



# UNITED STATES PATENT OFFICE.

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## FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 463,570, dated November 17, 1891.

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*To all whom it may concern:*

Be it known that we, ALPHONSE BICHET and ROBERT W. WHITNEY, citizens of the United States, residing at Florence, in the county of Marion, State of Kansas, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in fire-alarms; and it has for its objects, among others, to provide a simple, cheap, and efficient device of this character in which the alarm is sounded by the action of water upon a turbine wheel, the flow of the water being governed by the armature of an electro-magnet to which the valve-stem is affixed.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a diagrammatic view with parts broken away, showing my invention. Fig. 2 is a front elevation of the alarm.

Like letters of reference indicate like parts in both views where they occur.

Referring now to the details of the drawings by letter, A designates an electro-magnet of known construction suitably supported in any desired position, and B is its armature connected with or affixed to the valve-stem C, to which is affixed a valve, (not shown,) which controls the flow of water through the pipe D, which may be a pipe connected with any source of supply—as, for instance, the water-works of a city. This stem is guided in its movements by suitable guide-arm *a*, which rises from the valve-case in which the valve is located, as seen in Fig. 1. This pipe D communicates with and is adapted to supply water to the casing E, in which is arranged a turbine wheel of any known construction, the shaft F of which is journaled in a suitable bearing or box *b* at one end and at the other end in a post or upright G, which

may be arranged at any desired point or place. The casing of the wheel should be provided with a suitable outlet, as *c*.

On the end of the shaft F is a disk H, provided with a crank-pin *d*, and to this crank-pin is attached the pitman I, the other end of which is pivotally connected with a vertical rod or arm *e*, which is free to move vertically in suitable guides *f* on the post, and at its upper end connected to the bell-hammer arm J between its ends, the said hammer-arm being pivoted at one end to a bracket *g* on the side of the post and at its other end carrying a bell-hammer *h*, adapted to strike the bell or gong K, which is carried by the horizontal arm L on the upper end of the post, as seen in Fig. 2.

M is a post or upright arranged at the desired place and to which a box is affixed in the usual manner, it being of course understood that this is but one of the many boxes located in a city, and these boxes numbered according to the ward or section of the city in which they are located. This box is of the usual construction, being provided with a lever *l*, which, when a fire occurs, is to be turned till it engages one of the contact-pins in the box, and thus closes or completes the circuit and attracts the armature of the magnet, and the attraction of the armature opens the valve and allows the water to flow through the pipe into the wheel-casing and starts the wheel, and this revolves the shaft and through the medium of the crank, pin, and connections sounds an alarm.

N shows the connection from the alarm-box to the magnet, and N' the connection from the magnet to the batteries O, the batteries and alarm-box being grounded, as shown in Fig. 1.

Normally the valve is closed and the circuit broken. As soon as the circuit is closed the valve is opened, the water flows, the wheel revolves, the crank and pin revolve, and the alarm is sounded through the intervening mechanism, as above described.

The apparatus is simple, efficient, and positive in its operation.

What we claim as new is—

The combination, with the turbine wheel, 100

the supply-pipe, and the electrically-controlled valve, of the crank-disk on the shaft of the turbine wheel, the pitman, the vertically-movable arm, the pivoted hammer-arm, 5 the latter being connected with the said arm, and the bell arranged to be struck by the hammer, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ALPHONSE BICHET.  
ROBT. W. WHITNEY.

Witnesses:

THOS. MORRISON,  
T. P. ALEXANDER.