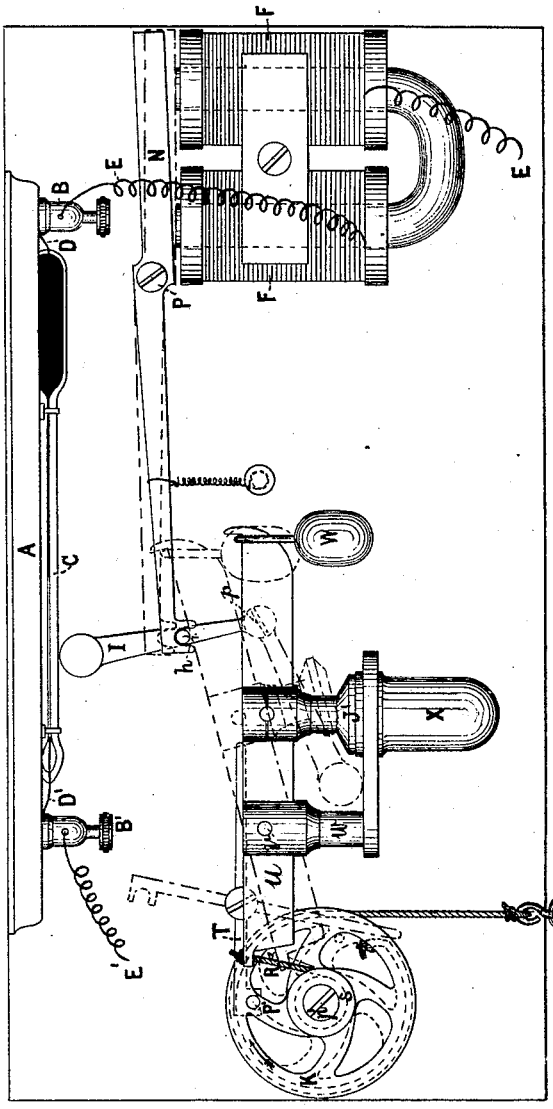
S. SANDERSON.

Alarm and Fire-Extinguisher.

No. 162,579. Patented April 27, 1875.



Witnesses

Chas. H. Smith

Geo. T. Pinckney

Inventor.

Solomon Sanderson

per Lemuel W. Serrell

atty

UNITED STATES PATENT OFFICE.

SOLOMON SANDERSON, OF HUDDERSFIELD, ENGLAND.

IMPROVEMENT IN ALARMS AND FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **162,579**, dated April 27, 1875; application filed April 14, 1875.

To all whom it may concern:

Be it known that I, SOLOMON SANDERSON, of Huddersfield, in the county of York, England, have invented certain Improvements in Apparatus for Extinguishing Fires and Giving an Alarm, of which the following is a specification:

This invention relates to thermostatic apparatus, whereby the expansion of mercury or other substance, or of an elastic vessel capable of expansion by heat, such as caoutchouc or skin bladder containing a fluid, is made to operate the cock or valve, so as to allow steam, water, or other suitable fluids or gases to escape, for the purpose of extinguishing fires.

The drawing illustrates the arrangement which I prefer to use in apparatus constructed according to this invention, though this arrangement must necessarily be varied according to the circumstances under which the apparatus is used, and the form of expansive agent or thermometers, batteries, magnets, and materials used.

A, the thermometer; B B′, the binding-screws; C, the glass bulb and tube containing mercury; D, platinum wire connecting the mercury with binding-screw B; and D′, the wire protruding into empty space of tube, and connected with binding-screw B′; E E′, wires connecting the thermometer with battery and electro-magnet F F, which attracts the armature marked N, when the mercury in the bulb is expanded by undue heat to platinum wire D′. The armature N is prolonged and centered at P, having at its prolonged end a notch or catch, *h*, to hold weighted lever I, which is centered at *p*. J is a steam water cock or valve, which may be attached at any steam, water, or other fluid supply. K is a wheel mounted on a pin or spindle, *p′*, and weighted by a weight marked *q*, to cause it to turn in the direction of the arrow, which winds the chain R onto boss S, thus pulling down weighted lever *u*, which is centered at *v* on upright *w*, and so raising or opening valve J′. Lever *u* is prolonged to weight W, which has the effect of keeping the valve J′ closed when the apparatus is at rest. X is a steam, water, or fluid pipe, in connection with a boiler or reservoir. P′ is a pin projecting from wheel K, which is held by a notch or catch in lever marked T, thus allowing the cock or valve to remain closed.

The action of the apparatus is as follows: The apparatus is shown on the drawing ready to act on the thermometer, taking effect by undue heat caused by conflagration in the building or hold of a vessel in which the apparatus is fixed. The mercury rises in the thermometer and comes into contact with the end of D′ circuit-wire, the other end of the circuit-wire being in contact already. An electric current immediately acts on the magnet F F, which draws down the armature N and releases the lever I, which, falling, strikes the end of the lever T, and so releases the wheel K, and allows the weight to descend and open the cock or valve J′, as already described, so admitting steam or other suitable fluid to the building to extinguish the conflagration. The dotted lines show the apparatus thus thrown into action.

I claim as my invention—

The cock or valve J′, weighted lever *u*, wheel K, and weight *q*, in combination with the holding-catch T, percussive lever I, and lever N, moved by or through the expansion of a thermostat, substantially as and for the purposes set forth.

Signed by me this 12th day of March, A. D. 1875.

SOLOMON SANDERSON.

Witnesses:

ALEXANDER NORTH,

ARCHIBALD H. I. FLETCHER,

Clerks to Messrs. Laycock, Dyson & Laycock, Solicitors, Huddersfield.