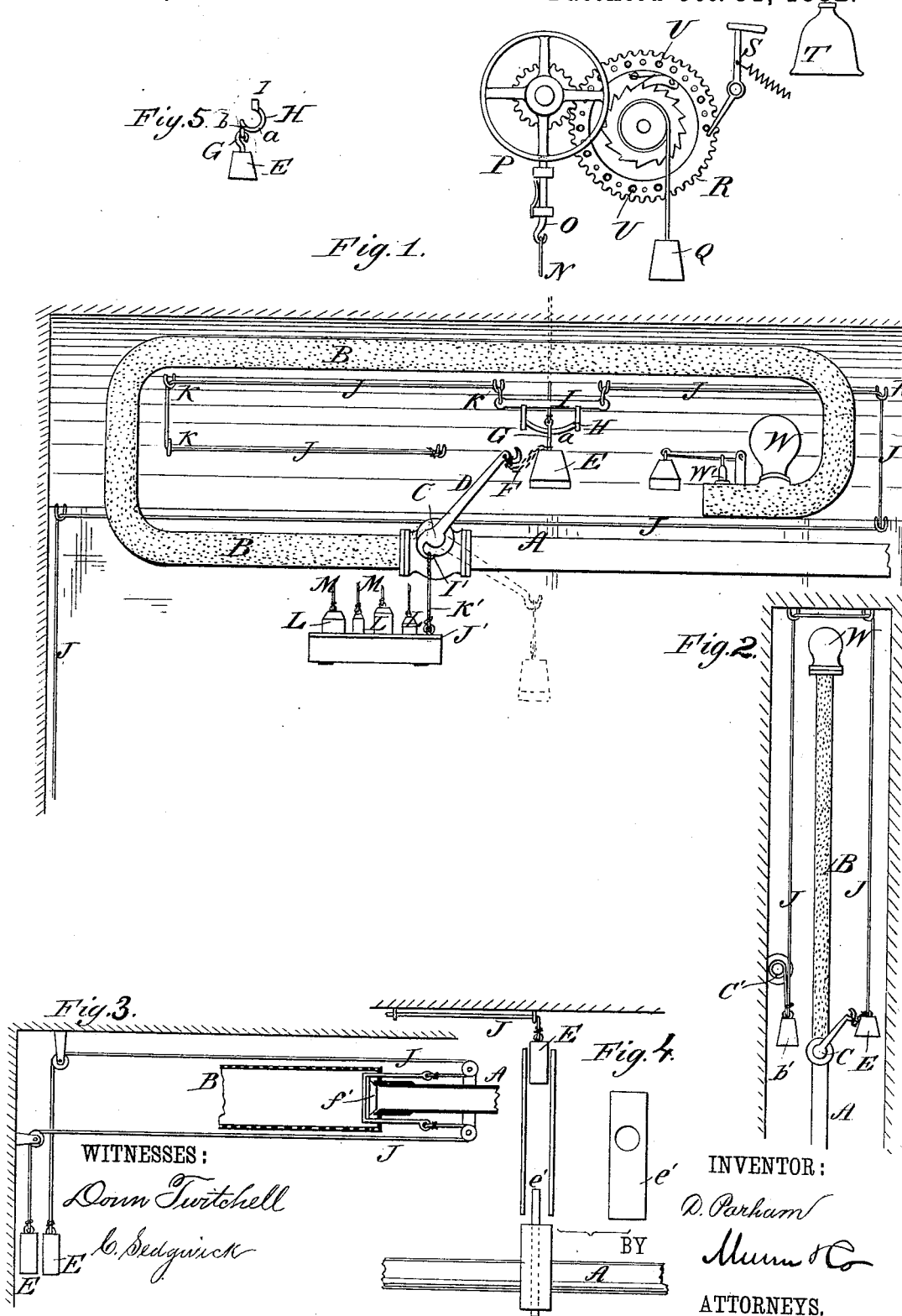


(No Model.)

D. PARHAM.  
FIRE EXTINGUISHER.

No. 266,876.

Patented Oct. 31, 1882.



# UNITED STATES PATENT OFFICE.

DANIEL PARHAM, OF TYNGSBOROUGH, MASSACHUSETTS.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 266,876, dated October 31, 1882.

Application filed April 8, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL PARHAM, of Tyngsborough, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Fire-Extinguisher, of which the following is a full, clear, and exact description.

This invention consists in a certain combination and arrangement of devices, whereby the severing of a cord or cords by fire operates to sound an alarm and to turn on water for extinguishing the fire.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of the improvement, showing an arrangement of fire extinguishing and alarm apparatus in accordance with my invention when water is to be used. Fig. 2 is an elevation of a stand-sprinkler, with apparatus for opening the cocks, as arranged in an elevated shaft or stairway. Fig. 3 is a sectional elevation of contrivances for opening a valve in the end of a horizontal sprinkler, and Fig. 4 is an elevation of apparatus for the opening of a gate in the water-pipe by the fall of a weight upon it when the cord burns off. Fig. 5 is a detail of Fig. 1.

In Fig. 1, A is a water-supply pipe located in the room to be protected according to the circumstances of the case, and having a sprinkler attachment, B, extended about the room as required, and a cock, C, shutting off the water from the sprinkler. The cock is provided with a lever, D, which stands in the elevated position represented in the drawings when the cock is shut, and has a weight, E, connected to its upper end by a chain, F, said weight being suspended by its hook G from the yoke H of a bar, I, held up at each end by the combustible cord J, traversing the building wherever desired through staples or eye-studs K, and to be exposed in the places where it is most likely to be burned in the beginning of the fire, to let the weight fall and open the cock by pulling lever D down to the position represented by the dotted lines. Lever D is also provided with a hook, I', holding up a drop-shelf, J', by a cord, K', whereon several weights, L, are placed, which are to be connected with alarm-signals by cords M, the sig-

nals to be located in different stations, as desired. The hook I' is so shaped that when the weight drops and pulls down the arm D, the hook I' will escape from the cord K' and let the shelf fall. The weight E is also connected by a cord, N, with the sliding bolt O, that engages the balance-wheel P of alarm mechanisms, so that said weight disengages said wheel when it falls, allowing the weight Q to revolve the pin-wheel R and actuate the bell-hammer S for sounding the alarm on the bell T. This alarm apparatus may have special combinations of the pins U for indicating the district from which the alarm is sounded by the order of the strokes of the bell.

To prevent damage to the sprinkler by excessive pressure of the sudden inflow of the water when the cock is opened, said sprinkler has both an air-chamber, W, and a safety-valve, W'.

The yoke H is contrived with a downward bend at *a* and two more abrupt bends at *b*, so that the weight will not slip off while bar I hangs nearly level, but allowing it to escape readily whenever either end of the bar falls by the burning of the cord. The contrivance of the yoke is represented more clearly in detail in Fig. 5.

In Fig. 2 the water-pipe A and sprinkler B are represented in suitable upright position for application to the well of an elevator, ventilator, or stairway, with the weight-suspending combustible cord J traversing the sides of the well as best suited for that locality. There is also a weight, *b'*, having a cord wound on a roller, C', to be set in motion for sounding an alarm or operating any other signal. The weight E may be let fall, when the cord J burns off, upon a sliding gate, *e'*, in the water-pipe A, as in Fig. 4; or a couple of weights E may be arranged to hold a valve, *f'*, closed against the end of the water-pipe A where it opens into the sprinkler B, as in Fig. 3; and other methods of utilizing the combustible cords may be employed. I prefer to treat the combustible cords with substances making them more combustible; also, to make them explosive for making them more certain and quicker in operation.

The arrangement of the cord-connections to the drop-shelf-supporting bell-cranks is to be

such between or within partitions and contiguous to floors and other combustible wood-work, where the connections are concealed in connecting the various apartments of a building, that such concealed portions may be of non-combustible material—such as wire—to avoid rapid spread of a fire by its running along such concealed combustible cords, it being intended that only so much of the cord as needs to be exposed in the several apartments for giving the fire-alarm and starting the extinguishing apparatus shall be of a combustible nature.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a fire-extinguisher, the combination, with a water or gas supply pipe, A, and a stop cock or valve, C, of the cock-lever D, the chain F, the weight E, suspended by its hook G on the yoke H of the bar I, which is held up by the combustible cord J, and a suitable sprinkler, B, as shown and described.

2. The combination, with the pipe A and stop-cock C, of the lever D, weight E, hook G, yoke H, bar I, cord J, and the perforated pipe or sprinkler B, extending about the room, as shown and described.

3. The combination, with the pipe A, stop-cock C, lever D, weight E, cord J, and perforated pipe B, of the air-chamber W at or near

the end of said pipe B, as shown and described.

4. The combination, with the pipe A, stop-cock C, lever D, weight E, cord J, and perforated pipe B, of the safety-valve W' near the end of pipe B, as shown and described.

5. The combination, with the lever D, weight E, and combustible cord J, of the hook I', cord K', shelf J', and one or more weights, L, connected with a fire-alarm, so that the dropping of said weight L shall give the alarm, as shown and described.

6. The combination, with the weight E, hook G, yoke H, bar I, and combustible cord J, of the cord N and slide-bolt O, communicating between the weight E and the stop-wheel P of a fire-alarm, as shown and described.

7. The combination, with the weight E, hook G, yoke H, bar I, combustible cord J, cord N, bolt O, and stop-wheel P, of the spur-wheel R, provided with pins U, the weight Q, the trip-hammer and spring S, and the bell T, as shown and described.

8. The combination of weight E, hook G, yoke H, bar I, and combustible cord J with the cock C and lever D of a water-supply pipe, substantially as described.

DANIEL PARHAM.

Witnesses:

CHAS. M. WILLIAMS,  
F. N. CHASE.