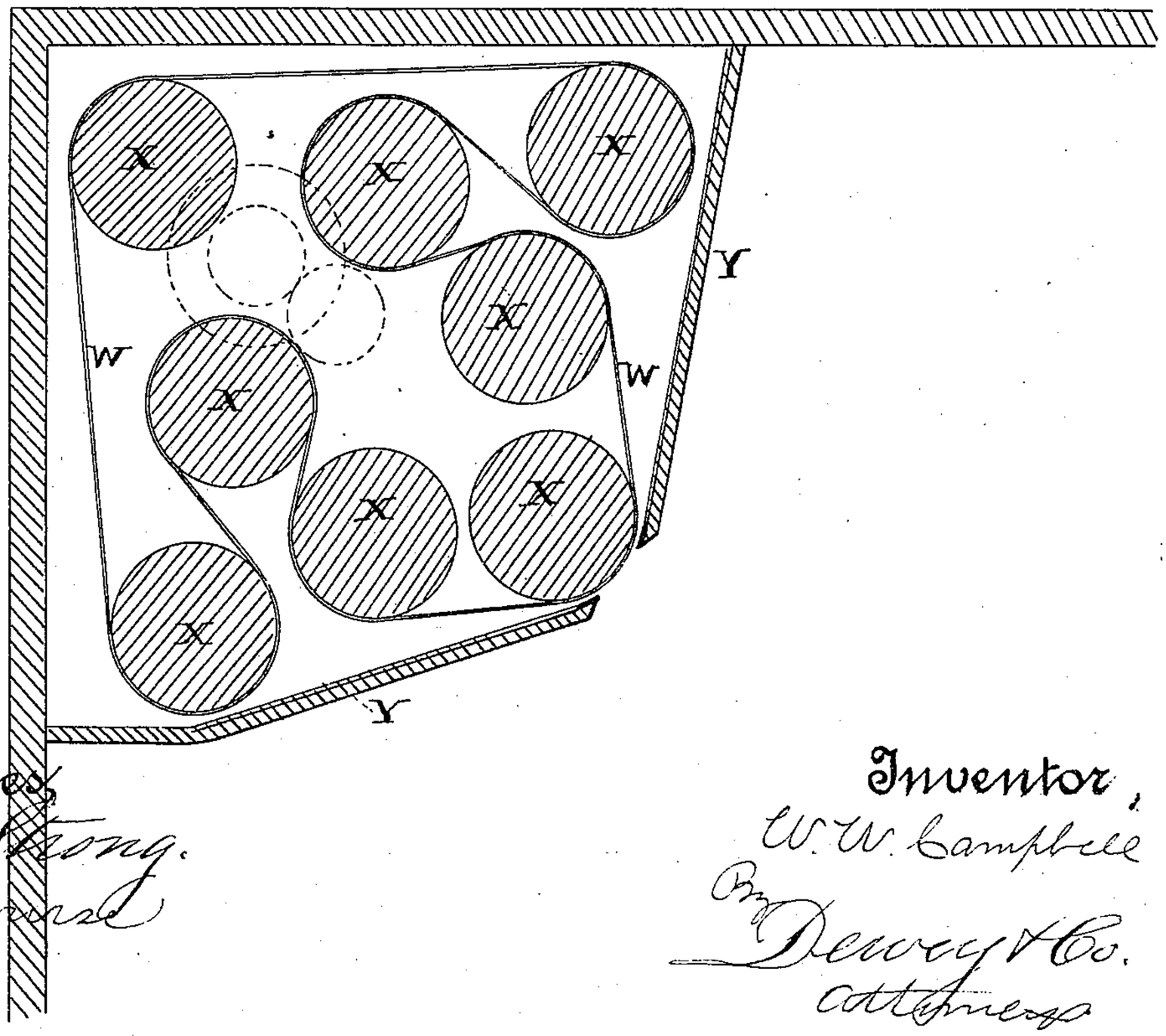

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FIG. 6

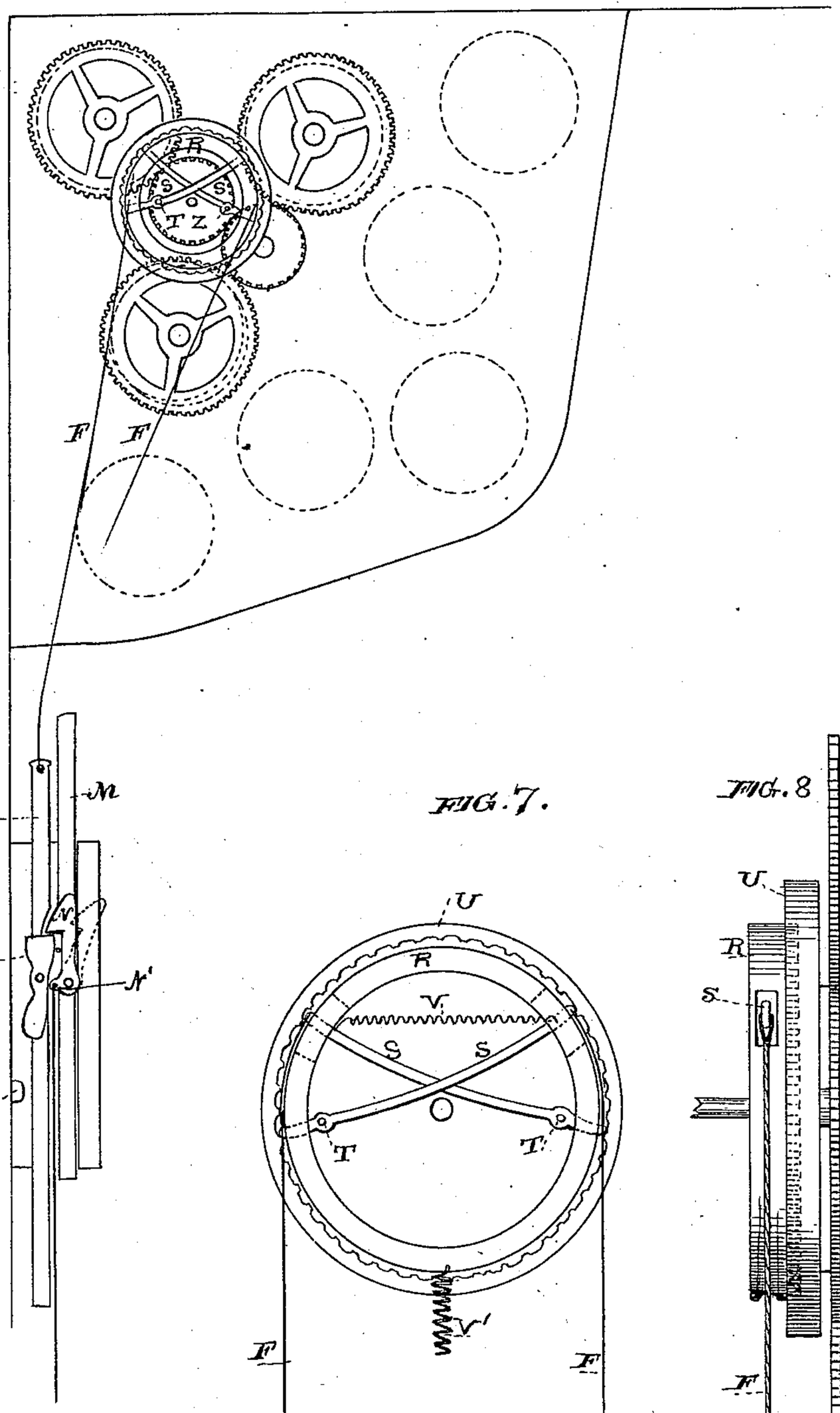
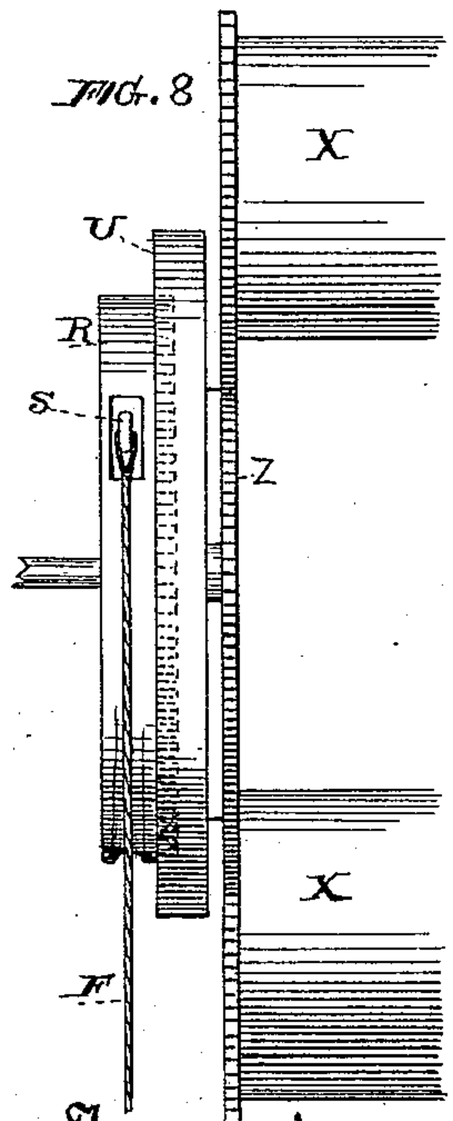


FIG. 7.

FIG. 8



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UNITED STATES PATENT OFFICE.

WILLIAM W. CAMPBELL, OF SAN FRANCISCO, CALIFORNIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 287,094, dated October 23, 1883.

Application filed August 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. CAMPBELL, of the city of San Francisco, county of San Francisco, and State of California, have invented an Improvement in Street or Station Indicators; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in devices by which streets or stations are indicated, when reached, to passengers within railway-cars; and it consists of a band or belt passing around certain supporting-rollers, and a mechanism by which they are caused to rotate, said mechanism being connected with a device beneath the car having an arm to enter the grip-slot of a cable-tube, and be actuated by means of lugs or projections fixed at the proper positions within the tube, as will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a car, showing my apparatus and its connection. Fig. 2 is a transverse section. Figs. 3 and 4 are views of the device for operating the mechanism and rolls. Fig. 5 is a vertical section of the case and rollers and band. Figs. 6, 7, and 8 are views of the operating mechanism.

A is a car having supporting-wheels B, running on rails C. In the present case I have shown my invention adapted to be used upon street-railways in which the cars are propelled by means of a cable traversing an underground tube or tunnel, and a suitable griping mechanism by which the car may be connected with the rope.

D is the cable tunnel or tube, and it has lugs or projections E fixed at one side within it, out of the way of the grip-shank.

Upon the bottom of the car is fixed a device by which the cords F are operated, and an arm, G, projects downward from it into the tube, and is bent at right angles, as shown at H, so that as it arrives at one of the lugs E it will be turned about its axis. The shaft G, to which the arm H is fixed, extends up vertically through a guide, I, and has arms J extending horizontally at its top, and crosswise of the car. To the ends of these arms the cords or wires F are fixed, and extend forward to the end of the car and around pulleys L, so as to lead up to the mechanism by which the band with the station-names is moved.

In order to limit the distance to which the wires may move, they are divided, and one end is connected with a slide, M, having a hook or lug, N, which catches upon a swinging button, O. This button is attached to another slide, P, moving in the same case or guide with the slide M, and having the other part of the cord fixed to its opposite end. When the cord attached to the first slide, M, is pulled by the action of the arm J, the lug N engages the button O, and thus draws the slide P and its cord until the lower or back end of the button strikes a lug, Q, upon the inside of the case, which throws it forward and thus releases it from the catch N, and allows it to be returned by a suitable spring attachment which is connected with the mechanism hereinafter described. The hook N has its lower pivoted end formed with a bell-crank lever, as at N′, to which the cord or wire is attached, and a spring holds the hook out of contact with the part O until the cord is pulled, when the first motion throws the hook forward so as to engage the catch O, and a further pull draws the slide M down. By this arrangement that part of the cord which is connected with the band-moving mechanism is always released at the same point, and the band will not be moved beyond the point necessary to exhibit the station desired; but the arm J and its connected slide M may be moved farther, if the car should be running fast and the arm G should strike the lug within the tube violently. This device may be placed at any suitable point between the operating-levers and the band or belt mechanism, but preferably near the latter, so that when the hook N of one side is detached and the other operated, there will be but a short length of the idle cord to be moved. The cords or wires from the arms J, after passing around the pulleys L, lead up to a point preferably in the upper front end of the car, and connect with slides M, as above described. Then the wires or cords from slides P pass partly around upon opposite sides of a rim, R, which is grooved to receive them, and are attached, one to the end of each of the levers S, which cross diagonally within the rim, and have their inner ends pivoted at T, as shown.

The outer ends pass through slots in the rim and project a short distance, so that the cords may be attached to them, as shown. The rim R fits within an outer rim, U, the interior face of which is toothed or corrugated, as shown. The operation will be as follows: The levers S have their inner ends pivoted below the center of the rim R and the line of attachment of the cords F, and when the cord upon either side is pulled it will pull the end of the lever S, to which it is attached, outward until it engages with the teeth or corrugations in the rim U, so that its further movement causes the rim U to be revolved also. As soon as the lever is released by the action of the slides M and P and the button O, the spring V draws the lever and cord back to its place. The rim R is returned to its position by means of a spring, V'.

W is a belt, band, or ribbon of any suitable material, having the names of the streets or stations printed upon it at equal intervals, and as the belt is moved by the action of the cords and levers it will be advanced so as to carry the names forward a certain fixed distance at each movement. The belt is passed around a number of rolls or carriers, X X, within an inclosing-case, Y, so as to provide as great a length as is necessary to carry all the names, and three of these rolls are driven by a gear-wheel, Z, upon the rim U, so as to prevent the possibility of the slipping of the belt. The arrangement of gears for the purpose is well shown in Fig. 6. The case Y is slotted at the rear upper portion, so that as the band passes over a roller, X, at that point its surface will be exposed so as to be seen by the passengers. A bell may be fixed so as to be automatically sounded when a new station is brought forward and exposed to view. The station or street names are so arranged that when moved forward each one will be left in the opening or slot so as to be easily seen.

It will be manifest that there will be a set of slides, M P, with the button O, and catch N, for each of the cords F, so that the belt may be moved either forward or backward at will; and it will also be seen that the mechanism R S U might be omitted and the work done by the slides M P with the catches O and bell-crank hook-levers N N', if desired.

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

1. In a cable-railway, a means for indicating streets or stations, consisting of an endless name band or belt passing around rollers within a case in the car, and cords or wires connected with these rollers and leading to a yoke beneath the car, in combination with a vertical stem to which the yoke is fixed, said stem extending down through the grip-slot of the cable-tunnel, and having an arm or arms which will be engaged by fixed lugs or projections within the tunnel, so as to partially rotate the shaft and move the belt, substantially as herein described.

2. A mechanism for moving an endless station-indicating band or belt, consisting of a vertical rotating shaft passing through the slot of a cable-railway tube or tunnel, and having an arm to be turned by projections fixed within the tube, in combination with a cross-arm fixed to the upper end of the shaft, and cords or wires leading from its ends to levers by which the mechanism is actuated, substantially as herein described.

3. In a street or station indicator, a means for limiting the movement of the cords or wires connected with the belt-carrying mechanism, consisting of the slides M and P, to which the two parts of a cord are attached, the lug N, swinging button or catch O, and the lug Q, substantially as herein described.

4. In a street or station indicator, the rim R, having the levers S, pivoted on the inner opposite sides crossing each other and extending through slots in the periphery of the rim, in combination with the exterior rim, U, toothed or corrugated, as shown, belt-carrying mechanism, and the cords or wires connected with the levers, substantially as described.

5. In a street or station indicator, the rolls or carriers X, about which the band W passes, in combination with the rim R, having operating-levers S, the exterior toothed or corrugated rim, U, and an intermediate gearing by which two or more of the carriers are driven directly from the geared rim U, substantially as and for the purpose herein shown and described.

6. In a station-indicator having an endless band carrying the names and a mechanism for moving the same, the slide P, having one end of the cord attached to it, and the trip lever or button O, in combination with the slide M, having the bell-crank hook-lever N N', to which the other part of the cord may be attached, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM W. CAMPBELL.

Witnesses:

S. H. NOURSE,

H. C. LEE.