Aug. 26, 1924. 1,506,264

H. W. STECKEL

ELECTRIC ALARM

Filed July 23, 1923 2 Sheets-Sheet 1

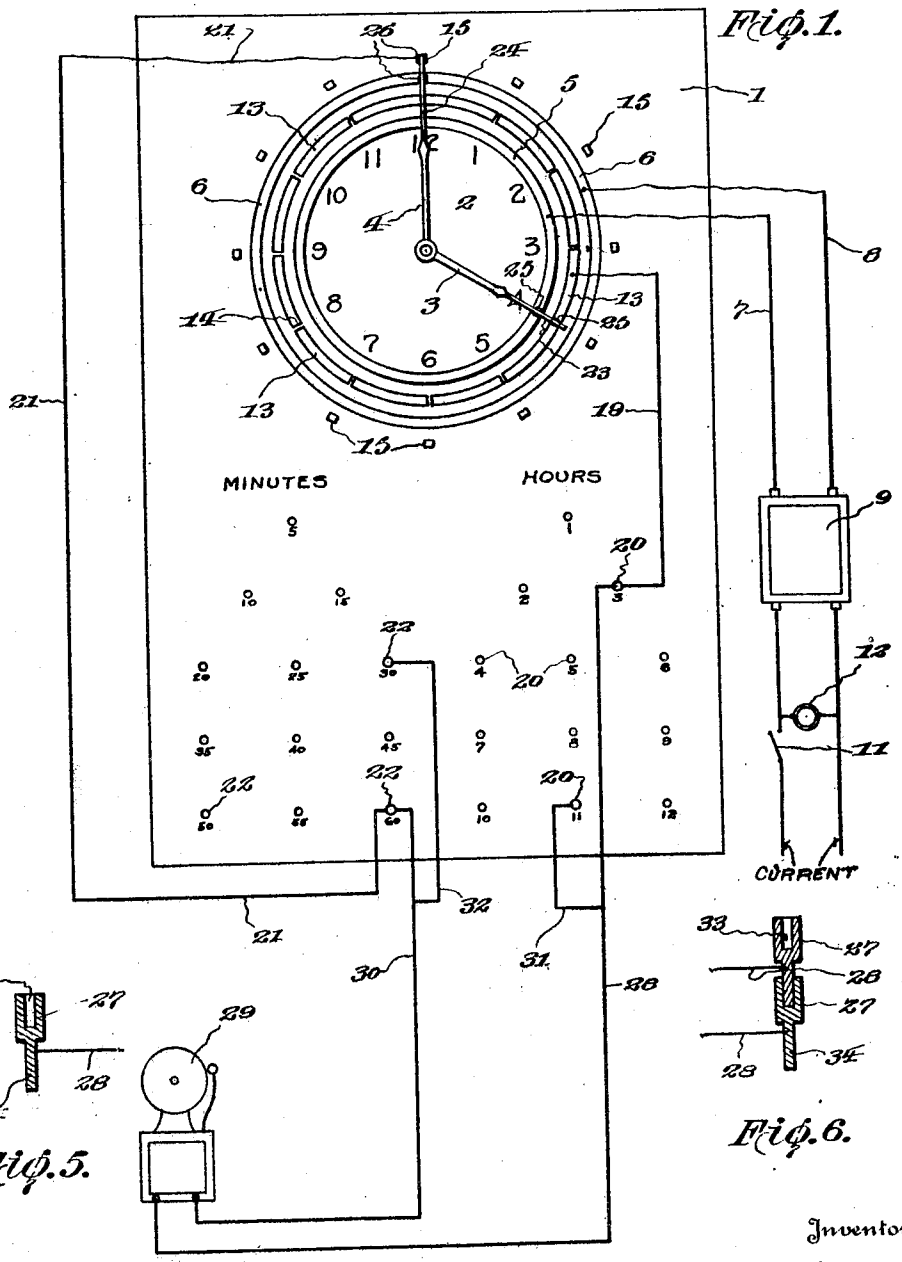


Fig. 1.

Fig. 5.

Fig. 6.

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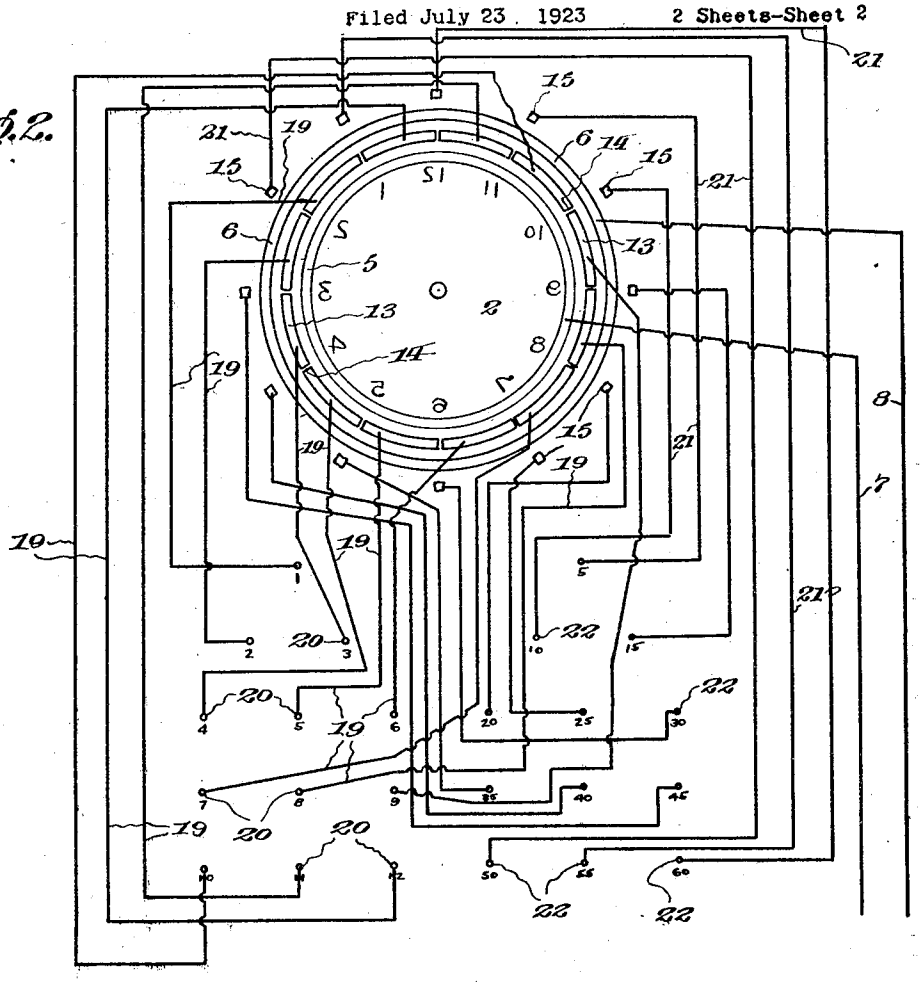
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Fig. 2.



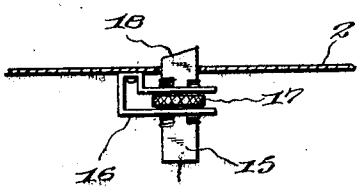


Fig. 3.

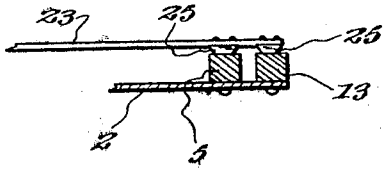


Fig. 4.

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Patented Aug. 26, 1924. 1,506,264

UNITED STATES PATENT OFFICE.

HARRY W. STECKEL, OF MUSKEGON, MICHIGAN.

ELECTRIC ALARM.

Application filed July 23, 1923. Serial No. 653,274.

To all whom it may concern:

Be it known that I, HARRY W. STECKEL, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented new and useful Improvements in Electric Alarms, of which the following is a specification.

This invention relates to an electric alarm mechanism for use in hotels, factories and the like for sounding an alarm or signal at any desired predetermined time at points at any desired distances from the time controlling mechanism.

One of the objects of this invention is to provide a device of this character whereby an alarm may be rung in the rooms of a hotel at any desired time by the use of a novel form of electrical contacts operated by the hands of a clock and having electrical connections with a switchboard therebeneath divided into respective hour and minute plug sockets.

Another object of the invention is to provide a novel form of a contact device for the minute hand, whereby the contact device is capable of adjustment for sounding an alarm for any predetermined length of time.

A further object of the invention is the provision of a dual contact means upon the hands of the clock for efficiently bridging the respective contact members for establishing circuits between the source of electricity and the predetermined selected bell or other alarm.

A still further object of this invention is the provision of a novel form of plug for the respective terminals employed in the system, whereby the plug may be used singly or any desired number may be telescoped or seated upon each preceding plug for sounding an alarm in any desired number of rooms, or the like, at the same predetermined time.

These and other objects will more fully appear and the nature of the invention will be more clearly understood from the construction described in the following specification, defined in the appended claims, and illustrated in the several views in the accompanying drawings, in which,

Figure 1 is a front view of the invention showing the switchboard, the clock mounted in the upper portion thereof, and the hour and minute plug sockets in the lower portion of the switchboard;

Fig. 2 is a rear view of the invention showing the manner of wiring the device for connecting the contacts of the clock with the respective plug sockets there-beneath;

Fig. 3 is a side view, partly in section, showing one of the adjustable contacts for the minute hand of the clock;

Fig. 4 is a side view, partly in section, showing the means provided upon the hands of the clock for bridging the contact members thereon;

Fig. 5 is a longitudinal section view showing one construction of the plugs employed at the terminals of the respective alarms or signals, and

Fig. 6 is a similar view to Fig. 5, but showing two of the plugs in telescopic or nested position upon each other for illustrating the manner in which a number of plugs may be superposed one upon the other for establishing a circuit in several separate alarm circuits for sounding the alarms at the same predetermined selected time.

Referring to the drawings, wherein similar reference characters denote corresponding parts throughout the several views, and referring in the first instance to Fig. 1 of the drawings, 1 indicates the switchboard which may be any preferred size and form and having mounted in the upper portion thereof a clock having the face 2, the hour hand 3 and the minute hand 4, the face 2 having the usual hour and minute designations. The face 2 of the clock is provided with an inner circular contact ring 5 and the outer contact ring 6, the contact rings 5 and 6 being connected by the respective wires 7 and 8 to one end of a suitable transformer 9, the opposite end of the transformer 9 being connected with a convenient source of electrical supply, the connections between the transformer and the source of the electric current having interposed therein a suitable switch 11 and if preferred a lamp socket 12.

Interposed between the contact rings 5 and 6 are a plurality of contact segments 13, the ends of which are insulated from each other as shown at 14. The contacts 13 are twelve in number representing one contact for each of the twelve hours. Also upon the face of the clock at the outer side of the contact ring 6 are a plurality of adjustable contact plugs 15 encircling the ring 6, there being twelve of the contacts 15, each representing five minutes of the sixty minutes in

each hour, the adjustable contacts 15 being clearly shown in detail in Fig. 3, wherein the adjustable contact 15 is shown mounted in a double arm bracket 16 secured upon the rear side of the clock face 2, the contact 15 being provided with threads engaged by an adjusting nut 17 for advancing or receding the contact 15 for presenting upon the front side of the clock face 2 any desired portion of its inclined face 18, whereby to regulate the desired length of the ringing of the alarms or signals.

Each of the hour contact segments 13 are connected by a wire 19 with a plug socket 20 in the lower portion of the switchboard. In the instance shown in Fig. 1, the three o'clock segment extending from the three o'clock point to the four o'clock point is connected by the wire 19 to the plug socket 20 which is the three o'clock plug socket. This illustration shown in Fig. 1 has been so shown as an example to more clearly define the connections between the hour segments and the hour plug sockets, as is likewise shown, the wire 21 connecting the sixty minute stud contact 15 with the sixty minute plug socket 22, it being understood that this wiring is located at the rear side of the clock and switchboard as fully shown in detail in Fig. 2.

The clock hands 3 and 4 are provided respectively with the spring extension members 23 and 24 upon the ends of the hands and insulated therefrom, the spring member 23 being shorter than the spring member 24 and each having upon their undersides the spaced contact members 25 and 26, respectively. The contacts 25 upon the spring member 23 are adapted to bridge the contact ring 5 and the contact segments 13, whereby to establish a circuit between the wire 7 through the contact ring 5, the contact segment 13, the wire 19 and the plug socket 20. The contact members 26 on the spring member 24 of the minute hand 4 are adapted to bridge the space between the outer contact ring 6 and one of the contact studs 15 for establishing a circuit between the main wire 8 through the contact ring 6, the contact stud 15, the wire 21 and the plug socket 22, so that when a plug 27 upon the end of the hour terminal wire 28 of the bell 29 is inserted in the plug socket 20 and a similar plug 27 at the end of the other terminal 30 of the bell 29 is inserted in the plug socket 22, the alarm bell 29 will be rung at approximately four o'clock when the parts are in the positions shown in Fig. 1. The just described operation is likewise performed by placing the plugs 27 of the terminals 28 and 30 of the bell 29 in others of the respective hour and minute sockets, whereby the alarm or signal 29 is adapted to be rung at any predetermined time. It is, of course, understood that any number of bells 29 and their respective terminals and plugs may be employed in accordance with the number of rooms in the hotel, factory or other like buildings, and as it may sometimes be necessary to ring one of the alarms 29 at two different predetermined periods of time, the terminals 28 and 30 of the bells 29 are provided with branch terminals 31 and 32, each being provided at their ends with a plug 27 so that the plugs of the branch terminals 31 and 32 may be inserted, for instance, in the eleven o'clock plug socket 20 and the thirty minute plug socket 22, respectively, and in this event a single bell 29 may be rung at four o'clock and again at eleven thirty o'clock. The bell would also ring at 12 and 3:30.

The novel form of plug 27 which I employ is formed with the socket 33 and the stem 34, the socket 33 and stem 34 being of suitable dimensions so that the lower portion of the stem 34 below its connection with the wire 28 may be received by the socket 33 for adapting the plugs to be nested one upon the other as clearly shown in Fig. 6 and hereinbefore described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character specified, the combination with a support, of a clock arranged in said support, plug sockets arranged in said support, alarms having means adapted to connect the same with said plug sockets, inner and outer contact rings upon said clock, contact segments between said inner and outer contact rings, contact studs surrounding said outer contact ring, means connecting said contact rings with a source of electrical supply, means for connecting said contact segments and said contact studs with said plug sockets, and contact members upon the clock hands for establishing an electrical connection between said inner ring and said segments and said outer ring and said studs for sounding an alarm at a predetermined time.

2. In a device of the character specified, the combination with a support, of a clock arranged in said support, hour and minute plug sockets arranged in said support, alarms having terminals adapted to connect the alarms with said hour and said minute plug sockets, inner and outer contact rings upon said clock, hour contact segments between said inner and said outer contact rings, minute contact studs surounding said outer contact ring, means connecting said contact rings with a source of electrical supply, means for connecting said hour contact segments with said hour plug sockets, means for connecting said minute contact studs with said minute plug sockets, contact members carried by the hour hand of the

clock for establishing an electrical connection between said inner contact ring and said hour segments, and contact members carried by the minute hand of the clock for establishing an electrical connection between said outer contact ring and said minute studs, whereby to sound an alarm at a predetermined time.

3. In a device of the character specified, the combination with a support, of a clock aranged in said support, hour and minute plug sockets arranged in said support, alarms having terminals adapted to connect the alarms with said hour and said minute plug sockets, inner and outer contact rings upon said clock, hour contact segments between said inner and said outer contact rings, adjustable minute contact studs surrounding said outer contact ring, means connecting said contact rings with a source of electrical supply, means for connecting said hour contact segments with said hour plug sockets, means for connecting said adjustable minute contact studs with said minute plug sockets, contact members carried by the hour hand of the clock for establishing an electrical connection between said inner contact ring and said hour segments, and contact members carried by the minute hand of the clock for establishing an electrical connection between said outer contact ring and said adjustable minute studs, whereby to sound an alarm at a predetermined time.

4. In a device of the character specified, the combination with a support, of a clock aranged in said support, hour and minute plug sockets arranged in said support, inner and outer contact rings upon said clock, hour contact segments between said inner and said outer contact rings, adjustable contact studs surrounding said outer contact ring, means for connecting said contact rings with a source of electrical supply, means for connecting said hour contact segments and said minute contact studs with said plug sockets, alarms having terminals provided with plugs adapted for telescopic connection with each other for engaging the respective hour and minute plug sockets, and contact members upon the clock hands for establishing an electrical connection between said inner and outer contact rings respectively with said contact segments and said contact studs, whereby to sound an alarm or a number of alarms at different predetermined times or to sound an alarm or a number of alarms at the same predetermined time.

In testimony whereof I affix my signature.

HARRY W. STECKEL.