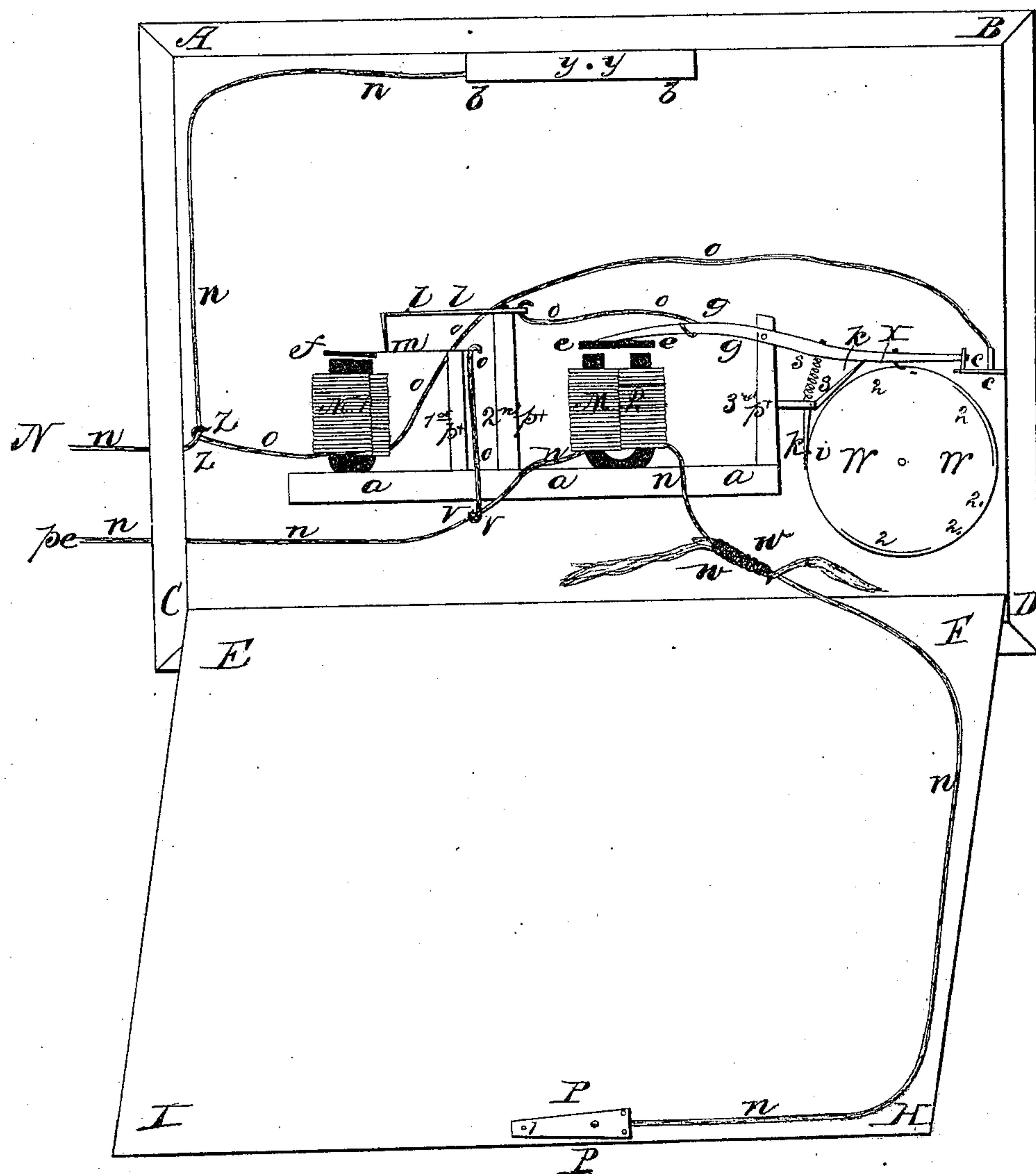


H. VAN ANSDALL.
MAGNETIC DETECTOR OF FIRE AND BURGLARS.

No. 9,240.

Patented Aug. 31, 1852.



UNITED STATES PATENT OFFICE.

HY. VAN ANSDALL, OF EATON, OHIO.

IMPROVEMENT IN ELECTRO-MAGNETIC FIRE-ALARMS.

Specification forming part of Letters Patent No. 9,240, dated August 31, 1852.

To all whom it may concern:

Be it known that I, HENRY VAN ANSDALL, of Eaton, in the county of Preble and State of Ohio, have invented a new and useful machine to give notice of the action of fire or burglars when doing any injury; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in providing an alarm by a combination of two electro-circuits, one of which is to be broken by the action of fire or encroachment of burglars, together with a wheel driven by clock-work operating on a key of the other circuit.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I take a box of sufficient capacity to contain the apparatus, as A B C D in the drawings annexed, in which E F G H represent the lid of the box attached thereto by hinges. This lid also represents a door, sash, or window-shutter.

The apparatus consists of a foundation made fast to the back or bottom of the box, as *a a*.

b b is a block made fast to the side of the box for the support of the terminal point *y*.

M' and *M*² are electro-magnets wrapped with insulated wire.

1st pt., 2d pt., and 3d pt. are posts for the support of other parts of the apparatus.

l l is an arm attached to the top of the post 2d pt., bent, and the downward point resting on the spring *m m* attached to the top of the post 1st pt., to which spring is riveted the armature *f f* over the magnet *M'*.

s s is a small spiral spring.

g g is a metallic key, playing on a pivot on the post 3d pt. On the under side of this key is the armature *e e* over the magnet *M*².

c c is a metallic bracket.

k k is a hook to catch in the notch *i* of the signal-wheel *W W*.

n n and *o o* are conducting-wires, *n n* being broken, lapped, and bound with some combustible material, as shown at *w w*.

To use the apparatus, charge a galvanic battery and attach the opposite ends of the wire *n n*, as shown on the left of the drawings, to opposite poles of the battery, then let the lid of the box, door, sash, or window-shutter be

closed; then the point *y* will be in contact with the metallic plate *P P* at 1, and all will be quiet; but as soon as the points *y* and 1 are detached (by the opening of a door, sash, or window-shutter by burglars, or the wire *n n* burned off at *w w*) the attractive power of the magnet *M*² is lost. Then the spiral spring *s s* draws down that end of the key until it strikes the bracket *c c*, which completes the magnetic circuit on the wire *o o* thus: From the positive pole of the battery *p c*, along the wire *n n* to the connection *v v*, thence on the wire *o o* to the spring *m*, through the spring to the arm *l l*, on the arm to the wire *o o*, through the wire to the key *g g*, through the key to the bracket *c c*, through the bracket to the wire *o o*, wrapping the magnet *M'* and charging it, thence to the connection *z z*, and from thence to the battery at *N*. The first circuit being thus broken, and the second closed, the attraction of the magnet *M'* draws down the armature *f f* and spring *m m*. The circuit *o o* is then broken by the spring *m m* leaving the downward point of the arm *l l*, destroying the power of attraction in *M'*. The elastic force of the spring then raises itself until it again strikes the point of the arm *l*, which closes the circuit again, and thus alternately, which alternate breaking and closing produces a rapid vibration of the spring *m m* and armature *f f*, and gives the alarm by the sound produced; and, again, the closing of the second circuit by the key *g* raises the hook *k k*, by pressing on its upper arm, out of the notch *i*, which sets the wheel *W* at liberty. It then revolves, (by clock-work not shown,) and by manipulating the key *g g* gives a preconcerted signal at the magnet *M'* thus: The wheel *W*, in revolving, breaks the circuit *o o* by raising the key *g* from the bracket *c* by the points, as at 2 2, adjusted on the wheel *W*, coming in contact with the key *x*; but as soon as a point has passed the spring *s* draws down the key *g* and closes the circuit *o* again. When the circuit *o* is thus closed the vibrations, before described, of the spring *m m* and armature *f* take place, but cease when broken by the points 2 on the wheel *W* coming in contact with the key *g*, as described. Thus, by the arrangement of the points 2 2 on the wheel *W* at a greater or less distance, or for a time continuous, a definite signal may be given at

M', and thus partially secure life and property from the encroachments of burglars, or damage by fire.

I claim—

1. The combination and arrangement of a signal-wheel with two electric circuits, so that when one is broken the wheel may revolve and operate a key in the other circuit.

2. The mode of constructing an electric cir-

cuit by breaking, lapping, and binding with a combustible material or equivalent, for the purpose of making it sensitive to fire, as herein dedescribed.

HENRY VAN ANSDALL.

Witnesses:

JOHN W. ACTON,

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