R. PORTER.

Fire Alarm.

No. 1,915. Patented Dec. 28, 1840.

FIG. 1

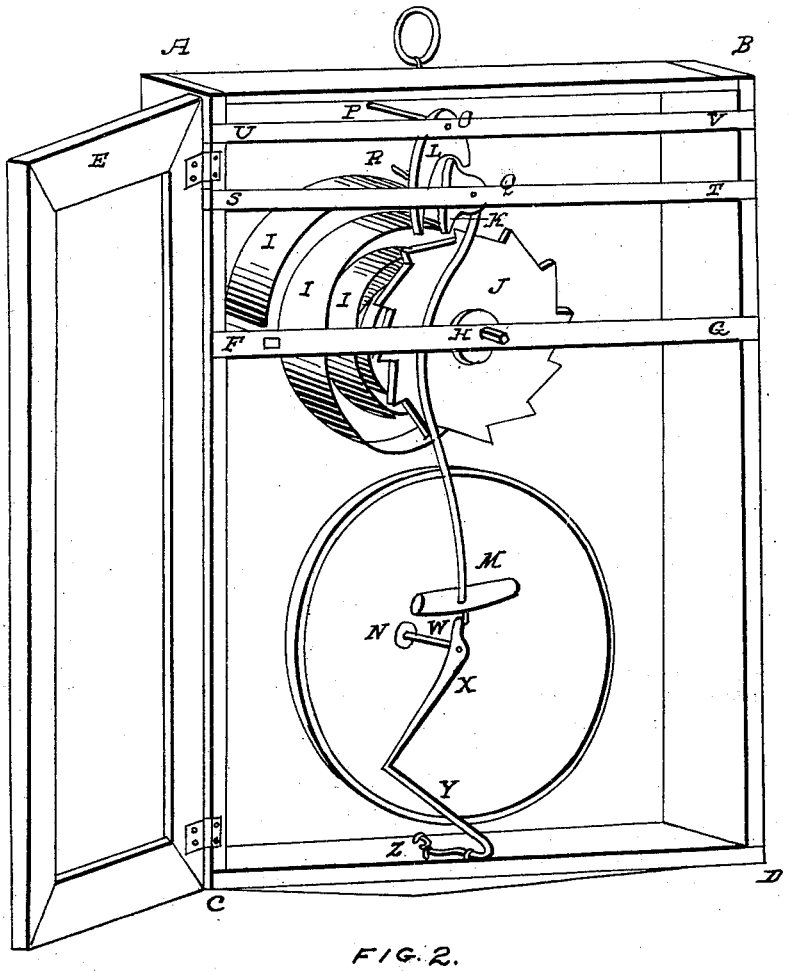
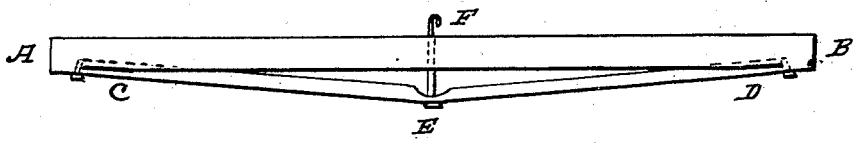


FIG. 2.



UNITED STATES PATENT OFFICE.

RUFUS PORTER, OF BILLERICA, MASSACHUSETTS.

FIRE-ALARM.

Specification of Letters Patent No. 1,915, dated December 28, 1840.

To all whom it may concern:

Be it known that I, RUFUS PORTER, of Billerica, in the county of Middlesex and State of Massachusetts, have invented a new and useful Machine for Giving Early Notice of Accidental Fires, and that the following is a full and exact description of the construction and operation of said machine.

A square box or case A, B, C, D, is made of thin boards, with a door E, which consists in part of a pane of glass and picture ornament. A cross bar F, G, extends across the front of the case and supports the front pivot of a horizontal arbor H, the end of which is made square for the purpose of being turned by a key; and to the body of which is attached one end of a clock-spring I, which occasionally turns the said arbor. An escapement wheel J, is mounted on the arbor near the cross-bar, and operates alternately the escapement dogs K, and L, thus giving a vibratory motion to the hammer M, and causing it to strike alternately on opposite sides of the bell N. The dogs K and L are mounted on two horizontal wire arbors O, P, and Q, R, which extend from two horizontal cross-bars S, T, and U, V, to the back of the case. The bell N, is secured by a screw in the center, to the back of the case, and from this center, near N, a small arm W projects horizontally to the front, and terminating in a pivot, on which is mounted a small lever X, the upper point of which prevents the motion of the hammer M, while its opposite point rests on the upper end of the catch Y. This catch consists of a piece of small wire which extends downward from the lever to the front of the bottom of the case, to a point equa-distant from the two sides thereof, and then turns horizontally toward the back, passing through two small staples which are fixed in the bottom of the case, and by which the catch-wire is kept in its proper position. Between these two staples at Z, this wire is bent about one-eighth of an inch to the left of a direct line, and the bent part is slightly elevated above the bottom of the case; that when this bent part is depressed, the upper end of the wire is removed from under the point of the lever. To the underside of the board which constitutes the bottom of the case, is attached in a horizontal position, a thin brass plate about seven inches long and one inch wide. The sides or edges of this plate are turned upward for the purpose of strengthening it except the center, at which part the edges of the plate are notched a little for the purpose of allowing the plate to bend more freely at this point than elsewhere. The ends of the plate being fastened by nails or otherwise to the bottom board, the center of the plate swells downward about one-eighth of an inch from the board as represented in Fig. 2, in which—

A, B, is the front edge of the bottom of the case; C, D, the front edge of the brass plate; and E, the center, at which point the edges of the plate are notched. From this point E a slender pin passes up vertically through the plate and through the bottom of the case, and the point of the pin being bent in the form of a hook (F Fig. 2,) takes hold of the bent part of the catch-wire at Z.

The escapement wheel J, and the arbor on which it is mounted, are furnished with a ratchet and click in the manner of the key-arbor, or barrel-arbor of an ordinary clock, by which the arbor is restrained from turning but in one direction without turning the wheel with it, and which are supposed to be too well understood to require any description here. One end of the spring I is attached to the center arbor H, and the other end to a small beam that extends from the cross-bar F, G, to the back of the case. When the arbor H is turned to the right by a key (a common clock key) the spring I is coiled around the said arbor; but the arbor is restrained from turning in the contrary direction without turning the wheel with it, by means of the ratchet and click before mentioned; and the motion of the wheel is prevented by the dog K, which is also restrained by the wire which extends therefrom to the hammer M, the hammer is restrained by the lever X, and this last by the catch-wire Y. Thus when the brass plate becomes by any means heated or warmed, the expansion thereof (the ends being confined) causes the center thereof to spring or bend downward, thus drawing down the pin (E Fig. 2) and with it the catch-wire, thus liberating the lever X, and thus the hammer M, which is made to vibrate by the alternate action of the teeth

of the escapement wheel, on the dogs K and L as before described, and by the impulse of the spring I.

I do not claim as my invention the employment of the expansion of a bar of metal by heat to disengage or let off an alarm; but

What I do claim as my invention, and desire to secure by Letters Patent is,

The combination of the metal plate C, D, the hook F, the catch Y, the lever X and the hammer M for the purpose and in the manner described.

I also claim the escapement wheel J in combination with the dogs K and L for the purpose and in the manner described.

RUFUS PORTER.

Witnesses:

STEPHEN L. PORTER,

A. WIGHT.