

1,230,247.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

FIG. 7.

WITNESSES.

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LOUIS WEITZMAN, OF TORONTO, ONTARIO, CANADA.

BURGLAR-ALARM.

1,230,247.

Specification of Letters Patent.

Patented June 19, 1917.

Application filed July 1, 1916. Serial No. 107,115.

To all whom it may concern:

Be it known that I, LOUIS WEITZMAN, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have
5 invented certain new and useful Improvements in Burglar-Alarms, of which the following is the specification.

My invention relates to improvements in burglar alarms and the object of the invention is to devise an alarm which will be automatically operated by the opening of a door to produce simultaneously an audible signal in a house and at the police station, a visual signal in the house and a photographic record of the burglar and such that
10 none of the operative parts will be noticeable to the burglar when operating to force the door of a safe, cupboard or other compartment protected thereby and it consists essentially of the following arrangement and construction of parts as hereinafter more particularly explained by the following specification.

Figure 1, is a diagrammatic view of my
25 device applied to a safe door.

Fig. 2, is a plan view of the contact mechanism operated by the motor.

Figs. 3 and 4 are perspective details of the hinge showing the contacting faces of
30 the hinge directed outwardly.

Fig. 5, is an enlarged sectional view on line *x-y* Fig. 3.

Fig. 6, is an enlarged perspective detail of the upper portion of the hinge member
35 shown in Fig. 3.

Fig. 7 is an enlarged detail elevation of the disk 10.

In the drawings like letters of reference indicate corresponding parts in each figure.

40 1 indicates the frame of a safe door. 2 indicates the outer door and 3 the inner door of the safe. 4 indicates the lower hinge of the outer door of the safe formed by the upper hinge member 4^x and the lower hinge member 4^y. The upper inner face of the lower hinge member 4^y is provided with an annular recess 4^z in which is countersunk an insulating ring 4³. 4⁴ indicates a ring of conducting metal having an open portion
45 4⁵. The ring 4⁴ is countersunk into the insulating annular ring 4³. 4⁶ indicates a vertical bore extending downwardly through the wall of the hinge from the lower face of

the annular ring 4⁴. The lower end of the bore 4⁶ is provided with an angular extension 4⁷. 4⁸ indicates a metal sleeve countersunk in the insulating member 4³ and provided with an internally threaded orifice. The sleeve 4⁸ freely fits into the insulating washer so as to be turnable therein. The
55 lower face of the hinge member 4^x is also provided with an annular recess 4⁹ in which fits an annular insulating member 4¹⁰. 4¹¹ indicates a conducting member corresponding in shape to the conducting member 4⁴ 65 hereinbefore described, that is to say, annular in form with an open portion 4¹². When the door is in the closed position the hinges are turned so that the open portions 4⁵ and 4¹² are in a line one with the other. 70

5 indicates a motor, the circuit wire 5¹ of which extends from one terminal thereof to the lower hinge member 4^y and passes upwardly through the orifice 4¹³ formed in the wall of the hinge, the upper end of the wire 75 being threaded and screwed into the sleeve 4⁸.

It will, of course, be understood that the wire 5¹ is a wire provided with an insulated cover, the end of the wire, of course, being
80 bared so as to be threaded.

5² indicates a wire extending from the other terminal of the motor to one terminal of the battery 5³. 5⁴ indicates a wire extending from the other terminal of the battery 85 5³. The opposite end of the wire 5⁴ extends through the orifice 4⁹ and is secured at its upper end to the contact ring 4⁴. By this means a complete circuit is formed through the motor energized by the battery 5³, such
90 circuit being opened and closed by the opening and closing operation of the members 4^x and 4^y of the door hinge 4.

6 indicates a supplemental battery. 7 indicates a wire leading from the negative terminal of the battery. 8^x indicate a series of
95 signal lights connected in series and to one terminal of which the wire 7 leads. 8 indicates a wire leading from the positive terminal of the battery 6. 9 indicates a suitable base upon which the motor 5 is supported. 10 indicates a metal disk formed of conducting metal. 10¹ indicates a semi-circular insulating piece countersunk into half
100 of the peripheral portion of the disk 10. 11 indicates reducing gears which may be belt 105

and pulley gears or sprocket and chain gears connecting the motor 5 to the supporting shaft 10² of the disk 10. 12 indicates a spring contact finger mounted upon a suitable standard 13 and bearing against the periphery of the disk 10 so as to alternately engage with the conducting portion and insulating portion of the disk as the disk revolves. 14 indicates a supplemental supporting standard carrying the spring contact finger 15. 16 indicates a block of insulating material which is freely inserted between the contact finger 15 and the face of the disk when the parts are in their normal position. 17 indicates a disk mounted upon a shaft 18, such shaft 18 being carried by suitable bearings carried by the base 9. An annular ring is fitted on to the outer periphery of the disk 17. 20 indicates a metal piece of conducting material countersunk into the outer periphery of the ring 19. 21 indicates a supporting standard carried by the base 9. 22 indicates a spring contact finger carried by the standard 21 and bearing against the outer periphery of the insulating ring 19. 23 indicates a reducing gear connection between the shaft 10² and the shaft 18 for a purpose which will hereinafter appear.

30 The opposite end of the wire 8 leading from the positive terminal of the battery 6 as hereinbefore described is grounded on the base 9. The motor 5, of course, is insulated from such base 9. 24 indicates a wire leading from the spring finger 12 to the opposite terminal of the signal lights 8^x. 35 25 indicates a wire leading from the contact finger 15. 26 indicates an incandescent light located at the inside of the inner door of the safe and to one terminal of which the wire 25 leads.

7' indicates a branch wire leading from the wire 7 extending from the negative terminal of the battery 6. 27 indicates an electro-magnet which may be located inside of the inner door of the safe or in any other suitable location which may be hidden from the eye of an ordinary observer. The wire 7' leads to the electro-magnet 27. 28 indicates a wire engaging the opposite terminal of the electro-magnet 27 with the contact finger 22. 7² indicates a wire connecting the opposite terminal of the lamp 26 to the wire 7'. 29 indicates a wire leading to the negative terminal of the battery 5³ formed by the wire 5' of the motor circuit.

30 indicates an electric bell which is designed to be located in a police station and to one terminal of which the wire 29 leads. 60 31 indicates a wire leading from the other terminal of the bell and connected at its opposite end to the wire 5² of the motor circuit leading to the positive terminal of the battery 5³. 32 indicates the revolving table 65 of a phonograph on which a record is de-

signed to be held with a needle constantly in contact therewith. 33 indicates an electro-magnet located beneath the table 32. 34 indicates a supplemental circuit leading through the electro-magnet 33, one terminal of which is connected to the wire 31 leading to the wire 5² of the motor circuit leading to the positive terminal of the battery 5³. The other terminal of the circuit 34 is connected to the wire 29 connected to the wire 5' leading through the hinge 4 to the other or negative terminal of the battery 5³.

35 indicates a pivoted armature suitably supported on the main casing of the phonograph and provided at its free end with outwardly turned portion 36. 37 indicates a projection carried by the lower face of the revolving table 32, such projection being normally in contact with the projecting portion 36 of the armature 35.

38, 39 and 40 indicate a series of cameras supported on the inner face of the inner door 3 of the safe, 38^x, 39^x and 40^x being the lenses thereof located opposite the openings 38', 39' and 40' formed in the inner door 3. 41 indicates a pivoted armature co-acting with the electro-magnet 27. 42 and 43 indicate pulleys carried by the inner face of the door 3. 44 indicates a cord connected at one end to the free end of the armature 41 and passing therefrom over the pulley 42 and vertically downward around and beneath the pulley 43 to the shutter lever 45 of the camera 40. 46 and 47 indicate pulleys also carried by the door 3. 48 and 49 indicate branch cords extending from the main cord 44 beneath the pulleys 46 and 47 to the shutter levers 50 and 51 of the cameras 38 and 39.

Having described the principal parts involved in my invention I will briefly describe the operation of the same.

Should a burglar succeed in opening the door 2 by opening such door the hinge member 4^x is turned, the hinge member 4' remaining stationary and thereby circumferentially moving the conducting ring 4¹¹ over the conducting ring 4⁴ so as to bridge the gap 4⁵ and simultaneously contact with the upper end of the wire 4' thereby electrically connecting the upper end of such wire to the ring 4⁴ which is connected to the other wire 5⁴ of the motor circuit thereby closing the motor circuit energized by the battery 5³. The motor 5 then immediately begins to revolve the rotating disks 10 and 17 through the intermediary reducing gear. As the disk 10 revolves the spring finger 13 is alternately in contact with the insulating portion 10' and the conducting portion of the disk 10 thereby alternating making and breaking the circuit formed by the wires 24, 8 and 7 leading through the battery 6 to the signal lights 8^x thereby alternating lighting and extinguishing such lights. Si-

multaneously with the closing of the motor circuit the circuit leading through the bell 30 located in the police station and comprising the wires 29 and 31 is energized from the motor circuit to ring such bell. Simultaneously with the energizing of the circuit formed by the wires 29 and 31 the circuit formed by the wires 34 is energized energizing the electro-magnet 33 and drawing the armature 35 thereto so as to carry the projection 36 out of a line with the projection 37. It will, of course, be understood that the phonograph is kept wound up so that immediately the projection 36 is withdrawn from the projection 37 the table 32 begins to revolve. The needle of the phonograph is in contact with the disk as above described and, therefore, immediately the above operation takes place the phonograph begins to play thereby giving an audible signal to the occupant of the house that the safe is being tampered with. After the door 2 has been opened and the motor circuit energized the disk 17 is revolved very slowly by means of the intermediary reducing gear connecting the same to the motor. As soon as one revolution of the disk 17 is completed the contact finger 22 engages with the conducting piece 20 connected to the conducting portion of the disk and thereby completes a circuit through the wire 28, electro-magnet 27, wire 7' and 7 through the battery 6, wire 8 to the base 9 upon which the wire 8 is grounded. By this means the electro-magnet 27 is energized, the armature drawn into contact with such magnet and the cord 44 and supplemental cords 48 and 49 drawn so as to simultaneously operate the shutter levers of the cameras 38, 39 and 40 to take the picture of whatever is in front of the safe. By driving the disk 17 at a very slow rate of speed time is allowed to enable the burglar to get inside the safe and immediately he has done this the camera lever is operated to take a picture of him.

In order to produce a light before taking the picture immediately the disk 10 begins to revolve the block 16 is carried from beneath the finger 15 by frictional contact with the disk and drops away, the finger springing into contact with the face of the disk and thereby completing a circuit through the wire 25, through the light 26 by the wire 7', wire 7' and wire 7 to the battery 6, the circuit being completed from the battery by the wire 8 grounded to the base plate 9.

From this description it will be seen that I have devised a very simple device which would be impossible for a burglar to detect when he operates upon a safe and which, immediately when he opens the door, will produce an audible signal both in the house

and in the police station, a visual signal in the house and as soon as he enters the safe will automatically operate cameras to take a picture of him and thereby furnish evidence for the police.

What I claim as my invention is.

1. In a burglar alarm, the combination with an outer and inner door, a camera having its lenses extending through the inner door from its inner face, electro-magnetic means for operating the camera shutter, a motor, a circuit therefor, means for closing the motor circuit by the opening of the outer door, a normally open circuit through which the electro-magnetic means is energized, and means operated by the rotation of the motor for closing such electro-magnetic circuit at a predetermined period.

2. In a burglar alarm, the combination with an outer and inner door, a camera having its lenses extending through the inner door from its inner face, electro-magnetic means for operating the camera shutter, a motor, a circuit therefor, means for closing the motor circuit by the opening of the outer door, a normally open circuit through which the electro-magnetic means is energized, means operated by the rotation of the motor for closing such electro-magnetic circuit at a predetermined period, an incandescent light located in proximity to the camera lenses, and means for automatically lighting such light prior to the operation of the camera shutter.

3. In a burglar alarm, the combination with an outer and inner door, a camera having its lenses extending through the inner door from its inner face, an incandescent light located in proximity to the camera lenses, a motor, a normally open motor circuit, means operated by the opening of the outer door for closing the motor circuit, and means operated by the rotation of the motor for first lighting the incandescent light and subsequently operating the camera.

4. In a burglar alarm, the combination with an outer and inner door, a camera having its lenses extending through the inner door from its inner face, an incandescent light located in proximity to the camera lenses, a motor, a normally open motor circuit, means operated by the opening of the outer door for closing the motor circuit, a normally open circuit extending through the incandescent light, a rotating disk of conducting material to which one end of the open circuit is electrically connected, a contact finger forming the terminal of the other open end of the circuit, a block of insulating material freely intervening between the finger and the face of the disk, electro-magnetic means for operating the camera shutter, a normally open circuit therefor, a rotating disk driven from the motor, an electric connection between the terminal of the

electro-magnetic circuit and the disk, a band of insulating material surrounding the periphery of such disk having an open portion, a projection extending from the disk through such open portion, and a finger forming the other terminal of the electro-magnetic circuit bearing upon the periphery of the disk.

5. In a compartment having an inner door having an orifice therein and an outer door, a camera carried by the inner face of the inner door having its lenses opposite such orifice and having the usual shutter lever, and means operated by the opening of the outer door for operating the shutter lever.

6. In a compartment having an inner door having an orifice therein and an outer door, a camera carried by the inner face of the inner door having its lenses opposite such orifice and having the usual shutter lever, and means operated by the opening of the outer door for operating the shutter le-

ver at a predetermined interval after the opening of the outer door.

7. In a compartment having an inner door having a plurality of orifices and an outer door, a plurality of cameras carried by the inner door having a lens opposite such orifice and having the usual shutter levers, and means operated by the opening of the outer door for simultaneously operating the shutter levers of the cameras.

8. In a compartment having an inner door and having an orifice therein and an outer door, a camera carried by the inner face of the inner door having its lens opposite the orifice of the inner door and having a shutter lever, and electro-magnetically operated means operated by the opening of the outer door for operating the camera shutter lever.

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Witnesses:

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