Oct. 4, 1927. 1,644,124

F. H. GRUETTNER

AUTOMATIC FIRE ALARM SIGNAL

Filed Dec. 7, 1922 2 Sheets-Sheet 1



Fig. 1.

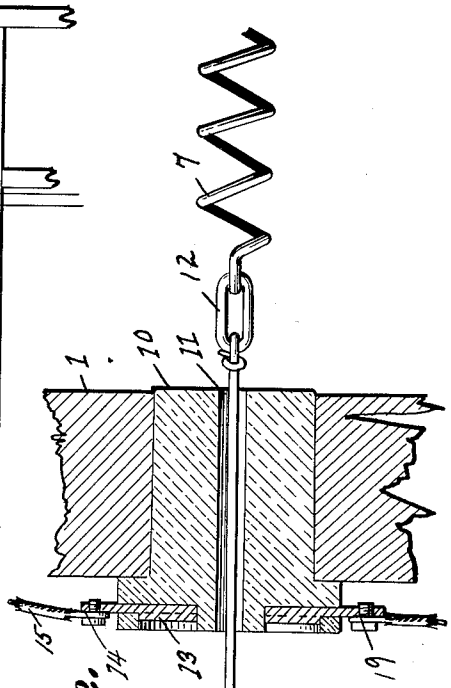
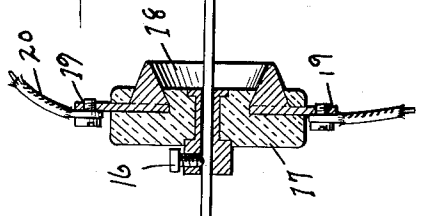


Fig. 2.



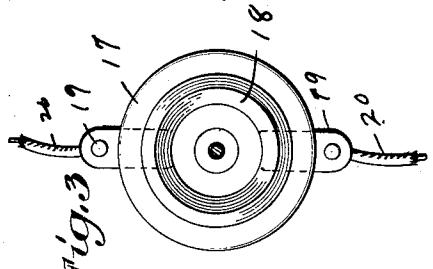


Fig. 3

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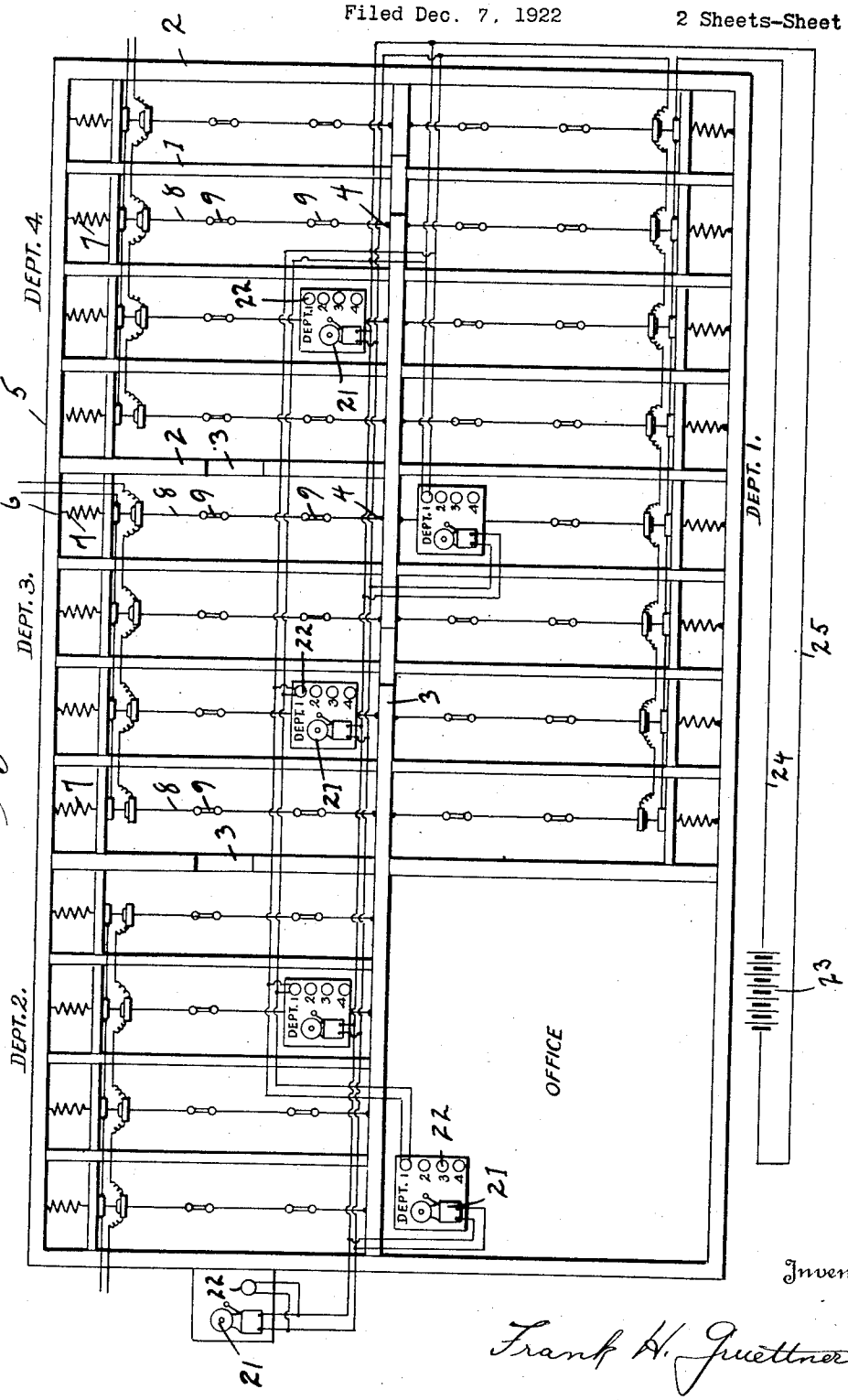

Fig. 4.

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Patented Oct. 4, 1927. 1,644,124

UNITED STATES PATENT OFFICE.

FRANK H. GEUETTNER, OF BUFFALO, NEW YORK.

AUTOMATIC FIRE-ALARM SIGNAL.

Application filed December 7, 1923. Serial No. 605,450.

This invention relates to improvements in automatic signal fire alarms, particularly adapted for use in factories, mills, department stores, and other large buildings, but also capable of use in connection with small buildings, such as residences, etc.

The principal object of this invention is to provide a fire alarm capable of being placed in buildings of the above indicated character, which will automatically sound an alarm in case of a fire starting in any room or compartment in the building.

A further object of my invention is to provide a signal fire alarm which will automatically sound a signal in every room or compartment of the building and which will indicate in every room or compartment the room or compartment in which the alarm has sounded from.

And a still further object of my invention is to provide a signal fire alarm which is adapted to close an electric circuit upon the starting of a fire in any room or compartment in the building in which same is installed, which in turn causes a bell to ring in each room and a light to be flashed for indicating the room from which the alarm has been sounded.

Another object of my invention is to provide means whereby a signal will be sounded on the outside of the building as well as on the inside, so that in case the watchman should for any reason fail to hear and see the signal, attention will be directed to the building by the outside alarm.

Still another object of my invention is to provide a signal fire alarm whereby means of communication may be had with fire headquarters for automatically sounding and giving an alarm in case of fire in any building equipped with my improved fire signal.

An additional object of the invention is to provide a fire alarm signal of the above indicated character, which is simple in construction, efficient for the purpose intended, and one which can be installed in buildings at a relatively low cost.

These and like objects of the invention will be better understood as the description follows and as is specifically pointed out in the appended claim.

Referring to the accompanying drawings which form a part of this specification,

Figure 1 is an enlarged plan view of my improved fire alarm, which is adapted to be installed in each room or compartment of a building.

Figure 2 is an enlarged sectional view of a portion of the electric circuit closing system.

Figure 3 is a plan view of the movable contact member, and

Figure 4 is a plan view of one floor of a building equipped with my improved fire alarm and signal indicating means.

Referring to the accompanying drawings in detail, like characters will be used to designate like parts in the different views.

In the drawings, the numeral 1 indicates the rafters of a building, and 2 the partitions separating the different floors of the building into rooms or compartments. The numeral 3 designates means of communication between the different rooms or compartments.

Secured to a central partition as at 4 and extending through the side partitions 5 and secured thereto as at 6 through a coil spring 7 are a series of wires 8. Positioned in each of the wires 8 at spaced intervals are a series of fuses 9, which are of such construction as to permit melting of the same in case the temperature in the room should reach an exceedingly high proportion.

Seated within one of the rafters 1 are a series of plugs 10, of insulating material (see Figure 2) having a central passageway extending therethrough as at 11, through which one of the wires 8 pass for engagement with the coil spring 7 as at 12 by means of a loop or ring. A contact plate 13 is positioned within a recess formed in one end of each of the plugs 10 and has an electric terminal on one side as at 14, to which an electric conductor 15 is connected.

Mounted on each of the wires 8 and held stationary thereon by means of the set screw 16 is a body member 17, of insulating material, having a contact plate 18 on its face opposing the contact plate 13. The contact plate 18 is provided with a terminal 19 having an electric conductor 20 connected thereto. The member 17 is held on the wire 8 in spaced relation from the plug 10 and contact plate 13.

In constructing the plugs and body members, the contact members 13 and 18 may be placed in molds of configurations so that when insulating material in a soft or plastic condition is poured or forced into the molds around the contact members 13 and 18, said

plugs and body members will be molded in the desired shapes. The molds may have recesses therein for receiving the portions of the terminals 14 and 19 extending beyond the plugs and body members which will also form a means for properly supporting the contact members in the molds.

When a fire starts in any compartment of the building equipped with this fire signal alarm, the fuse 9 is melted, thus allowing the spring 7 to move the wire and body member 17 along with the contact plate 18 in the direction of the contact plate 13, thus closing a circuit through the conductor wires 15 and 20 to sound an alarm in the form of a bell 21 in each room or compartment of the building and also on the outside of the building. In addition to sounding an alarm, a signal light is flashed as indicated by the numeral 22, the signal light 22 being positioned on a board along with the signal bell 21.

The numeral 23 indicates a battery having wires 24 and 25 running therefrom and adapted to be connected with the wires 15 and 19, for supplying the source of current for operating the signal and alarm.

If so desired, the bell 21 and light 22 may be positioned in police headquarters or fire headquarters, for immediately indicating therein upon the occurrence of a fire in any compartment or building equipped with this improved signal fire alarm.

In view of the foregoing description of my invention, taken in connection with the accompanying drawings, it is though that any further explanation as to the construction, operation, and objects of this invention is unnecessary.

While I have shown and described the preferred form of my invention, I realize that various minor changes may be resorted to, without departing from the spirit and scope of the invention as claimed, and therefore, I do not wish to limit myself to the exact details of construction shown, nor to the combination and arrangement of parts.

What I claim as new and desire to secure by Letters Patent is:

A switch for fire alarm apparatus comprising a plug of insulating material having a longitudinally disposed opening, the plug being provided at one end with a diametrically enlarged head portion having an annular groove, a contact plate located in the groove, a conductor slidably received in the opening, a body member mounted upon the conductor and disposed opposite the head of the plug and normally spaced therefrom, a fusible element connected with the conductor and serving to hold the body member spaced from the plug, a spring connected with the conductor and being under tension with a tendency to move the body member towards the plug, the body member having an annular groove, a contact member seated in said groove and having an edge portion projecting beyond the face of the body member and toward the plate which is received in the head of the plug.

In testimony whereof, I have affixed my signature.

FRANK H. GRUETTNER.