No. 781,322. PATENTED JAN. 31, 1905.

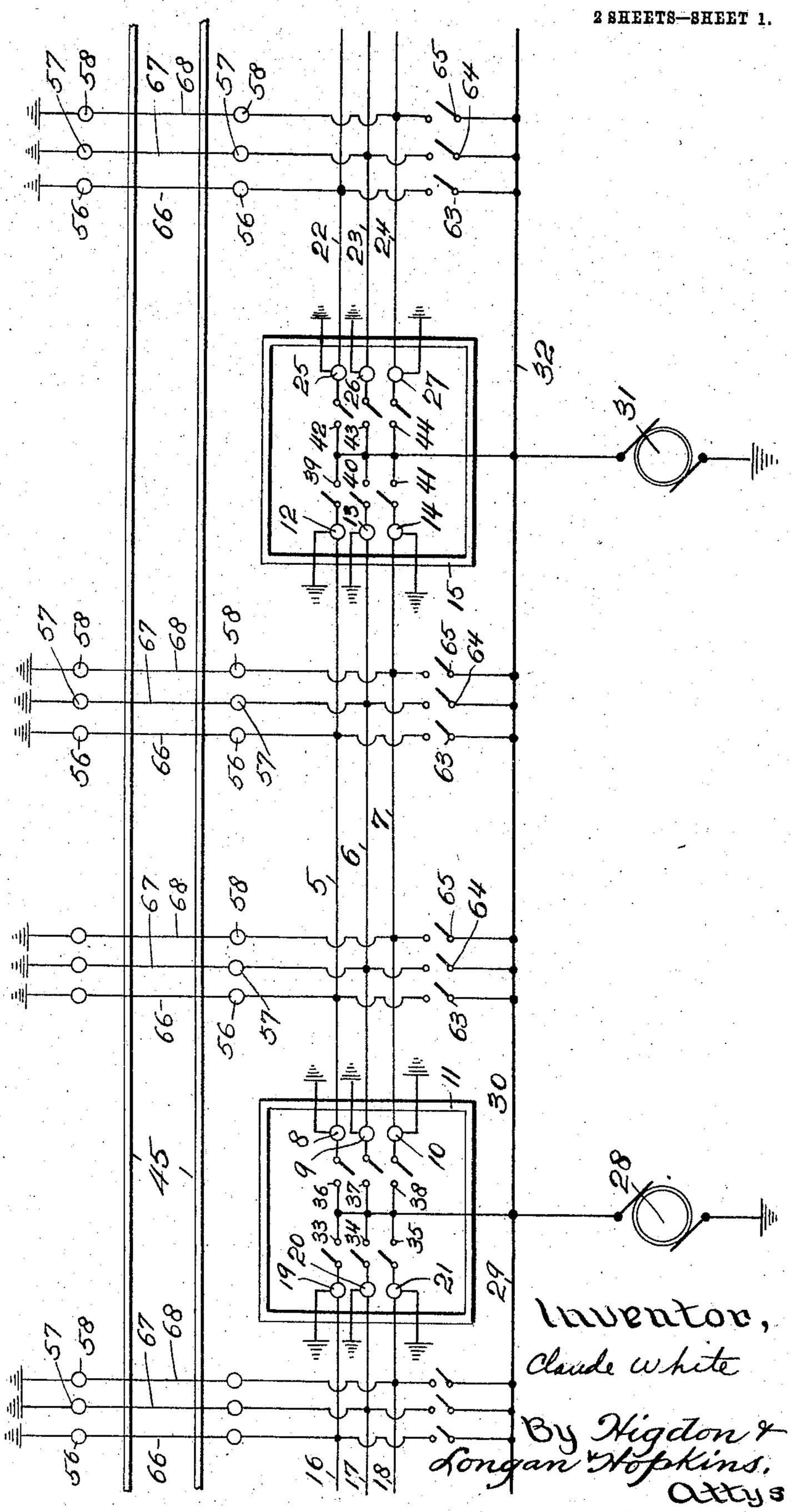
C. WHITE.

SIGNAL SYSTEM.

APPLICATION FILED AUG. 27, 1904.

2 SHEETS—SHEET 1.

FIG. 1.



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2 SHEETS—SHEET 2.

FIG. 2.

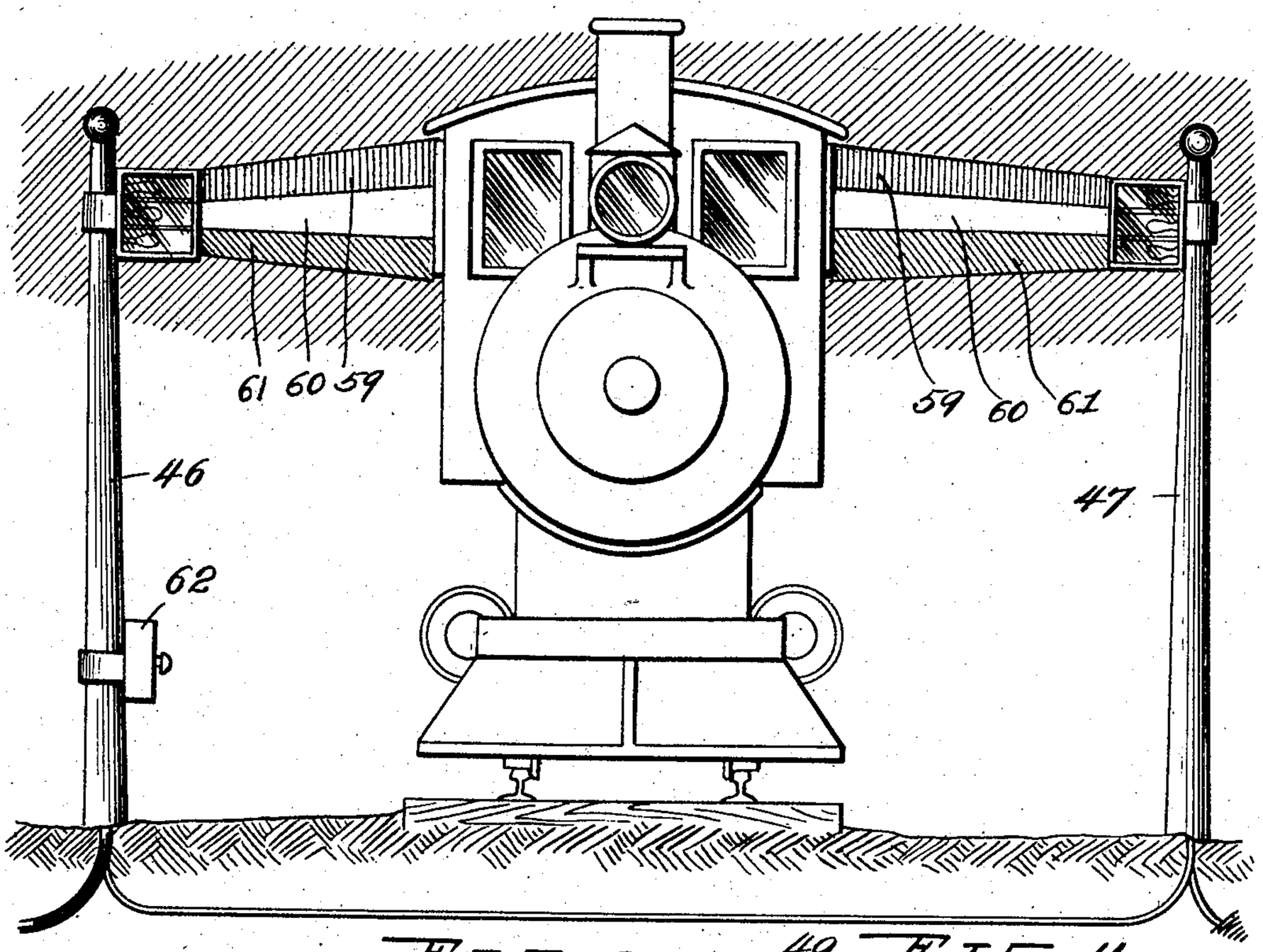

FIG. 3.

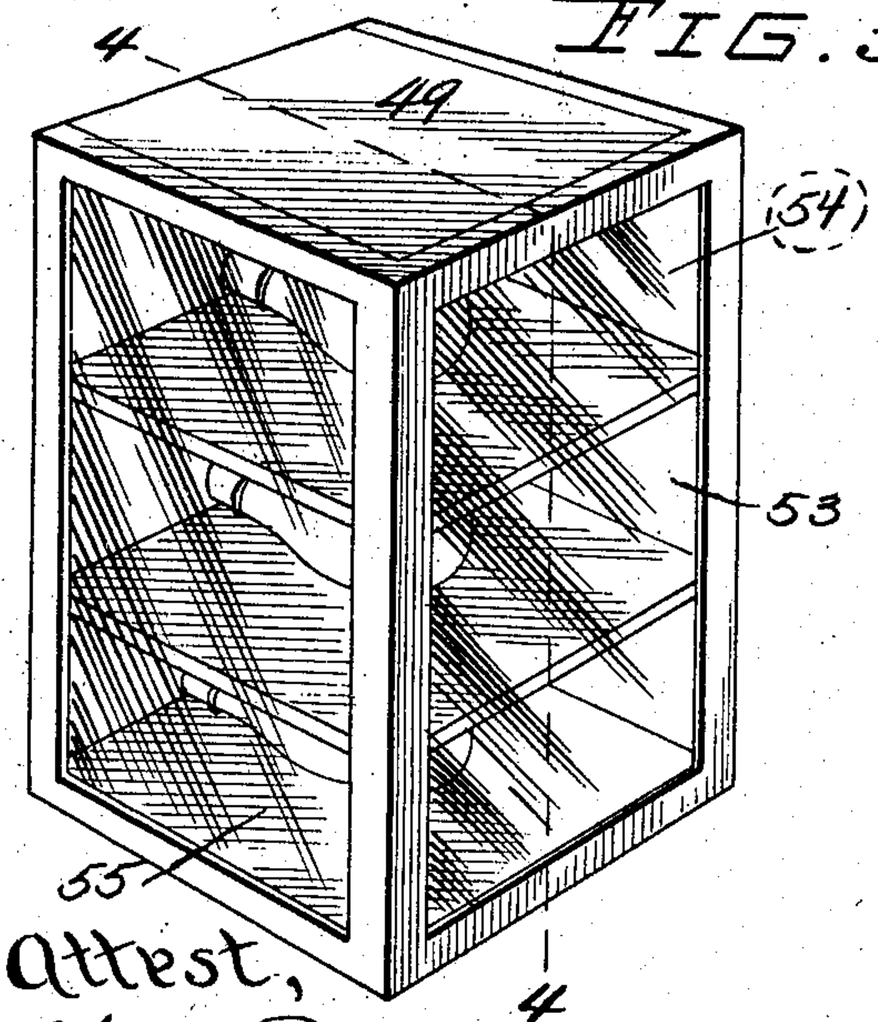

FIG. 4.

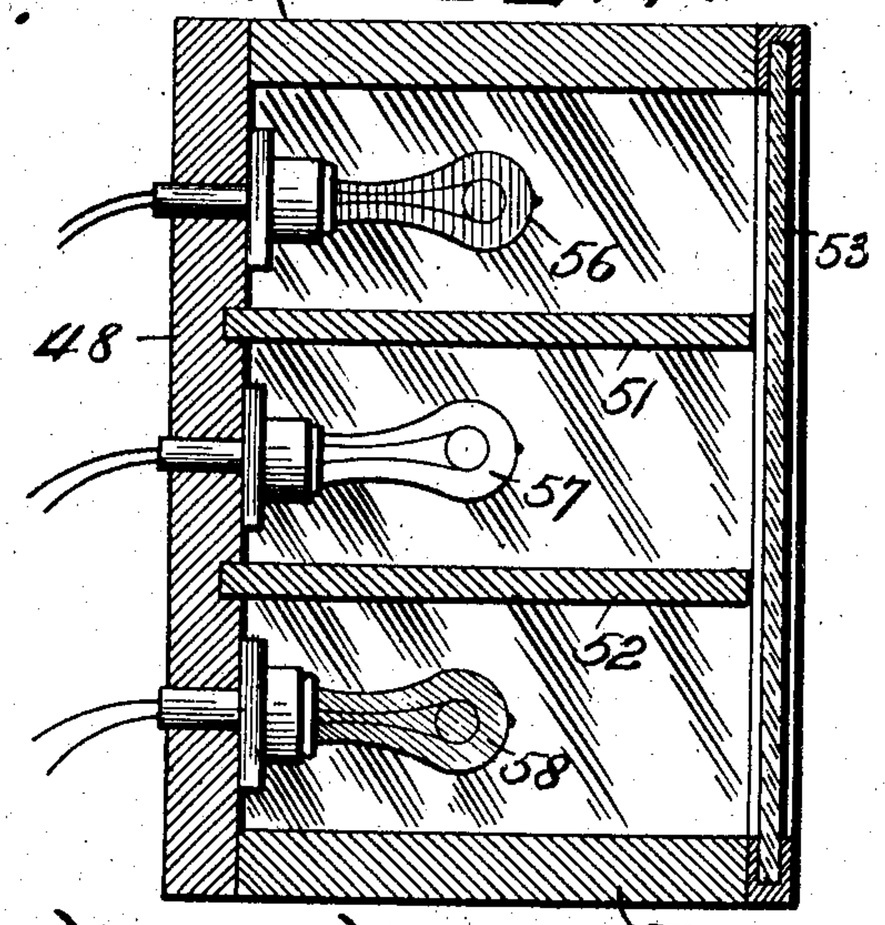

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PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 781,322. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

CLAUDE WHITE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO CHARLES T. NOLAND, OF ST. LOUIS, MISSOURI.

SIGNAL SYSTEM.

SPECIFICATION forming part of Letters Patent No. 781,322, dated January 31, 1905.

Application filed August 27, 1904. Serial No. 222,442.

To all whom it may concern:

Be it known that I, CLAUDE WHITE, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Signal Systems, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to signal systems, my object being to construct a signal system by means of which signals may be sent to and from the trainmen upon a running train between stations; and my improved signal system comprises a series of stations arranged along the railway, each station being independently connected by three electric wires with the next station, both up and down the track, lights of contrasting colors connected to said wires, said wires being normally deënergized, a live wire extended along the railway, and means of connecting the deënergized wires to the live wire at any desired point, so as to send signals to or from the trainmen upon a running train between stations.

The further object of my invention is to provide a lamp which will show three distinct colors or any combination that can be made from three colors and introduce the lamp into my signal system.

In the drawings, Figure 1 is a diagrammatical view showing my improved signal system with reference to two stations, the wires extending to the next stations up and down the track being broken away. Fig. 2 is a front elevation of a locomotive upon a railroad-track and showing signals directed within the plane of vision of the engineer and other trainmen. Fig. 3 is a perspective of the three-color lamp. Fig. 4 is a vertical central section of the lamp on the line 4 4 of Fig. 3.

Referring to the drawings in detail, the wires 5, 6, and 7 connect the lights 8, 9, and 10 within the station 11 to the lights 12, 13, and 14 within the station 15, and the wires 16, 17, and 18 connect the lights 19, 20, and 21 within the station 11 to similar lights in the next station down the track, and the wires 22, 23, and 24 connect the lights 25, 26, and 27 within the station 15 to similar lights in the next station up the track.

The generator 28 may be any source of electric power in the town in which the station 11 is located, and said generator is connected to the live wire 29, extending down the track from the station 11, and said generator is connected to the live wire 30, extending from the station 11 to the station 15. The generator 31 may be any source of electric power in the town in which the station 15 is located, said generator being connected to the wire 30, extending down the track to the station 11, and said generator being connected with the live wire 32, extending up the track from the station 15. At the station 11 the wires 29 and 30 are connected together and connected to the switches 33, 34, 35, 36, 37, and 38 within the station 11. At the station 15 the wires 30 and 32 are connected together and connected to the switches 39, 40, 41, 42, 43, and 44 at the station 15. At the station 11 the wires 16, 17, and 18 are connected to the switches 33, 34, and 35, and the wires 5, 6, and 7 are connected to the switches 36, 37, and 38. At the station 15 the wires 5, 6, and 7 are connected to the switches 39, 40, and 41, and the wires 22, 23, and 24 are connected to the switches 42, 43, and 44.

The stations 11 and 15 represent two of a series of stations arranged along the railway 45. Posts 46 are arranged along one side of the railway 45, and posts 47 are arranged along the other side of the railway 45. Upon each post is a lamp comprising the back wall 48, the top 49, the bottom 50, horizontal partitions 51 and 52, a glass front plate 53, the glass side plates 54 and 55, the red bulb 56 above the partition 51, the white bulb 57 between the partitions 51 and 52, and the green bulb 58 below the partition 52. All the parts of the lamp are opaque except the glass plates 53, 54, and 55, so that when the bulbs are illuminated the lamp will give off three distinct colors of light, as indicated by the red, white, and green rays 59, 60, and 61 in Fig. 2. A switch 62 is mounted upon each of the posts 46, and switch connections 63, 64, and 65 are located in the

switch-box, one side of each of said connections being connected to the live wires 29, 30, and 32 and the other side of said connections being connected to the wires 5, 6, and 7, 16, 17, and 18, 22, 23, and 24, each of said wires being independently connected to the corresponding bulbs 56, 57, and 58 upon the posts 46, and the wires 66, 67, and 68 connect the bulbs 56, 57, and 58 upon the posts 46 to corresponding bulbs upon the posts 47. All of the lamps are grounded or provided with suitable return-wires. The switch-boxes 62 are controlled by keys carried by the trainmen, so that the trainmen may stop at any point between the stations and by manipulating the switches 63, 64, and 65 send signals along the track and to the stations 11 and 15.

The operation of the signal down the track from the station 11 and up the track from the station 15 is the same as that already described.

A code of signals may be arranged by which any desired information may be communicated either to or from the trainmen.

I claim—

1. In a signal system, a series of stations arranged along the railway, each station being independently connected by three wires with the next station, both up and down the track; lights of contrasting colors connected to said wires; said wires being normally deënergized; a live wire extended along the railway and means of connecting the deënergized wires to the live wire at any desired point, so as to send signals to or from the trainmen upon a running train between stations.

2. In a signal system, a series of stations arranged along the railway, each station being independently connected by three wires with the next station, both up and down the track; lights of contrasting colors arranged along the railway and at the stations and connected to said wires; said wires being normally deënergized; a live wire extended along the railway; and means for connecting the deenergized wires to the live wire at any desired point, so as to send signals from the stations to the trainmen upon a running train between the stations, or from the trainmen to the stations; substantially as specified.

3. In a signal system, a series of stations; each station being paired with each adjacent station; three series of lights of contrasting colors arranged between the stations; a live wire connecting the stations and switches arranged so that either series of lights may be illuminated from either end or at any desired point between the stations.

4. In a signal system, a series of lights and means of illuminating the lights; each light comprising three globes of contrasting colors; opaque partitions between the globes; opaque back, top and bottom; and glass front and sides, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLAUDE WHITE.

Witnesses:

JNO. H. NAZENSTAH,

ALFRED A. EICKS.