

(No Model.)

O. H. NORTON.

FIRE ALARM TELEGRAPH SYSTEM.

No. 304,351.

Patented Sept. 2, 1884.

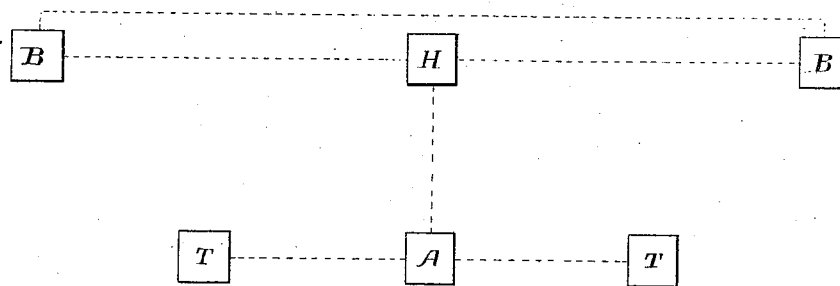


Fig. 1.

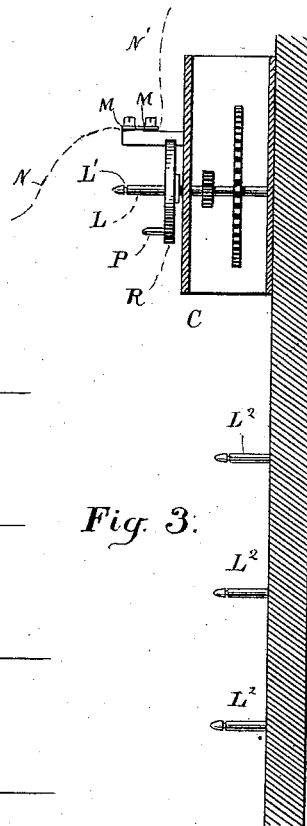
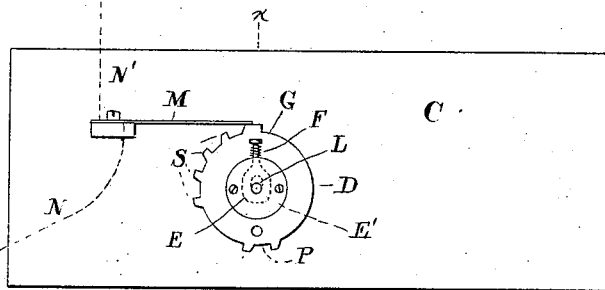


Fig. 3.

	10	20	30	
1	1 ○ L²	11	21 ○	31 ○ L²
2	2 ○	12 ○ L²	22	32 ○
3	3 ○ L	13 ○	23 ○ L	33
		λ	24 ○	34 ○ L²

Fig. 2.

Witnessed,

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# UNITED STATES PATENT OFFICE.

ORIN H. NORTON, OF PEORIA, ILLINOIS.

## FIRE-ALARM-TELEGRAPH SYSTEM.

SPECIFICATION forming part of Letters Patent No. 304,351, dated September 2, 1884.

Application filed June 7, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ORIN H. NORTON, of Peoria, in the county of Peoria, in the State of Illinois, have invented an Improved Fire-Alarm-Telegraph System; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference

refer to like parts, and in which—

Figure 1 represents a plan of my system; Fig. 2, a front elevation of my multiple alarm-sender; Fig. 3, a sectional elevation of same through *x x*.

The object of this invention is the devising of a system and the construction of mechanism therefor whereby any one of a number of telephones in different parts of a city can communicate an alarm of fire to a central station, from which an alarm can be struck upon the fire-bells in all the engine-houses and any public or city bells simultaneously. Such alarm shall of course indicate the exact locality of the telephone sending the same.

My invention consists of any number of telephones, each having an appropriate number inscribed thereon, circuit-wires communicating from them to the central fire-alarm station, and an instrument at said station whereby any one of said telephone-numbers can be struck simultaneously upon the different fire-alarm bells.

In Fig. 1 of the drawings, T T represent two of any number of telephones; A, the central telephone-station; H, the central fire-alarm station, and B B two of any number of fire-alarm bells. The dotted lines joining these points represent the circuit-wires. The telephones may be those regularly used at the residences, stores, offices, hotels, banks, and other buildings in different parts of the city, or they may be extra telephones supplied by the fire-department at any desired point to communicate an alarm of fire. Each telephone has affixed to it in plain sight a numeral, which, when that number shall be struck, will strike the same number upon the signal-bells at all the stations of the fire-department, and thereby indicate that it, among all the other telephones of the place, is the one to which the fire-department is called. To each telephone

there is to be affixed, also, a card showing the number of said telephone, which number is duplicated at the department headquarters, with the directions that in case of fire, or of an alarm of the same in the vicinity, the individual first at the telephone shall ring up the central telephone station and call "fire." This word shall be the signal for the alarming-telephone to be immediately put into communication with the fire-department headquarters. The word "fire" is then again to be spoken, together with the number of the telephone. The attendant at the telephone of the fire-department headquarters, immediately upon hearing said message, by means of my "multiple alarm-sender" hereinafter described, rings the given number upon the engine-house alarm-bells. The fire companies and others having the numbers and localities of the telephones indicated upon a card will know at once just where they are wanted.

My multiple alarm-sender consists of three principal parts—viz, as many detachable circuit-breakers as there are telephones, together with as many more as it may be thought that there may be telephones added to the system. circuit-wires and clock-work mechanism for operating said circuit-breakers, and an index-table upon which said circuit-breakers can be so arranged as to be individually found upon the instant wanted. The clock-work mechanism is similar to that ordinarily used for fire-alarm purposes, with the exception that the fan-wheel, by which such mechanism is made to unwind at a uniform rate, is detachable from its axis to give place to other fan-wheels of different sizes that shall regulate the clock-work mechanism at other rates of speed, for the purpose explained below. The axle L, which is driven by said clock-work, has fastened upon it a disk, R, having a projecting finger, P. Near the end of said axle L, which is made conical, is a groove or notch, L'.

The detachable circuit-breaker D consists of a disk having an insulated outer rim, upon which are the teeth or lugs S, and having an axial opening made to fit the axle L. The small ring E, having stem and head G, has the lower edge of its opening pressed up into the groove or notch L' of the axle L by means of the spiral spring F, encircling said stem and abut-

ting between said head and the central portion of the disk D. A small plate, E', screwed over the said ring E, serves to keep the same in place upon the side of the disk D. Another opening in the said disk, through which the finger P can enter, enables the same to be kept rigid on the axle L, while the said ring E and groove L' retain the said disk upon said axle. Said teeth or lugs S upon the insulated rim of each circuit-breaker D are arranged in as many groups as there are figures in the number which said circuit-breaker is to ring, and each group consists of as many lugs or teeth S as is the digit represented by that group. The circuit-wires communicating with the alarm-bells join an end of each to the two separately-insulated springs M, the free ends of which just touch the teeth or lugs S as the circuit-breaker is revolved upon the axle L. In case the number to be struck is a small one, the fan-wheel before mentioned is removed and a smaller one substituted, that the clock-work mechanism may unwind faster, and so cause the circuit-breaker to make its revolution in quicker time. Where, however, the number is a large one, a larger fan-wheel is substituted, that the number may be struck slowly enough to make sure of the hearers counting correctly. My index-table consists of pins L<sup>2</sup> projecting from any convenient board or backing, and arranged in nine horizontal rows of ten each, there being as many of these groups of pins as there are hundreds of numbers in the telephone system, actual or prospective. Each pin L<sup>2</sup> is made tapering at its end and grooved similarly to the axles L, and is for receiving a circuit-breaker, D, and preventing it from coming off, except when desired. Upon these pins L<sup>2</sup> the circuit-breakers are arranged in numerical order, beginning with 1 at the upper left-hand corner of each group and running down each vertical column. Each circuit-breaker D has stamped upon it the number which it is arranged to strike; but to render it possible to find almost instantly any desired one, I have devised the following numerical index: At the ends of the horizontal rows of pins are painted or otherwise im-

5  
10  
15  
20  
25  
30  
35  
40  
45  
50

printing the upper row 1. At the tops of the vertical rows are put the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, as partly shown in Fig. 2. Soon as it is desired to find any particular circuit-breaker—for instance, 32—a finger is placed upon the 30-column and moved downward till it meets the horizontal row headed 2. At this point of juncture is the desired number, 32; or, placing the finger upon the 30-column, the eye is run along the 2-row until it reaches the column with the finger thereon, and the number is found.

In removing the desired circuit-breaker from its index-pin L<sup>2</sup>, the head G is pressed until the ring-catch E is released from the groove L<sup>3</sup>. We then place the circuit-breaker upon the axle L, where it is retained from coming off by its ring-catch E entering the groove L'. The finger P and the opening therefor in the circuit-breaker D are so arranged as to bring the first tooth or lug, S, thereof just at the ends of the springs M. The clock-work being started, the circuit-breaker revolves, the springs M touch the lugs S as each passes, and, alternately making and breaking the circuit of the wires running from the same to the bells, ring out upon them the alarm-number.

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. A circuit-breaker consisting of a rotary shaft, with a circuit-breaking wheel removably secured thereto, in combination with a spring-catch, substantially as shown, whereby the circuit-breaking wheel is locked in position, as set forth.

2. The axle L, having groove L', disk R and finger P, and suitable clock-work, in combination with the circuit-breakers D, each having a perforation therein at a point corresponding to the finger P, the ring E, stem and head G, spring F, and plate E', substantially as and for the purpose set forth.

In testimony that I claim the foregoing invention I have hereunto set my hand this 31st day of May, 1883.

ORIN H. NORTON.

Witnesses:

E. W. QUINCY,  
H. W. WELLS.