Jan. 2, 1923. 1,440,605.

L. P. HYNES.

EMERGENCY OPENER FOR CAR DOORS.

FILED MAR. 10, 1919.

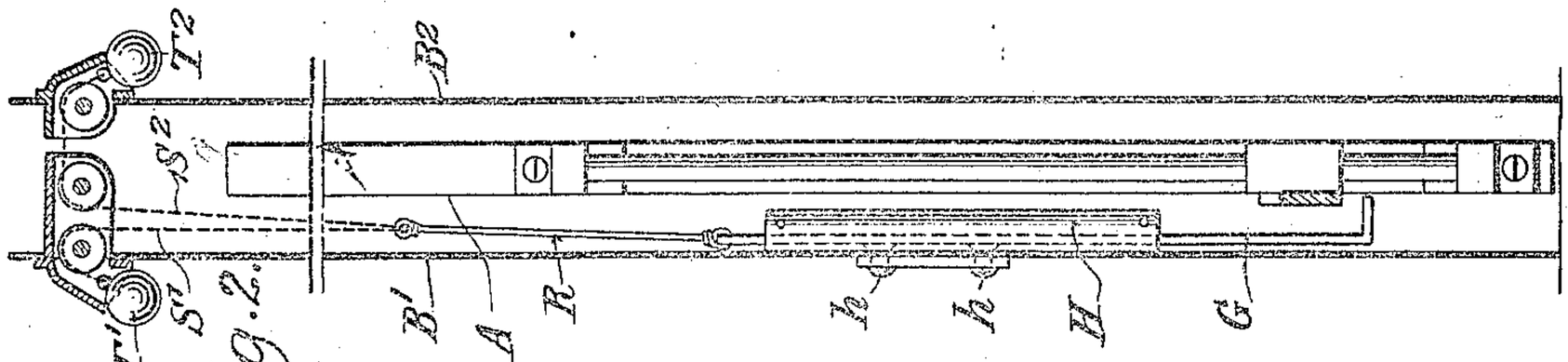

Fig. 2.

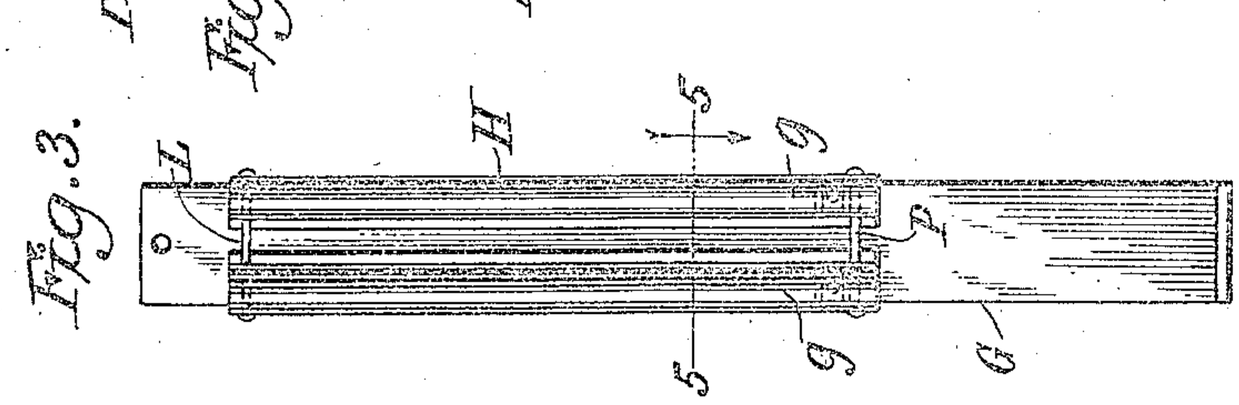

Fig. 3.

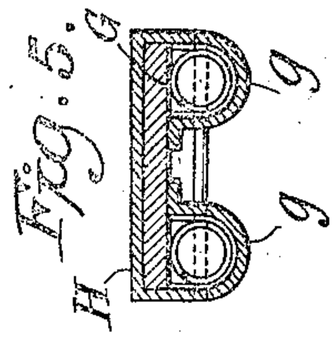

Fig. 5.

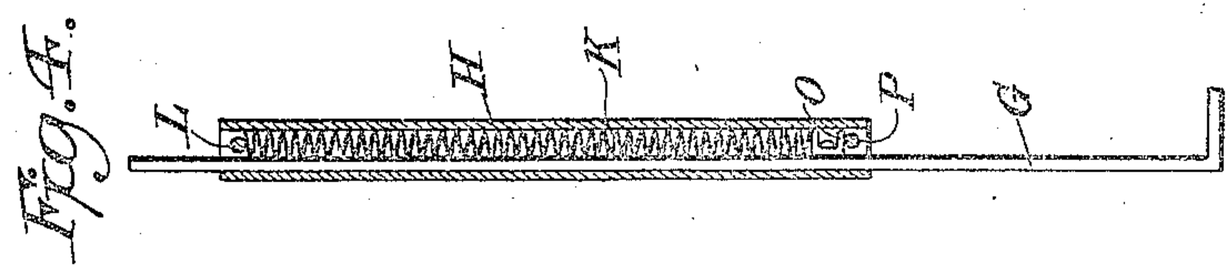

Fig. 4.

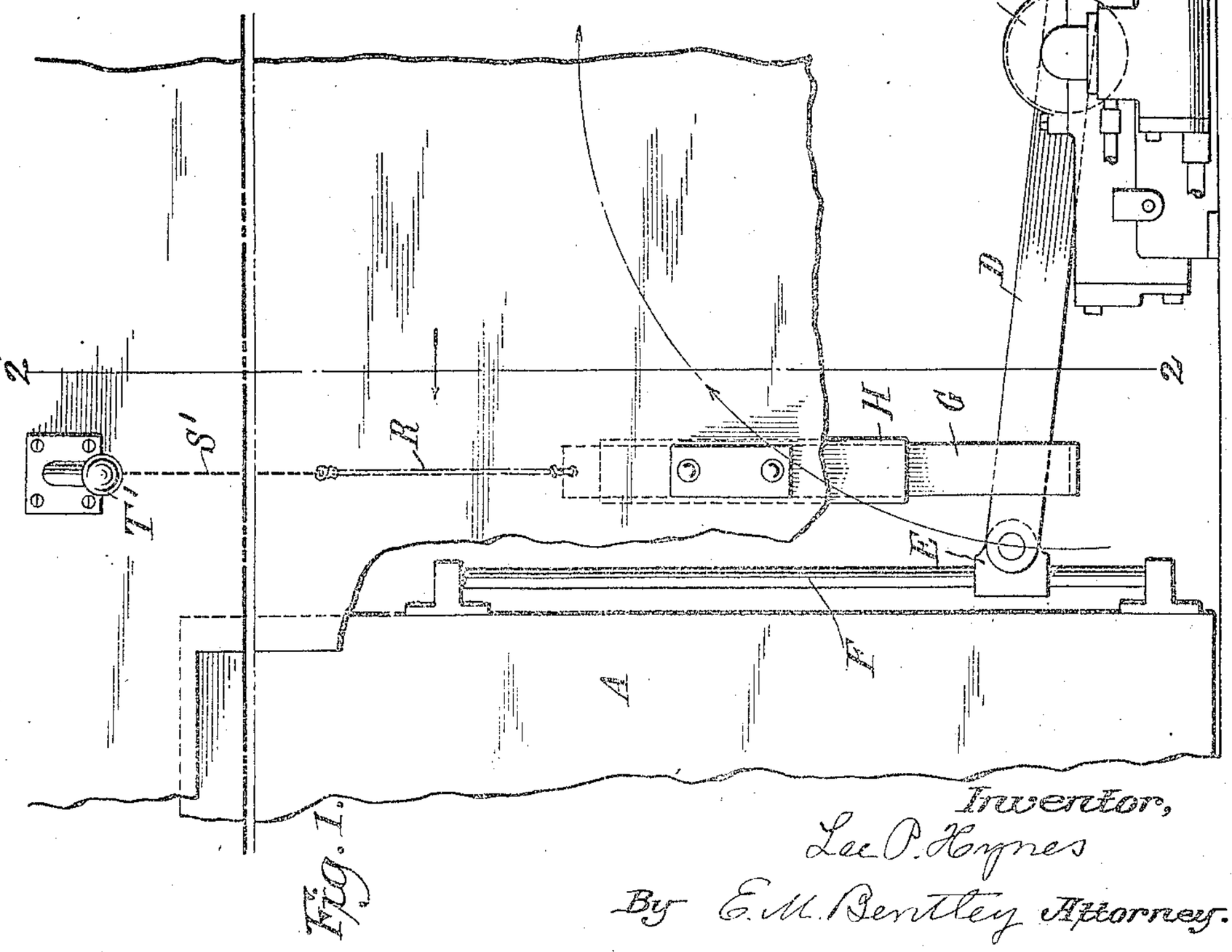

Fig. 1.

Inventor,
Lee P. Hynes
By E. M. Bentley Attorney.

Patented Jan. 2, 1923. 1,440,605

UNITED STATES PATENT OFFICE.

LEE P. HYNES, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR-HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

EMERGENCY OPENER FOR CAR DOORS.

Application filed March 10, 1919. Serial No. 281,626.

To all whom it may concern:

Be it known that I, LEE P. HYNES, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Emergency Openers for Car Doors, the following being a full, clear, and exact disclosure of the one form of my invention which I at present deem preferable.

For a detailed description of the present form of my invention, reference may be had to the following specification and to the accompanying drawing forming a part thereof, wherein—

Fig. 1 is a side view of my construction;

Fig. 2 is a section on line 2—2 of Fig. 1;

Figs. 3, 4 and 5 show details.

My invention relates to car doors operated by a motor and is for the purpose of opening such a door in the event of the motor being disabled and the door thereby left in a locked condition.

Referring to the drawing, A represents the sliding door and B^1 B^2 the walls of the recess in which the door moves. C is the door-motor and D is the ordinary door-operating arm extending radially from the motor shaft. This arm is jointed to a block E arranged to slide on a rod F secured to and parallel to the rear edge of the door. In the use of such an arrangement the door, when closed, is locked in that position by the arm D which, in its door-closing operation, comes down nearly to a horizontal position, so that the back thrust of the door is transmitted through the arm to the motor shaft with no effective tendency to rotate the arm backward. If the motor becomes disabled when in this condition the door will be permanently locked and, to meet that contingency, I provide the following expedient: To the inside of the wall B^1 I attach a sort of double barrelled sheathing H, the same being stamped out of sheet metal with a flat back adapted to rest against the wall and be secured thereto by means of rivets *h*, as appears in Fig. 2. On the front side the metal sheet is bent up as appears in Fig. 5 to form the two parallel barrels or tubes *g*. Within the flat portion of the casing H slides a lifter G, the lower end of which is bent at right-angles to form a hook which normally stands just below the arm D as appears in Figs. 1 and 2. In the two barrels are coiled springs K which at their upper ends abut against a pin L which passes through both of the barrels while at their lower ends the springs bear against blocks O which are riveted to the lifter G and which rest against a stop-rivet P which passes through both barrels like the rivet L. Obviously, when the parts are in their normal condition, the springs K force the lifter downward into its inactive position with its hooked end underneath the door-operating arm D. To the upper end of the lifter is secured a rod R and to the upper end of this rod are attached two chains S^1 S^2 which pass over pulleys secured in the respective walls B^1 B^2 and terminate in ball handles T^1 T^2, one of which is inside and the other outside of the walls of the car. In the event of the door motor being disabled, as heretofore described, it is only necessary to reach up and pull one of the ball handles T^1 T^2 which will draw up the lifter G against the force of the springs K and thereby raise the arm D out of its locking position. Then the door can be moved back by hand, the arm D being now free to yield to and be rotated by the back thrust of the door.

What I claim as new and desire to secure by Letters Patent is:

1. The combination with a car door of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position, a lifter for said arm contained within the car walls and mounted thereon, and means for operating said lifter from the outside of said walls.

2. The combination with a car door of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position and a lifter mounted on the car wall and applied to said arm and means for operating the lifter from inside the car.

3. The combination with a car door of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position, a lifter mounted on the car wall and applied to said arm, and means for operating the lifter from outside the car.

4. The combination with a car door of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position, a lifter for said arm mounted on the car wall, and means located near the top of the door for operating the lifter.

5. The combination with a car door of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position, a lifter for said arm mounted on the car wall and located between the walls of the door recess, and two handles for the lifter one inside and the other outside the car.

6. The combination with a car door, of a reversing motor therefor having a door-operating arm arranged to come into a door-locking position, a lifter for said arm mounted on the car wall and located between the walls of the door recess, a flexible connector attached to said lifter and a handle inside the car secured to said connector.

7. As an article of manufacture a door arm lifter comprising a base, a bar slidably supported by said base and having a portion shaped to engage the door arm, a spring acting to maintain said bar in a normally inoperative position, and means by which the bar may be moved in opposition to the spring, whereby it will engage and move said door arm.

8. As an article of manufacture a door arm lifter comprising a sheet metal casing, a bar slidably mounted in said casing and having a portion shaped to engage the door arm, a spring interposed between said bar and a portion of said casing to maintain the bar in a normally inoperative position, and means by which the bar may be moved in opposition to the spring, whereby it will engage and move said door arm.

9. As an article of manufacture a door arm lifter comprising a base provided with a vertically disposed guide, a bar slidably engaging said guide and having a portion at its lower end shaped to engage the door arm, a spring acting to normally depress said bar, and means by which the bar may be moved in opposition to the spring, whereby it will engage and move said door arm.

10. As an article of manufacture a door arm lifter comprising a base provided with a vertically disposed sheet metal casing, a bar slidably disposed within said casing and having its lower end shaped to project beneath the door arm, a spring in said casing acting to normally depress said bar, and means by which the bar may be moved in opposition to the spring, whereby it will engage and move the door arm.

11. As an article of manufacture a door arm lifter comprising a base, a bar slidably supported by said base and having a portion shaped to project beneath the door arm, a spring acting to maintain the projecting portion of said bar normally out of engagement with said door arm, and a flexible member connected to the bar, whereby the latter may be moved in opposition to the spring to bring its projection into engagement with and to lift said door arm.

12. As an article of manufacture a door arm lifter comprising a base, a bar slidably supported by said base and of a shape to fit within the door recess between the door and one wall of the recess, said bar having a portion shaped to engage the inside of the door arm, a spring acting to maintain said bar in a normally inoperative position, and means by which the bar may be moved in opposition to the spring, whereby it will engage and lift said door arm.

Signed at Albany, county of Albany and State of New York, this 7th day of March, 1919.

LEE P. HYNES.