

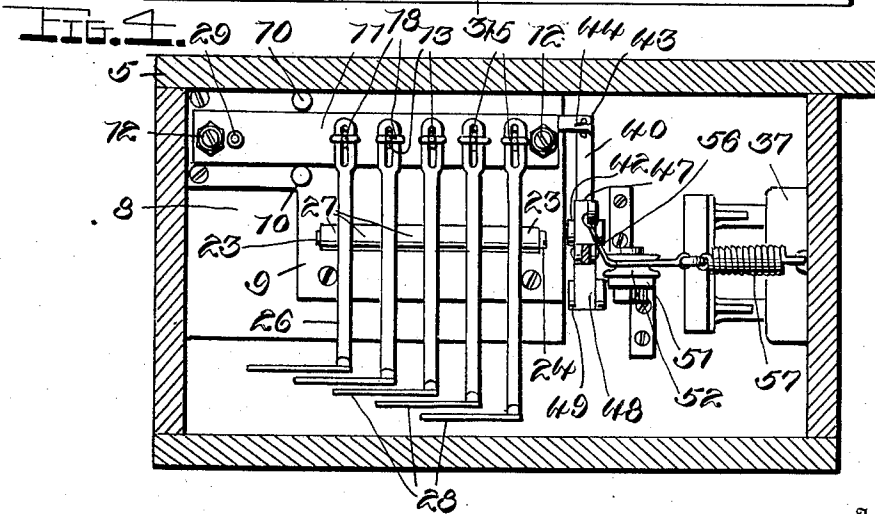
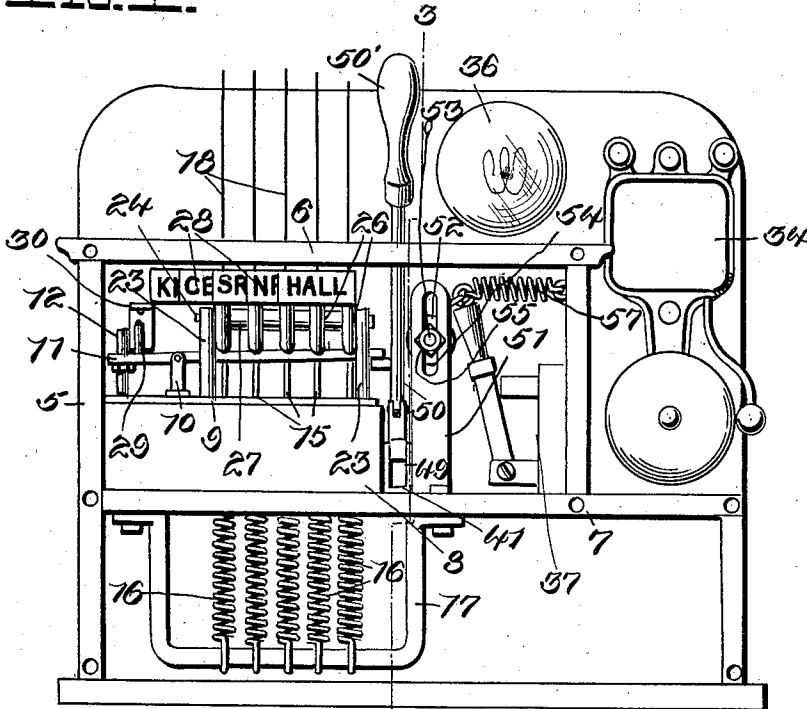
C. RAYMOND.  
FIRE SIGNAL DEVICE.  
APPLICATION FILED MAY 23, 1911.

1,026,769.

Patented May 21, 1912.

3 SHEETS-SHEET 1.

FIG. 1.



Witnesses

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L. H. Ellis.

Inventor

Cotis Raymond.

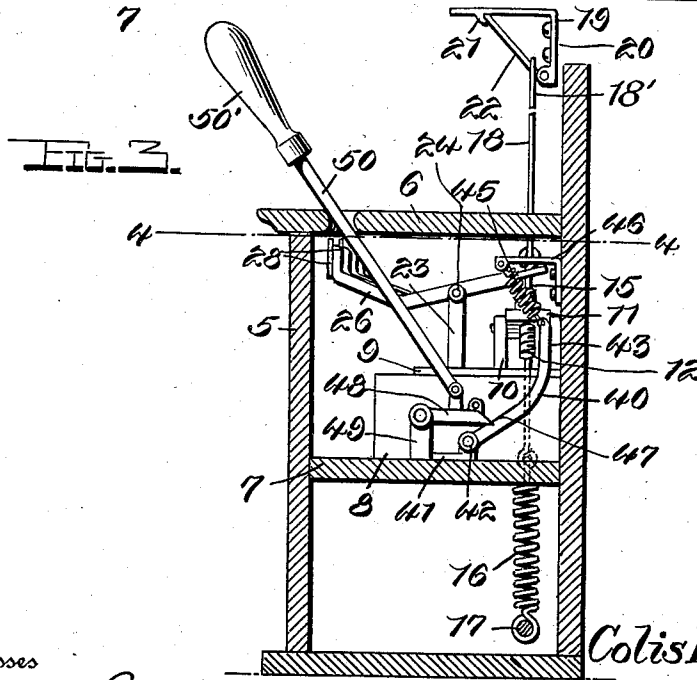
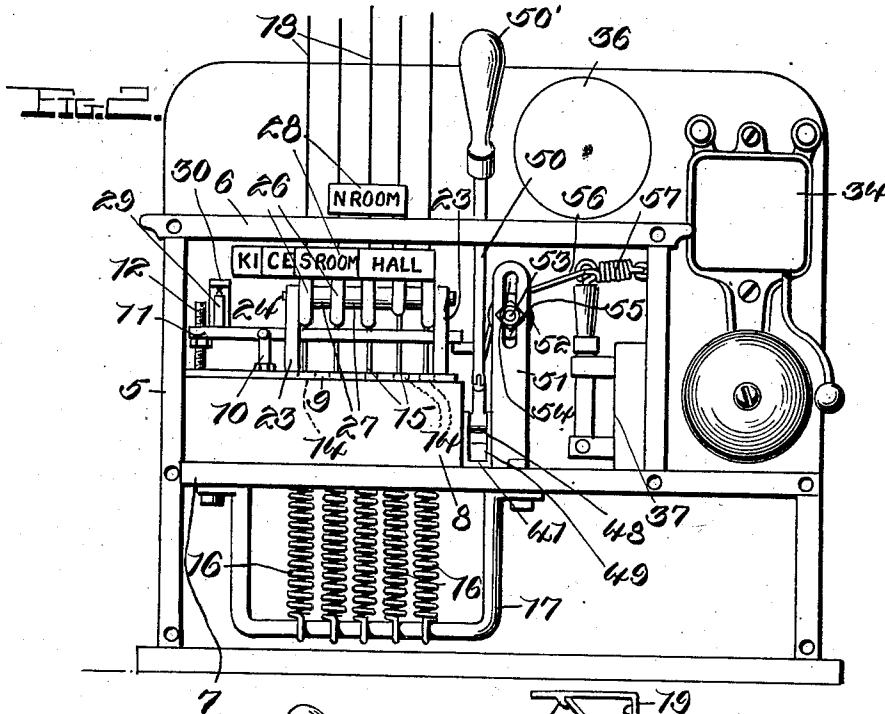
By Watson E. Coleman,  
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3 SHEETS-SHEET 2.



Witnesses

Chas. L. Griesbauer  
L. H. Ellis.

Inventor

Colis Raymond

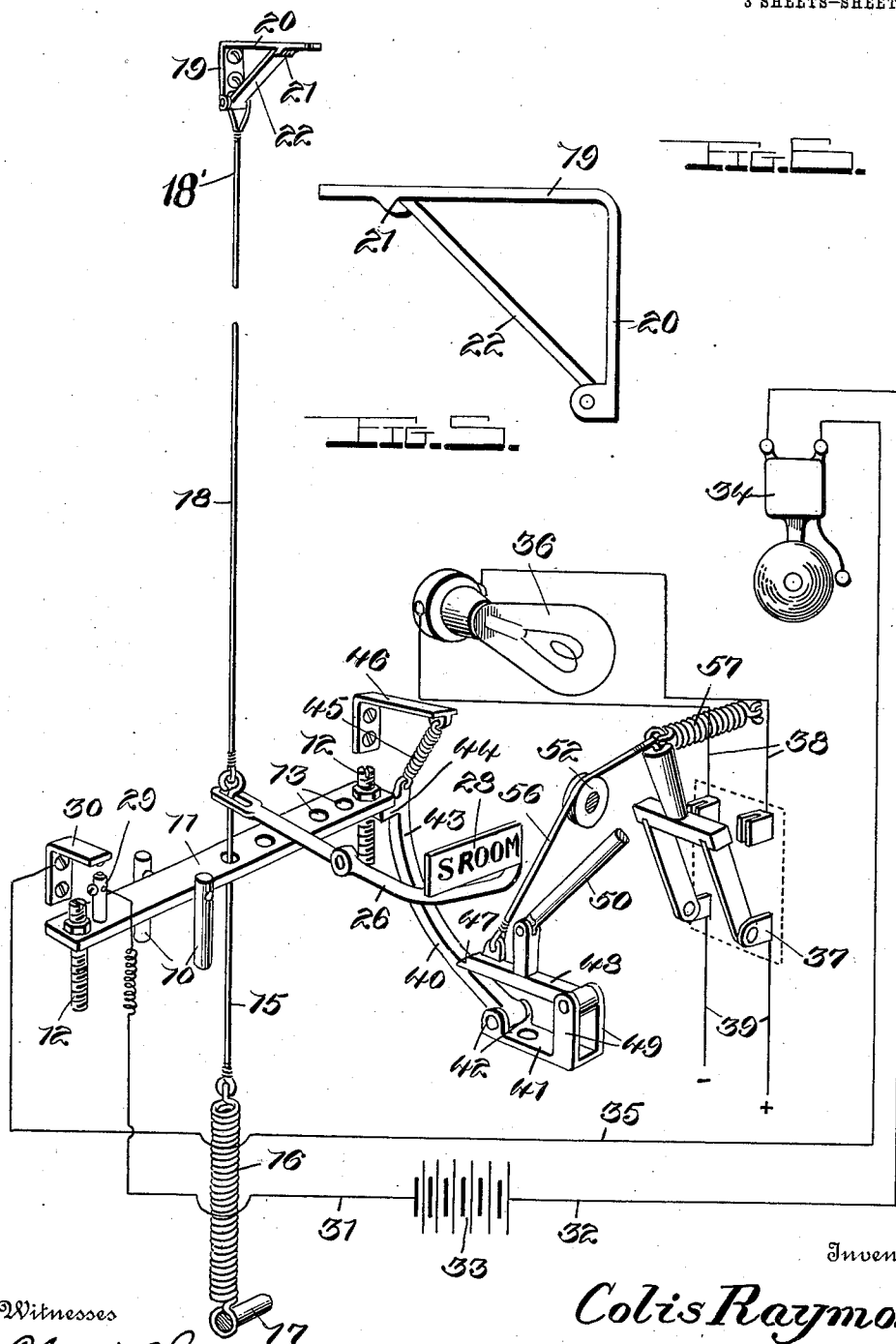
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3 SHEETS-SHEET 3.



Inventor

*Colis Raymond*

Witnesses

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# UNITED STATES PATENT OFFICE.

COLIS RAYMOND, OF WINDSOR, CONNECTICUT.

## FIRE-SIGNAL DEVICE.

1,026,769.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed May 23, 1911. Serial No. 628,966.

*To all whom it may concern:*

Be it known that I, COLIS RAYMOND, a citizen of the United States, residing at Windsor, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Fire-Signal Devices, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in alarm devices and more particularly to a fire alarm device of simple and novel construction, the invention having for its primary object the provision of an alarm which is especially adapted for use in hotels, apartments and other large buildings whereby the place of origin of the fire will be at once indicated and an alarm sounded.

Another object of the invention resides in the provision of a bell circuit and a light circuit, means normally holding said circuits open, said means including fusible wires arranged in the various apartments of the buildings, the fusing of any one of said wires automatically effecting the closure of the electric circuits.

A further object of the invention is to provide an electrically controlled alarm device, means normally holding the electric circuit open, said means including fusible wires, and an annunciator automatically actuated upon the fusing of any one of the wires to indicate the point of origin of the fire simultaneously with the operation of the alarm.

Still another object of my invention resides in the provision of an electrical fire alarm device of comparatively simple and inexpensive construction, and one which is also very positive and durable in practical use.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an alarm mechanism embodying my improvements; Fig. 2 is a similar view of the alarm mechanism showing the positions of the parts upon the operation of the alarm; Fig. 3 is

a section taken on the line 3—3 of Fig. 1; Fig. 4 is a section taken on the line 4—4 of Fig. 3; Fig. 5 is a perspective view, the electric circuits being diagrammatically illustrated; and Fig. 6 is an enlarged detail side elevation of one of the catches to which the fusible wires are connected.

Referring in detail to the drawings 5 60 designates a case or housing of any approved form, said case including the horizontal top and bottom walls 6 and 7 respectively. Upon the bottom plate 7 of the case a suitable supporting base is rigidly secured upon which the plate 9 is 65 mounted and securely fixed by means of suitable screws or similar fastening elements. Upon the plate 9, short vertical standards 10 are arranged in spaced relation and have pivotally mounted between 70 their upper ends the plate 11 which is disposed substantially in a horizontal plane. It will be observed that this plate is mounted between the standards at one side of its 75 longitudinal center, so that one end portion thereof is normally disposed below the pivotal axis of the plate as shown in Fig. 2. The proper balance of the plate 11 is obtained by arranging a bolt or screw 12 in 80 each end thereof. The longer end of the plate 11 is provided with a plurality of spaced openings 13 which are disposed in line with similar openings 14 formed in the plate 9 and the support 8. Through these 85 openings the rods 15 extend and are connected at their lower ends to the coiled springs 16, the lower plate 7 of the casing being provided with a longitudinal opening or recess in its rear edge through which 90 said springs extend. The lower ends of the springs 16 are secured to a rod 17 which is of substantially U-shaped form and is secured at its extremities to the bottom of the casing. To the upper end of each of the 95 rods 15 a wire 18 is connected, said wires being movably disposed through the upper plate 6 of the case and suitably connected to the fusible wires 18' which are arranged around the walls of the apartments of the 100 building adjacent to the ceiling. It will be understood that as many of the rods 15 may be provided as are necessary in accordance with the number of rooms in the building.

The wires 18' are movably supported upon the walls of the apartment, and the ends thereof are attached to the catches 19. Each of the catches consists of an angular plate 20, one arm of which is rigidly fixed to one of the side walls of the room or apartment, the other arm thereof engaging the ceiling and having a shoulder 21 formed on its under face. To the secured arm one end of a blade 22 is pivotally connected, the other end thereof being adapted for engagement with the shoulder 21. This blade is slightly resilient so that it can be forced into position behind said shoulder, the wire 18' being first provided with a loop in its end and engaged over said blade as clearly shown in Fig. 6.

A second pair of standards 23 are mounted on the base plate 9 and in the upper ends thereof a horizontal rod 24 is mounted. Upon this rod a plurality of annunciator arms 26 are pivotally arranged intermediate of their ends and are held in spaced relation to each other by means of the collars 27. These arms extend at right angles to the plane of the plate 11 and have one of their ends disposed above said plate. The rods 18 are loosely disposed through the ends of the arms 26, and to the other ends of said arms the name plates 28 are secured, the names thereon corresponding with different rooms or apartments of the building. These name plates are projected through an opening in the top plate 6 of the case upon the operation of the alarm so that the point at which the fire originated can be determined. Under normal conditions, the name plates 28 are disposed within the case, the ends of the arms 26 to which they are secured moving downwardly by gravity. The upper ends of the rods 15 to which the wires 18 are connected have loops formed thereon which limit the upward movement of the ends of the annunciator arms. Upon the shorter end of the pivotally mounted plate 11 a contact member 29 is arranged and is adapted to co-act with the stationary contact member 30 secured to the rear wall of the case 5 to connect the bell circuit upon the operation of the alarm. The wires 31 and 32 extend from the battery 33 and are connected to the contact 29 and to the bell or other alarm device 34. A wire 35 connects the stationary contact 30 with the bell so that upon the operation of the alarm, the circuit is connected through the battery 33, wire 31, contacts 29 and 30, and wires 32 and 35 back to the battery.

I also provide a lamp 36 in the form of an electric light bulb which is suitably mounted upon the case 5 or at any other convenient point, the electric circuit for said bulb including a knife switch 37, the wires 38 connecting the contact members of the switch with the socket of the bulb, and the

wires 39 which extend from the posts upon which the switch blades are mounted to a lamp socket or other source of current supply. This lamp circuit is adapted to be automatically closed simultaneously with the closing of the bell circuit and to this end I provide the bar 40 which is pivotally mounted at one end between the ears 42 formed on one end of the plate 41 rigidly fixed to the bottom plate 7 of the case. This bar is transversely arranged within the case 5 and has its free end vertically disposed as indicated at 43, the extremity thereof being laterally extended as at 44 and disposed beneath the end of the pivotally mounted plate 11. One end of a coiled spring 45 is connected to the upper end of the bar 40 and has its other end secured to a bracket arm 46 fixed to the rear wall of the case. This bar is provided adjacent to its pivoted end with a shoulder 47 for engagement by the free end of a pawl or dog 48 which is pivotally mounted at its other end between the ears 49 formed upon the plate 41. To this dog the lower end of a lever 50 is pivotally connected, said lever extending through the top 6 of the case and having a suitable handle 50' thereon whereby the lever may be forced downwardly to engage the dog with the shoulder 47 of the bar 40. A vertical plate 51 is secured to the bottom of the case 5 adjacent to the lever 49 and a grooved wheel or pulley 52 is mounted upon the upper end of said plate upon a stud 53 which is disposed through a longitudinal slot 54. A nut 55 is threaded on one end of the stud whereby it may be rigidly secured in any position in the slot thereby permitting of the easy and quick adjustment of the pulley. A wire or other flexible element 56 extends over this pulley and is connected to the handle of the knife switch and to the pivotally mounted dog 48. One end of a coiled spring 57 is secured to the handle of the switch and to one of the side walls of the case, said spring acting to normally hold the switch closed. When the dog 48 is forced downwardly by pressure on the handle 50', it will be readily seen that the switch blades will be moved to their open positions as shown in Fig. 1, thereby breaking the lamp circuit.

From the above description it is believed that the operation of the device will be obvious. When a fire originates in any one of the rooms or apartments of the building, the intense heat quickly fuses the wire 18', thereby permitting the spring 16 which is connected to the lower end of the rod 15 to which the wire 18 is connected, to contract. The rod 15 is thereby drawn downwardly, such movement of the rod also moving the plate 11 upon its pivot and forcing the same downwardly upon the end 44 of the bar 40, and simultaneously moving

the annunciator arm 26 to position the main plate thereof above the top of the case 5. The downward movement of the bar 40 releases the dog or pawl 48, whereupon the spring 57 contracts and closes the knife switch 37, thereby connecting the lamp circuit. Simultaneously therewith the contacts 29 and 30 are engaged and the bell circuit is connected. Thus the two circuits are automatically connected to give the alarm and the annunciator is simultaneously actuated to at once indicate the origin of the fire.

The construction and arrangement of the various elements of my improved alarm device are comparatively simple, and from the foregoing description it will be seen that the device is very positive in its operation. It can also be manufactured at a low cost and is extremely strong, durable and efficient in practical use.

While I have shown and described the preferred construction and arrangement of the various parts, it will be understood that the device is susceptible of considerable modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. An alarm device of the character described comprising a plate pivotally mounted intermediate of its ends, a plurality of rods movable through said plate, springs normally under tension connected to the lower ends of said rods, fusible wires connected to the upper ends of the rods, said wires extending around the walls of the apartment of a building and having their ends secured, an electrical alarm device and a circuit therefor, a contact member forming one of the terminals of the circuit arranged on said pivoted plate, a stationary contact member forming the other terminal of the circuit, a plurality of movable annunciator members associated with said rods, the fusing of any one of said wires permitting of the contraction of one of the springs to move the rod to which said wire is connected and move said pivotally mounted plate to engage the contacts of the alarm circuit and simultaneously move one of the annunciator elements to its indicative position.

2. An alarm device of the character described comprising a plate pivotally mounted adjacent to one of its ends, the longer end portion of said plate having a plurality of openings therein, vertically disposed rods movable through the openings in said plate, springs normally under tension connected to the lower ends of said rods, fusible wires connected to the upper ends of the rods, an electric bell and circuit therefor, a contact member carried by said pivoted plate and

forming one of the terminals of said circuit, a stationary contact forming the other circuit terminal, an electric lamp and circuit therefor, said circuit including a knife switch, means tending to hold said switch closed, additional means to hold said switch open, said latter means including a movable bar, one end of said pivoted plate engaging said bar, the fusing of any one of said wires permitting of the contraction of the spring connected to the rod to which said wire is attached thereby moving said pivoted plate and connecting the bell circuit and simultaneously moving said pivoted bar to release said last named means and permit of the closing of the knife switch to close the lamp circuit.

3. An alarm device of the character described comprising a plate pivotally mounted adjacent to one of its ends, a plurality of vertically disposed movable rods, a coiled spring connected to the lower end of each of said rods, said springs being normally under tension, fusible wires connected to the upper ends of the rods, a bell circuit, a contact arranged on the pivoted plate forming one of the terminals of said circuit, a stationary contact forming the other circuit terminal, an electric lamp and circuit therefor, said circuit including a knife switch, means normally acting to hold said knife switch closed, a pivoted bar, one end of said bar being engaged by said pivoted plate, means yieldingly holding the end of said bar in contact with the plate, means associated with said bar and connected to the switch blades to hold said switch open in the normal position of said bar, the fusing of any one of said wires permitting of the contracting of the spring connected to the end of the rod to which said wire is attached whereby said pivoted plate is moved to connect the bell circuit, and said pivoted bar is simultaneously moved to permit of the movement of the switch blades to their closed positions whereby the lamp circuit is connected.

4. An alarm device of the character described comprising an electrical alarm device including an electric circuit, a movable contact member forming one of the terminals of said circuit, a stationary contact member forming the other circuit terminal, a plurality of vertically disposed movable rods, fusible wires connected to said rods, means for moving one of said rods upon the fusing of its respective wire to cause said contact members to engage and close the electric circuit, an electric lamp and circuit therefor including a knife switch, a pivotally mounted bar, a spring connected to said bar and yieldingly holding the same against pivotal movement, a pivoted dog engaging said bar, means acting to close the knife switch, a guide pulley, a flexible connection between said dog and

the movable knife blades to hold said switch  
open, and means actuated by the movement  
of any one of said rods upon the fusing of  
its respective wire to move said pivoted bar  
5 and release said dog to permit of the closing  
of the knife switch whereby said lamp cir-  
cuit is connected.

In testimony whereof I hereunto affix my  
signature in the presence of two witnesses.

COLIS RAYMOND.

Witnesses:

GEORGE R. MAUDE,  
PATRICK J. CUNNINGHAM.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents  
Washington, D. C."

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