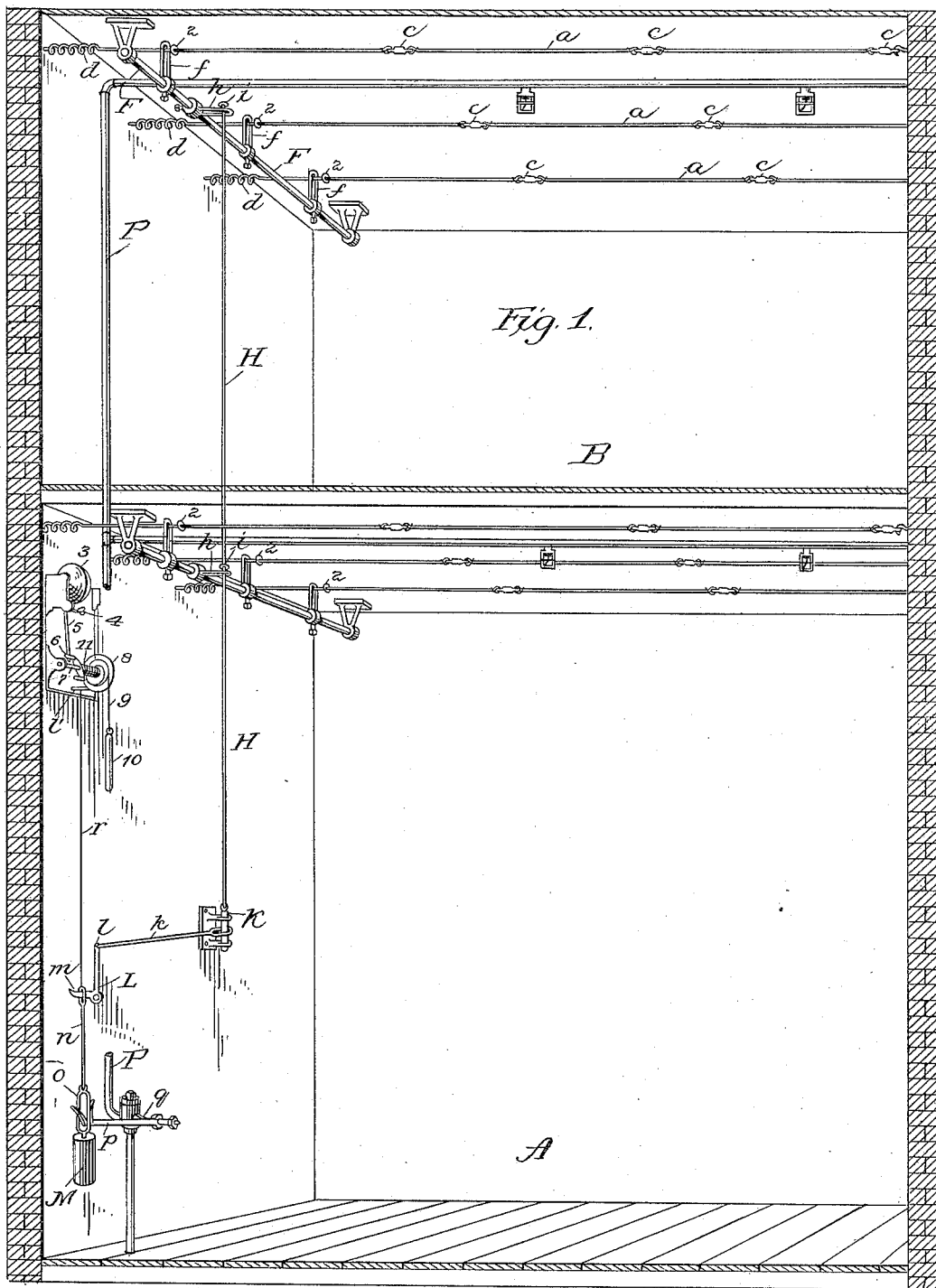


W. NERACHER.

AUTOMATIC FIRE ALARM AND EXTINGUISHER.

No. 344,673.

Patented June 29, 1886.



Attest  
Haller Donaldson  
F. L. Middleton

Inventor  
William Neracher  
by Joyce & Spear  
Attys.

(No Model.)

2 Sheets—Sheet 2.

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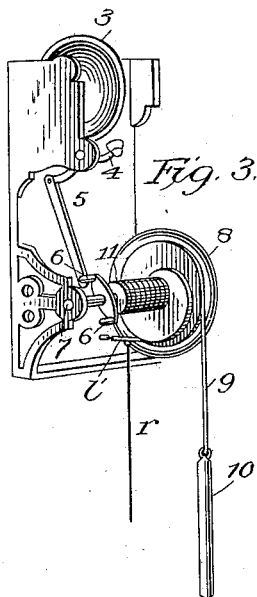


Fig. 3.

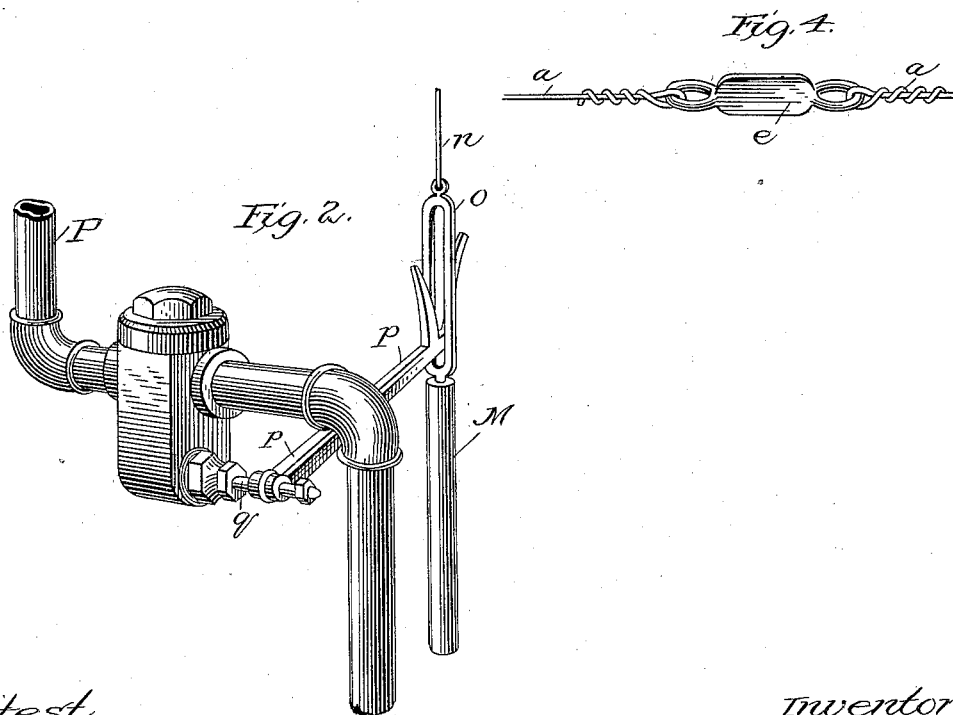


Fig. 2.

Fig. 4.

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# UNITED STATES PATENT OFFICE.

WILLIAM NERACHER, OF CLEVELAND, OHIO.

## AUTOMATIC FIRE ALARM AND EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 344,673, dated June 29, 1886.

Application filed September 8, 1885. Serial No. 176,499. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM NERACHER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Automatic Fire Alarms and Extinguishers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to automatic fire-alarms and fire-extinguishers, and is adapted to be used either with one or the other, or with both combined.

In the accompanying drawings, Figure 1 shows the apparatus in perspective located in the apartment or building. Fig. 2 shows the valve. Fig. 3 shows a perspective view of the alarm; Fig. 4, a view of the fusible link.

In these drawings, A represents a lower floor, and B the upper floors, of a building.

a indicates the wires of a series in the upper apartment, arranged at regular intervals across the apartment and near the ceiling. These wires are fastened at one end to any suitable hook or eye in the wall, and at the other end are attached to a spring, d, which connects them to the wall on the other side and maintains them under tension. At suitable intervals in each wire are interposed links c c, which are made of metal or material adapted to be fused or rendered brittle at temperature above that of summer heat, but sufficiently low to rupture the wire at a very early stage of the fire occurring in the apartment or building. These links are shown at e, Fig. 4. They have a thin central portion and rings at each end, into which the wire-sections are looped. The wire passes through a slotted arm, f, which is fixed into an upright position on the shaft F, hung in suitable bearings across the wires. A small collar is fixed on each wire near the slotted lever on the side of the lever away from the spring, the collar being larger than the transverse diameter of the slot, in which the wire may be freely moved when not hindered by the collar. On the shaft F is another arm, h, set horizontally, and slotted like the first mentioned.

The construction in the apartment A next below is the same as that above described, and has a series of wires, b, and shaft F', uniting the wires, and this represents any number

of floors of the building. A rod, H, passes through the slotted arms h, both of the upper and lower floors, and when the wires are all in place this rod H is supported with collars i, just above or resting on the levers. The parts are so arranged that when any one of the links a is broken the spring d will draw upon the slotted lever f in front of it by means of the collars, and rocking the shaft will, through the lever h, lift the rod H. It will be readily understood that no fusible link is interposed between the lever f and the spring d, and that each spring d must be in itself sufficient to lift the rod H. At the lower end of the rod H is a bolt, K, which passes through staples and through a ring in the end of the rod k, which is connected to an arm, l, of the bell-crank lever L. The other arm, m, of the bell-crank lever sustains the weight M by means of a rod, n, the upper end of which has a ring hooked over the end of the rod n. Intermediate between the rod n and the weight is a long link, o, which link straddles the forked end of the arm p on the stem q of the valve which admits water to the supply-pipe P.

From the construction described it will be apparent that when any one of the links is broken in any wire the rod H will be drawn up. The spring d, which is preferably spiral, has movement enough to draw the pin K out of the ring in the arm k and let the weight M drop. Normally the weight M stands with its link o raised above the fork of the lever p, and when the weight drops the link strikes the lever with the added force of momentum, thus insuring the turning of the valve to let on the supply of water. A wire, r, connects the weight M with a detent, l, on the alarm, and when the weight falls it removes this detent and allows the alarm to sound. The alarm is of an improved form, and specially adapted for the purpose. It has a bell, 3, and a spring-hammer, 4. The tail 5 of this hammer is in range with a pair of pins, 6, on the ends of the arms set on the shaft 7 of the driving-wheel 8. This wheel is made heavy, so as to acquire momentum sufficient for the purpose hereinafter described. It has a spiral peripheral groove on which is wound a cord, 9, of the weight 10. This cord is wound upon a barrel, 11, first, and then continued on the spiral groove to the

weight. It thus acts first with the greatest leverage and gives the wheel 8 sufficient momentum before the cord has run down to the barrel. While running off the barrel, therefore, it runs steadily, being regulated by the wheel 8, acting as a fly-wheel. This causes the arms to act uniformly and steadily on the tail of the bell-hammer, and to give a distinct and recognizable sound.

The distances between the wires of a series in an alphabet and between the links of any wire cannot be precisely given, but vary within the conditions and requirements of the room. The fusible loops should be sufficiently frequent in the space over head to have one near the fire at whatever spot it may occur, and the series in each room being all connected by one common shaft with the bolt which releases the weight, any one of the wires broken in any place releases the weight without delay, necessary where the fire must spread in order to find a fusible link.

The alarm may be located on the top of the building or at a distant house, as may be required, and it will sound steadily and for a time sufficient to give notice at any time.

I claim as my invention—

1. A fire-extinguisher arranged in an apartment or building, consisting of a series of distributors, a series of wires under tension having intermediate fusible links, a water-source for supplying water to all the distributors, having a suitable valve, the described releasing mechanism therefor, and an intermediate shaft having slotted arms between the valve-releasing mechanism and the series of wires for communicating the action of any one of the series to the said releasing mechanism, the parts being arranged and operated, substantially as described.

2. A fire-extinguisher arranged in an apartment or building, consisting of a series of distributors, a series of wires under tension having intermediate fusible links, an alarm, operating mechanism therefor, and an intermediate shaft having slotted arms between the alarm-operating mechanism and the series of wires for communicating the action of any one of the series to the said alarm mechanism, substantially as described.

3. A fire extinguisher arranged in an apartment or building, consisting of a series of distributors, a series of wires under tension, and provided with intermediate fusible links and collars, a water supply and releasing mechanism therefor, and an intermediate shaft connected to said releasing mechanism and having slotted arms through which wires pass, and an arm, *h*, the parts being arranged and operating substantially as described.

4. In combination with the series of wires and their springs and collars, the shaft having slotted arms through which the wires pass, an arm, *h*, a rod, *H*, and an alarm and water-supply having suitable operating and releasing mechanism connected to and operated by the said rod *H*, all substantially as described.

5. In combination with the series of wires and their springs and collars, the shaft having slotted arms through which the wires pass, a rod, *H*, a releasing-bolt connected to and operated by the said rod, an arm, *h*, for operating the said rod *H*, a water-supply, the valve-stem thereof having the forked arm and the suspended weight, and the link *o*, substantially as described.

6. In combination with the series of wires and their springs and collars, the shaft having slotted arms through which the wires pass, a rod, *H*, a releasing-bolt connected to and operated by the said rod, an arm, *h*, for operating the said rod *H*, an alarm having a detent connected to a weight and to the described operating mechanism, the said detent being adapted to be moved by the dropping of the weight, and thus permit of the sounding of the alarm, substantially as described.

7. In combination, a series of wires arranged as described and having fusible links, with the shaft, the slotted arms and the rod and releasing-bolt, and a water-supply pipe and valves and alarm-bell, all connected to the releasing devices, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM NERACHER.

Witnesses:

CHARLES L. STURTEVANT,  
W. C. DUVAL.