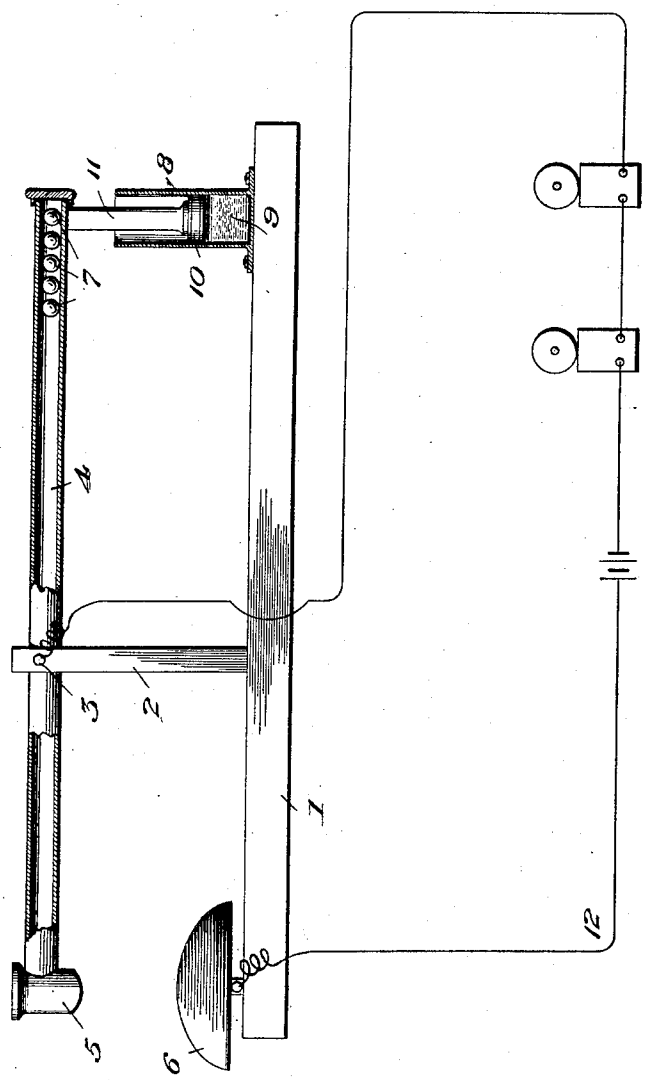
T. BELL & E. BROPHY.

FIRE ALARM.

APPLICATION FILED JULY 3, 1911.

1,020,074. Patented Mar. 12, 1912.



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THOMAS BELL, OF FALL RIVER, MASSACHUSETTS, AND EDWARD BROPHY, OF TIVERTON, RHODE ISLAND.

FIRE-ALARM.

1,020,074. Specification of Letters Patent. **Patented Mar. 12, 1912.**

Application filed July 3, 1911. Serial No. 636,759.

To all whom it may concern:

Be it known that we, THOMAS BELL and EDWARD BROPHY, citizens of the United States, residing, respectively, at Fall River, county of Bristol, and State of Massachusetts, and Tiverton, county of Newport, and State of Rhode Island, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification.

Our invention relates to fire alarms.

The object of the present invention is the provision of a light, simple, durable, and inexpensive fire alarm which can be readily placed in any convenient location, will require no attention after being so located, and will be adapted to automatically strike a gong or start an electric bell or bells ringing or perform both offices, whenever the temperature in the room where the device is located rises above a predetermined degree.

In carrying out our invention we provide a pivoted lever, rolling or movable objects carried thereby, which maintain the lever in inoperative position, a temperature-expansible or mercury column adapted to coöperate with the lever and by its expansion to tilt the lever, and an alarm which is set off by the lever: this alarm may be a gong struck by the lever when it is tilted, or it may be a switch controlling an electric bell or bells, or both.

The following specification sets forth one form the invention may assume but is to be considered as illustrative, rather than restrictive, of the invention.

The accompanying drawing illustrates the invention in side elevation, with certain parts in section.

We provide a suitable base 1 of any preferable length from which rises a standard 2 to which is pivoted at 3 a tubular lever 4. The lever 4 could be made solid and provided with a tube, if preferred. One end of the lever is provided with a hammer 5 which is adapted to strike a gong 6 on the base 1 when said lever is tilted. Preferably, the pivot 3 is nearer the end of the lever which carries the hammer than the other end so that the lever is normally in such position that the hammer is raised above the gong. Located within the tubular lever are one or more balls, preferably of metal, 7.

Resting upon the base 1 is a cylinder 8 containing a mercury column 9 or any other liquid which will expand or contract by changes in temperature on which rests a plunger 10 which fits the cylinder air tight and has a stem 11 on which the end of the lever rests when it is in its normal position with the hammer raised. An electric circuit 12 containing one or more bells, a battery, and having its terminals connected to the gong and to the pivot 3 may be employed to sound the alarm at any point and to keep it ringing after the initial stroke on the gong due to the falling of the hammer.

We wish it understood that in carrying out our invention we may use the gong alone, an electrically-controlled alarm whose terminals are closed on the falling of the lever, or both the gong and the electric circuit and bells.

Normally the hammer is raised due to the weight of the balls being disposed at the right hand end of the lever and the latter rests upon the stem of the plunger. When the temperature unduly rises the mercury or other column expands, forcing up the piston and its stem and raising the right hand end of the lever sufficiently so that the balls roll by gravity to the left hand end of the lever, causing the hammer to quickly strike a blow on the gong and also to close the electric circuit and set the electric bells ringing, thus sounding the alarm.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

In a fire alarm, the combination with a lever pivoted intermediate its ends, of one or more traveling objects carried thereby adapted to move from one side of the lever's fulcrum to the other side thereof, a mercury or other expansible liquid column stationarily mounted separate from the lever, a plunger resting on the mercury or liquid column and abutting against the lever

whereby on the expansion of the column the lever will be tilted and the movable object or objects will travel to the other end of the lever, a mechanical gong which is sounded by the lever when the lever tilts, and an electric alarm whose circuit includes said gong and is closed by the contact of the lever therewith.

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

THOMAS BELL.
EDWARD BROPHY.

Witnesses:
ARBA N. LINCOLN,
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