

G. S. WILLIAMSON.
 SIGNAL SYSTEM.
 APPLICATION FILED AUG. 23, 1912.

1,063,096.

Patented May 27, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

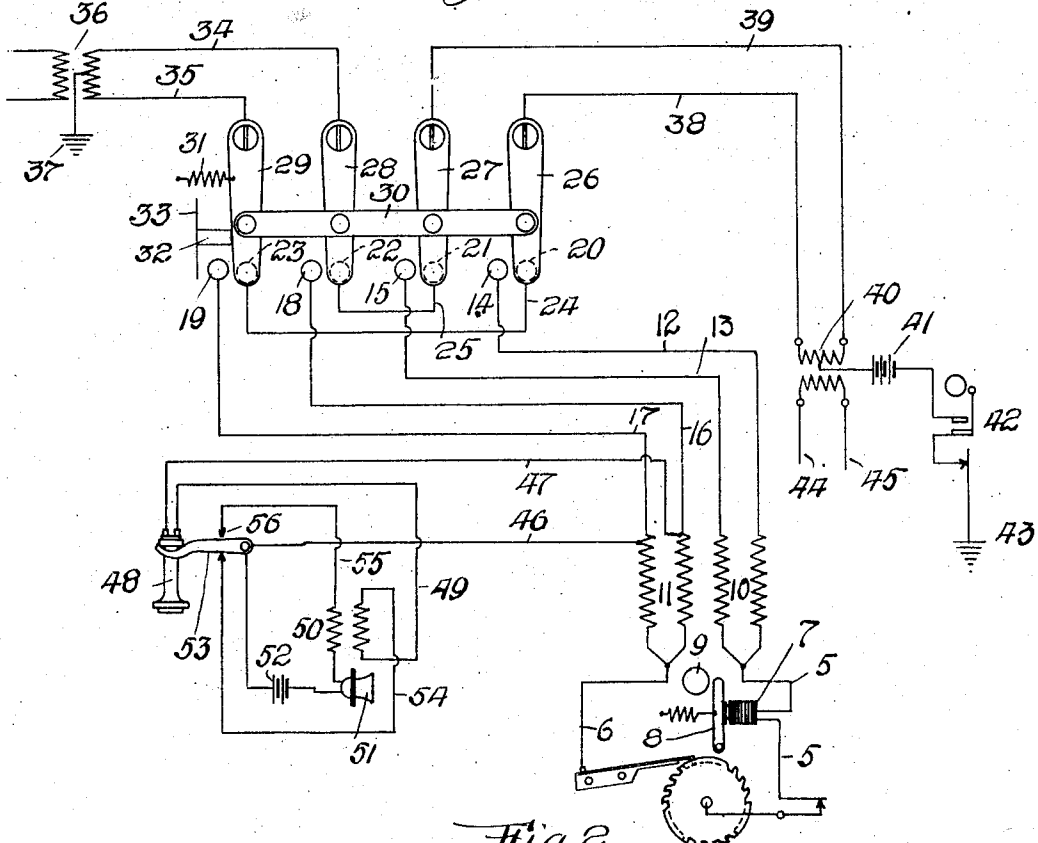
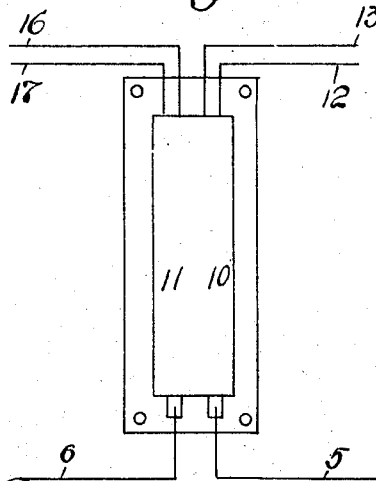


Fig. 2.



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2 SHEETS—SHEET 2.

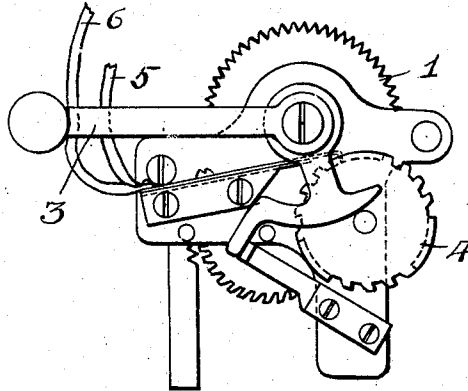


Fig. 3.

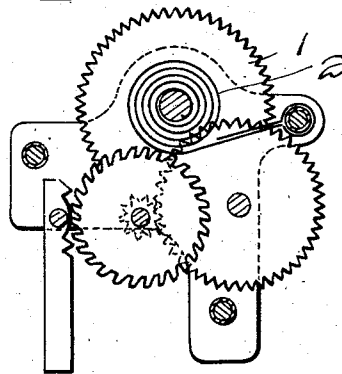


Fig. 4.

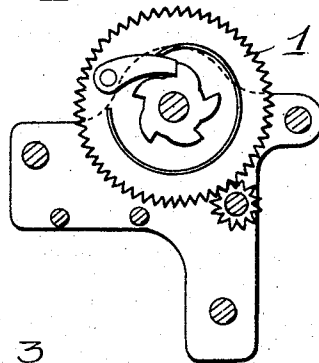


Fig. 5.

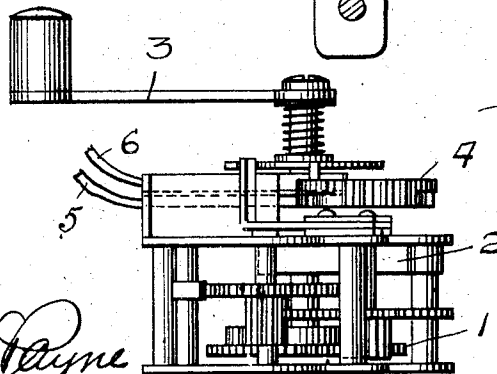


Fig. 6.

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UNITED STATES PATENT OFFICE.

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SIGNAL SYSTEM.

1,063,096.

Specification of Letters Patent.

Patented May 27, 1913.

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To all whom it may concern:

Be it known that I, GEORGE S. WILLIAMSON, a citizen of the United States of America, residing at McKeesport, in the 5 county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Signal Systems, of which the following is a specification, reference being had therein to the accompanying 10 drawing.

This invention relates to a signal system especially designed for municipal use as a combined telephone, telegraph and alarm apparatus such as ordinarily used in connection with police and fire departments. 15

My invention aims to provide, first, a non-interfering fire and police alarm system that permits of a talking circuit being maintained from which alarms or signals can be sent without interfering with call boxes throughout the system. Second, a system that can be used in connection with the present type of fire alarm boxes by providing boxes with a switch released when the 25 door of the fire alarm box is opened. Third, a system wherein a repeater coil is utilized for maintaining separate and independent telephone and telegraph circuits that are cut in on a main line circuit by a novel switch. 30 Fourth, a signal system that obviates the necessity of maintaining separate telephone and telegraph stations throughout a city independently of the fire alarm system. Fifth, a signal system that can be used in connection with the present street wiring of the fire alarm system for maintaining a closed talking circuit when boxes are not in use. 35

My invention further aims to accomplish the above results by a mechanical construction that will be hereinafter specifically described and then claimed. 40

Reference will now be had to the drawings wherein there is illustrated a preferred embodiment of my invention, but it is to be understood that the structural elements are susceptible to such changes in form, proportion and minor details as fall within the scope of the appended claim. 45

In the drawings: Figure 1 is a diagrammatic view of the electric circuits used in connection with the system, Fig. 2 is a diagrammatic elevation of a repeater coil forming part of the apparatus, and Figs. 3 to 6 inclusive are detail views of an alarm mechanism 50

used in connection with a fire alarm call box. 55

As heretofore stated, the signal system and the apparatus employed for producing the same is applicable to different types of call boxes therefore I have deemed it unnecessary to illustrate a casing of a box, but have illustrated in Figs. 3 to 6 inclusive an alarm mechanism that can be operated or pulled to send in an alarm. The mechanism includes a train of gear wheels 1 actuated by a spring 2 that is placed in operation or under tension by a pull lever 3. The train of gears places in motion an alarm wheel 4, containing a "call" which is illustrated in Fig. 3 as "444." The alarm wheel 70 establishes a circuit through leading out wires 5 and 6, which are diagrammatically illustrated in Fig. 1. The leading out wire 5 is connected to an electro-magnet 7 having a spring actuated striking armature 8 that repeats the alarm in connection with a bell 9. The electro-magnet 7 and the leading out wire 6 are connected to repeater coils 10 and 11 of 45 ohms respectively. The repeater coil 10 is connected by wires 12 and 13 to contacts 14 and 15 respectively and the repeater coil 11 is connected by wires 16 and 17 to contacts 18 and 19 respectively. Associated with these contacts are contacts 20, 21, 22 and 23, the contacts 20 and 23 being connected by a wire 24 and the contacts 21 and 22 by a wire 25. 85

The contacts 20 to 23 inclusive are normally engaged by pivoted contact arms 26, 27, 28 and 29 coupled together by a bar 30 whereby all of said arms can move in unison. The pivoted contact arms 26 to 29 inclusive constitute a switch and said switch is thrown in engagement with contacts 14, 15, 18 and 19 by a coiled retractile spring 31 connected to one of said arms. To retain the arms 26 to 29 inclusive normally in engagement with the contacts 20 to 23 inclusive a projection or pin 32 on the inner side of a box door 33 engages one of the arms and holds the switch in the position shown in Fig. 1 until the door of the call box is opened, at which time the switch is automatically thrown. The contact arms 28 and 29 are connected to main line wires 34 and 35 respectively having a repeater coil 36 one-half of which is grounded, as at 37. The contact arms 26 and 27 are connected to 105

main line wires 38 and 39 respectively that are in circuit with a repeater coil 40 and one-half of this coil is in circuit with a local battery 41, an alarm bell 42 and a ground 43. The repeater coil can be in circuit through the medium of wires 44 and 45 with a main office telephone.

Connected to the repeater coil 11 are wires 46 and 47, the latter being connected to a telephone receiver 48 which is connected by a wire 49 to a coil 50. The coil 50 is in circuit with a transmitter 51, a local battery 52 and a switch arm 53, which is connected to the wire 46. The coil 50 is also connected by wires 54 and 55 to contacts 56 of the switch arm 55. This telephone apparatus is of the ordinary type used in police call boxes and is associated with the alarm mechanism whereby a talking circuit can be used during the sending of an alarm to headquarters. By reference to Fig. 1 it will be observed that the position of the switch arms 26 to 29 inclusive maintains the circuit through the main line wires 34, 35, 38 and 39 by reason of the wires 24 and 25, consequently the talking circuit through these wires is not interfered with by the call box being closed or inactive.

It is thought that other circuits of the apparatus will be apparent without further description and that the operation will be understood without specifically tracing the circuits.

What I claim is:—

In a non-interfering alarm system, two

pairs of contacts, a pair of leading-out wires, a magnet interposed in one of said leading-out wires, a repeater coil of forty-five ohms connected to each of said wires, an alarm mechanism for establishing a circuit through said wires, a pair of circuit wires leading from each pair of contacts to a coil, a row of contacts arranged with the outer contacts of the row connected together and the inner contacts of the row connected together, a normally locked spring controlled switch including four contact arms connected together for moving in unison and normally engaging the contacts of said row for normally closing a main line circuit for the sending of an alarm, a pair of main line circuit wires leading to two of said arms and having interposed therein a repeater coil with one-half grounded, a pair of main line circuit wires leading from the other two arms and having a repeater coil interposed therein with one-half grounded, a telephone circuit leading to one of the first mentioned repeater coils, and said switch when released having the arms thereof engaging said pairs of contacts for maintaining the main line circuit closed for closing the telephone circuit through said main line circuit.

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

GEORGE S. WILLIAMSON.

Witnesses:

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