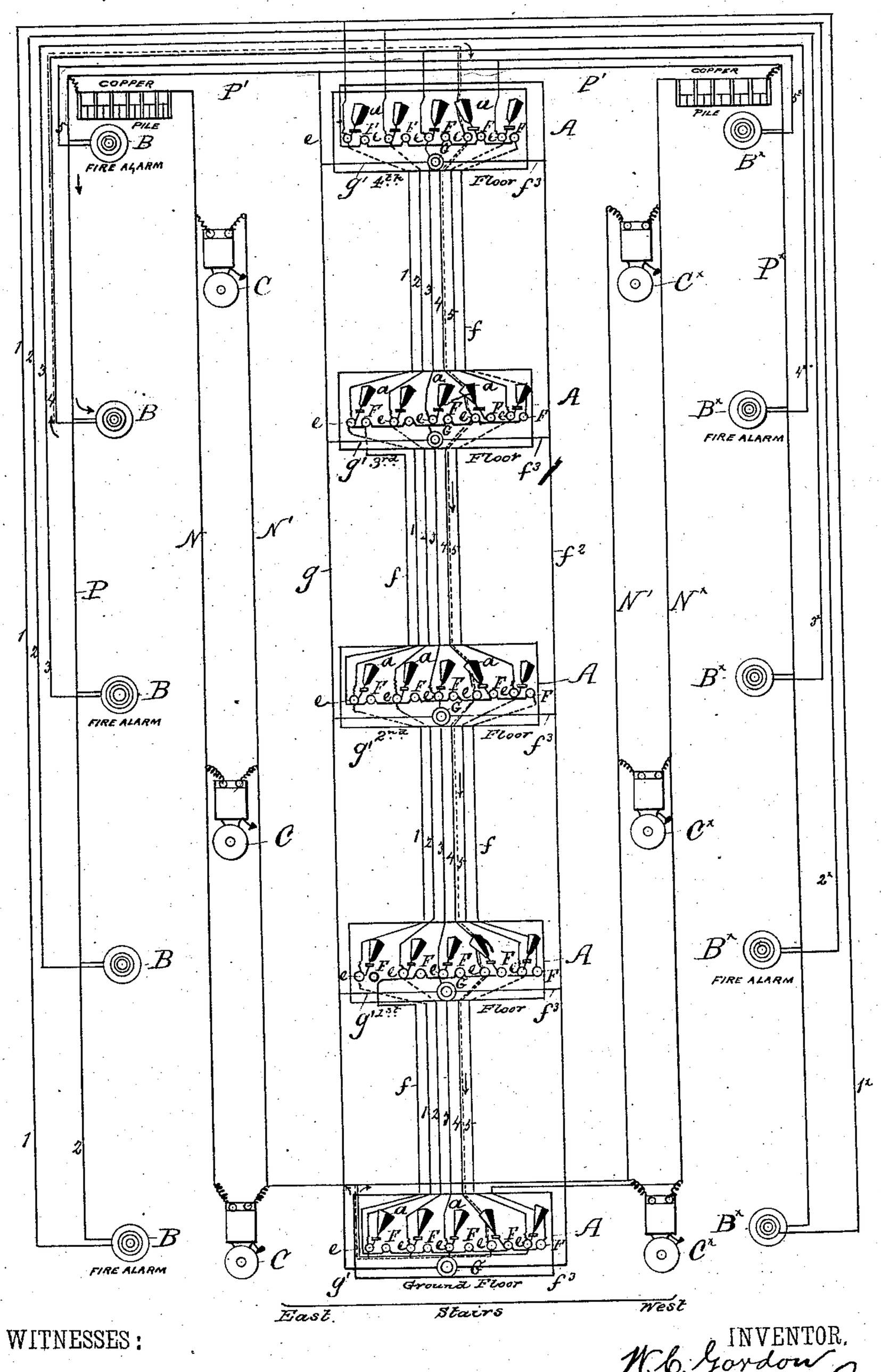
(No Model.)

W. C. GORDON.

ELECTRIC FIRE ALARM APPARATUS.

No. 287,664. Patented Oct. 30, 1883.



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WILLIAM CLEATHER GORDON, RESIDING AT THE LANGHAM HOTEL, COUNTY OF MIDDLESEX, ENGLAND.

ELECTRIC FIRE-ALARM APPARATUS.

SPECIFICATION forming part of Letters Patent No. 287,664, dated October 30, 1883.

Application filed April 23, 1883. (No model.) Patented in England January 5, 1883, No. 78, and in France January 27, 1883, No. 153,384.

To all whom it may concern:

Be it known that I, WILLIAM CLEATHER GORDON, a subject of the Queen of Great Britain, residing at the Langham hotel, in the county of Middlesex, England, have invented a certain new and useful Improvement in Electric Fire-Alarm Apparatus, of which the following is a specification.

This invention relates to improvements in electric fire-alarm apparatus for hotels and other large buildings or structures; and it has for its object to enable an alarm of fire to be originated at any floor of a building, and the locality or floor from which the alarm emanated to be indicated upon every other floor, and the alarm to be sounded simultaneously in various parts of the building, so as to call the attention of the fireman or other person in charge, in whatever part of the building he may happen to be, and at the same time convey immediate and precise information of the whereabout of the outbreak.

It has, further, for its object to enable all the indicators which have been so operated to be returned to their normal position from any one of them as an intimation that the fireman or other person in charge has heard and attended to the summons.

In order that the invention may be better understood, I will describe the same with reference to the accompanying diagram.

In carrying out the invention I provide upon every floor of the building, and in any convenient place, one or more indicators, A, each having as many signaling-apertures and corresponding signal-disks, *a*, as there are floors or parts of the building at which an alarm of fire is to be localized. In the example shown there are supposed to be five floors, and there are consequently five indicators A, each having five signal-disks *a;* and upon every floor or other part of a building I fix a push-piece or other form of circuit-closer, B, in a prominent position to enable any person to give an early alarm in case of need; and, lastly, in suitable parts of the building I provide any desired number of electric bells C.

The electrical apparatus for actuating the above-mentioned signaling indicators and bells in the manner described are of special arrangement, and are as follows: There are as many electrical circuits 1 2 3 4 5 as there are signal-disks *a* in any one indicator, the said circuits corresponding, respectively, to the different floors of the building, and each passing successively through the electro-magnet *e* in the several indicators of the first, second, third, or other signal-disk, denoting the particular floor to which the circuit corresponds, and all these circuits are connected in multiple arc with the main leads P and N from the poles of the battery or batteries. Each circuit between, say, its junction with the main lead P and the first indicator, is carried to any convenient point of the floor which the signal-disks upon said circuit are appropriated to denote, and at this point it is broken and provided with a push-piece, B, or other contact-maker, whereby the circuit may be closed and the signal-disks denoting that floor brought into view in all the indicators. In the circuit of the main lead N, between the last indicator of the series and the negative pole of the battery, I interpose a number of electric bells C, arranged in multiple arc between the two parts N N′ of the negative lead.

In very large buildings, when it is desired to ring bells at opposite extremities of the building, I prefer to use two batteries, as shown in the diagram, and two sets of push-pieces, B B$^{\times}$, and of electric bells C C$^{\times}$, situated at opposite ends of the building, in which case I connect the positive poles of the batteries by a wire, P′, and connect the positive leads P P$^{\times}$ to the said poles and branch the negative lead N at a point, *n*, between the last indicator and the two sets of bells, so that the current will divide and pass through both sets of bells in returning to the negative poles of the two batteries.

In the drawing the signal-disks on the third-floor circuit, No. 4, are represented as having been operated by a current whose course is indicated by the dots and arrows on that circuit.

To enable all the signal-disks which have been actuated to be returned to their normal position by closing a circuit at any one of the indicators, each indicator is provided with a set of reversing-magnets, F, one for each signal-disk, all these magnets being arranged in

series on the same circuit *f*, and connected at one end with the lead from the negative pole of one of the batteries, while a wire, f^2, from the other end is branched at f^3 to push-pieces or circuit-closers G, one upon each indicator, a wire, *g*, connected to the wire P′, which connects the positive poles of the battery, being similarly branched at *g′* to the said push-pieces, so that on the circuit being closed at any one of them a current will be passed through the whole series of reversing-magnets F of all the indicators, and will thus return any of the signal-disks *a* which may have been previously thrown over to their normal position. The signal-disks are carried by polarized needles pivoted so as to oscillate between the pairs of actuating and reversing electro-magnets *e* F.

What I claim is—

1. The combination, with a series of electrical indicators arranged upon several floors of a building and each provided with as many signal-disks as there are floors, of electrical circuits corresponding in number to the number of signal-disks on any one indicator, and circuit-closers equal in number to the number of indicators, each circuit-closer serving to operate a signal-disk on each indicator, substantially as shown and described.

2. The combination, with a series of electrical indicators arranged on the several floors of a building and each provided with as many signal-disks as there are floors, of electrical circuits corresponding in number to the number of signal-disks on any one indicator, circuit-closers equal in number to the number of indicators and interposed alarms, substantially as herein shown and described.

The foregoing specification of my improvement in electric fire-alarm apparatus signed by me this 28th day of February, 1883.

WILLIAM CLEATHER GORDON.

Witnesses:

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PERCY R. GOLDRING,

Both of 17 *Gracechurch Street, London, Notary's Clerks.*