(No Model.)

C. H. JUDSON.

FIRE ALARM.

No. 298,981. Patented May 20, 1884.

Fig. 1

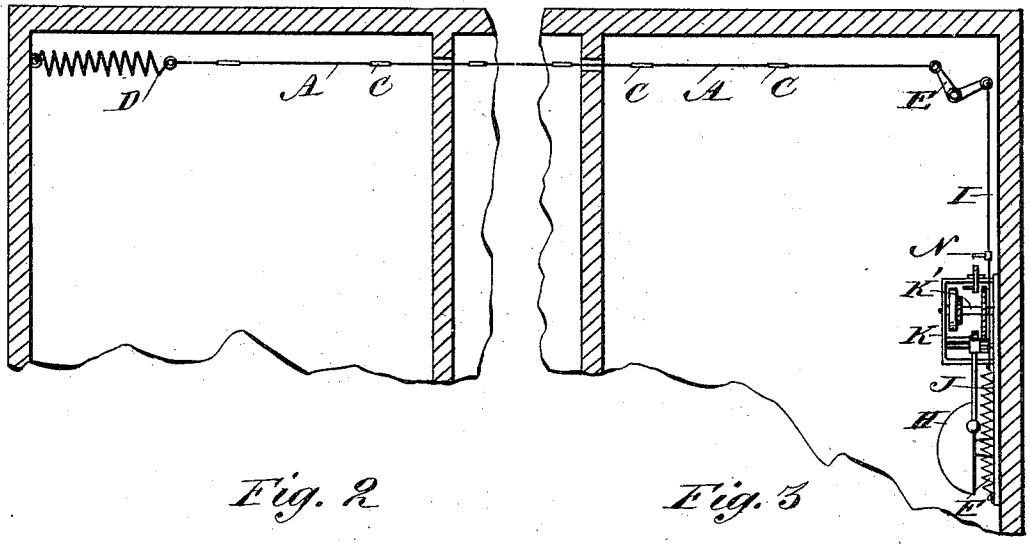


Fig. 2

Fig. 3

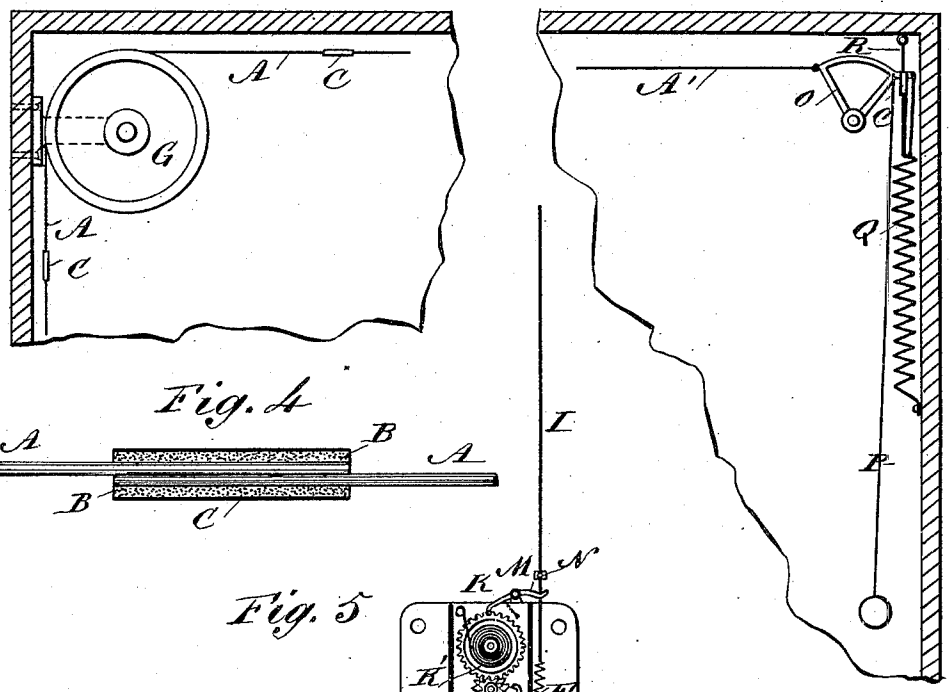
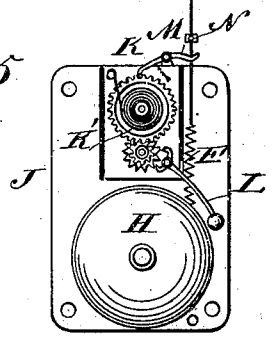


Fig. 4

Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES H. JUDSON, OF GREENVILLE, SOUTH CAROLINA.

FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 298,981, dated May 20, 1884.

Application filed March 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. JUDSON, of Greenville, in the county of Greenville and State of South Carolina, have invented a new and Improved Automatic Fire-Alarm, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved device for automatically sounding an alarm in case a fire breaks out in any part of a building.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

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 shows sections of rooms provided with my improved fire-alarm. Fig. 2 is a face view of the pulley for carrying the wire around corners. Fig. 3 is a side view of the combination of the alarm and bell-pull wires. Fig. 4 is a longitudinal elevation of the coupling for the wires. Fig. 5 is a face view of the bell and the mechanism for ringing it.

Pieces of wire A, about from eight to ten feet long, are coupled by means of a highly-fusible alloy, B, cast into sheet-metal cylinders C, into which the ends of the wires are inserted, as shown in Fig. 4. One end of a series of wires is connected with a powerful spring, D, or weight, and the opposite end of the connected wires is secured to one arm of an elbow-lever, E, to the other arm of which is secured a wire, I, to the opposite end of which a spring or weight, F, is fastened, having about half the tension of the spring or weight D. The wire is passed through the several rooms to the elbow-lever E, which is directly above the spring F. If the wire is to make bends at corners, it is passed over pivoted grooved rollers G. The bell H is secured on a sounding-board, J, on which a box, K, is fastened, containing a gear and spring mechanism, K′, for operating the vibrating hammer L. The said mechanism is locked by a pivoted trigger-lever, M, a short distance above the outer end of which lever a projection, N, is formed on the wire I. If an incipient fire occurs, the highly-fusible alloy B melts and flows out of the tube C, whereby the wires A are disconnected, thus permitting the spring F to pull the wire I downward, and causing the projection N to strike the trigger-lever M, and thereby disengaging it from the bell-ringing mechanism, which then rings the bell and sounds the alarm. The more powerful spring D counteracts the effects of expansion and contraction of the long wire, and prevents the expansion or contraction of the wire from moving the elbow-lever E, and prevents the spring F from drawing the wire I downward until the wires are disconnected. But a single elbow-lever is used in each line of wires. Several lines of wires can be combined with one bell. If the usual bell-pull wires are to be used for sounding the alarm, the usual bell-wire, A′, is connected with the elbow-lever O, from which a pull cord or wire, P, extends downward. A spring, Q, has one end secured to the wall and the other end to the lever O, and a wire, R, having a fusible connection, is fastened to the ceiling, &c., and to the upper end of the spring Q. If the pull-cord P is pulled, the call-bell is sounded in the office or at the annunciator and the drop falls, thus showing in which room the wire was pulled. If a fire occurs, it melts the fusible connection of the wire R and releases the upper end of the spring Q, which can thus pull downward and turn the elbow-lever O, whereby the bell at the annunciator is sounded as if pulled by the hand.

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

1. In a fire-alarm, the combination, with a wire having fusible connections, of the spring D at one end of the same, a less powerful spring, F, at the opposite end, a mechanical bell-ringing mechanism, a gong or bell, H, the trigger-lever M, formed with two arms, one of which engages the alarm mechanism and the other of which projects outward therefrom, and the projection N, formed on the wire and adapted to act on the said outwardly-projecting arm of the trigger-lever M, substantially as herein shown and described.

2. The combination, with the bell-wire A′, the elbow-lever O, and the cord or pull P, of

a spring connected at the upper end with the elbow-lever, and with a wire having a fusible connection and holding the upper end of the spring and preventing it from pulling or turning the elbow-lever, substantially as herein shown and described.

3. The combination, with the bell-wire A′, the elbow-lever O, and the cord or wire pull P, of the spring Q, secured to the wall and the elbow-lever, and the wire R, having a fusible connection and secured to the ceiling or wall and to the upper end of the spring Q, to prevent it from contracting, substantially as herein shown and described.

CHARLES H. JUDSON.

Witnesses:
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