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PATENTED SEPT. 10, 1907.

W. E. PUTNAM.
SIGN OPERATING MECHANISM.
APPLICATION FILED NOV. 6, 1906.

2 SHEETS—SHEET 1.

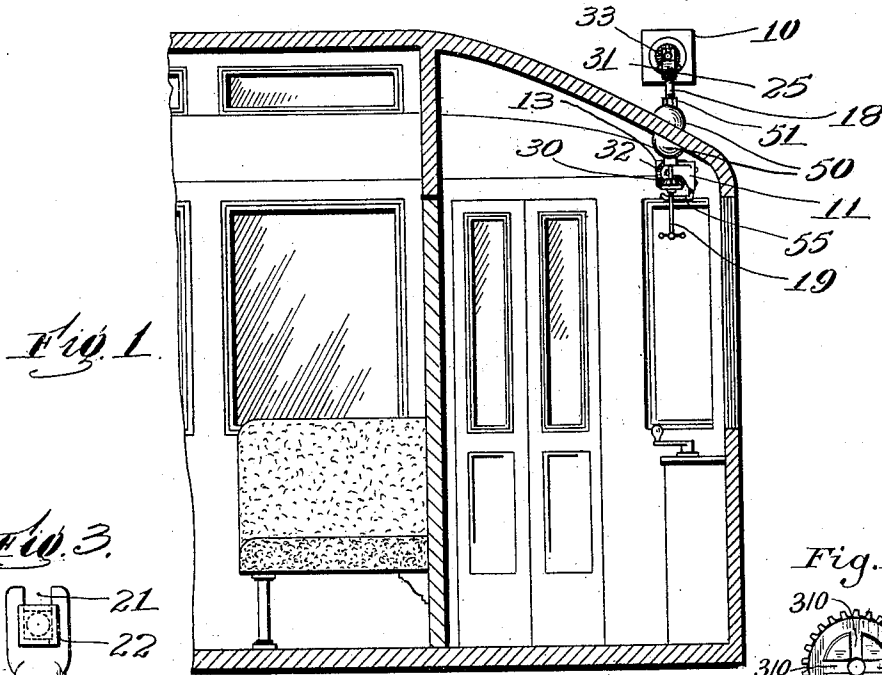


Fig. 3.

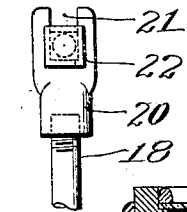
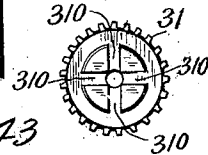
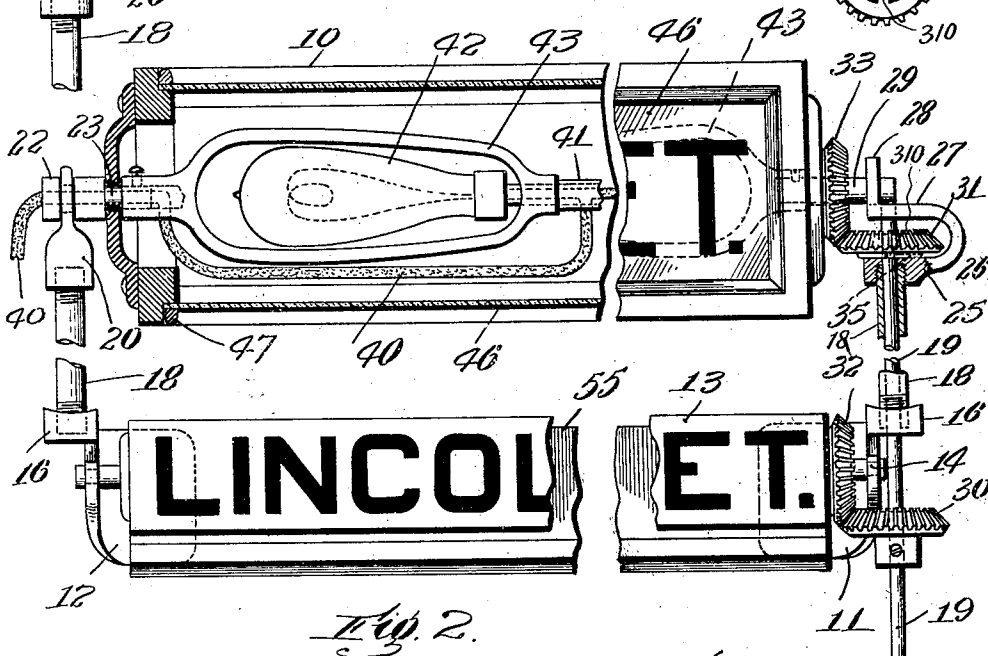


Fig. 11.



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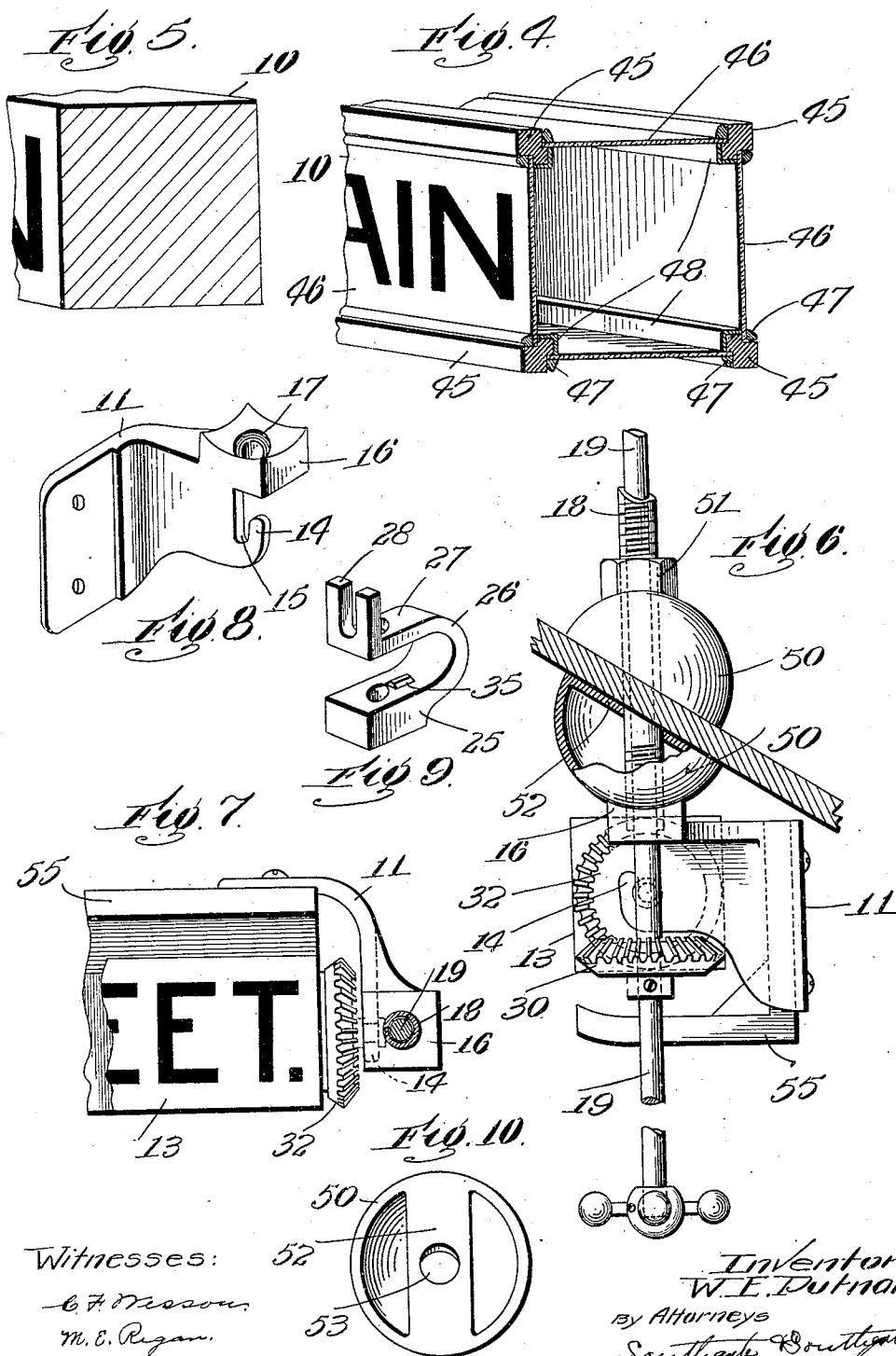
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIS E. PUTNAM, OF WORCESTER, MASSACHUSETTS.

SIGN-OPERATING MECHANISM.

No. 865,526.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed November 6, 1906. Serial No. 342,265.

To all whom it may concern:

Be it known that I, WILLIS E. PUTNAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Sign-Operating Mechanism, of which the following is a specification.

My invention relates to a sign capable of general use but especially adapted for use on street cars and to apparatus for operating the same.

It also includes an indicator located in such position as to be readily seen by the motorman and by the incoming passengers and operable by the mechanism employed for operating the car sign on the top of the car so as always to indicate the same destination.

Further objects of the invention are to provide a simple and efficient means for supporting both the indicator and the sign, preferably from the same set of supports; to provide a simple mechanism for locking the sign and indicator and for unlocking the same when they are to be rotated or changed; to provide an improved mechanism for clamping the parts on the roof of the car; and to generally improve and simplify the construction of apparatus of this character.

Reference is to be had to the accompanying drawings which illustrate certain forms in which the invention may be embodied and in which,

Figure 1 is a fragmentary longitudinal sectional view of a car showing a preferred location of the device and certain features of the construction thereof. Fig. 2 is a rear elevation of the sign and indicator partly in section, the car roof not being shown. Fig. 3 is an end elevation of the bracket shown at the left of Fig. 2. Fig. 4 is a perspective sectional view showing one form of sign which can be used with this mechanism and showing certain improvements in the sign itself. Fig. 5 is a sectional perspective view of another sign which can be employed. Fig. 6 is an end elevation partly in section showing means for supporting the indicator and means for clamping the device to the car roof. Fig. 7 is a plan of one end of the indicator. Fig. 8 is a perspective view of one of the indicator supporting brackets. Fig. 9 is a perspective view of one of the sign-supporting brackets, Fig. 10 is a bottom plan view of a portion of the clamping device shown in Fig. 6, and Fig. 11 is a bottom plan view of one of the gears.

This apparatus is preferably used in connection with a sign 10 mounted in the usual position over the front or rear end of a car, although it may be used with signs mounted in any desired position on the car or other device.

For the purpose of securely supporting the device and clamping the parts to the car roof, I have shown a mechanism consisting of a pair of hemispherical clamping pieces 50. These can be made solid or hollow. I have shown them as being of the latter form. An upright 18 is intended to pass through the two clamping

pieces and to be held thereon between the top of a bracket 11 or 12 and a nut 51 which is secured on the upper part of the upright. In order to prevent the clamping pieces from slipping along the inclined car roof, they are provided with a cross-bar 52 which has a perforation 53 for the upright 18. This perforation is made on the desired angle so as to prevent any lateral motion of the upright or any sliding motion of the clamping piece when the nut is tightened.

Located within the car and preferably at a point close to the front or rear end of the same are the brackets 11 and 12 for supporting an indicator 13. This indicator is or may be of the same general appearance as the sign and is mounted to turn on a parallel axis. The part of the sign which is exhibited, however, is that which appears on one face thereof while the part of the indicator that is seen is on the other face. The lettering on the sign and indicator is therefore so located as to accommodate this state of affairs. It is intended that the lettering on the indicator be in such position that it can be seen by the passengers and by the motorman and conductor so that it not only indicates to the passengers the destination of the car but shows the operatives the position in which the sign on top of the car is located.

The brackets 11 and 12, as shown in Fig. 8, are each provided with a projecting tongue 14 inside of which is an open-topped slot 15 for receiving the ends of the shaft or projecting studs upon which the indicator is mounted. Consequently, it will be seen that the indicator can readily be removed and put in position. Each of these structures is also provided with a projection 16 which is provided with a counter-sunk opening 17 in the top surface thereof. These openings are provided for the purpose of holding the uprights 18. The one of these shown at the left in Fig. 2 may be a solid rod or sleeve as desired. The one shown at the right is hollow for the purpose of permitting the passage of an operating rod 19. Consequently, also, the projection 16 shown at right is perforated to permit the passage of the rod, while the projection on the left-hand bracket is not necessarily so constructed. In either event, the sleeve or rod 18 supports the brackets 11 and 12 below and another bracket above. On the left-hand side this bracket 20 is provided with a rectangular open-topped slot 21 in which fits a square section of a shaft 22. This prevents the shaft from turning. The sign 10 is provided with a bearing 23 which fits a cylindrical portion of the shaft so that the sign may be turned thereupon. The sleeve 18 through which the rod passes supports a bracket 25 of a different shape. This bracket, as shown in Figs. 2 and 9 has a bowed portion 26 which terminates in a flat surface 27 at the end of which is a fork 28 having a passage therethrough for a stud 29 which constitutes the bearing for this end of the sign.

For the purpose of operating the sign and indicator, the rod 19 is provided with a pair of bevel gears 30 and 31 meshing with bevel gears 32 and 33 connected with the indicator and sign respectively.

- 5 In order to lock the sign and indicator in the several positions in which the lettering will appear on a vertical surface, the bracket 25 is provided with a lug 35 adjacent to the opening therein through which the rod 19 passes.
- 10 The gear 31 is provided on its bottom surface with a number of radial slots 310 equal to the number of faces of the sign and capable of receiving the lug 35. This lug is provided with slanting surfaces so that although it will hold the sign in any position in which the front
- 15 face is vertical, the turning of the rod from below will cause the surface of the gear to ride up the inclined surface and become unlocked so that it may be turned to the next position. In order to assist in accomplishing this result, the end of the rod 19 is caused to extend
- 20 through an opening through the surface 27 and to engage the end of the stud 29 so that when the rod is lifted, the stud is lifted with it and the gears 31 and 33 remain in mesh during the turning operation. This also raises the gears 30 and 32 and maintains them in mesh.
- 25 It is to be noted that the bracket 11 is supported by the sleeve 18 which supports the bracket 25, and the rod 19 is supported by the latter bracket; consequently, the sleeve 18 constitutes the entire support for this end of the sign.
- 30 The construction so far described is employed whether the sign is of the form shown in Fig. 4 or that shown in Fig. 5. Fig. 5 is intended to indicate merely a solid sign or one in which there is no mechanism of any kind within the sign. Fig. 4 shows a construction in which
- 35 the sign is hollow and can, if desired, be provided with transparent faces and have electric or other lights within. For this purpose the stationary shaft 22 on which the sign turns is made hollow so that feed wires 40 may pass through the same to the interior of
- 40 the sign. These wires are shown as passing out of the shaft, after they enter the sign and being connected within a tube 41 with the terminals of two lights 42 which are located within frames 43 forming a part of the shaft 22. By this means a pair of lights within the
- 45 sign can be connected with a source of power in a very convenient and simple manner.

The construction of the sign for containing the lights is shown in Fig. 4. This sign is provided with corner pieces 45 each of which has two rabbeted edges. The

- 50 sides 46, preferably consisting of glass sheets or plates, are placed with their edges in the rabbeted portions of the corner pieces and suitable fastening strips 47 applied thereto. Inside the sign are angle-irons 48 which fit over the inside corners of the corner pieces
- 55 and engage the edges of the sides and help hold them in position. The construction is substantially on the same principle whether the sign has four, three or any other number of sides.

When the indicator is so located that it can be seen

- 60 from the front of the car, it is preferable to provide means for concealing its front surface and under all conditions it is desirable to conceal its bottom surface. For this purpose, a right angled plate 55 is secured to the brackets 11 and 12. This plate has two leaves at
- 65 right angles to each other adapted to conceal both the

front and lower faces of the indicator. When the indicator is other than square shaped, the shape of this member may be correspondingly altered, although one of this shape will answer all ordinary purposes.

While I have illustrated and described two forms in 70 which the principle of the invention may be carried out, I am aware that many modifications may be made in the same without departing from the spirit of the invention as expressed in the claims. Therefore, I do not wish to be limited to the details herein shown and 75 described except as required by the scope of the appended claims but

What I do claim and desire to secure by Letters-Patent is:—

1. In a rotatable sign, the combination of a bracket, a 80 hollow non-rotatable shaft mounted therein, said shaft having a cylindrical portion, a sign having a bearing engaging said cylindrical portion, means for rotating the sign on its bearing, a plurality of frames rigidly connected with said shaft and located inside the sign, a tube for connecting said frames, an incandescent lamp in each frame, 85 and conductors passing from said tube to the lamps and passing through said shaft.
2. The combination of a hollow support, an indicator movably carried thereby, an operating rod passing through 90 said support, a sign on the support means connected with said operating rod for supporting the sign and indicator and lifting them with the rod, and means for locking the sign when the rod is lowered.
3. The combination of a hollow sleeve, a rod passing 95 therethrough, a bracket supported at the top of said sleeve, a sign having a stud or shaft supported by said bracket, a rod passing through the sleeve and supported by the bracket thereon, said rod passing through the bracket and the end of the rod engaging said stud, whereby the lifting 100 of the rod will lift the end of the sign, and means for locking the sign when the rod is lowered.
4. The combination of a sleeve, a bracket supported 105 thereby, a sign, a stud projecting from the sign and supported by the bracket, a rod passing through the sleeve and bracket and engaging the stud, a gear on the rod for rotating the sign, said gear and bracket being provided with means for locking the sign in certain positions of the gear and one position of the rod.
5. The combination of a bracket, a sign having a stud 110 supported by the bracket, an operating rod extending through the bracket and adapted to engage the stud, said bracket and rod being provided with means for locking the sign, said means being disengaged when the rod is lifted.
6. The combination of a vertically movable operating 115 rod, a sign having a stud, and means for locking the rod when it is lowered, the end of said rod engaging the stud, whereby the lifting of the rod to disengage it from the locking means will lift the end of the sign.
7. The combination of an operating rod, a gear thereon, 120 a sign, a gear on the sign engaging the first named gear, means for locking the rod and the first named gear, and means whereby the rod may be lifted to disengage it from the locking means and the sign lifted with it to retain said 125 gears in mesh with each other.
8. The combination with an inclined support and a sign-supporting member, of a pair of hemispherical clamping 130 pieces through which said supporting member passes, and means for clamping said pieces together upon opposite sides of the support to hold the supporting member in vertical position at an angle to said support.
9. The combination of a supporting member for a sign or 135 the like with a pair of hollow hemispherical clamping members adapted to be located on opposite sides of a slanting roof or the like, said members having cross-bars each provided with a perforation for the supporting member, and means for clamping the clamping pieces together.
10. A clamping piece for a sign support comprising a 140 hollow hemispherical member having a bar across the open face thereof, said bar and the hemispherical surface of the member being provided with perforations.
11. The combination of a pair of hemispherical clamping

pieces, a sign-supporting rod passing therethrough at an angle to their plane sides, and means for clamping the rod to said pieces whereby said pieces can be secured to a slanting support or the like to hold the rod in vertical position.

5 12. The combination of a pair of hemispherical clamping pieces, a sign-supporting rod passing therethrough at an angle to their plane sides, and means for clamping the rod to said pieces, the pieces having means for holding the rod at a predetermined angle with respect to their plane sides.

10 13. The combination of a pair of clamping pieces each having a plane side and a curved side, a sign-supporting rod passing through both of said pieces at an angle to their plane sides, and means for clamping the rod to said pieces, said pieces having means on their plane sides for holding the rod at a predetermined angle thereto.

14. In a sign, the combination of a plurality of corner pieces having edges each provided with a reëntrant angle on each of its two opposite sides, side members with their edges located in said angles, and angle-irons located within the sign on the inwardly extending angles of said corner pieces, the edges of said angle-irons engaging the side members to hold them in position and the reëntrant angles being provided with fastening strips therein located on the outside of the side members. 20

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses. 25

WILLIS E. PUTNAM.

Witnesses:

ALBERT E. FAY,
LOUIS W. SOUTHGATE.