

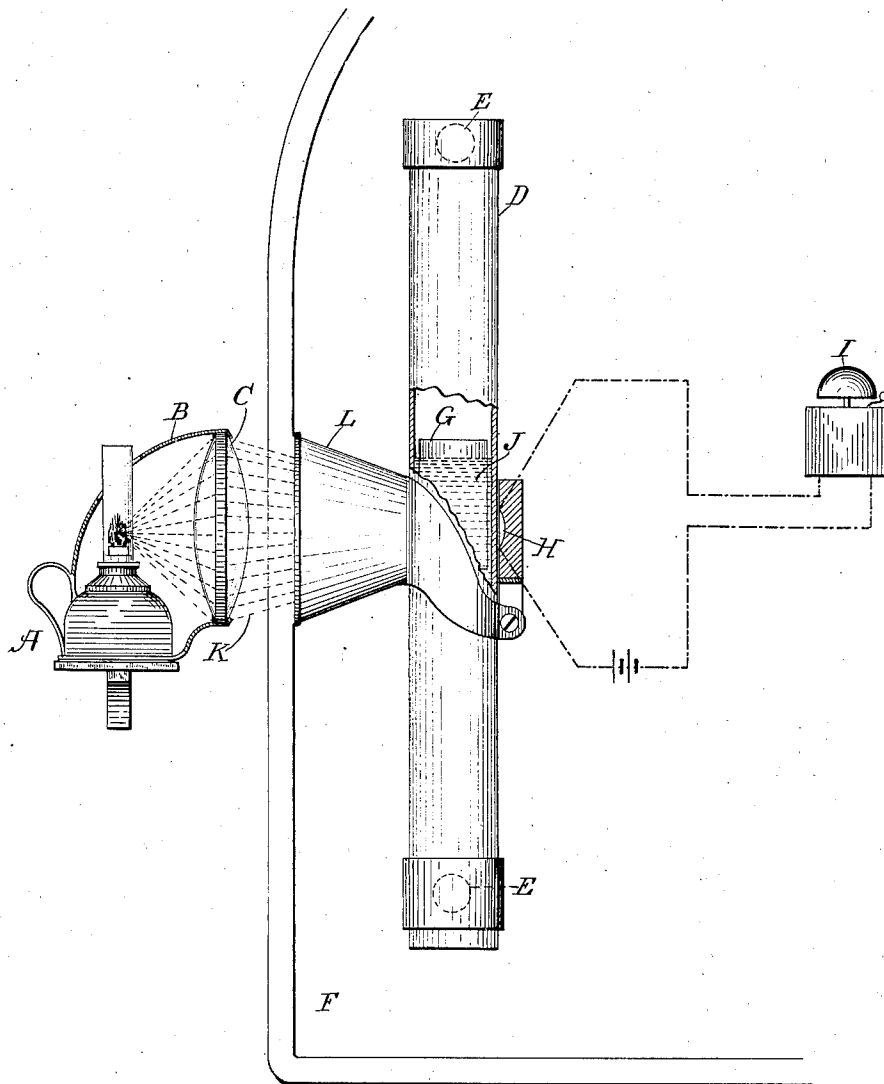
(No Model.)

J. J. GHEGAN.

AUTOMATIC ELECTRIC LIQUID LEVEL INDICATOR.

No. 352,647.

Patented Nov. 16, 1886.



ATTEST:

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JOHN J. GHEGAN, OF NEWARK, NEW JERSEY.

AUTOMATIC ELECTRIC LIQUID-LEVEL INDICATOR.

SPECIFICATION forming part of Letters Patent No. 352,647, dated November 16, 1886.

Application filed May 29, 1886. Serial No. 203,614. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. GHEGAN, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Electric Liquid-Level Indicators, described, claimed, and shown in the following specification, claims, and drawing.

My invention relates to indicators or alarms for low water in tanks—such as reservoirs, boilers, and similar containing-vessels.

The object is to provide a device operating entirely by means located without the vessel containing the water, and yet being of such a nature as to be independent of jars, vibrations, or shocks communicated to the vessel.

It consists in the application of a piece of selenium to liquid-level indicators or alarms, so that when the water becomes low rays of light will fall upon the selenium, which by electrical means causes a signal to be given.

In order to illustrate the practical manner of carrying out the invention, and to enable others to construct and use the same, a drawing is hereunto annexed and described, in which similar characters of reference represent corresponding elements.

The liquid-level indicator consists of the combination of a source of light—such, for instance, as a lamp—A, a shield or screen, B, in whose opening is a condensing-lens, C, a containing-tube, D, of glass, which may be considered as having liquid or pipe connections E with a boiler or tank, F, a float, G, made of opaque material—such as sheet metal—or of a cork or piece of wood, said float being within the tube, and a piece of selenium, H, upon the opposite side of the tube from the lamp, and in the same horizontal line with the flame of the lamp, the selenium being in an electric circuit of constant and preadjusted resistance, and including an electric bell, I. A funnel or ray-collector, L, is provided opposite the lens C. In the normal condition the water J in the tube is of such a depth that the float cuts off the rays K of light from falling upon the selenium, so that the circuit remains practically of uniform resistance; but when the water sinks the float also sinks and

the rays fall upon the selenium, diminishing the resistance so much that the current in the circuit becomes strong enough to ring the bell or to operate any similar translating device.

The invention is not limited to the precise construction hereinbefore described and shown, as it is evident that many modifications may be made therein without departing from the spirit of the invention.

In the place of selenium may be placed a substance whose electrical resistance is influenced by heat, as heat-rays always accompany light-rays. The resistance of carbon and metals thus varies but only slightly, while, as stated in Sprague's "Electricity, its Sources and Applications," page 10, the resistance of a piece of selenium varied through four hundred megohms in being taken from a dark room into a gas-lighted room.

Having now stated the object of the said invention, having described its practical realization by reference to the accompanying drawing, and having particularly ascertained the manner in which the same operates to accomplish the said object, what I consider to be novel and original, and therefore claim as my invention, is—

1. The combination of a source of light, a translucent vessel containing a liquid, and a piece of selenium forming part of an electric circuit, including a translating device, substantially for the purpose and in the manner described.

2. In an automatic liquid-indicator, the combination of a source of light, a condensing-lens, a liquid translucent containing-vessel, an opaque float in said vessel, a piece of selenium, and an electric circuit including a translating device, such as an electric signal, said source of light, lens, float, and selenium lying normally in an approximately straight line.

3. In an automatic liquid-level indicator, the combination of a source of light, a liquid translucent containing-vessel, an opaque float therein, and a piece of selenium forming part of an electric circuit containing a translating device, such as an electric signal, said float being normally between said source of light and said selenium.

4. In a liquid-level indicator, the combina-

tion of a lamp, a double convex lens attached thereto, a liquid-containing vessel, a funnel-shaped mouth fixed upon the side of said vessel, an opaque float in said vessel, a piece of selenium, and an electric circuit containing an electric bell, said lamp, lens, funnel, float, and selenium being normally in an approximately straight line, as and for the purpose described.

Witness my signature and seal this 24th day of May, 1886.

JOHN J. GHEGAN. [L. S.]

Witnesses:

EDWARD P. THOMPSON,
M. H. TOPPING.