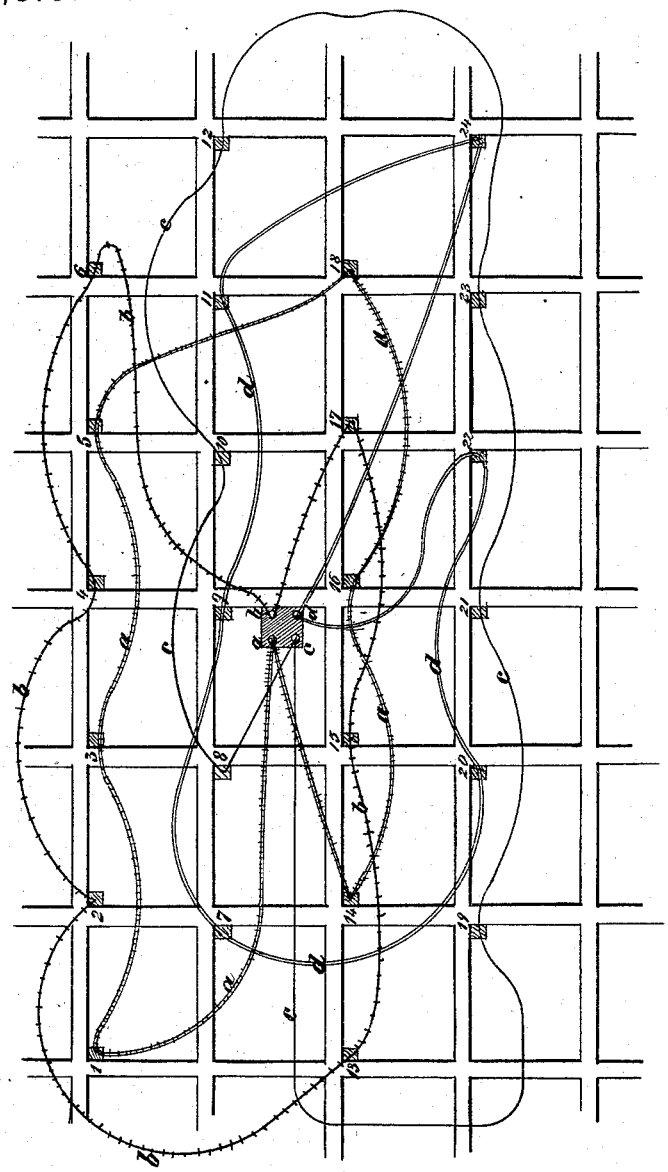
J. N. GAMEWELL.

Fire-Alarm Telegraph-Circuits.

No. 163,310. Patented May 18, 1875.



Witnesses;
Henry Eichling
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UNITED STATES PATENT OFFICE.

JOHN N. GAMEWELL, OF HACKENSACK, NEW JERSEY.

IMPROVEMENT IN FIRE-ALARM-TELEGRAPH CIRCUITS.

Specification forming part of Letters Patent No. **163,310**, dated May 18, 1875; application filed March 30, 1875.

To all whom it may concern:

Be it known that I, JOHN N. GAMEWELL, of Hackensack, Bergen county, in the State of New Jersey, have invented an Improvement in the Combination and Arrangement of the Line-Wires and Signal-Boxes of Fire-Alarm Telegraphs, of which the following is a specification, reference being had to the accompanying drawings forming part thereof.

It is the practice, in the erection of fire-alarm telegraphs in large cities, to have a central office or station, at which all the batteries are located, and from which a number of independent lines or circuits radiate to the several districts or parts of the city, In each of these circuits are placed several signal stations or boxes, each box communicating with and sending its alarm to all the other stations in its circuit and to the central station.

In the fire-alarm telegraph, as in others, any of the circuits are liable to become disabled from the breaking of the wire, derangement or exhaustion of its battery, or otherwise, and when this occurs the entire district or neighborhood occupied by the disabled circuit is deprived of the means of giving an alarm of fire.

The object of my improvement is to obviate the difficulty referred to, by so arranging the circuits and signal-stations that every two adjacent signal-stations shall be in different circuits—that is to say, each signal-station is in a different circuit from the station or stations nearest to it; by which arrangement, if, in attempting to sound an alarm from any signal-station in any part of the city, such station should be found to be disabled and silent, the station nearest to such disabled station may be resorted to, and, being in another and different circuit, will be likely to be in working condition.

The drawing is intended to represent the streets and blocks of a city.

A is the central station. The small squares, one in a corner of each of the blocks of the plat, is intended to represent a signal box or station. Four circuits are shown, with their several batteries, lettered *a b c d*, located in the central station. Circuit *a* is represented by a double line, with cross shade-lines; circuit *b* by a single line, with short cross-lines; circuit *c* by a double line, and circuit *d* by a single line. The signal-stations are numbered from 1 to 24, inclusive. In circuit *a*, as shown, are stations 1, 3, 5, 18, 16, and 14. In circuit *b* are stations 6, 4, 2, 13, 15, and 17. In circuit *c* are stations 19, 8, 10, 12, 23, and 21; and in circuit *d* are stations 24, 22, 20, 7, 9, and 11.

Now, it will be observed that throughout the entire plat no two adjacent stations are in the same circuit. In fact, all stations adjacent, in whatever direction, to any one of the stations are in different circuits from such one station. For example, the stations adjacent to station 24, which is in circuit *d*, are stations 23, which is in circuit *c*, and 14, which is in circuit *a*. Again, the stations adjacent to station 13, which is in circuit *b*, are 8, 19, and 21, which are in circuit *c;* 20, 7, and 9, which are in circuit *d;* and 14 and 16, which are in circuit *b*, and so on throughout the entire series of stations.

It is obvious that the system here described is susceptible of a great number of variations in the arrangement and direction of the line-wires. I do not, therefore, limit myself to the precise arrangement shown in the drawings, the essential feature being that the line-wires of the several circuits shall be so disposed and combined with the signal-stations that each station is in a different circuit from the station or stations nearest or adjacent to it, as shown in the drawings.

For a more particular description of what constitutes the several parts of a fire-alarm telegraph—namely, the central station, the signal-stations, the circuits, and the instruments by which alarms of fire are given, and the functions of these parts—I have to refer to Letters Patent of the United States No. 17,355, issued to William F. Channing and Moses G. Farmer, May 9, 1857.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement, in a fire-alarm telegraph, of a series of signal-stations and electric circuits, as herein described, whereby each signal-station throughout the series is in a different circuit from that or those located nearest or adjacent to it, as specified and shown.

In witness whereof I have hereunto set my hand this 29th day of March, 1875.

JOHN NELSON GAMEWELL.

Witnesses:

JAS. M. GARDINER,

JAS. A. WILKINSON.