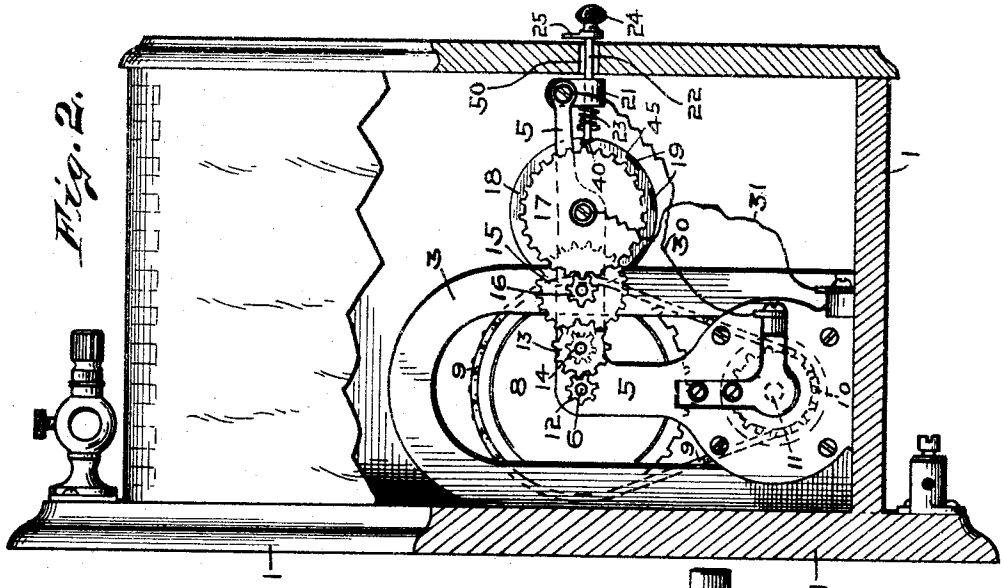
No. 781,194. PATENTED JAN. 31, 1905.

L. V. ELLIOTT.

AUTOMATIC CODE RINGER FOR MAGNETO SIGNAL BELLS.

APPLICATION FILED FEB. 20, 1904.

Fig. 2.



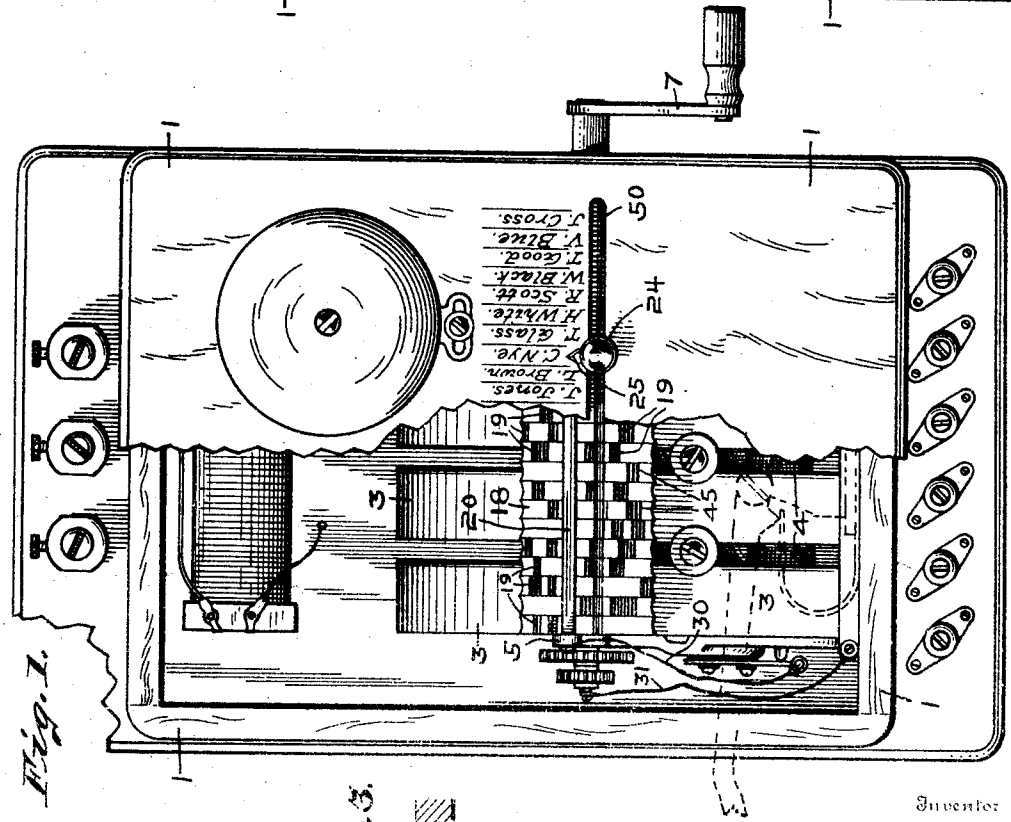
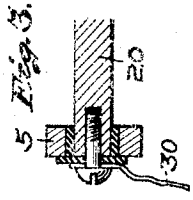


Fig. 1.

Fig. 3.



Witnesses

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Attorney.

No. 781,194. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

LARKIN V. ELLIOTT, OF INDIANAPOLIS, INDIANA.

AUTOMATIC CODE-RINGER FOR MAGNETO SIGNAL-BELLS.

SPECIFICATION forming part of Letters Patent No. 781,194, dated January 31, 1905.

Application filed February 20, 1904. Serial No. 194,542.

To all whom it may concern:

Be it known that I, LARKIN V. ELLIOTT, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Code-Ringers for Magneto Signal-Bells, of which the following is a specification.

This invention relates to automatic code-ringers for magneto signal-bells, and is particularly adapted to be used in connection with rural telephones, where generally a plurality of telephonic instruments are connected to a single wire for handling communications between the several instruments, whereby the cost of putting into operation and the maintenance of the system is greatly reduced over a system employing an independent wire for each instrument.

The object of this invention consists in providing each instrument connected to a single wire with a code which permits as many different signals to be secured as there are instruments, so that each subscriber is insured a signal which differs from any one of the others. The mechanism employed for securing the signals is so arranged as to be within easy access of the user, who can quickly and effectually manipulate the mechanism to secure the proper signal for the person desired.

The nature of the invention and the arrangement and construction of the various parts will first be fully described and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar numerals of reference indicate similar parts, Figure 1 is a partial front elevation and a partial section of a telephone-box and shows my automatic code-ringer in operating position. Fig. 2 is a partial side elevation and a partial sectional view of the construction shown in Fig. 1. Fig. 3 is a fragmentary detail view of the guide-rod for holding the recording-needle and shows the construction for mounting said rod in insulated bearings.

In the drawings, 1 is the telephone-box of an old and well-known construction and is employed for housing the magnet and signaling mechanism. An ordinary magnet, comprising the field 3 and revoluble armature excited by the magnet, supports the signaling mechanism by means of the brackets 5. A bracket 5 is secured to each side of the magnet for carrying the revoluble drum hereinafter described. The bearings 5 also support the crank-shaft 6, by which means the drum and armature are operated. A crank 7 is secured to the shaft 6 and is arranged outside the box 1, so as to be within reach of the operator. The crank-shaft 6 is provided with the sprocket-wheel 8, and by means of the sprocket-chain 9, that leads to the sprocket-wheel 10 on the armature-shaft 11, the armature is operated. The crank-shaft 6 on the end opposite the one carrying the crank 7 is provided with the pinion 12, and through the peculiar arrangement of the pinions 13, 14, 15, 16, and 17 the rotation of the pinion 17 is greatly reduced. The pinion 17 is rigidly secured to the crank-shaft that carries the revoluble drum 18. The drum 18 is preferably made circular in form and has its periphery formed of a series of circumferentially-disposed concave grooves. These grooves lie parallel with one another and are provided with depressions or notches 45 at intervals, which are cut into the face of the drum. These notches 45 permit the insertion of any suitable insulating-plugs 19, which are subsequently dressed down to conform with the curvature of the drum to present a smooth surface. I may state that the grooves in the drum 18 are preferably made concave. However, they may be made convex or flat, as desired, and instead of placing the insulating-plugs 19 into the notches 45 these plugs may also be dispensed with, in which instance I employ the gaps or spaces created by the removed plugs for interrupting the electric current, which will be hereinafter more particularly described. The drum 18 is also provided with a longitudinal insulated groove 40, which forms a seat for the contacting needle and marks the termination of a complete revolution of the drum. The drum 18 is given a complete revolution when signaling, so that the several insulated plugs or gaps in a given groove are brought into play to secure a given signal.

A rod 20, suitably mounted in insulated bearings (see Fig. 3) in the brackets 5, stands adjacent and parallel with the drum 18. This rod is preferably formed square, so as to prevent rotating, and is also provided with the adjustable block 21, which carries the adjustable needle 22, that bears on the drum 18. The block 21 has longitudinal movement on the rod 20, but is prevented from rotating by means of the square formation of the rod 20. As before stated, the block 21 carries the needle 22, which has the lower end formed to correspond and engage the concave grooves in the periphery of the drum 18. The needle is held into contact with the drum by means of the spring 23. The upper end of the needle 22 extends through a slot 50 in the box 1 and is provided at the top with a pointer 25 and the knob 24, by which the needle may be shifted. Examining Fig. 1 of the drawings, it will be seen that the box 1 is provided on its face with a series of names which represent the several subscribers on the line and correspond with the number of grooves in the periphery of the drum 18.

When it is desired to call a subscriber, the person calling moves the needle 22 by means of the knob 24 until pointer 25 overlies the name of the desired subscriber, when the mechanism is ready to be operated to secure the proper signal. As before stated, the needle during this operation stands in the insulated groove 40, and hence no circuit is formed between the drum and the needle. The parts now being in position, the operator turns the crank 7, which operates both armature and the drum 18 and which turning is continued until the drum has completed a revolution, during which time the needle 22 has been kept in constant contact with the drum. The needle has therefore traversed the length of one of the concave grooves and is again deposited into the longitudinal insulated groove 40. At the beginning of the rotation of the drum 18 the needle 22 after leaving the groove 40 immediately comes into contact with the metal periphery of the drum, when a connection is made and a signal given. This signal is continued while the needle is traversing the metal portion of the groove and is interrupted when the needle engages one of the insulations or gaps, and it will be readily understood that the length of the signal depends on the metal surface exposed to the needle, while the lapse of time intervening depends on the number of insulations or gaps, so that by lengthening one and shortening the other almost an unlimited number of codes can be secured. It may also be stated that the line-wires (not shown) are connected to the magnet in the old and well-known manner.

Having thus fully described my said invention, what I desire to secure by Letters Patent is—

1. In an automatic code-ringer for magneto signal-bells, a rotatable drum provided with a series of parallel circumferentially-disposed concave channels, circuit-breakers embedded in the periphery of the drum and lying within the concave channels, a bar mounted adjacent and parallel to the drum, a needle slidably mounted on the bar, means on the needle and operating to hold said needle in contact with the drum, and means in the surface of the drum to engage the needle and operating as a barrier for limiting the rotation of the drum.

2. In an automatic code-ringer for magneto signal-bells, a rotatable drum provided with a series of parallel circumferentially-disposed concave channels, circuit-breakers embedded in the periphery of the drum and lying within the concave channels, a bar mounted adjacent and parallel to the drum, a needle slidably mounted on the bar and in a radial-plane line to the axis of the drum, means on the needle to hold the latter in contact with the drum, and means in the surface of the drum to engage the needle and operating as a barrier for limiting the rotation of the drum.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 15th day of February, A. D. 1904.

LARKIN V. ELLIOTT. [L. S.]

Witnesses:
A. S. CHILL,
F. W. WOERNER