(No Model.)

J. C. WOLLIN.

CIRCUIT CLOSER FOR ELECTRICAL ALARM CIRCUITS.

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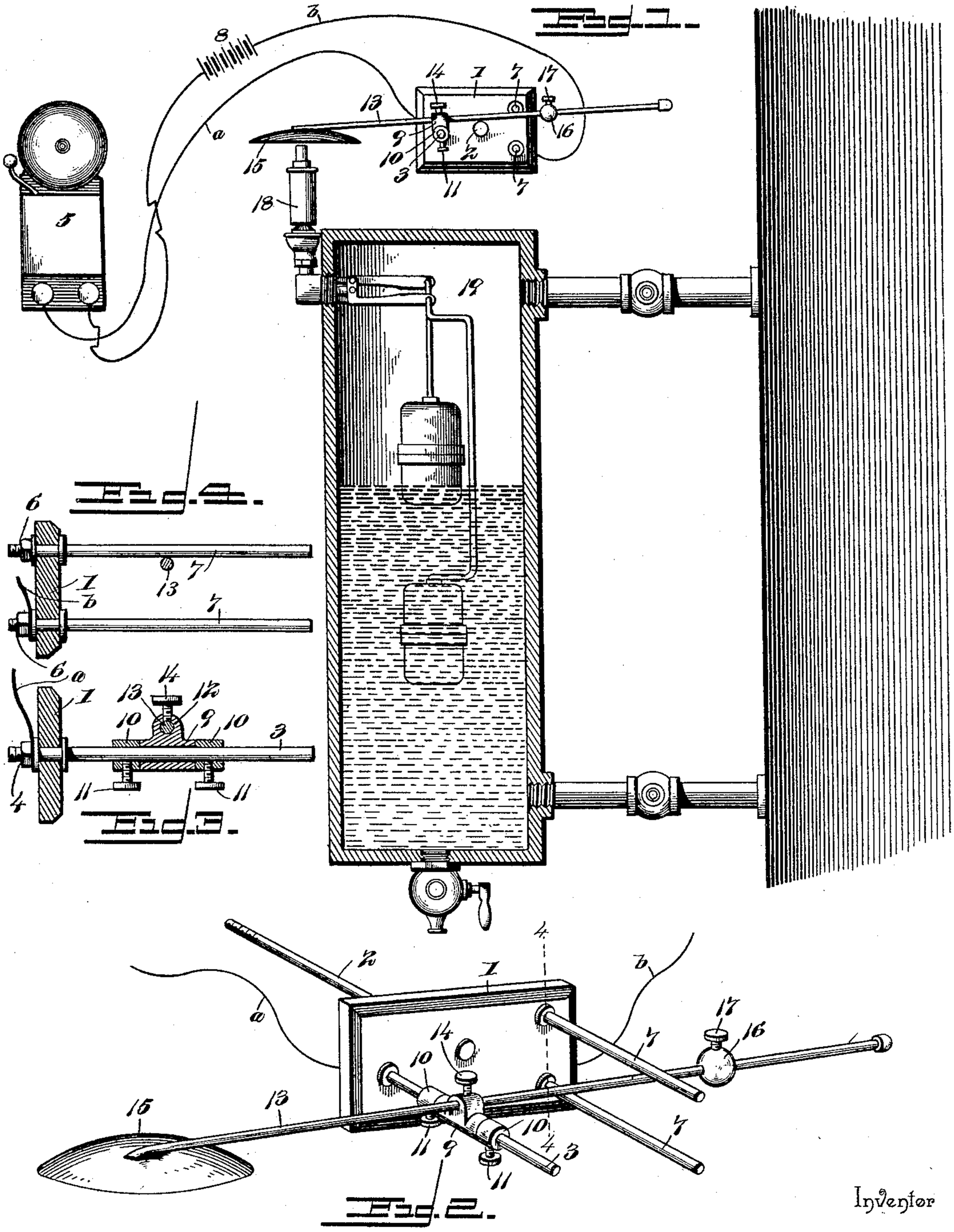

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UNITED STATES PATENT OFFICE.

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CIRCUIT-CLOSER FOR ELECTRICAL ALARM-CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 573,948, dated December 29, 1896.

Application filed September 11, 1896. Serial No. 605,520. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHRISTAN WOLLIN, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented new and useful Circuit-Closers for Electrical Alarm-Circuits, of which the following is a specification.

This invention relates to circuit-closers for electrical alarm-circuits; and it has for its object to provide a new and useful circuit-closer adapted to be operated by air, steam, or other gas pressure to provide for sounding an electrical alarm at a point remote from or near to the location of the circuit-closer.

To this end the invention is especially adapted for use as a supplementary high and low water alarm for steam-boilers, so that the electrical alarm-bell may be located in an office or other location remote from the boiler to insure the hearing of the alarm should the engineer or attendant be absent from his post, but the circuit-closer is also adapted for use in connection with safety-valves, alarm-whistles of all sorts, and in fact is capable of being used at any point where it can be operated by escaping air, steam, or other gas under pressure when it is desirable that an alarm should be sounded by such escape of air, steam, or other gas.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a front elevation of a circuit-closer constructed in accordance with this invention and shown applied for use in connection with the steam alarm-whistle of an ordinary high and low water alarm for steam-boilers. Fig. 2 is a detail in perspective of the circuit-closer proper. Fig. 3 is a detail sectional view of the circuit-closer, showing more clearly the pivotal support of the oscillating contact-rod. Fig. 4 is a detail sectional view on the line 4 4 of Fig. 2.

Referring to the accompanying drawings, the numeral 1 designates a base-block constructed in any suitable form, and adapted to be fastened by means of the fastening-bolt 2, or other suitable fastening means, to any suitable point of attachment adjacent to the steam or air escape in connection with which the circuit-closer is adapted for use, and in the present invention the base-block 1 has fitted in an opening therein one end of an offstanding pivot-post 3. The end of the pivot-post 3, fitted in the base-block 1, is projected beyond the inner side of the base-block to form a binding-post portion 4, to which is designed to be connected one terminal of the alarm-circuit wire *a*, the other terminal of which wire is connected to one of the binding-posts of the electrical alarm-bell 5, which is located in an office or other location remote from the location of the circuit-closer.

The offstanding pivot-post 3 is fitted to the base-block 1, near one end thereof, and near its opposite end the said base-block has fitted therein the inner binding-post ends 6 of a pair of offstanding spaced parallel contact-posts 7, the function of which posts will be presently referred to, and to the inner binding-post portion 6 of either of the spaced contact-posts 7 is designed to be connected one terminal of the alarm-circuit wire *b* included in the circuit of an electric battery 8 or other source of electrical energy and connected with the other binding-post of the electrical alarm-bell 5, so as to complete an electric circuit through such bell and the battery 8.

The offstanding pivot-post 3 lies in a plane between the planes of the oppositely-located spaced contact-posts 7, and said pivot-post has loosely mounted thereon, intermediate of its inner and outer ends, an oscillatory pivot-sleeve 9, which is retained in position on the post 3 and prevented from longitudinal movement by means of the retaining-collars 10, fitted on the post 3 at opposite ends of the sleeve 9 and secured firmly in place by the set-screws 11, mounted in the collars 10 and impinging on the post 3. The oscillatory pivot-sleeve 9 is provided at one side and at right angles to its bore with a rod-opening 12, which adjustably receives therein an oscillatory contact-rod 13, which is secured stationary in its adjusted position in the opening 12 by means of the set-screw 14.

The oscillatory contact-rod 13 plays between the two contact-posts 7 and has rigidly fitted to one end thereof a shallow metallic

concavo-convex impact-cup 15, and at the side of the pivot-sleeve 9, opposite the cup 15, the rod 13 has slidably mounted thereon a balance-weight 16, secured in any adjusted position by means of the set-screw 17 and serving to balance the rod 13 to such a degree that it will be sensitive to any pressure of steam, air, or other gas that may be directed against and into the impact-cup 15.

Normally the weight 16 is so adjusted as to be overbalanced by the weight of the cup 15, so that the rod 13 will contact with the post 7, having no wire connection therewith, and the electrical alarm-circuit will therefore normally remain broken. With the parts thus normally positioned, when the circuit-closer is used in connection with the steam-whistle of a high and low water boiler-alarm, the impact-cup 15 is adapted to be disposed directly above the steam alarm-whistle 18 of an ordinary high and low water alarm 19 for steam-boilers.

The high and low water alarm 19 is of any approved construction designed to allow steam to escape through the whistle 18 when the water in the boiler reaches either its highest or lowest levels, thereby sounding an alarm to indicate the level of the water in the boiler. When the steam is thus allowed to escape through the whistle 18, the same rises into and against the impact-cup 15, causing the contact-rod 13 to oscillate on its pivot and strike against the contact-post 7, having a wire connection therewith, thereby closing the electrical alarm-circuit and causing the bell 5 to sound an alarm at the place where the same is located.

It will be obvious that should it be desired to only sound an alarm by the bell 5 the sounding part of the whistle 18 may be removed and the steam allowed to escape directly against the impact-cup 15, and by arranging the circuit-closer with the impact-cup 15 over a safety or blow-off valve or at any point where escaping air, steam, or other gas under pressure can strike the same it will be operated to close a circuit through the bell 5 in the manner already described.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. A circuit-closer for electrical alarm-circuits comprising a fixedly-positioned oscillatory support included in an electrical alarm-circuit, an oscillatory contact-rod adjustably fitted to said oscillatory support, a balance-weight adjustably mounted on the rod at one side of its support, a shallow concavo-convex metallic impact-cup fitted to one end of the contact-rod and adapted to be arranged over the point of escape for compressed air, steam or other gas, and a fixedly-positioned contact-post included in the same circuit with the oscillatory support and arranged in the path of the contact-rod, substantially as set forth.

2. A circuit-closer for electrical alarm-circuits comprising a base-block, a fixed pivot-post secured at one end to said base-block and having a circuit-wire connection therewith, a pair of spaced contact-posts arranged opposite the pivot-post and fitted at one end to said base-block, one of said contact-posts having a circuit-wire connection therewith, an oscillatory pivot-sleeve loosely mounted on said pivot-post and provided with a rod-opening, an oscillatory contact-rod playing between said contact-posts and adjustably fitted in the rod-opening of said pivot-sleeve, a balance-weight adjustably mounted on the rod at one side of the pivot-sleeve, and a shallow concavo-convex metallic impact-cup fitted to one end of the contact-rod and adapted to be arranged over the point of escape for compressed air, steam, or other gas substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN CHRISTAN WOLLIN.

Witnesses:
E. G. KOCH,
MICH. SOHL.