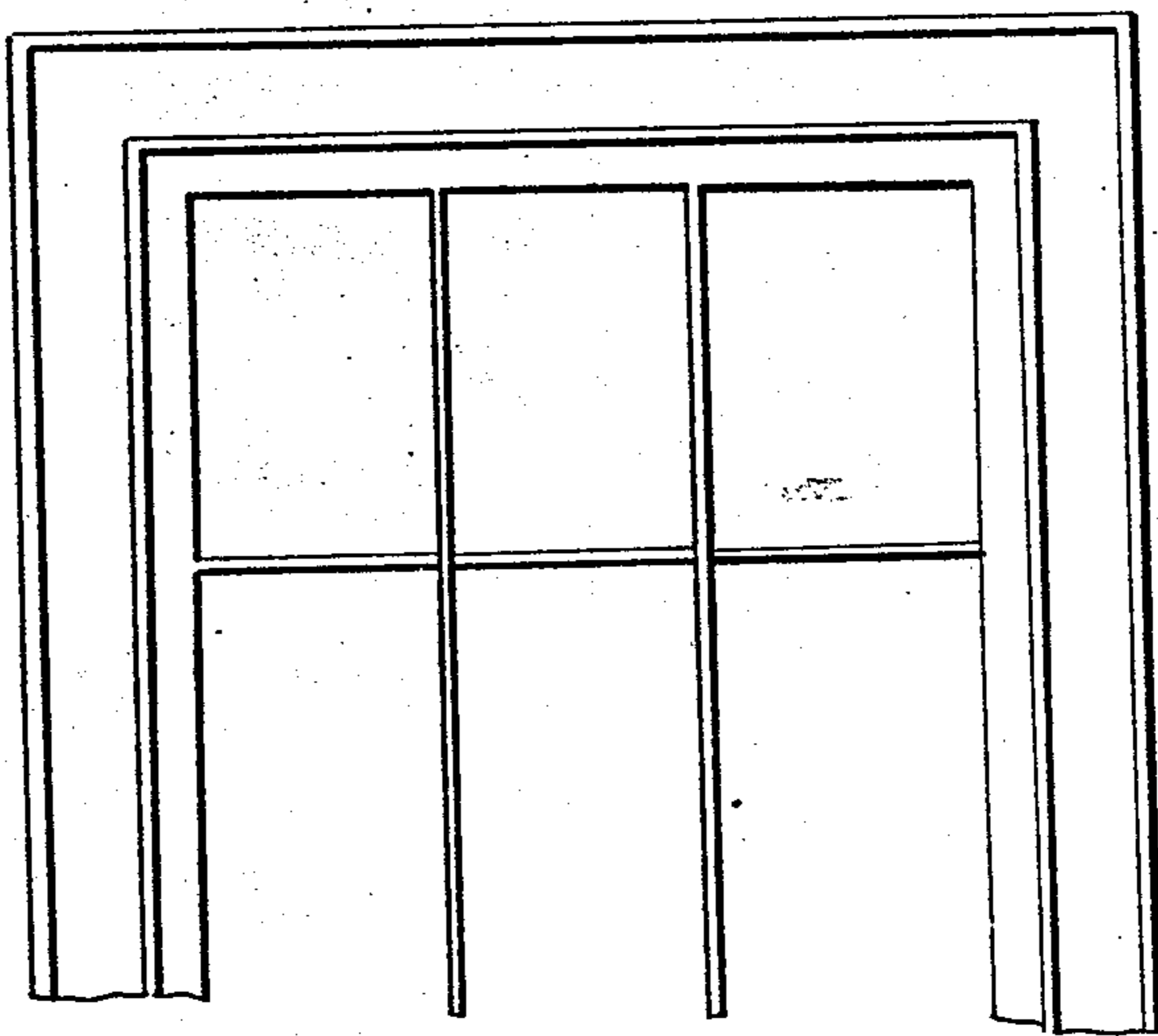
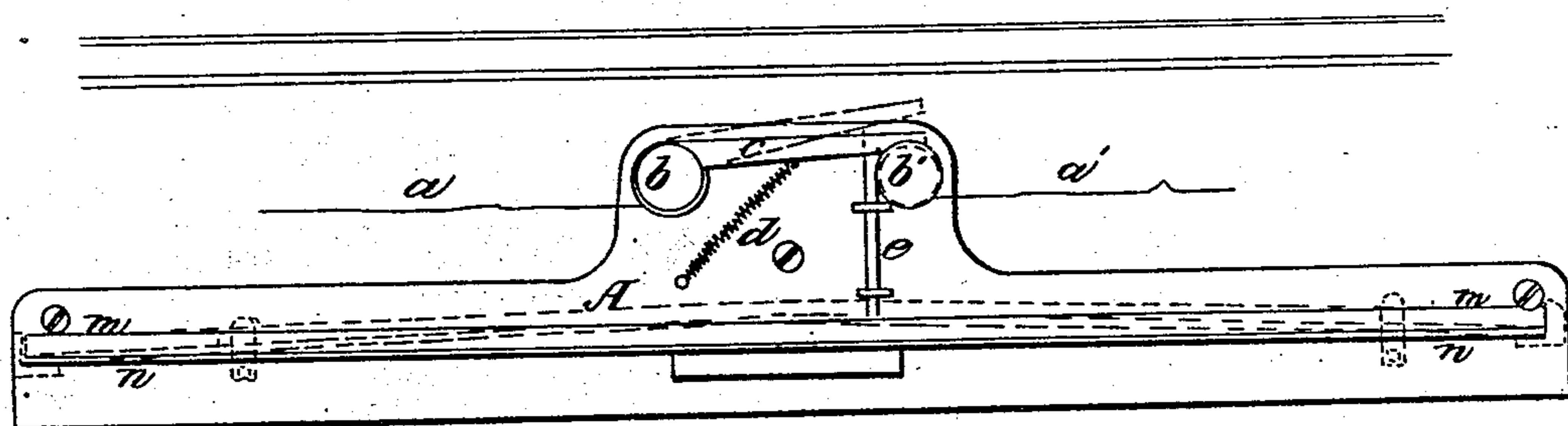


BIGGAR & BLOOD.

Fire Telegraph.

No. 79,894.

Patented July 14, 1868.



Witnesses;
W. C. Asketon
Thos. Fische.

Inventor;
W. J. Biggar,
J. C. Blood,
per Munn, &
attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM J. BIGGAR AND JOHN C. BLOOD, OF CONNEAUT, OHIO.

IMPROVED CIRCUIT-CLOSER.

Specification forming part of Letters Patent No. 79,894, dated July 14, 1868.

To all whom it may concern:

Be it known that we, WILLIAM J. BIGGAR and JOHN C. BLOOD, of Conneaut, in the county of Ashtabula and State of Ohio, have invented a new and useful Improvement in Burglar Fire-Alarm; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the drawing represents our improvement in a burglar fire-alarm.

This invention relates to a new and useful circuit-breaker for a fire-alarm, designed to be connected with the apparatus of a magnetic burglar-alarm for which Letters Patent have been applied for by William J. Biggar, John C. Blood, and D. M. Griswold, in connection with a device for breaking the electro-magnetic circuit by the entrance of a burglar through a door or window.

Our improved device for a circuit-breaker is operated on by the heat of a fire that may occur in a room where it is placed, and thus give timely alarm through the agency of the magnetic signal, as hereinafter described.

A strip of wood, A, is provided with a circuit-breaker operated by the heat of an accidental fire which may occur in the room where it is placed.

The insulated wires *a a'* are connected with the poles of a magnetic battery having a signal-alarm attached to it, and form an electro-magnetic circuit through the circuit-breaker, one wire, *a*, being secured to the metal pin or post *b*, and the other, *a'*, to the post *b'*, set on the wooden base A. The two posts *b b'* are connected by a lever, *c*, that is pivoted at one end on the post *b*, and by means of a coil-spring, *d*, bears at the other end against the post *b'*, to form the circuit-connection between the wires *a a'*.

Running lengthwise with the base-board A are two straight strips of metal, *m n*, secured

to the board at their ends and lying side by side, the inside strip, *m*, being made of brass and the outside strip, *n*, of iron, made a little thinner than the brass strip. A sliding pin or bolt, *e*, is fitted to lie endwise between the middle of the strip *m* and the lever *c*, touching both.

As the powers of expansion of the two metals brass and iron, under the influence of heat, are different in degree, and brass expands more rapidly than iron, it will be seen that with this arrangement of the metal strips *m n*, if they are exposed to an unusual degree of heat, they will form a curve, by their expansion, with the brass strip on the convex side. The expansion of the two metals, therefore, which would be produced by the heat of a fire to which they might be exposed would push up the bolt *e* against the lever *c* and lift it away from the post *b'*, whereby the circuit of the magnetic current of the wires *a a'* would be broken and the alarm of fire would be sounded by the signal connected with the battery.

This fire-alarm device would be fastened near the ceiling of a room, where the heat of a fire acts quickly, and be placed in any number of rooms of a building connected with the same set of insulated wires connected with the battery and alarm apparatus, and thus secure protection against accidental fire.

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

The combination of the board A, the brass and iron strips *m n*, the sliding bolt *e*, the spring-lever *c*, and the posts *b b'* with the insulated wires *a a'*, arranged and operating substantially as and for the purpose herein described.

WILLIAM J. BIGGAR.
JOHN C. BLOOD.

Witnesses:

C. R. GODDARD,
C. O. COUGHLAN.