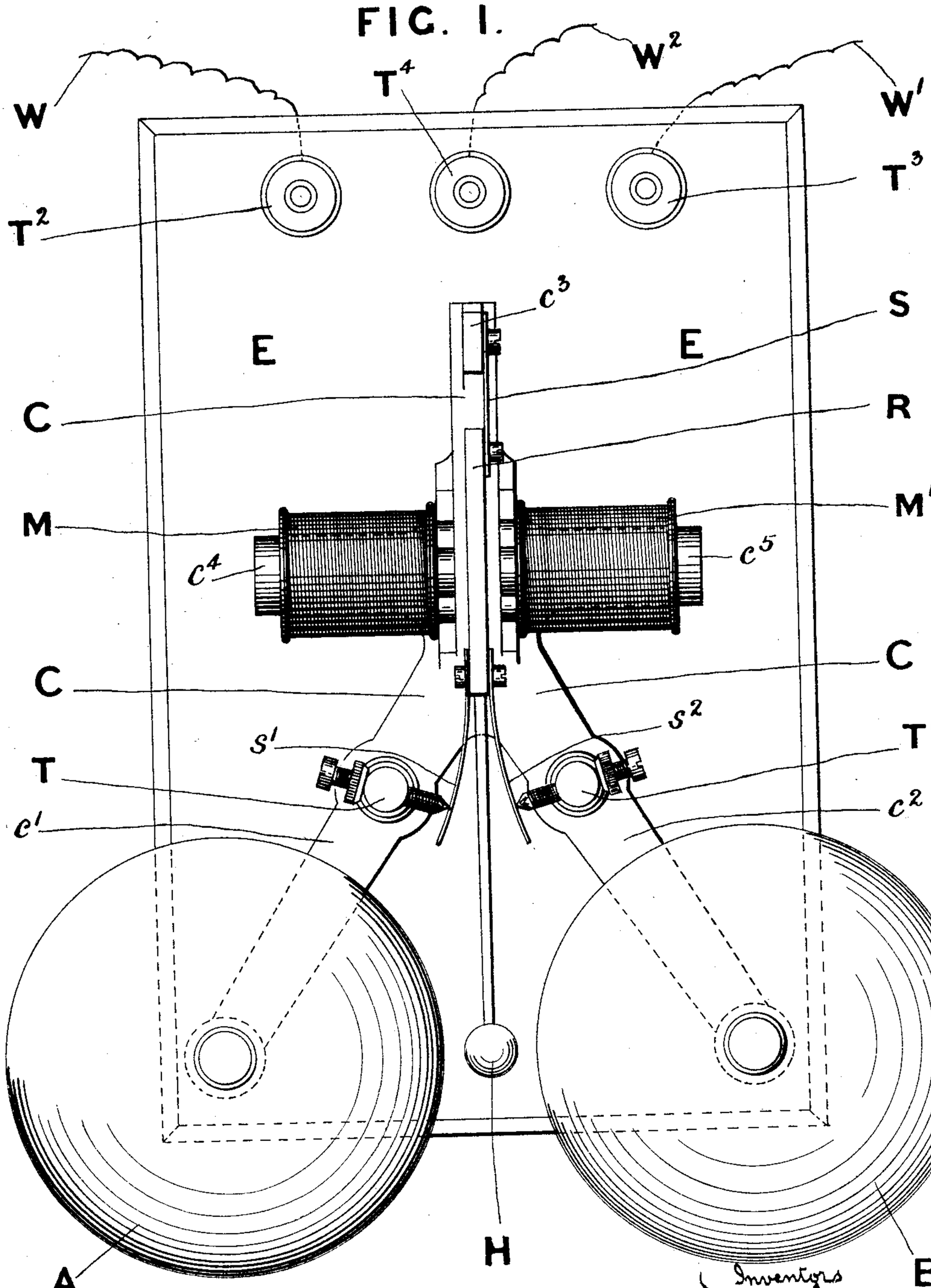
(No Model.) 2 Sheets—Sheet 1.

S. JEVONS & W. COLLINS.

BELL.

No. 589,897. Patented Sept. 14, 1897.

FIG. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Double Action Push

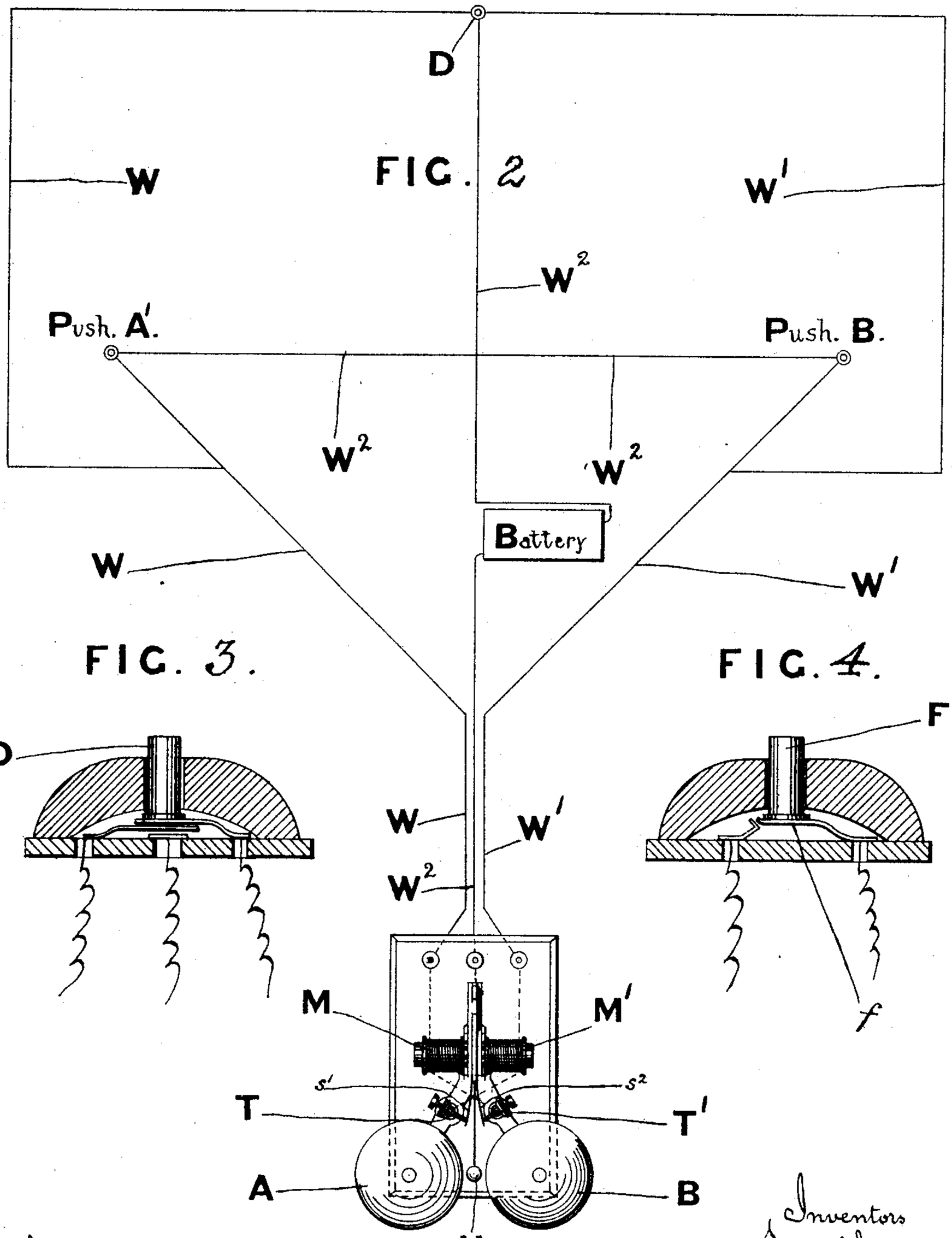

FIG. 2

FIG. 3.

FIG. 4.

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UNITED STATES PATENT OFFICE.

SAMUEL JEVONS AND WILLIAM COLLINS, OF BIRMINGHAM, ENGLAND.

BELL.

SPECIFICATION forming part of Letters Patent No. 589,897, dated September 14, 1897.

Application filed October 28, 1896. Serial No. 610,355. (No model.) Patented in England July 21, 1896, No. 16,404.

To all whom it may concern:

Be it known that we, SAMUEL JEVONS, electrical engineer, of the Minories, Birmingham, and WILLIAM COLLINS, electrical engineer, of 138 St. Paul's Road, Birmingham, in the county of Warwick, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in and Relating to Electrical Signaling Apparatus or Bells, (for which we have received Letters Patent in England, No. 16,404, dated July 21, 1896,) of which the following is a specification.

Our invention has for its object improvements in and relating to electrical signaling apparatus or bells by which we are enabled to indicate by distinctly different sounds and by means of one apparatus various rooms or positions from which the indication is made without the necessity of going to the indicator-register for the purpose and which is absolutely necessary with the present apparatus. We thus greatly expediate communications without complication.

In order that our invention may be clearly understood and more easily carried into practical effect, we have appended hereunto two double-sized sheets of drawings, upon one of which we have given an example of our apparatus in a compact form and upon the other a diagram showing one mode of connections for the said apparatus, as well as examples of such pushes as may be used to answer the purpose.

Figure 1 is a side elevation of our improved signaling apparatus attached to the usual bell-board E. Fig. 2 is a diagram view showing one arrangement of the connections between the battery and the signaling apparatus and the bell-pushes. Fig. 3 is a sectional elevation of a bell-push by which the two bells or gongs A and B may be struck simultaneously. Fig. 4 is a similar view to Fig. 3, showing a push which will produce two repeat-signals from one bell or gong, so as to multiply the distinct signals to be obtained from our new apparatus.

In carrying our invention into practice we mount bells or gongs A and B on the arms c' c^2, these arms forming part of the common base C, and which is fixed to the bell-board E. We then connect one end of the armature R to the tension-spring S, the other end of the spring being connected to the projecting blocks c^3, which also forms part of the base C. The hammer H for striking the bells or gongs is fastened or mounted to the other end of the armature R in the usual manner, and the contact-springs s' and s^2 are also connected to this end of the armature. Mounted on either side of the armature in the standard or hollowed blocks c^4 c^5 are two electromagnets M and M', coiled upon bobbins, which are also connected to the base and through which the electric current passes when signaling. The contact-pillars T and T' are mounted, respectively, on the arms c' c^2, and are in contact with the contact-springs—that is to say, the contact-pillar T with the contact-spring s' and the contact-pillar T' with the contact-spring s^2. The bell-wires W and W', carried to any different parts of any building or position in which the signaling apparatus is placed, are connected, respectively, to the terminals T^2 and T^3, fixed at, say, the top of the bell-board and the battery-wire W^2 to the return or battery terminal T^4.

In order to ring the bell or gong A, which is of course made so as to produce a very distinct sound from the bell B, we operate the bell-push A', which brings the bell-wire W into contact with the battery-wire W^2 and acts upon the electromagnet M, thus attracting the armature on that side and making and breaking the contact between the contact-spring s^2 and the contact-pillar T', by which means the hammer is made to repeatedly strike that particular bell or gong. The return-circuit is through the base C. The bell B is signaled in a similar manner by operating the bell B and push, the electric current passing along the bell-wire W' and operating through the electromagnet M', thus attracting the armature to that side which makes and breaks the contact between the contact-spring s' and the contact-pillar T.

In order to give a double signal, the bell-push D is operated, which brings both the bell-wires W and W' into contact with the battery-wire W^2, as clearly shown at Fig. 3, which brings both the electromagnets into action upon the armature, causing it to act alternately on both sides the making and-breaking contact between the contact-springs s' and s^2 and the contact-pillars T and T', respectively, by which means the hammer is made to strike both bells or gongs A and B re-

peatedly, which constitutes the third clearly-distinguished sound. Further distinguished sounds may be produced by bell-pushes in other parts of the same building on the principle shown in section at Fig. 4. By this mode we can obtain three more distinct signals. For instance, when the button or push F is pressed partly down it brings the bell-wire and the battery-wire into contact, and when it is pressed to its full extent the wires separate, and when the button is released it brings these wires into contact again as the push returns to its normal by the action of the spring *f*.

We may pivot the armature at the center and fix the bells or gongs A and B at each end of the armature and so produce a similar effect. It will be evident that two different-toned gongs or bells may be mounted on separate bases and connected up so that the three main distinguishing signals before mentioned may be obtained from the installation, but the one we have shown as an example is both compact and cheap in its construction. It will be evident that the hammer may be made to strike each bell or gong but once instead of a number of times from one contact, as is well known.

What we claim is—

In combination with the two bells, a single hammer arranged between them and common to both, the single armature attached to the hammer, a pair of magnets arranged to act on the common armature, the contact-pillars, one on each side of the armature, the contact-springs carried by the armature, a circuit and push-button for each magnet and contact-pillar, and a double push-button independent of the two first-mentioned and adapted to be located at any desired distance therefrom with circuit connections for closing both circuits to energize both magnets and sound both bells from the common hammer, substantially as described.

In testimony that we claim the foregoing as our own we have affixed our names in the presence of two witnesses.

SAMUEL JEVONS.
WILLIAM COLLINS.

Witnesses:
H. W. DENTON INGHAM,
GEORGE LESTER.