G. VON SAALFELD.

ELECTRIC SIGN.

APPLICATION FILED JULY 1, 1911.

1,041,174.

Patented Oct. 15, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

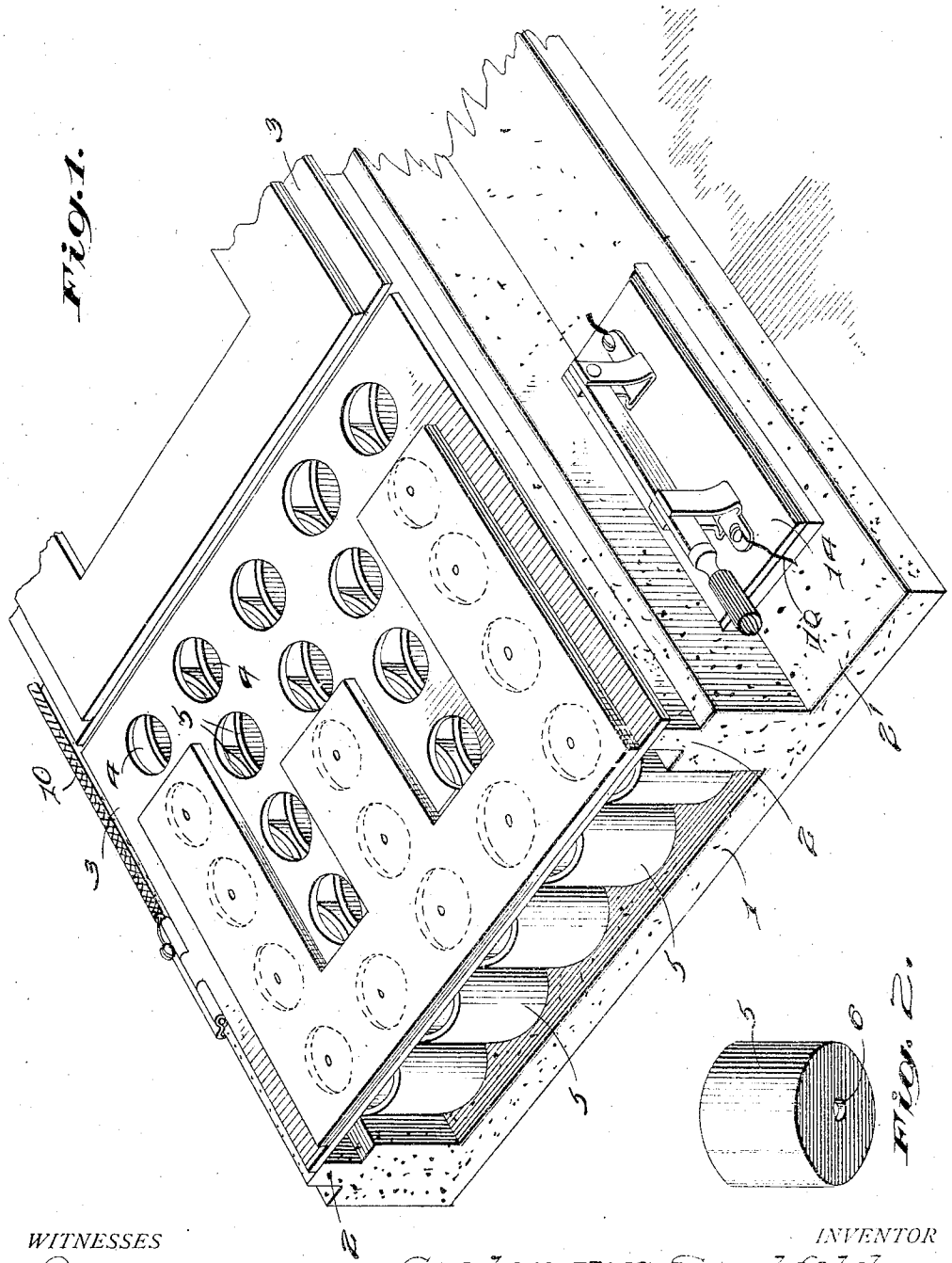


Fig. 2.

WITNESSES

J. M. Mills

E. W. Cady

INVENTOR

Gunter von Saalfeld

By E. C. Wroomans Attorney.

G. VON SAALFELD.

ELECTRIC SIGN.

APPLICATION FILED JULY 1, 1911.

1,041.174.

Patented Oct. 15, 1912

3 SHEETS—SHEET 2.

Fig. 3.

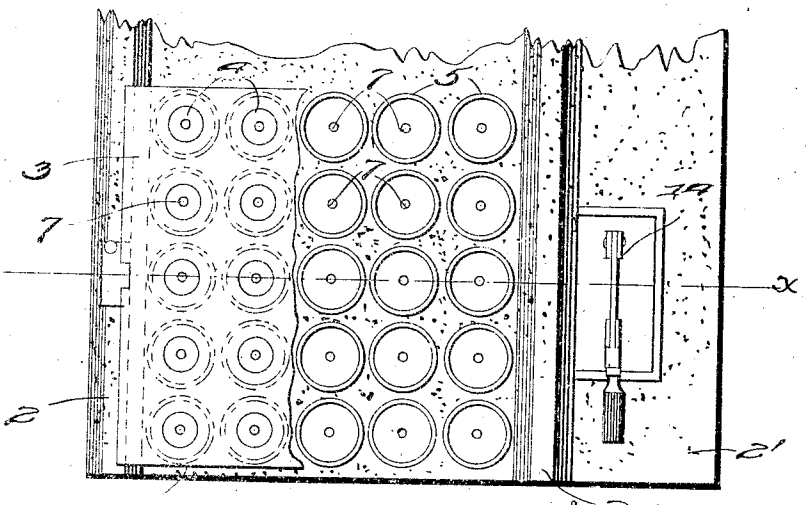
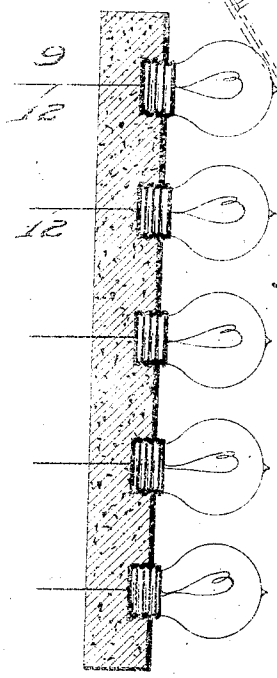


Fig. 4.



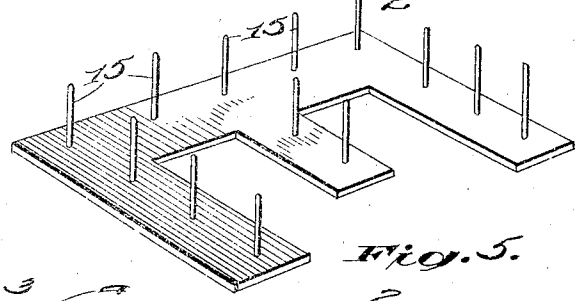


Fig. 5.

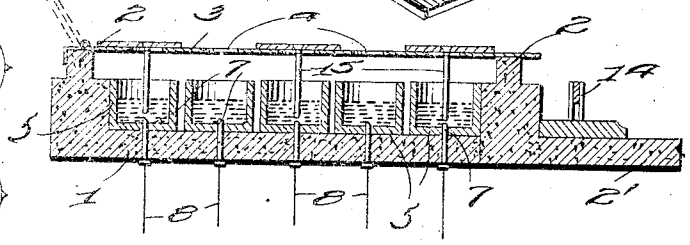


Fig. 6.

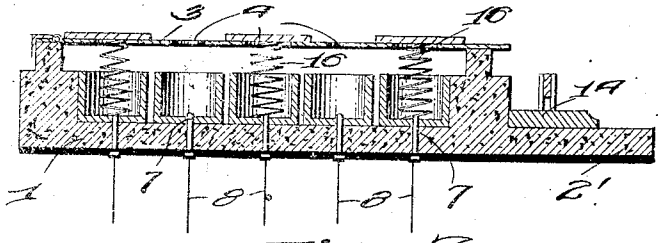


Fig. 7.

WITNESSES

J. M. Mills

E. W. Cady

INVENTOR

Gunter von Saalfeld

By E. G. Crosman, Attorney.

G. VON SAALFELD.

ELECTRIC SIGN.

APPLICATION FILED JULY 1, 1911.

1,041,174.

Patented Oct. 15, 1912.

3 SHEETS—SHEET 3.

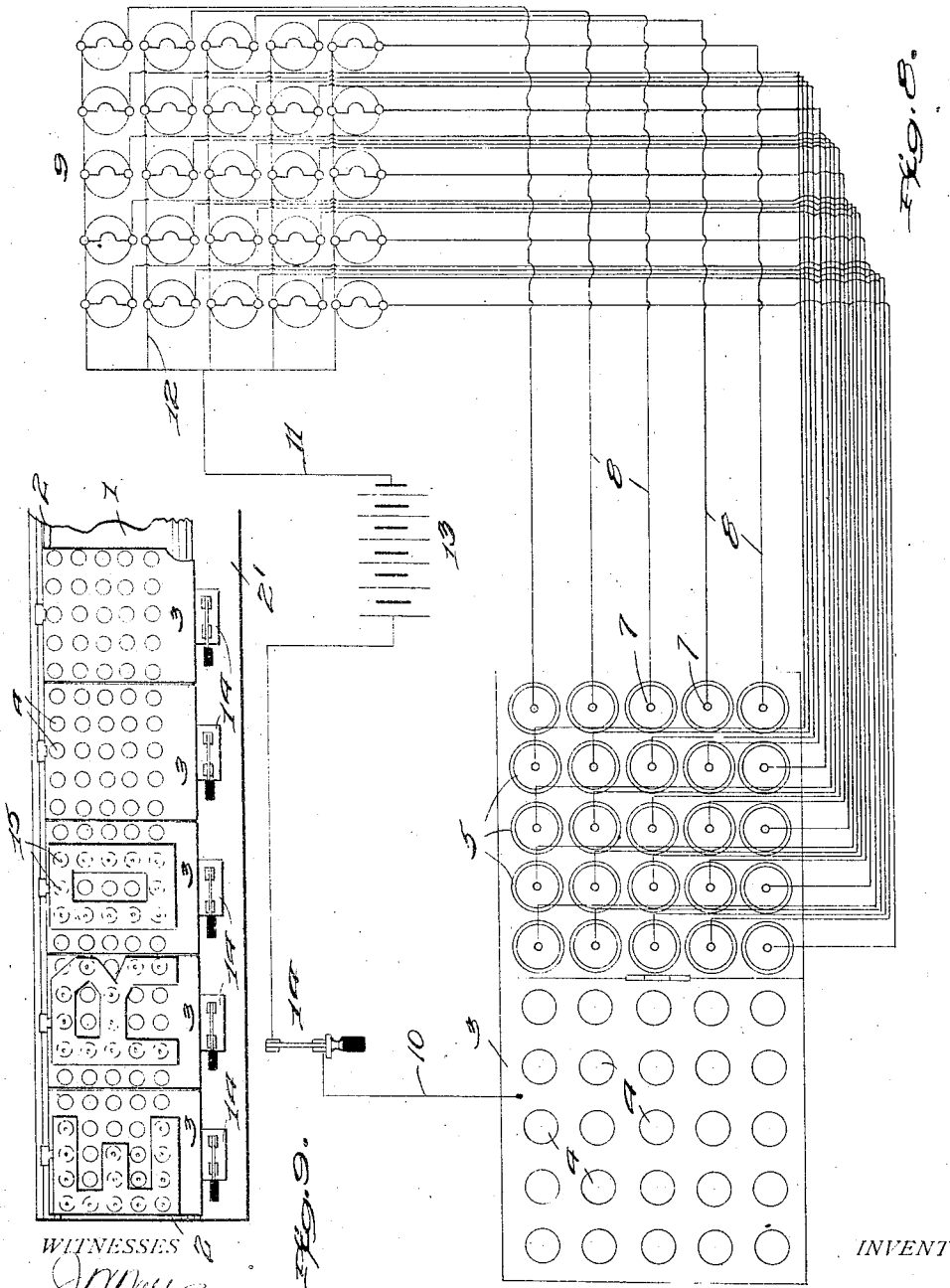


Fig. 9.

WITNESSES

J. Mueller

E. W. Cady

INVENTOR

Gunzer von Saalfeld.

By C. C. Crowman, Attorney.

UNITED STATES PATENT OFFICE.

GUNTER VON SAALFELD, OF SEATTLE, WASHINGTON.

ELECTRIC SIGN.

1,041,174. Specification of Letters Patent. Patented Oct. 15, 1912.

Application filed July 1, 1911. Serial No. 636,885.

To all whom it may concern:

Be it known that I, GUNTER VON SAALFELD, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Electric Signs, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to electric signs in which the letters or characters of the sign are indicated by means of electric lamps.

The invention has special reference to that class of electric signs in which the letters or characters of a sign indicated by electric lamps may be changed by means of a switch board at a distant point having a number of switches electrically connected with said lamps and means for changing the letters or figures of the sign by operating said switches.

The invention has for its object to provide an improved electric sign apparatus of this kind by means of which the lamps of the sign may be readily and easily illuminated to form the particular letters or characters and provide different designs and figures in the group of lamps mounted on the sign board.

Referring to the accompanying drawings:—Figure 1 is an enlarged view in perspective of one end of a structure, the entire structure containing groups of switches and means for closing electric circuits with a sign board having banks of lamps to form different letters of a sign indicated by certain of said banks of lamps which form the desired letters or characters. Fig. 2 is a detail view in perspective of one of the mercury cups employed with the structure shown in Fig. 1. Fig. 3 is a plan view of the structure shown in Fig. 1 with a part of a covering plate broken away. Fig. 4 is a detail view in longitudinal section of a portion of a sign board showing the electric lamps mounted thereon. Fig. 5 is a detail view in perspective of a letter formed of conducting material employed in connection with this invention. Fig. 6 is a view in vertical section on the line X—X of Fig. 3, of the structure shown in said figure. Fig. 7 is a detail view in cross section of a modification of the structure shown in Fig. 6. Fig. 8 is a diagrammatic view illustrating the electric circuits connecting a group of switches with a bank of the electric lamps. Fig. 9 is a plan view showing several letters in the banks of cups.

In the construction of this invention a suitable frame is employed which, as partly shown in Fig. 1, consists of an oblong board 1 provided with a pair of longitudinal vertical strips 2, and a lateral base strip 2′ on one side of the frame. Located at intervals and resting upon the top of the longitudinal strip 2 are a number of plates 3 hinged to one of the longitudinal strips 2 and provided with circular openings 4. Located above and corresponding in number with a number of mercury cups 5 seated on the base portion 1, each of said cups 5 having central apertures 6 through which projects a metallic contact point 7 connected with an electrical conductor 8 which leads to a bank of electric lamps 9, more particularly hereinafter referred to. Each of the hinged plates 3 is electrically connected by means of an electrical conductor 10 with a branch circuit wire 11 connected by branch wires 12 with the poles of each of the electric lamps 9 and located in said electrical conductor 10 is a battery 13 and a switch 14. The electrical conductors 8 connected with the contact points 7 are connected with the other poles of the lamps 9 as shown in Fig. 8. In order to form the letters in the several banks of electric lamps on the sign board metallic letters are employed with contact points which are placed on the several hinged plates 3 so as to complete an electric circuit from said points through the mercury cups and the electrical conductors 8 and 10 to the particular set of lamps which are located in the electric circuits closed by the points on the metallic letter placed on the plate 3. For example, a metallic letter "E", preferably of copper, is shown in Fig. 5 having a number of contact metallic points 15 which when the letter is placed on the plate 3, as shown in Fig. 6, dip into certain of the mercury cups 5 and complete the electric circuits through the points 7 and the electrical conductors 8 to a particular set of lamps in the bank of lamps 9 so as to form the letter "E" in the set of lamps thus illuminated. In this way, a word or words or designs are formed and indicated by the illumination of certain lamps in the different banks of lamps on the sign. By means of the switch 14, which is located opposite each group of mercury cells individual letters may be indicated by cutting in and out

the electric circuits connected therewith. In Fig. 7 is shown a modification of the conductors on the letter which are placed on the plates 3 which conductors consist of coil springs 16 extending to the bottom of the mercury cups and contacting with the contact points 7.

What I claim is:—

1. A contact maker for display signs consisting of an insulating plate, a series of cups mounted in spaced relation on said insulating plate, a series of conductors each connected to a respective cup and extending through the plate for connection with a wire, said cups being adapted to contain mercury, ribs on said insulating plate and extending upwardly therefrom, a plate of conducting material having perforations therethrough, said perforations being arranged to register with the centers of the mercury cups, said plate being adapted to rest in spaced relation above the cups on said ribs, in combination with a metallic character having spaced contact members adapted to pass through selected perforations in the conducting plate, and dip into the mercury, said character being arranged to rest upon the conducting plate when the contact members dip in the mercury.

2. In a circuit closer for display signs, an insulating base plate provided with spaced parallel ribs, a series of mercury cups arranged in spaced relation between said ribs, each of said cups being held in position on the base plate by a conductor member extending through the bottom of the cup and the base plate, a conducting plate hinged to one of the ribs of the base plate and having its free edge adapted to rest on the other edge of the base plate, said conducting plate being provided with a series of perforations equal in number to the mercury cups and corresponding in position thereto, the conducting plate being held in spaced relation to the mercury cups, and a metallic character adapted to rest upon the conducting plate and receive current therefrom, said character being provided with a series of conducting members adapted to pass through selected perforations in the contact plate and dip into respective mercury cups.

3. A contact maker for display signs consisting of an insulating plate, a series of cups mounted in spaced relation on said insulating plate, a series of conductors each connected to a respective cup extending through the plate for connection with a wire, said cups being adapted to contain mercury, ribs on said insulating plate and extending upwardly therefrom, a plate of conducting material having perforations therethrough, said perforations being arranged to register with the centers of the mercury cups, said plate being adapted to rest in spaced relation above the cups on said ribs, in combination with a metallic character having spaced contact members adapted to pass through selected perforations in the conducting plate, and dip into the mercury, said character being arranged to rest upon the conducting plate when the contact members dip in the mercury, each of said conducting members of the metallic character comprising a coiled metallic spring adapted to engage the bottom of the respective mercury cup when the character is in contact with the plate.

4. In a circuit closer for display signs, an insulating base plate provided with spaced parallel ribs, a series of mercury cups arranged in spaced relation between said ribs, each of said cups being held in position on the base plate by a conductor member extending through the bottom of the cup and the base plate, a conducting plate hinged to one of the ribs of the base plate and having its free edge adapted to rest on the other edge of the base plate, said conducting plate being provided with a series of perforations equal in number to the mercury cups and corresponding in position thereto, the conducting plate being held in spaced relation to the mercury cups, and a metallic character adapted to rest upon the conducting plate and receive current therefrom, said character being provided with a series of conducting members adapted to pass through selected perforations in the contact plate and dip into respective mercury cups, each of said conducting members of the metallic character comprising a coiled metallic spring adapted to engage the bottom of the respective mercury cup when the character is in contact with the plate.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

GUNTER VON SAALFELD.

Witnesses:
LAWRENCE SLEDGE,
J. G. B. WILSON.