

E. J. KINGSBURY.

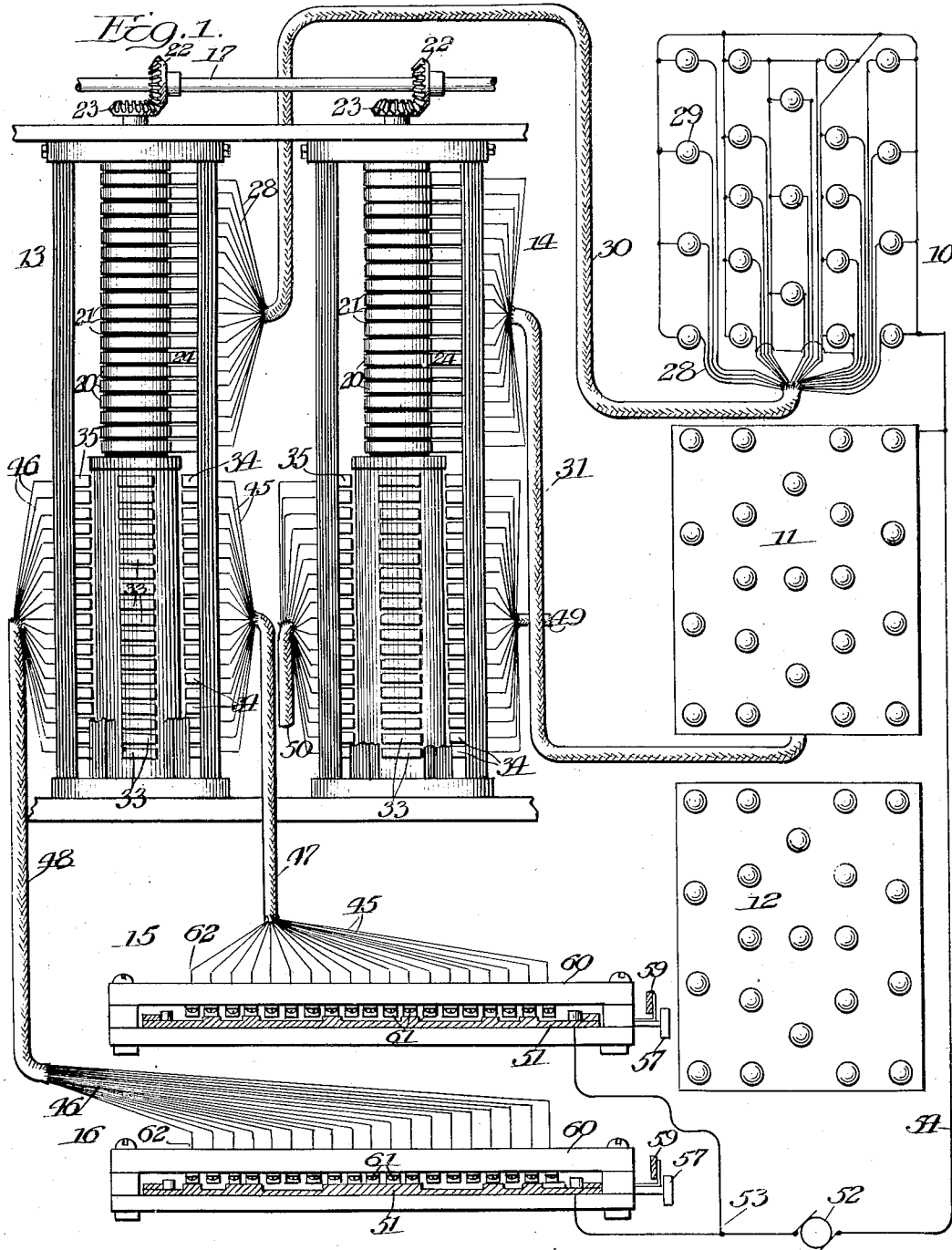
DISPLAY SIGNAL.

APPLICATION FILED SEPT. 25, 1916.

Patented Nov. 6, 1917.

3 SHEETS—SHEET 1.

1,245,467.



Inventor
Elmer J. Kingsbury
by May W. Zabel Atty.

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3 SHEETS—SHEET 2.

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Fig. 2.

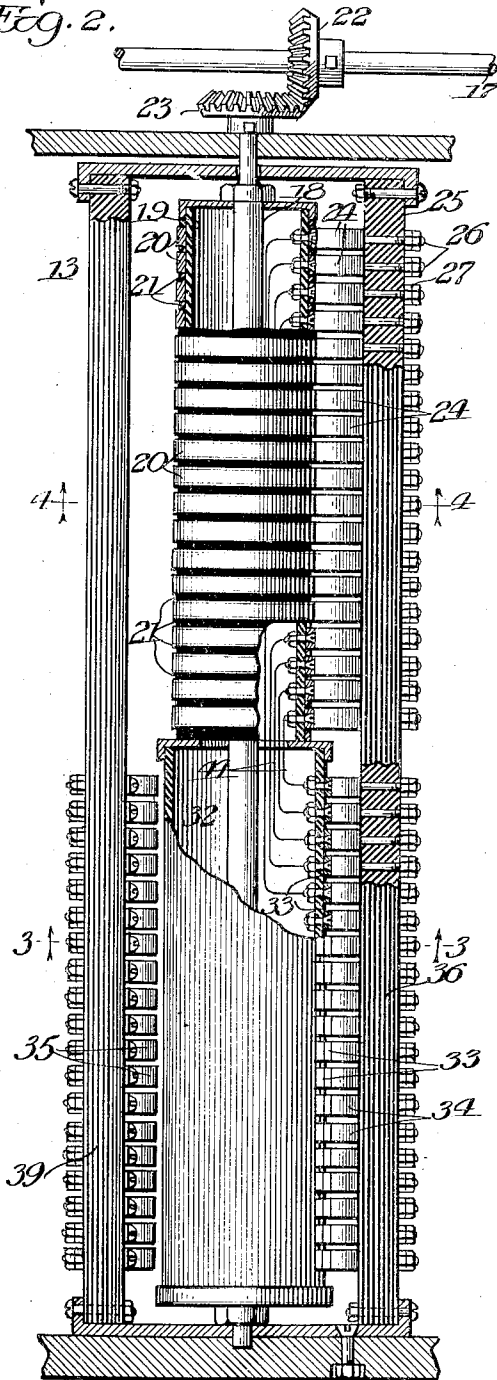


Fig. 3.

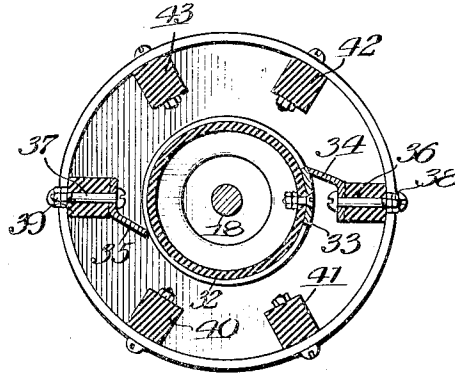


Fig. 5.

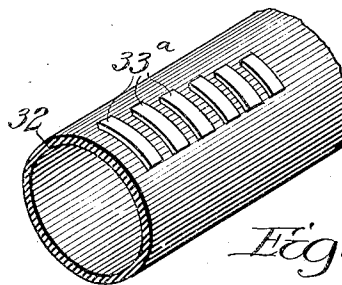
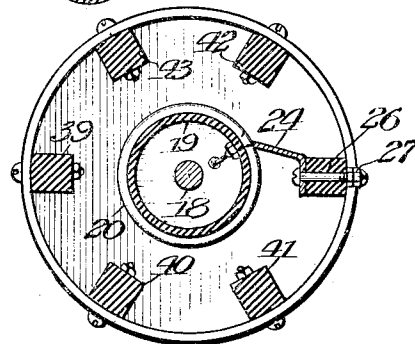


Fig. 4.



Inventor
Elmer J. Kingsbury
by May W. Zabel atty.

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 3 SHEETS—SHEET 3.

Fig. 6.

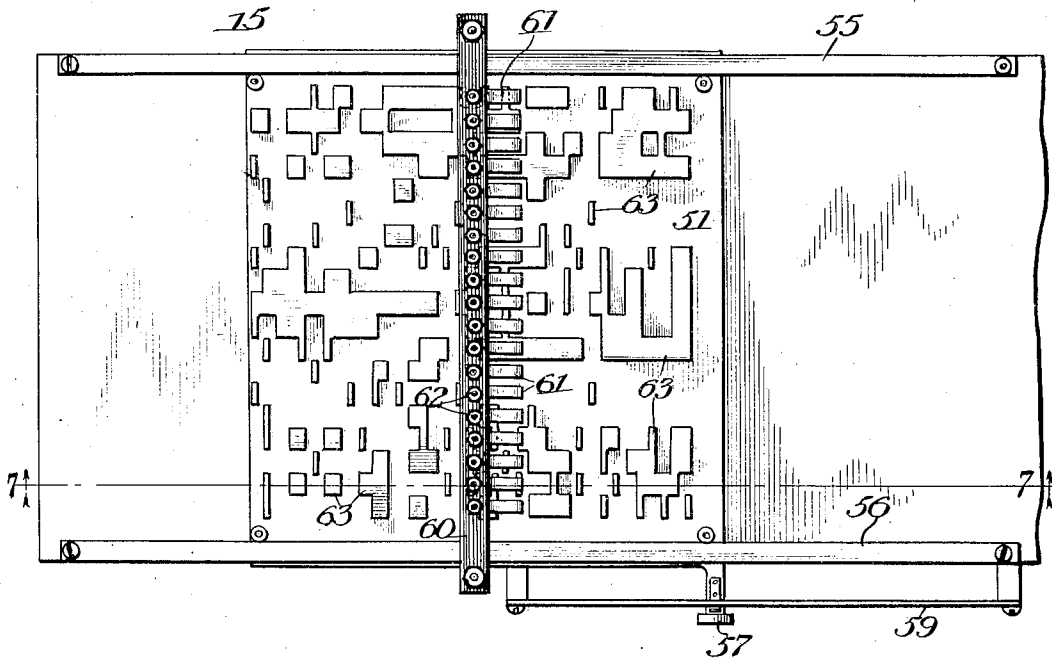


Fig. 7.

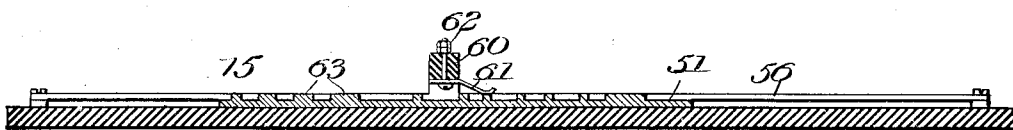


Fig. 8.



Inventor
Elmer J. Kingsbury
by May W. Zabel atty.

UNITED STATES PATENT OFFICE.

ELMER J. KINGSBURY, OF CHICAGO, ILLINOIS.

DISPLAY-SIGNAL.

1,245,467.

Specification of Letters Patent.

Patented Nov. 6, 1917.

Application filed September 25, 1916. Serial No. 121,991.

To all whom it may concern:

Be it known that I, ELMER J. KINGSBURY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Display-Signals, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to display signs, and more particularly to that character of sign in which a plurality of individual units are utilized to make up a complete sign. These individual units are controlled so that any letter or character may be displayed in each of them, thus that the complete sign portrays any desired legend.

My invention concerns itself with control apparatus for signs of this character in which automatically different succeeding legends may be flashed from the sign. My invention concerns itself in detail with simplified setting means for setting up the various legends so that they may be thereafter automatically displayed by the sign, the structure being such that succeeding legends may be set up without interfering with the portrayal of previously set up legends.

I will explain my invention more in detail by referring to the accompanying drawings, in which—

Figure 1 is a view partly diagrammatic illustrating the general arrangement of the control apparatus;

Fig. 2 is an enlarged view partly in section of one of the flash units;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Fig. 4 is a sectional view on line 4—4 of Fig. 2;

Fig. 5 is a detail view of a modification; Fig. 6 is a detail top view of a setting unit;

Fig. 7 is a sectional view on line 7—7 of Fig. 6, and

Fig. 8 is a side view of the setting unit shown in Fig. 6.

Referring more particularly to Fig. 1, I show three sign units 10, 11 and 12, which are representative of a sign, which sign may of course have any desired number of such units. Each sign has a flash unit, there being but two indicated, respectively the flash unit 13 for the sign 10 and the flash unit 14

for the sign unit 11. Each flash unit 13 has a plurality of setting units, there being shown in Fig. 1, however, only two setting units respectively the setting units 15 and 16, which cooperate with the flash unit 13. The number of successive legends which can be displayed on the sign without any attention on the part of the operator would depend upon the number of setting units that may be arranged for in connection with these flash units. For instance, if the sign had three sign units as shown in Fig. 1, there would be three flash units, and if there were to be portrayed four successive legends without resetting then there would be four setting units for each flash unit, making twelve setting units all told. Thus in the arrangement stated for Fig. 1, there would be three setting units corresponding to one legend, three for the second, three for the third, and three for the fourth; the three setting units for the first legend would be set to display a legend, likewise the second set of three would be set, as also the third and fourth. Then the flash units would be automatically operated through the agency of the drive shaft 17 to automatically successively display the four legends that had been previously set up. Thus assume that the setting unit 15 were set to display the character A, and the setting unit 16 were set to display the character B, then the continuous operation of the flash unit 13 could successively display the characters A and B in the sign unit 10. These characters would be successively displayed so long as the shaft 17 operated and so long as the setting units were not in the meantime reset to display different characters. The flash unit 13 is more particularly illustrated in Fig. 2 where it is shown as comprising a shaft or spindle 18 which carries a drum 19 of insulating material. This drum has a plurality of collector rings 20. These collector rings entirely encircle the drum and are separated by rings of insulation 21. The drum 19 is fixedly mounted on the shaft 18 and rotates therewith. This shaft 19 receives its rotation from the drive shaft 17 through the bevel gears 22, 23. For each collector ring there is a brush 24. These brushes are firmly held in the insulating frame 25 by the bolts 26. These bolts at their extremities have binding post nuts 27 by means of which wires 28 connect these brushes 24 directly

to the various lamps 29 of the corresponding sign unit, this being the sign unit 10 of Fig. 1. These conductors 28 are diagrammatically shown as being collected together in a cable 30 which extends from the flash unit 13 to the sign unit 10. Similarly a cable 31 connects the brushes of the flash unit 14 with the lamps of the sign unit 11. The shaft 18 is rotatably mounted in the framework 25 as shown and carries a further drum 32 of insulating material. This drum as shown more clearly in Figs. 2 and 3 is provided with a plurality of segmental contact segments 33. These contact segments in the said illustration are of the same width and are all aligned vertically so that these contact segments simultaneously touch their cooperating brushes which are likewise vertically aligned. They are mounted to cooperate with each of the segments 33 and plurality of brushes depending upon the number of setting units that there may be as but two setting units 15 and 16 are shown in Fig. 1. There will be two brushes 34 and 35. These brushes of which there is a pair for each segment 33 are insulatingly mounted through the agency of the bolts 36 and 37 which carry at their extremities binding posts 38 and 39 for connecting wires thereto. For each additional setting unit added there will be additional brushes mounted upon the blocks 40, 41, 42 or 43. Thus the contact segment 33 successively engages the brushes with which it cooperates and thus is successively in circuit with one after another of whatever setting units are employed to cooperate with the particular flash unit. In practice there would be enough brushes so that the segment 33 would be, except for the intervals between the legends, continuously in electrical contact with one or the other of the setting units. If but two brushes 34 and 35 were employed then the segment 33 might desirably extend for a length of slightly less than 180° about the periphery of the drum 32. If six brushes are employed then the angular extent of the segment 33 would be a trifle less than 60° . The segments 33 are connected each to each by means of the conductors 44 with the collector rings 20, there being as many segments 33 as there are collector rings and there being as many collector rings as there are lamps in a sign. The set of brushes 34 are connected by means of wires 45 with the setting unit 15, and the brushes 35 are connected by means of wires 46 with the setting unit 16. Cables 47 and 48 diagrammatically indicate the wires as they extend between the flash unit and the setting units. Similarly cables 49 and 50 indicate the outgo of the wires from the flash unit 14 for its respective setting units.

A setting unit is more particularly illustrated in Figs. 6, 7 and 8. This setting unit

consists of a metallic block 51 preferably connected to a source of current 52 by a conductor 53 as shown in Fig. 1, the other terminal of the source of current being connected by means of the conductor 54 to one terminal of the lamp, whose opposite terminal is connected by way of the cable 30 to its corresponding flash unit 13. The metallic block 51 is slidably mounted in ways 55 and 56. This plate 51 is provided with a finger piece 57 by means of which it may be slid, this finger piece having a pointer 58 extending upwardly therefrom. A character indicating plate 59 is mounted in close association with the ways 55 and 56 and cooperates with the pointer 58. The arrangement is such as will be presently apparent that a movement of the conducting plate 51 to a position in which the pointer 58 cooperates, say with the letter O, will cause the display of the letter O upon the corresponding sign unit when the segment 33 cooperates with the brushes leading to that particular setting unit. Cooperating with the plate 51 is an insulating bridge 60, which insulating bridge carries a plurality of brushes 61. These brushes 61 have binding posts 62 by means of which they are respectively connected through the agency of the conductors 45 to the flash unit 15, that is, to the brushes 34 thereof. There are as many brushes 61 as there are brushes 34 and there are as many brushes 34 as there are brushes 24, and there are as many brushes 24 as there are lamps in a unit sign. The conducting plate 51 has metallic protrusions 63 of unlike shape, which protrusions form part of the metallic portion of the plate 51. These protrusions are arranged so as to connect certain predetermined brushes 61 through the agency of the plate 51 with the source of current 52, the selection of the particular brushes 61 depending upon the position of the plate 51. Thus in the position of the plate shown in Figs. 6, 7 and 8, those protrusions of the plate 51 engage the brushes 61 which are equipped to form the letter O in the sign unit 10. The plate 51 can be moved of course into any given position so as to portray any of the characters shown on the index plate 59, or others that may be selected and arranged for.

It will be apparent from this that as many succeeding legends can be automatically displayed upon the sign through the agency of the flashers as there are setting units for each flasher. It will also be apparent that the setting units can be set into different positions during the course of the operation of the sign so that the sign may continuously display different legends which are being set up while others are being displayed. The extreme simplicity of the setting device makes this possible in that it is necessary

to very quickly arrange for a legend with signs of this character, and the mere sliding of the plate 51 into position is all that is necessary to arrange for the projection of the corresponding character upon the co-operating sign unit.

By referring more particularly to Fig. 5, I have shown the cylinder 32 as provided with segments 33^a, which segments are of unlike size so that a character may be built up in a sign instead of having the entire character flashed at once. The arrangement shown in Fig. 5 would mean that various illuminating units which are required to portray a character are successively illuminated but are simultaneously extinguished, although of course the arrangement also could be such as to cause the character to have its various illuminating units successively extinguished.

From what has been thus described the nature of my invention will be readily clear to those skilled in the art. Having however thus described one form which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a character selecting element having means to control the selection of any one of a plurality of unlike characters together with means for moving said element into any predetermined position for the selection of any predetermined character and individual character elements co-operating with said character selecting element whereby the position of said character selecting element in coöperative relation with any different character element controls the selection of that character.

2. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means corresponding to each character desired for portrayal.

3. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters, in said sign unit, said means including a movable circuit control-

ling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means to correspond to each character desired for portrayal, said circuit controlling device having circuit controlling means associated with said illuminating devices and having circuit controlling means adapted for successive association with said character controlling elements.

4. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a rotatable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means corresponding to each character desired for portrayal.

5. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a rotatable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means to correspond to each character desired for portrayal, said circuit controlling device having circuit controlling means associated with said illuminating devices and having circuit controlling means adapted for successive association with said character controlling elements.

6. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign units, said means including a rotatable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means to correspond to each character desired for portrayal, said circuit controlling device having a plurality of collector rings and brushes respectively associated with said illuminating devices, and a plurality of contact elements associated

with said collector rings adapted for successive association with said character controlling elements.

7. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each of said individual character controlling elements having individual circuit controlling means expressive of each character desired for portrayal.

8. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device, a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, contact elements associated with said character controlling elements, and means for causing a relative adjustment between said character controlling elements and their associated contacts to control the selection of the various desired characters.

9. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device, a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each of said individual character controlling elements having means to control the selection of any predetermined one of a plurality of characters, contact elements associated with said character controlling elements, and means for causing a relative adjustment between said character controlling elements and their associated contacts to control the selection of the various desired characters.

10. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device and a plurality of individual character controlling elements adapted for successive association with said sign unit through the agency of said circuit controlling device, each said character controlling element having means to correspond to each character desired for portrayal, said circuit controlling device having means for successively causing illumination of the illuminating devices selected for the portrayal of any given character.

11. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a movable circuit controlling device having means for successively causing illumination of the illuminating devices selected for the portrayal of any given character together with a manually operable setting device having individual character elements expressive of each character desired for portrayal.

12. A device of the character described comprising a sign unit having a plurality of illuminating devices adapted by their selective actuation to portray unlike characters, and means for successively displaying unlike characters in said sign unit, said means including a character controlling element having means to control the selection of any one of a plurality of unlike characters together with means for moving said element into any predetermined position for the selection of any predetermined character, and an indicating plate cooperating with said last aforesaid means to indicate the particular character for which said character controlling element is set.

In witness whereof, I hereunto subscribe my name this 20th day of September, A. D. 1916.

ELMER J. KINGSBURY.

Witnesses:

HAZEL A. JONES,
MAX W. ZABEL.