

No. 657,331.

Patented Sept. 4, 1900.

N. A. CHRISTENSEN.
GAGE ILLUMINATOR.

(Application filed Aug. 21, 1899.)

(No Model.)

Fig. 1.

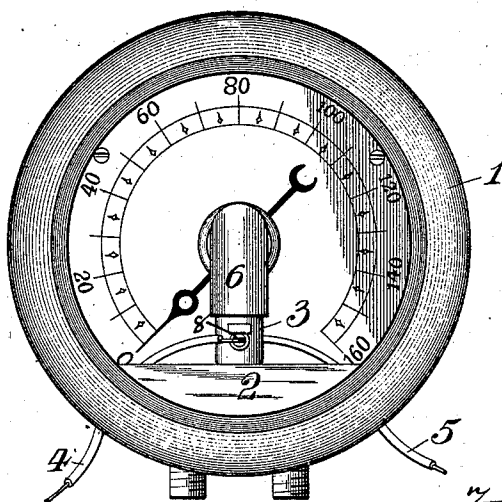


Fig. 2.

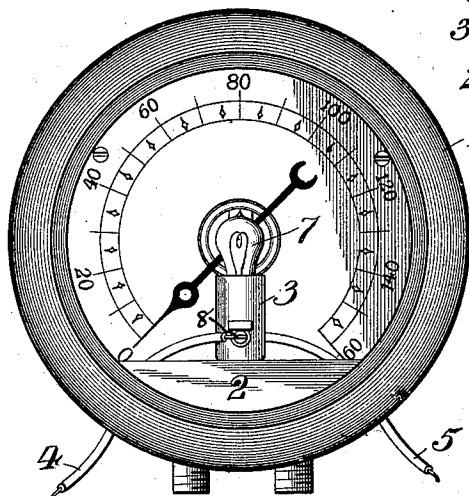


Fig. 4.

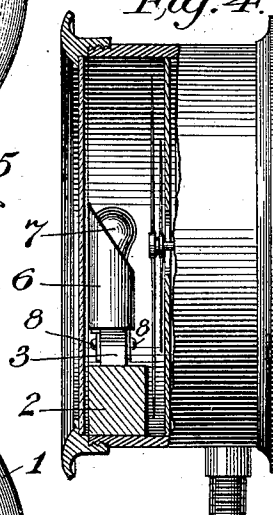


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

NIELS ANTON CHRISTENSEN, OF MILWAUKEE, WISCONSIN.

GAGE-ILLUMINATOR.

SPECIFICATION forming part of Letters Patent No. 657,331, dated September 4, 1900.

Application filed August 21, 1899. Serial No. 727,990. (No model.)

To all whom it may concern:

Be it known that I, NIELS ANTON CHRISTENSEN, a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Gage-Illuminators, of which the following is a specification.

My invention pertains to illuminators for gages and the like; and its object is to provide means contained entirely within the compass of the gage for illuminating the gage-dial by means of a light arranged directly in front thereof inside the glass and provided with a shade or reflector to throw or project the light on the face of the dial and to shield the light from the engineer or motorman.

My invention has particular application to the air-brake gages as employed on roads using electricity as the motive power, so that electricity is readily obtainable for an incandescent light.

Hitherto gages have been illuminated from behind or by a lamp arranged in front outside the gage altogether, but especially for the particular use above mentioned such arrangements have not been found satisfactory owing chiefly to the insufficient lighting of the edges of the dial and to the interference or obstruction caused by the outside lamp.

In the drawings, Figure 1 is a view of a gage with my illuminator applied; Fig. 2, a similar view with the shade removed; Fig. 3, an enlarged detail view of the shade alone, and Fig. 4 a sectional elevation of the gage and illuminator.

In order to accommodate my illuminator, the casing 1 of any ordinary gage may be extended beyond the standard length—say about one inch farther. Secured to the extended part of the casing, at the bottom thereof, is a piece or block 2, of preferably hard wood, which is preferably curved to correspond with the curvature of the case and in which I mount a lamp-socket 3, preferably of porcelain, having the usual binding screws or posts 8 for attaching the wires or terminals 4 and 5, which are in electrical connection with a supply of electricity and which lead into the casing and through the wooden block to the socket. An ordinary, but rather small, incandescent lamp 7 is attached to the socket in the usual manner. The shade 6 may be

formed from a cylinder of the same diameter as the socket and having its upper end cut on the bias, as clearly shown in Fig. 3 of the drawings. This shade is of course arranged on the socket with its long side outermost, so that the shade will effectually shield the eyes of the engineer or motorman, but reflect or project the light over the whole face of the dial. My illuminator is therefore entirely contained within the gage and is extremely compact. It avoids objections to other forms of illuminators inasmuch as the whole dial is fully illuminated in a simple manner, the light being thrown directly upon the dial, so that the numbers and calibrations can be easily read, and also inasmuch as there is no outside lamp to interfere with the work of the engineer or be liable to accident. Again, the device is easy of access without disturbing the position of the gage or taking it apart.

Although I have described more or less precise forms and details of construction, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient and without departing from the spirit of my invention.

I claim—

1. A gage-illuminator comprising, in connection with a gage and its casing, a lamp arranged in front of the dial of the gage and within the casing and a shade in front of such lamp and within the gage-casing for throwing the light on the front face of the dial.

2. A gage-illuminator comprising, in combination with a gage and its casing, a block secured in front of the dial and within the casing, a lamp-socket mounted on the top of the block and interposed in an electric circuit, a small incandescent electric lamp arranged in the socket and in front of the dial of the gage and a shade secured to the socket and located within the gage-casing for throwing the light on the dial.

3. A gage-illuminator comprising, in connection with a gage and its casing, a small incandescent lamp arranged in front of the gage and within the casing, a lamp-socket within the casing for the lamp, and a substantially-cylindrical-shaped shade mounted on the socket within the casing and having

one end cut on the bias for throwing the light over the whole face of the dial and also shielding the light from the eyes of the engineer or operator.

- 5 4. A gage-illuminator comprising, in connection with a gage and its casing having an extension in front of its dial, a block fitting upon and secured to the bottom of the casing and in front of the dial, a lamp-socket on the
10 block, leading-in wires connected to said socket, an incandescent lamp arranged on the socket and in front of the dial of the gage and a shade secured to the socket and within the gage-casing for throwing the light on the dial
15 and also shielding the light from the eyes of the engineer or operator.

5. A gage-illuminator comprising, in con-

nection with a gage and its casing 1, a block 2 within the casing upon the bottom thereof in front of the dial of the gage, a lamp-socket 20 3 mounted on the block and having binding-screws, electrical terminals 4 and 5 attached to the socket, an incandescent lamp on the socket and in front of the dial, and a cylindrical shade 6 secured to the socket and having its upper end cut on the bias for shielding the eyes of the engineer or motorman but throwing the light on the whole face of the dial. 25

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Witnesses:

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