

1

2,804,607

DISPATCHER'S BOARD WITH MOVABLE FACING SECTIONS

George S. Nalle, Jr., Austin, Tex.

Application July 2, 1954, Serial No. 440,913

7 Claims. (Cl. 340—225)

This invention relates to dispatchers' boards, and the invention will be described as applied to an electrical dispatcher's board which is used for public utilities and power companies which must maintain constant vigilance over a power distribution system.

It is an object of the invention to provide an improved dispatcher's board, and more especially to provide a board which can be quickly and easily changed to take care of the addition of new equipment and the moving of old equipment. Different power companies have different systems for control panel operation, but for any of them it is a distinct advantage to have a dispatcher's board which can be quickly and easily changed to meet changing conditions in the system.

The invention comprises a fixed panel, or a group of fixed panels, located in a control room; and each of the panels has rows of holes for receiving studs which extend rearwardly from small facing sections that fit together to make up the front surface of the dispatcher's board. One feature of the invention relates to a construction in which the front of the board is made up of a large number of plastic squares, some of which have symbols imbedded in them.

Another feature of the invention relates to means for connecting the facing sections to the board by fastening means which are quickly detachable; and to means for illuminating the symbol sections by means of individual lights which are themselves connected to the panel by fastening means which are quickly and conveniently removable.

Other objects, features and advantages of the invention will appear or be pointed out as the description proceeds.

In the drawing, forming a part hereof, in which like reference characters indicate corresponding parts in all the views:

Figure 1 is a front view, partly broken away, showing a dispatcher's board made in accordance with this invention;

Figure 2 is a greatly enlarged, fragmentary rear view of the dispatcher's board shown in Figure 1;

Figure 3 is a greatly enlarged, sectional view taken on the line 3—3 of Figure 2; and

Figure 4 is a rear view of one of the facing sections shown in the other figures.

The electrical dispatcher's board shown in Figure 1 includes a fixed panel 10 having rows of openings 12 which are provided for the purpose of admitting light to transparent equipment symbols mounted on the front of the panel. These openings 12 will be referred to as the light openings.

At diametrically opposed locations on opposite sides of each of the light openings 12, there are holes 14 for receiving studs or pins that extend rearwardly from facing sections 16 that fit together to make up the front surface of the board.

At a corresponding location adjacent to each of the openings 12, there is a small threaded opening 18 for

2

receiving a screw which connects a light housing to the back of the panel at any location where lights are needed for illuminating facing sections which have symbols therein.

5 The dispatcher's board shown in Figure 1 has 238 facing sections 16. Behind each one of these facing sections 16, there is one group of openings consisting of a light opening 12, stud or pin holes 14 and a threaded opening 18. In the preferred embodiment of the invention, the light opening 12 is located behind the center of the facing section 16, and the pin holes 14 are symmetrically located behind a diagonal of the square facing section 16 so that the facing section can be put on with different orientation, it making no difference which edge is the top or bottom. If the panel 10 is made with four openings 14 around each of the light openings 12, then the facing sections can be put on with any edge at the top and symbols can be located to extend either horizontally or vertically. With the construction shown, 10 separate facing sections are provided for horizontal or vertically extending symbols because the two holes 14 permit facing sections to be turned 180°, but do not locate the pins in the right positions if the facing sections are turned only 90°.

25 Most of the facing sections 16 are solid, opaque squares made of plastic material with front faces which are rough enough to write on with a pen. Although plastic or rubber facing sections 16 are preferred, these sections can be made of various materials.

30 A number of special facing sections are shown having transparencies imbedded therein, for example, there is a facing section 21 with a white, round window 22 through which light from behind the panel will show. There are other facing sections 24 with square green windows therein. Another facing section 26 has a square white window.

There are facing sections 28 having elongated red windows; and other facing sections 30 and 32 having elongated orange and blue windows, respectively. There are other facing sections 34 with elongated green windows; and there are some facing sections 36 with special double X symbols which are red windows. The different shapes of the windows represent different kinds of equipment and the color of the window represents the voltage on that equipment. For example, the circular window 22 represents an electric generator. The elongated windows in the facing sections 28, 30, 32 and 34 are buss symbols. The square windows in the facing sections 24 and 26 represent circuit breakers; and the double X windows in the facing section 36 represent transformers.

The circuits between the different pieces of equipment shown on the dispatcher's board are represented by thin strips of Scotch tape 40, and different colors of tape are used to indicate the voltage in the different circuits. In Figure 1 the color of the tape is indicated by the letters R for red, B for blue, and G for green. Markings of the different colors can be made directly on the face of the board in place of the tape 40, if desired, but the tapes provide a quick and convenient way of indicating the circuits, and the tape sticks readily to the matte surface of the board. If the dispatcher wants to make any notes on the board with respect to any of the circuits or the equipment, he can do so by writing on the front surfaces of the facing sections 16, and when the notes become obsolete they can be easily removed by merely wiping the front of the board with a damp cloth.

Figure 3 shows the way in which the facing section 21 is attached to the panel 12, and shows the way in which a light is located behind the window 22. The facing section 21 has two studs or pins 44 extending from its rearward face and through the holes 14 in the panel 10. Sleeves

46 are slipped over the pins 44 and pushed down on the pins far enough to contact with the back of the panel 12. These sleeves 46 are stretched slightly when placed over the pins 44 and the stretching provides sufficient friction to hold the sleeves 46 on the pins 44. This fastens the facing section 21 to the panel 10.

A light housing 50 has a lamp chamber 52 in which there is a small electric light bulb 54. This chamber 52 is open at one end, and the opened end is substantially the same size as the light opening 12 through the panel. The housing 50 has a bracket 58 on one side through which a screw 60 extends into the threaded opening 18 in the panel. The parts are so dimensioned that the screw 60 extends into the threaded opening 18 when the open end of the chamber 52 is in alignment with the light opening 12 through the panel. A spacing sleeve 62 is clamped between the bracket 58 and the back wall of the panel 10.

There are terminals 65 and 66 at the upper end of the light housing 50 for connection with conductors for supplying power to the bulb 54. It is intended that the conductors from the terminal 65 and 66 will extend back through the power distribution system to the actual equipment represented by the window 22. Connections are made to control apparatus at that location so that in the event that the equipment fails to operate, current is supplied to the conductors leading to terminals 55 and 56, and the light behind the window 22 will light to indicate that there is trouble at that part of the distribution system. The power company can connect the control equipment in various different ways, for example, so as to make the light behind each equipment symbol remain lighted as long as the equipment is functioning properly, and to flash when the equipment is out of order. Various other ways of signalling can be used, as desired.

If at any time the facing section 21 is to be removed from the panel because of changes in the power distribution system, the sleeves 46 are pulled off the pins 44, the tape 40 is peeled back from the facing section 21, and the pins 44 are pushed forward to displace the facing section 21 away from the panel and beyond the level of the adjacent facing sections 16 so that the section 21 can be gripped by the fingers and removed from the panel. If the only change to be made in the power distribution system is a change in the voltage of the equipment represented by the window 22, then the section 21 is replaced with another section having a window of different color, corresponding to the new voltage, and this new section is placed in front of the light housing 50, and the tape 40 is replaced with a tape of different color to represent the new voltage.

If the change in the power distribution system, as represented on the dispatcher's board, requires that the equipment represented by the facing section 21 be shifted to some other part of the board, then the facing section 21 is replaced by a solid facing section 16; and the screw 60 is removed from the threaded opening 18 so that the light housing 50 can be moved to some new location on the panel.

In the construction illustrated, each of the facing sections 16 is made with side walls that converge toward the back of the facing section. This makes it possible to fit the adjacent facing sections together into a continuous flush front surface for the panel board without requiring such close manufacturing tolerances as would otherwise be necessary.

The sleeves 46 are preferably made of rubber, or some similar material that can be stretched to fit over the pins 44 with a reasonable amount of friction. If the pins 44 are of a diameter almost as large as the diameter of the pin holes 14, then the sleeves 46 can have very thin side walls and still function to prevent the pins 44 from pulling out through the holes 14. If the pins 44 are of smaller diameter and fit quite loosely through the pin holes 14,

then sleeves 46 with thicker side walls are necessary to adequately fasten the facing sections 21 to the panel 10.

The preferred embodiment of the invention has been illustrated and described, but changes and modifications can be made and some features can be used in different combinations without departing from the invention as defined in the claims.

What is claimed is:

1. An indicator board comprising a rear panel having a plurality of openings in rows extending both lengthwise and transversely on the panel, a plurality of facing sections located side by side on the front of the panel, fastening means for holding the facing sections to the panel and located away from the openings and symmetrical about said openings so that each facing section can be attached to the board in different positions angularly around one of said openings, some of the facing sections having windows therein in line with the openings in the panel so that light passing through said openings illuminates said windows, a plurality of housings for electric light bulbs, and other fastening means connecting different housings with the panel in positions to locate the lights within the housings behind openings in the panel which are in alignment with the windows of the facing sections.

2. An electrical dispatcher's board comprising a rear panel having a plurality of openings therein arranged in rows, facing sections located side by side across the front face of the panel, detachable fastening means holding the respective facing sections on the panel and located away from the openings and symmetrical about said openings so that each facing section can be attached to the board in different positions angularly around one of said openings, windows opening through some of the facing sections, some of the windows having different shapes from others for indicating different kinds of equipment, and some of the windows having different colors from others for indicating different voltages of the equipment represented by the windows, a plurality of housings for electric lights, and means for connecting different housings to the panel in positions behind different facing sections which have windows therein.

3. An electrical dispatcher's board comprising a panel having a plurality of holes for receiving studs for holding facing sections on the front of the panel, a plurality of facing sections located on the front of the panel side by side and providing a continuous front surface for the dispatcher's board, the front surfaces of the facing sections having matte finish that can be written on, each of the facing sections extending across at least two of the holes in the panel, studs of one piece construction with the facing sections extending rearwardly from each of the facing sections and through the holes in the panel, detachable fastening means for preventing removal of the sections from the panel, said fastening means comprising a sleeve slipped over each of the studs and fitting the stud with a friction grip, the outside diameter of the sleeve being larger than the panel hole through which the stud extends so that one end face of the sleeve contacts with the back face of the panel around the edge of the hole through which the stud extends, and symbols on some of the facing sections, the symbols on different sections being of different shape to indicate different kinds of equipment, and the symbols on some of the facing sections being of different color from those on other sections to indicate different voltage for the equipment represented by the symbols.

4. An indicator board comprising a rear panel having a plurality of holes therein for receiving studs of facing sections of the board, a plurality of openings located between certain of the stud receiving holes and of larger size than said holes for the passage of light through the panel at a plurality of locations, the panel also having a threaded opening near each of said openings, a plurality of facing sections located side by side on the front of the

5

panel, studs extending from the facing sections through the holes in the panel, a sleeve of resilient material placed over each of the studs beyond the back of the panel and frictionally gripping the stud, the sleeves being of an outside diameter substantially greater than the width of the holes through the panel so that an end face of each sleeve contacts with the panel around the edges of the hole through which the stud extends to prevent forward displacement of the studs, a plurality of housings for electric lights, each of the housings containing an electric lamp and being open at one end for passage of light through one of the large openings in the panel, and fastening means for attaching each housing to the back of the panel with the open end of the housing in alignment with one of the large openings in the panel, said fastening means comprising a screw that threads into the threaded opening which is near the large opening provided for the passage of light.

5. An electrical dispatcher's board comprising a stiff metal panel having a plurality of openings arranged in longitudinal and transverse rows for the passage of light through the panel, the panel having at least two holes, of smaller diameter than said openings, located on diametrically opposite sides of said openings, and said panel also having at least one threaded opening near each of the openings which is provided for the passage of light, a plurality of facing sections located side by side on the front of the panel and providing a continuous front face for the dispatcher's board, two studs of one piece construction with each of the facing sections and spaced from one another in positions to extend through the holes on opposite sides of one of the light passage openings over which each facing section is placed, the studs being substantially longer than the thickness of the panel so that their end portions extend beyond the back of the panel, resilient sleeves surrounding the rearwardly extending portions of the studs, the sleeve on each stud fit-

6

ting the stud with a friction grip, the outside diameter of the sleeve being larger than the panel hole through which the stud extends so that one end face of the sleeve contacts with the back of the panel to prevent forward displacement of the stud with respect to the panel, each of the facing sections being constructed of opaque plastic material and some of the facing sections having openings therethrough with windows imbedded in the plastic sections and filling the space provided by said openings, the openings and windows being of different shapes in some of the facing sections to represent different kinds of equipment in the electrical system, and some of the windows being of different colors from others to represent different voltage of the equipment represented by the shape of the windows.

6. The indicator board described in claim 1 and in which the fastening means for holding the facing sections to the panel include studs projecting from the rearward surfaces of the facing sections and through other openings in the panel.

7. The indicator board described in claim 6 and in which there are two studs extending rearwardly from each facing section through the other openings in the panel, and a resilient element gripping each of the studs rearward of the panel by friction contact with the stud for preventing forward displacement of the studs and facing section.

References Cited in the file of this patent

UNITED STATES PATENTS

733,834	Glidden	July 14, 1903
1,854,808	Reid	Apr. 19, 1932
2,315,420	Harrington	Mar. 30, 1943
2,394,062	Houck	Feb. 5, 1946
2,496,853	Burns	Feb. 7, 1950