

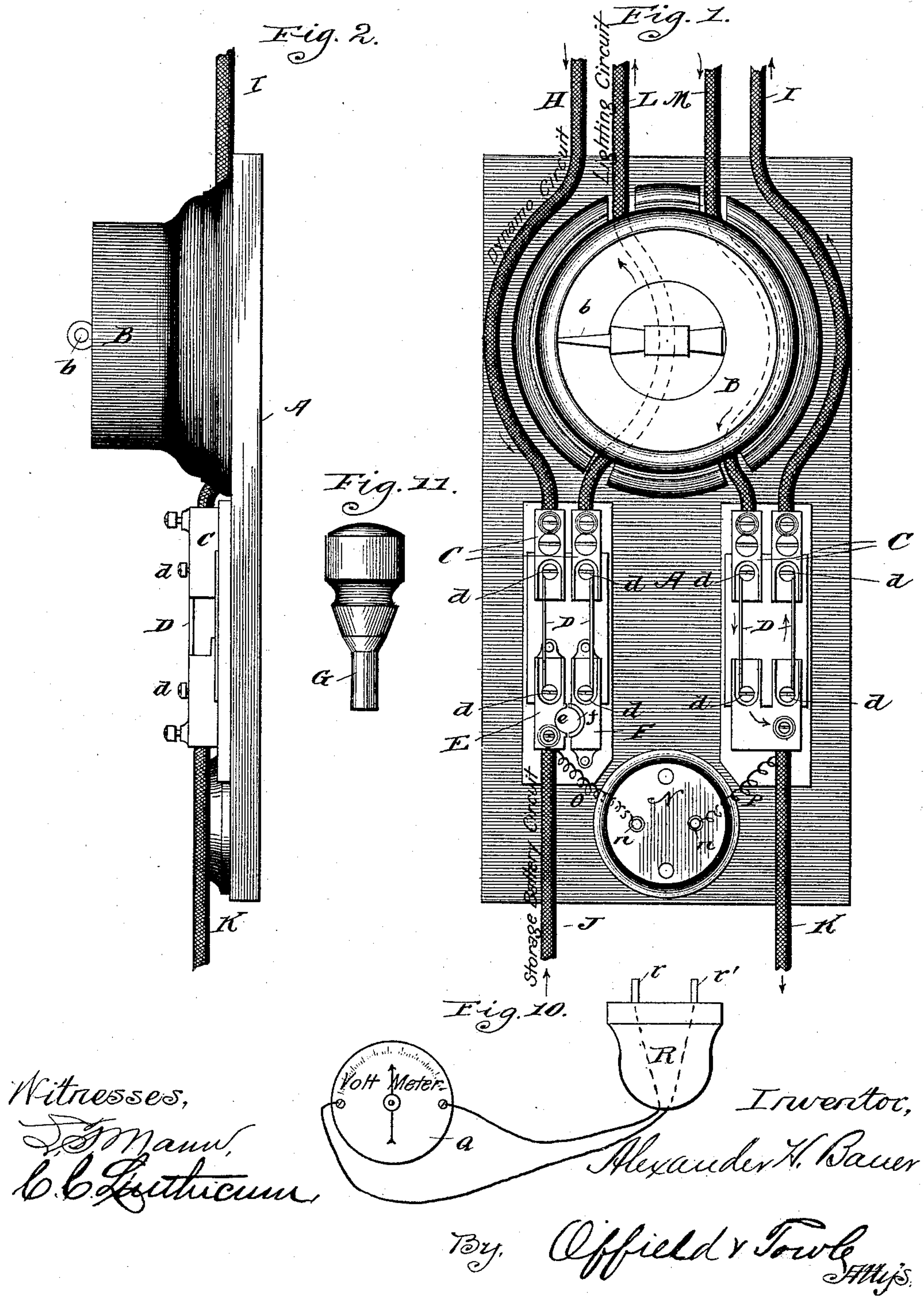
(No Model.)

2 Sheets—Sheet 1.

A. H. BAUER.
ELECTRIC LIGHTING SYSTEM.

No. 435,084.

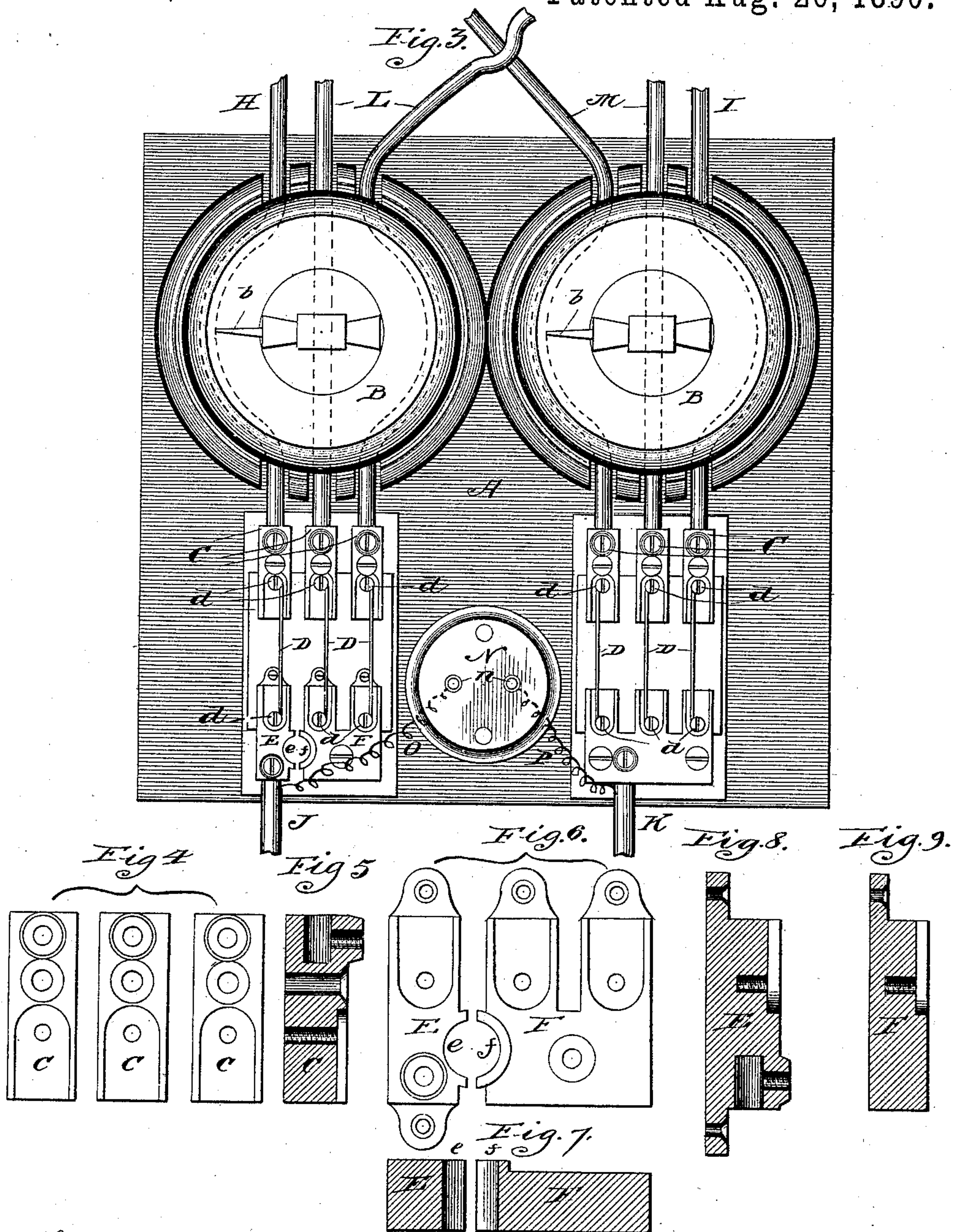
Patented Aug. 26, 1890.



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Witnesses,
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UNITED STATES PATENT OFFICE.

ALEXANDER H. BAUER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PULLMAN'S PALACE CAR COMPANY, OF SAME PLACE.

ELECTRIC-LIGHTING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 435,084, dated August 26, 1890.

Application filed August 10, 1889. Serial No. 320,361. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER H. BAUER, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Electric-Lighting Systems, of which the following is a specification.

My invention relates particularly to electric-lighting systems for lighting railway-cars, in which the electric current is generated by a dynamo carried in one of the cars of the train, and in which storage-batteries are also provided in some or all of the cars of the train.

The features to which my improvements particularly relate are, first, an improved switch appliance, whereby a lamp-circuit may be supplied or cut out from the dynamo or from the batteries, or both, by the removal or insertion of a single plug or kindred device; second, the provision of a fusible strip, through which the current is passed, said strip being secured inside the car, so as to be accessible for repairs or replacement in case of destruction by short-circuiting or for other cause; and, third, means for testing the battery-current, which comprise a voltmeter and a movable contact-plug electrically connected, said plug having metallic points adapted for electrical connection with a stationary block on the switch-board, which block is electrically connected to the battery-wires, respectively.

In the accompanying drawings, Figure 1 is a front elevation of the switch-board, showing one lamp-circuit, and wires leading to the dynamo and the batteries. Fig. 2 is an edge view of the parts shown in Fig. 1. Fig. 3 is a front elevation of a switch-board, having two lamp-circuits with my improvements applied thereto. Fig. 4 shows the three blocks which form the upper connection of the fusible strips shown in Fig. 3. Fig. 5 is a sectional elevation of the same parts. Fig. 6 shows the corresponding blocks on the plug side for connecting the lower ends of said fusible strips. Figs. 7, 8, and 9 are sectional views of the parts shown in Fig. 6. Fig. 10 shows the plug before mentioned connected to a voltmeter. Fig. 11 shows the plug used to form and cut out the circuits.

In the drawings, A represents the switch-board, which may be a wall of the car, but

preferably the interior of the car, at some place where it is easily accessible in case of the destruction of the fusible strip, and also for the purpose of turning on or cutting out the currents to light or extinguish the lamps.

B represents the usual indicator-disk having the index-finger *b*, the position of which indicates whether the currents are on or not.

Referring to Fig. 1 of the drawings, C represents metallic blocks to receive the ends of the wires and which also furnish means for securing the fusible strips D, which latter have their ends secured, respectively, to the upper and lower blocks by means of screws *d*. Two of these blocks on one side of the switch-board, which, for purposes of identification, are marked E F, have circular apertures *e f* in their opposite edges, and into this space the contact-pin G is thrust. The stem of this pin will be formed of some conducting material, so that the current may pass through it from block E to block F, and vice versa.

Let H represent a wire leading from the positive pole of the dynamo and I represent a wire leading to the negative pole, said wires being connected, as shown in Fig. 1, to the outside upper blocks of the switch-board, which blocks are connected by the fusible strips D with the lower blocks, which latter are connected by the wires J K with the battery.

It will be observed that the upper blocks C are separated each from the other, and that the lower blocks at the right of Figs. 1 and 2 are formed integrally, while the blocks E and F are separated from each other, but are adapted to be electrically joined by means of the plug before mentioned.

L M represent the lamp-wires, which are connected to the inner upper blocks C. Suppose, now, that the plug be inserted in the circular aperture between blocks E and F in the construction shown in Fig. 1, and that the dynamo be in motion, the current may pass by wire H through said plug to wire L of the lamp-circuit, returned by wire M through the switch, and thence by wire I to the opposite pole of the dynamo, thus completing the circuit. At the same time the current from the

battery may pass from one pole, by wire J, through the plug G, lamp-circuit L M, switch, and wire K to the opposite pole of the battery, thus completing the battery-circuit; but
 5 if the plug be removed, it is obvious that both the dynamo and the battery-circuit are broken at the blocks E F.

The description above given applies equally to Fig. 3, except that in said figure two lamp-
 10 circuits instead of one are shown. In using this system, it is possible by the simple removal of the plug G to prevent the misuse or unnecessary use of the lamps.

In order to provide means for testing the
 15 battery power, I have shown on the switch-board a stationary block N, having metallic bushings *n*, which are connected, respectively, by the wires O P with the wires J K.

Q represents the voltmeter having wires
 20 carried through apertures in the plug R to the pins *rr'*, which are adapted to be inserted within the bushings *n*, so as to form electrical contact therewith, whereby the current may be directed through the voltmeter whenever
 25 desired. By means of this appliance the batteries of the various cars of the train may be readily tested by moving the voltmeter to

the vicinity of the switch-board and forming the connections by the means described.

I claim--

1. In an electric-lighting system for railway-cars having a dynamo, storage-battery, and one or more lamp-circuits, a switch mechanism comprising contact-blocks to receive wires from the dynamo, separate blocks to secure
 35 the lamp-wires, blocks joined to the battery-wires and connected to the dynamo-block, and a plug adapted to be inserted between the battery and lamp-circuit blocks, whereby to complete the lamp-circuit, substantially as
 40 described.

2. In an electric-lighting system for railway-cars having a dynamo, storage-battery, and one or more lamp-circuits, the combination
 45 of contact-blocks for securing the dynamo and lamp-circuit wires secured upon an interior wall of the car, blocks for securing the battery-wires, and fusible strips connecting the sets of blocks, substantially as described.

ALEXANDER H. BAUER.

Witnesses:

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