

I. T. PEASE.

Fire Alarm.

No. 87,194.

Patented Feb. 23, 1869.

Fig. 1

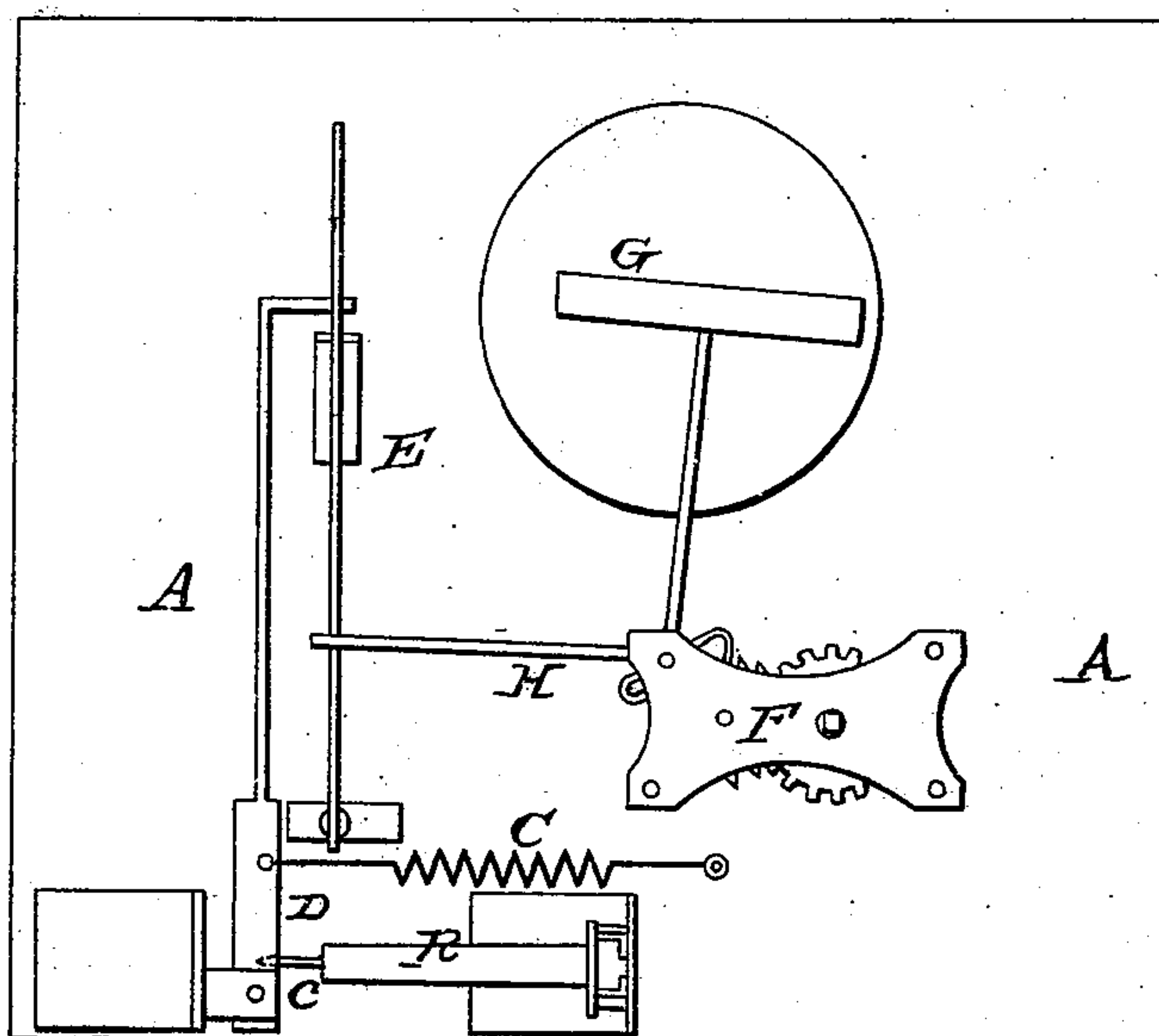


Fig. 2

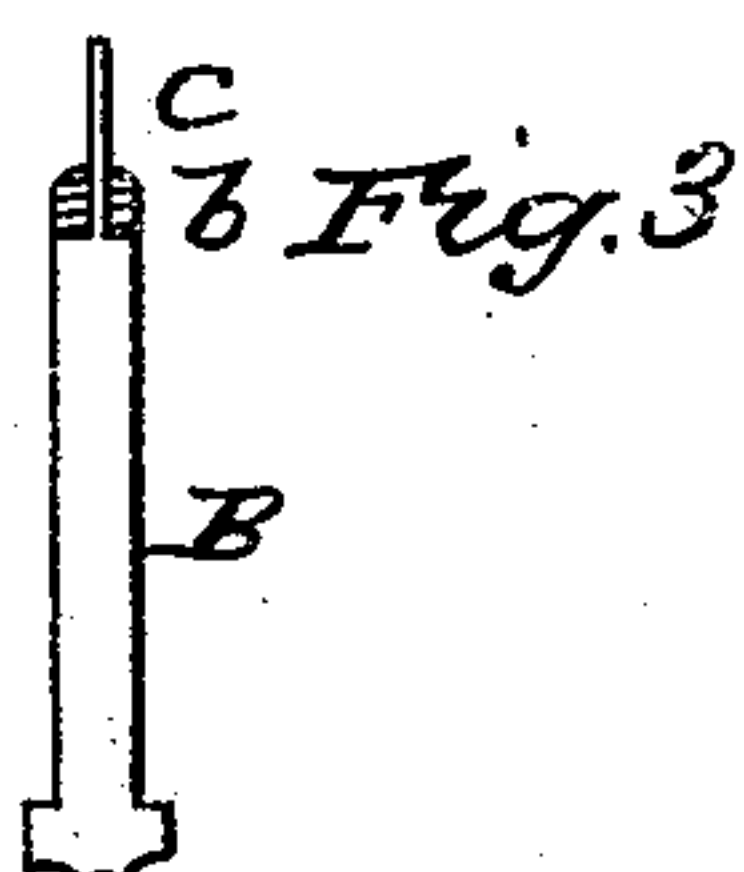
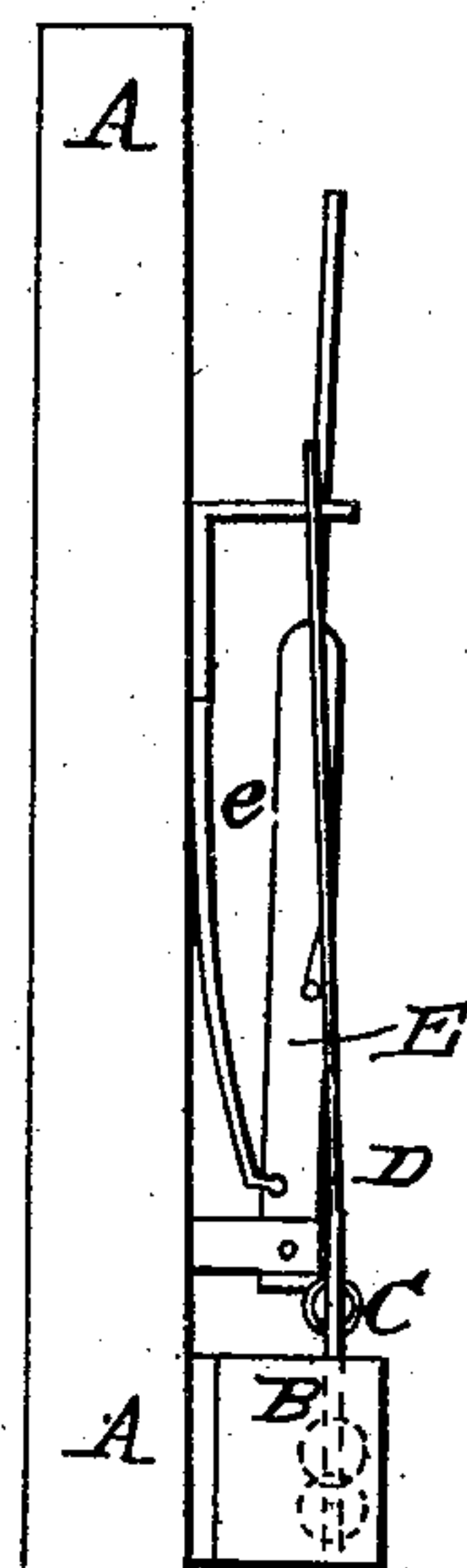


Fig. 4



Witnesses
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ISAAC T. PEASE, OF THOMPSONVILLE, CONNECTICUT.

Letters Patent No. 87,194, dated February 23, 1869.

IMPROVEMENT IN FIRE-ALARM.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ISAAC T. PEASE, of Thompsonville, in the county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Fire-Alarms; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

Figure 1 shows a front view of a fire-alarm with my improvements.

Figure 2 shows an edge or side view, from the left side of fig. 1, with the bell and alarm-mechanism removed, to show the parts relating to my invention more distinctly.

Figure 3 is a section through the middle of the expansion-bar.

Figure 4 is an end view of the same.

My invention relates to that class of fire-alarms in which the expansion of a bar lets off an alarm when a fire takes place, and the heat of the apartment in which it occurs is raised above a given temperature.

A is the frame of the apparatus, to which the several parts are attached.

B is a tube, of some suitable metal, copper being preferably used, on account of its high heat-conducting power, ductility, tenacity, and cheapness.

This tube is filled with alcohol or some other highly-expansive liquid, by the alteration in bulk of which, in changes of temperature, one end of the tube B is made to move out or in, to lengthen or shorten the distance between the extreme ends of the tube.

One end of the tube, which is shown in the drawings as larger than the main part, is furnished with a thin, flexible metallic head, which is pressed out by the expanding liquid, and is forced inward again by the pressure of the air when the fluid contracts.

This end of the tube can be made of the same size as the main part, if desired, the object being to give it such a size that it will admit of expanding and contracting, the required amount, without taking a permanent set.

The tube is filled full of the liquid, and sealed up, leaving no air-space inside.

This is done by leaving a small hole at the end *b*, either where the pin *c* is inserted, or in some other convenient place, and filling the tube entirely with the liquid through that orifice.

The tube is then placed in cold water, to keep it cool, while the opening is soldered over as quickly as possible.

Should there be any small space accidentally left within the tube, not occupied by the liquid, the tube can be slightly indented, to fill the vacancy.

This expansion-mechanism acts at one end against a standard, attached to the frame A, and at the other against a multiplying-lever, D, one end of which has a fulcrum, attached to the frame A by a suitable standard, and the other passes by a bend, near the end, under the drop-lever E.

The expansion-mechanism acts near the fulcrum of the lever D, so as to give the bent end the necessary amount of motion, to regulate the escape of the lever D from under E with sufficient exactness.

A spring, C, holds the lever D against the end of the expansion mechanism.

The drop-lever E is furnished with a spring, *e*, which holds it against the end of the lever D, and causes it to drop against the frame A, when released.

F is a common clock-alarm, the hammer of which strikes upon a bell, G.

This alarm is held, when wound up, by the wire H, resting in a nick in the drop-lever E, and is released and set in motion by the dropping of E, when released from D.

The operation of my invention is as follows:

When a fire occurs in the apartment where the improved alarm is placed, the heat expands the enclosed liquid, and lengthens the expanding-mechanism B. This moves the lever D, releases the alarm by means of the lever E, and gives notice of the fire.

The apparatus may be set to give an alarm at any required degree of temperature, by regulating the length of the escape-end of the lever D, reaching under the drop-lever E.

The apparatus is set by winding up the alarm, and replacing the parts in the position described.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An expanding bar, composed of the hermetically-sealed metallic tube B, completely filled with an incompressible liquid, when the whole is constructed and operates substantially as shown and described, and for the purpose specified.

2. The combination of the expanding-mechanism, herein described, with a multiplying-lever, or levers, for the purpose of releasing and operating an alarm.

ISAAC T. PEASE.

Witnesses:

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