(No Model.)

T. ATKINSON.

ELECTRIC VALVE CONTROLLER FOR AUTOMATIC FIRE EXTINGUISHERS.

No. 381,459. Patented Apr. 17, 1888.

FIG. I.

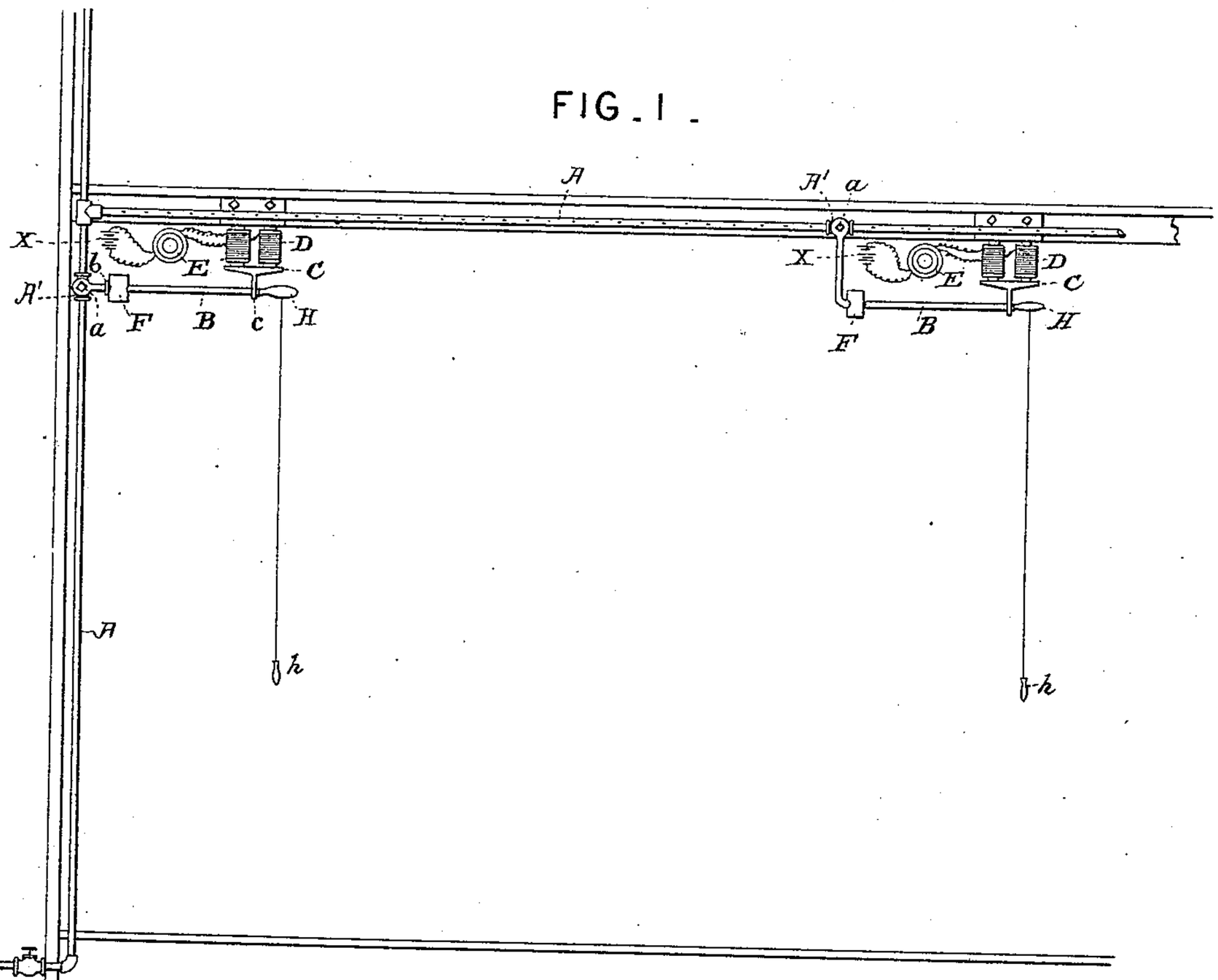


FIG. II.

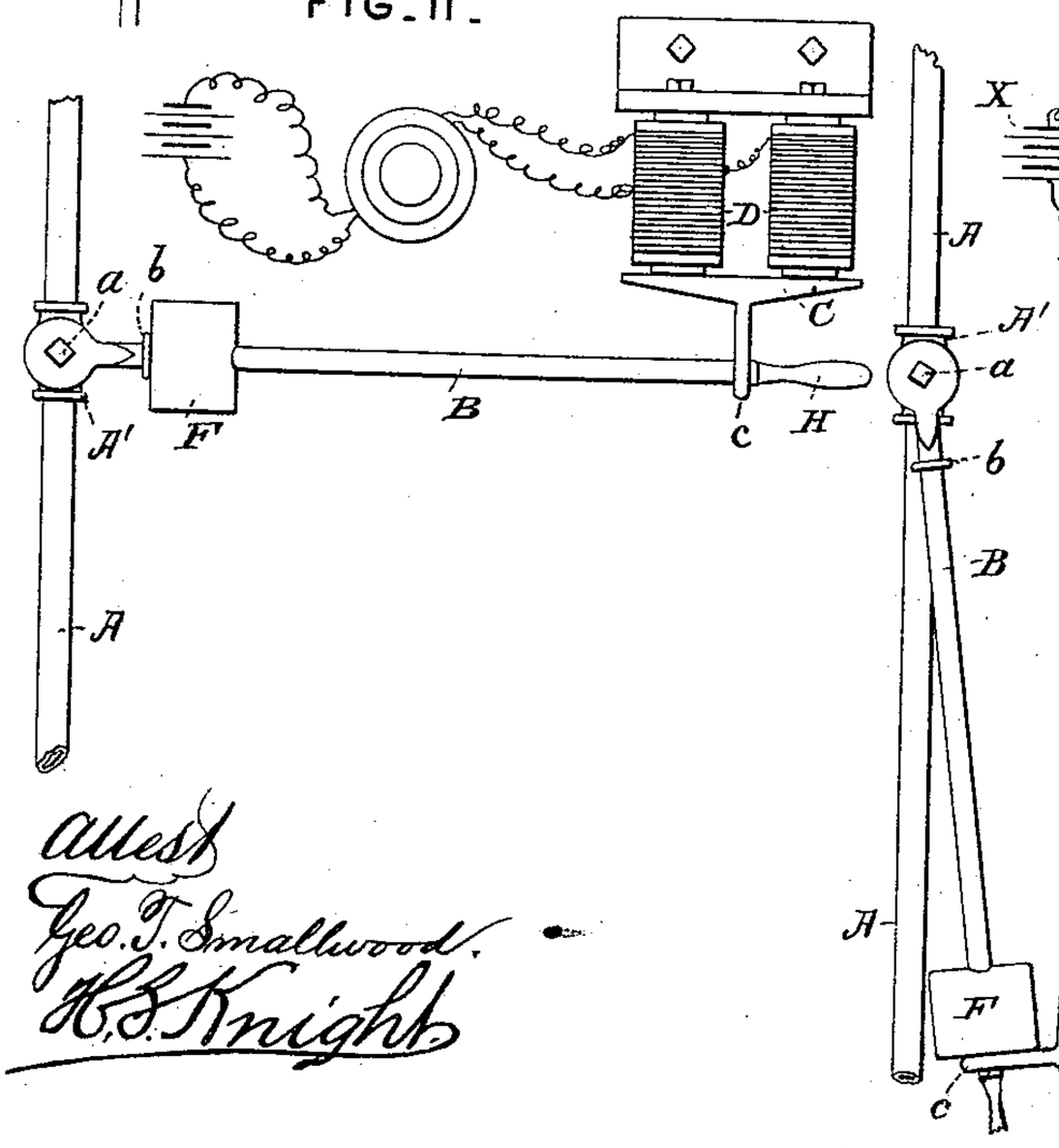
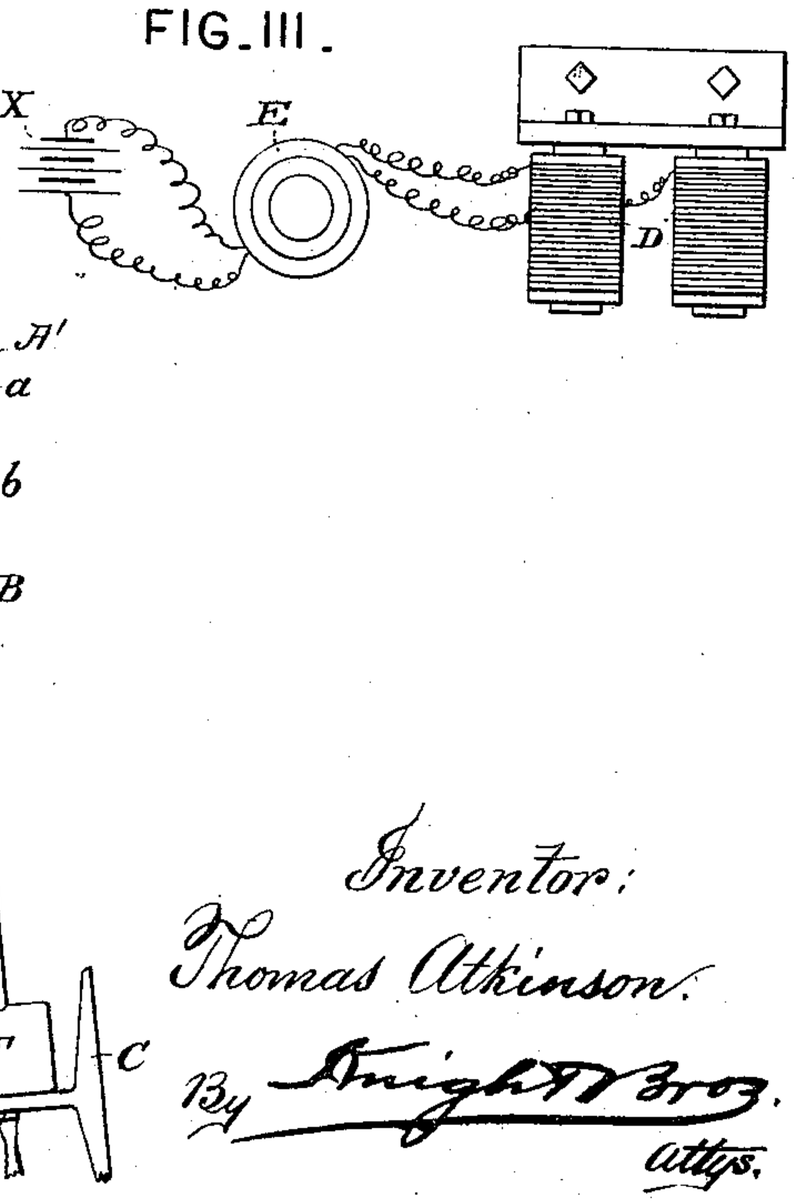


FIG. III.



Attest
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UNITED STATES PATENT OFFICE.

THOMAS ATKINSON, OF RICHMOND, VIRGINIA.

ELECTRIC VALVE-CONTROLLER FOR AUTOMATIC FIRE-EXTINGUISHERS.

SPECIFICATION forming part of Letters Patent No. 381,459, dated April 17, 1888.

Application filed November 22, 1887. Serial No. 255,922. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ATKINSON, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Electric Valve-Controllers for Automatic Fire-Extinguishers, of which the following is a specification.

My invention relates to that class of extinguishers known as "stationary fire-extinguishers," in which a system of pipes is arranged in a building which is to be protected and has connected thereto means for automatically operating a valve or valves in said system, whereby the extinguishing-fluid is released and discharged into the room or rooms in which the fire occurs.

The object of my invention is to provide a more efficient and certain means for releasing the said extinguishing-fluid at the proper time, and also to enable the immediate detection of any disorder in the releasing mechanism that may occur.

To these ends my invention consists in providing either in the main pipe or in each of the branch pipes of an ordinary system a releasing-valve of any preferred form, which is operated by a lever on which is a weight for depressing said lever, the same being held in horizontal position by an electro-magnet. The circuit of this electro-magnet is adapted to be broken, and the magnet thereby de-energized by means of one or more thermostats.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is an elevation of a building having several apartments in which is fixed a fire-extinguishing system, as herein described. Fig. II is a detail view of the valve-controlling apparatus in normal position. Fig. III is a similar view with the operating-lever released.

A is the main pipe, running vertically up the side of the building, having the valve A′, on whose square head *a* is fitted a lever, B, in such manner that the valve will be closed when said lever is in horizontal position.

F is a weight fitted upon the lever B and adapted to freely slide thereon.

b is a collar integrally or otherwise secured near the inner end of the lever. *c* is a similar collar fitted at or near the outer end of the lever and having cast integrally therewith a piece, C, adapted to be used as an armature for the electro-magnet D. Between these collars *b* and *c* the sliding weight F is confined in its movement. The electro-magnet D is secured in such position as to hold the lever B horizontal by means of the armature C.

E represents a thermostat in circuit with the magnet D, and may be placed in any desired part of the building, and of which there may be one or more.

X represents a suitable electric supply.

The lever B is formed with a projection, H, adapted for prehension when it is desired to release the fluid by hand.

Of the above-described valve-controllers there may be any number. For instance, there may be one in the main vertical pipe A and adapted to be released by thermostats, and situated in different parts of the building; or there may be one in each branch pipe, adapted to be released only by the thermostat in that particular apartment, in which case the vertical pipe would be normally open. The weight F is placed at its inner limit on the lever B, so as to obviate unnecessary strain on the electro-magnet, but is made to slide freely, so that when the lever is released and slightly inclined it will immediately travel to the outer collar, *c*, and thus depress the lever fully. This releasing mechanism may be situated either in convenient reach from the floor or at the upper part of a room. In the latter case I provide a drop-handle, *h*, extending to within convenient reach of the floor. In case the branch pipes are each provided with an independent releasing mechanism a suitable cut-off valve is provided at the base of the building, so as to cut off the fluid when desired.

In the above-described device it is obvious that any extinguishing-fluid may be used without necessitating the changing of the mechanism; but I prefer to use steam, in which case if the circuit in the releasing mechanism becomes damaged or in any way obstructed, and the extinguishing-fluid consequently released, little or no damage will result from the escape

of the steam, whereas if water were used great damage would be done. In case it is desired to release the extinguishing-fluid before the fire has gone far enough to affect the thermostats, the lever may be easily released by means of the handle, it being necessary only to use sufficient force to overcome the electro-magnet.

It will be seen that the above-described device has the great advantage of simplicity, and though I am aware that it is not new to form releasing mechanism of a lever or series of releasing-levers operated by a spring or otherwise, or adapted to be operated by closing the circuit, I am not aware that the precise arrangement of parts set forth in the above specification has been made, for by the use thereof, together with the closed circuit, it will always be known when the releasing mechanism gets out of order.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. An electric valve-controller for fire-extinguishers, substantially as herein described, consisting of a drop-lever attached to said valve for opening and closing the same, a normally-active electro-magnet having an armature attached to the end of said lever for holding the lever in elevated position, and a sliding weight fitted upon the lever, substantially as and for the purpose set forth.

2. The herein-described improvement in valve-controllers, consisting of the lever B, a sliding weight, F, upon said lever, an electro-magnet above the lever, and an armature secured to the lever, said armature being adapted to limit the outward movement of said weight, substantially as shown.

THOMAS ATKINSON.

Witnesses:
E. C. MAYO,
ROBT. L. SMITH.