

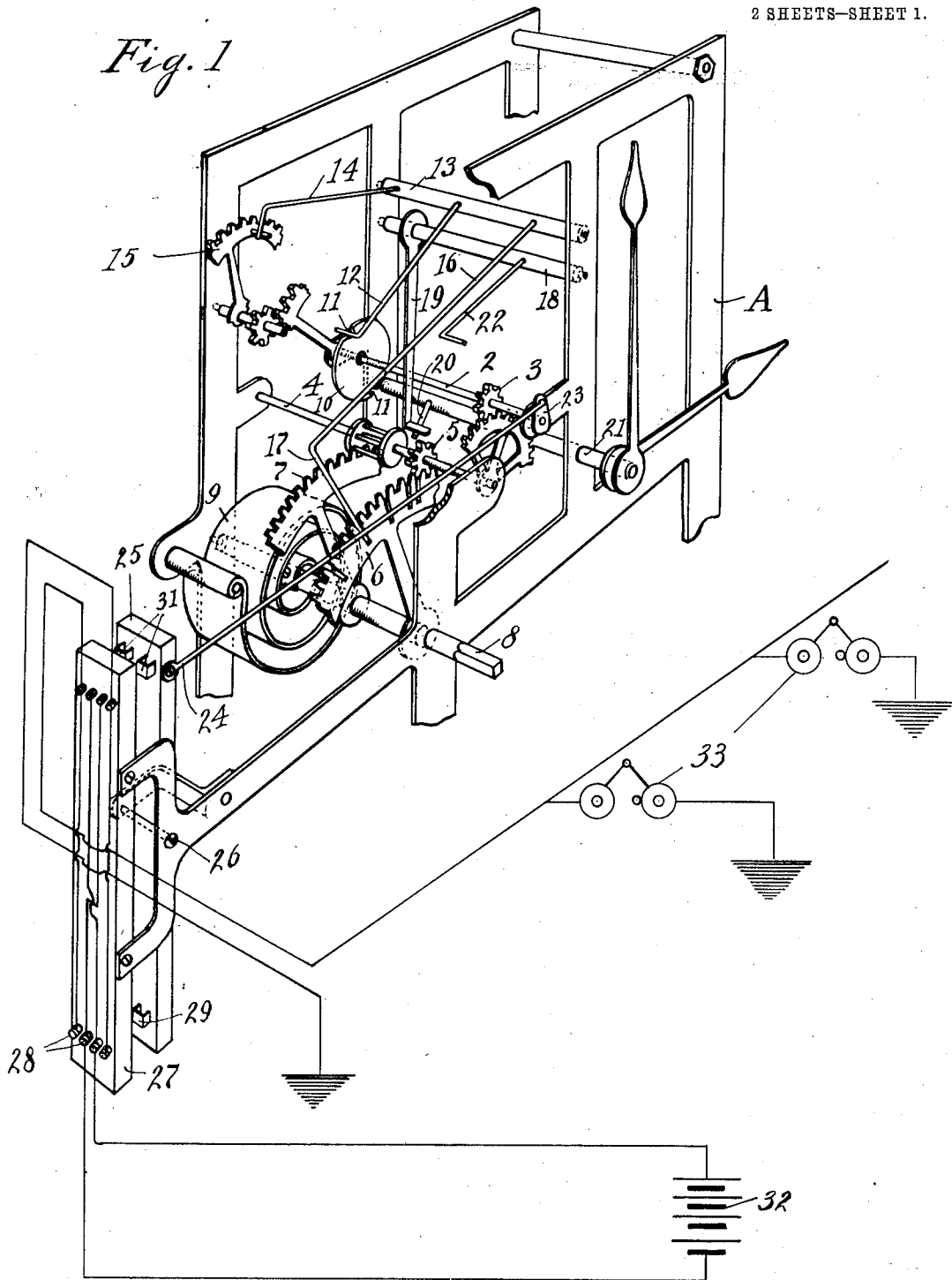
W. POTHEN.
 TELEPHONE TIME SIGNAL.
 APPLICATION FILED JUNE 10, 1911.

1,059,758.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS-SHEET 2.

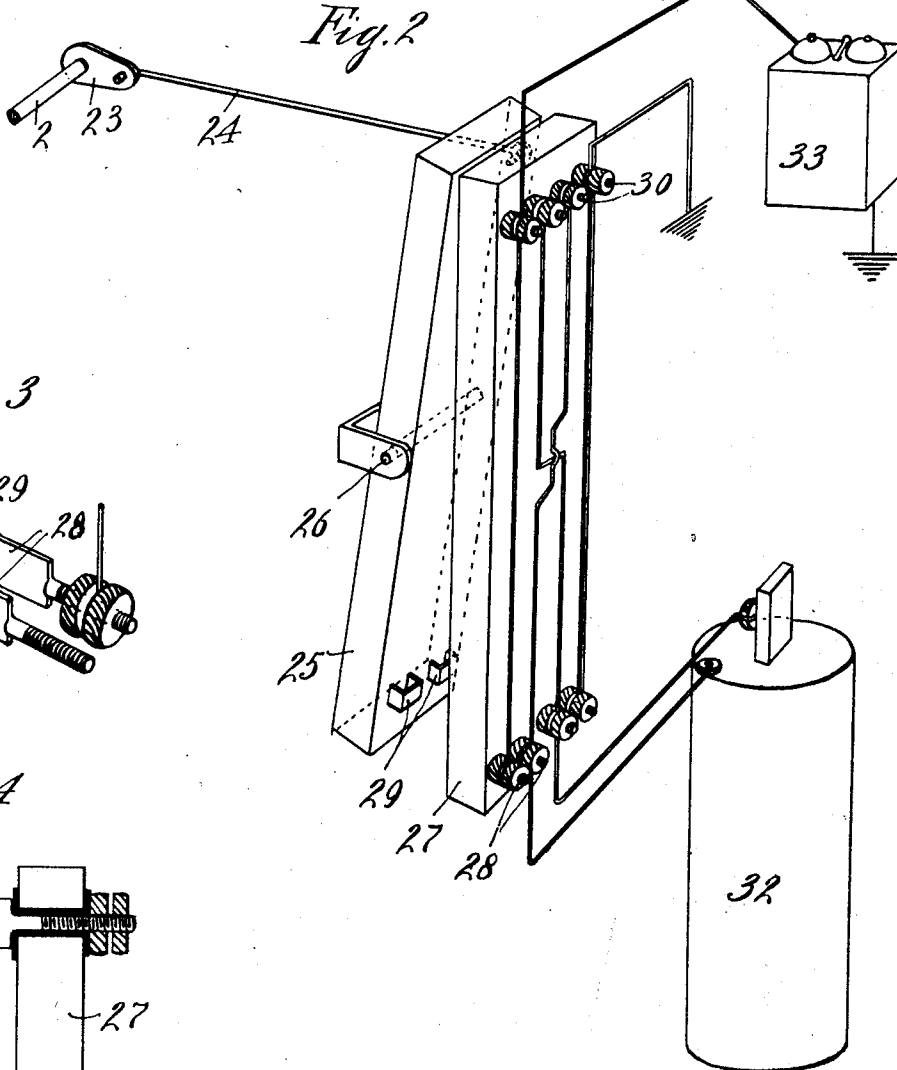


Fig. 3

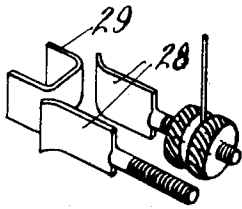


Fig. 4

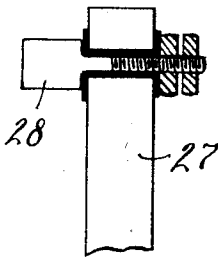
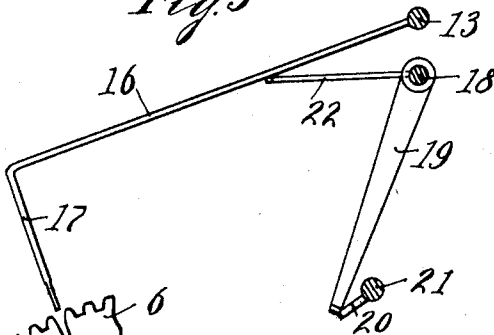


Fig. 5



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UNITED STATES PATENT OFFICE.

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TELEPHONE TIME-SIGNAL.

1,059,758.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed June 10, 1911. Serial No. 632,453.

To all whom it may concern:

Be it known that I, WILLIAM POTHEN, a citizen of the United States, residing at Murdock, in the county of Swift and State of Minnesota, have invented certain new and useful Improvements in Telephone Time-Signals, of which the following is a specification.

My invention relates to improvements in means arranged in connection with telephone systems for ringing the bells of the sub-telephones from the central station to signal the hours, and consists particularly of a clock arranged in connection with the system at the central station and means actuated from the striking mechanism of the clock to make and break the circuit to ring the bell at the sub-station.

To this end the invention consists in the features of construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 represents a perspective view of a clock and associated devices arranged in connection with the system at the central station; Fig. 2 is a perspective view of a portion of the mechanism for sending the signals; Figs. 3 and 4 are detail views of contacts forming part of the mechanism; and Fig. 5 is a detail view of a portion of the alarm mechanism of the clock.

Referring to the drawings A represents an ordinary clock embodying one form of hour striking mechanism. This striking mechanism embodies a shaft 2 having gear connection 3 with a supporting shaft 4 which carries a pinion 5 intermeshing with the toothed strike regulating wheel 6. The shaft 4 is connected by gearing 7 with the supporting shaft 8 which is connected with the framework by the ordinary spring 9. Mounted upon the shaft 2 is a disk 10 formed with depressions 11 in its periphery. A finger 12 carried by a shaft 13 journaled in the framework rides at its free end upon the periphery of the disk 10. Said shaft 13 also carries a suitable locking arm 14 for engaging with the train of gears 15 connected with the shaft 2. An arm 16 is carried by the shaft 13 and provided with a downwardly bent end 17 which coöperates with the teeth of the strike regulating wheel 6. A shaft 18 journaled below the shaft 13 carries a downwardly extending arm 19, the

free end of which is adapted to be engaged by a post 20 carried by the minute hand arbor 21 whereby as the post 20 engages and turns upwardly the free end of the arm 19 it will thereby turn the shaft 18 and turn an arm 22 carried by said shaft against the arm 16 to release the same from the strike regulating wheel and simultaneously release the locking arm 14 from the train of gears. The strike mechanism operates in the usual way, i. e. when the minute hand arbor brings the post 20 into position turning the arm 19 and releasing the locking arm 14, the actuating spring of the striking mechanism will actuate the parts until the downwardly bent end of the arm 16 drops into the next succeeding deep slot of the strike regulating wheel to again allow the locking arm 14 to drop into locking position. The amount of rotation of the shaft 2 will of course be in proportion to the distance between the slots and thus regulate the strikes.

In carrying out my invention I mount upon the outer end of the striking shaft 2 a crank arm 23 to which is pivoted one end of a link 24, the other end of the link being pivotally connected with the upper end of a contact lever 25. The contact lever 25 has central pivotal support 26. Opposed to the contact lever 25 and arranged in coöperative relation therewith is a fixed contact bar 27 having at one end a pair of contacts 28 adapted to be engaged by coöperating contacts 29 carried by the opposite end of the pivoted lever. Similar contacts 30 and 31 are carried by the opposite ends of the levers. The contacts 28 and 30 are respectively connected as shown in Fig. 2 with a battery 32 and the magnet of the striking bell mechanism 33 arranged at the station where the telephone apparatus is to be actuated.

In operation, as the shaft 2 of the striking mechanism of the clock is turned at the striking of the hour it will actuate the contact lever 25 through the medium of the crank 23 and link 24. For each half of a revolution of the disk 10 which corresponds with one tooth revolution of the strike regulating wheel 6, the lever contact bar 25 will be turned on its pivotal support, alternately bringing its opposite ends into contacting relation with the fixed bar and thus complete the circuit for each hour's strike of the striking mechanism of the clock. Each closing of the circuit will make a single ring

of the call bell at the receiving telephone. With the parts as shown in Fig. 2, the circuit will be traced as follows: from the left hand contact of the battery 32 to the inner
 5 left hand contact 28, thence to the inner right hand contact 30 and through the co-operating contact 31 to and through the outer right hand contact 30 to the ground, the opposite side of the circuit being made
 10 from the right hand contact of the battery 32 to and through the inner right hand contact 28 to the inner left hand contact 30, thence through the engaging contact 31 and
 15 outer left hand contact 30 to the bell mechanism 33. As shown an alternating current system is used, causing the current to pass through the electromagnet in opposite directions to alternately carry the striker
 20 against the two bells of the signaling apparatus 33. It will thus be evident that as the striker mechanism of the clock is actuated in the usual manner to strike off the hours the call bell at the receiving station
 25 may by my features of improvement be actuated to give the corresponding number of signals.

I claim as my invention:

30 1. In combination with a circuit and contained alarm, of a clock arranged in connection with the circuit, a circuit changer arranged in connection with the circuit comprising a fixed contact arm, and a coöper-

ating pivoted contact arm, contacts carried by the opposite ends of the pivoted arm, said contacts carried by the pivoted arm not
 35 being included in the circuit, and a reciprocating connection between said movable contact and the striking mechanism of the clock for turning said movable contact arm on its pivot to alternately bring the contacts
 40 at the opposite ends of said arm into relationship with the contacts of the fixed arm to make and break the circuit supported to sound an alarm.

2. The combination with a circuit and a
 45 contained alarm, of a clock arranged in connection with the circuit, a circuit changer arranged in connection with the circuit and comprising a fixed contact arm and coöper-
 50 ating movable contact carrying arm, a crank rotatably connected with the striking mechanism of the clock, and an operative connection between the free end of said crank and
 55 said movable contact carrying bar, whereby to turn the pivoted arm on its pivot into co-operation with the fixed arm for the purpose described.

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

WILLIAM POTHEN.

Witnesses:

GEORGE VOELKER,
 H. S. JOHNSON.