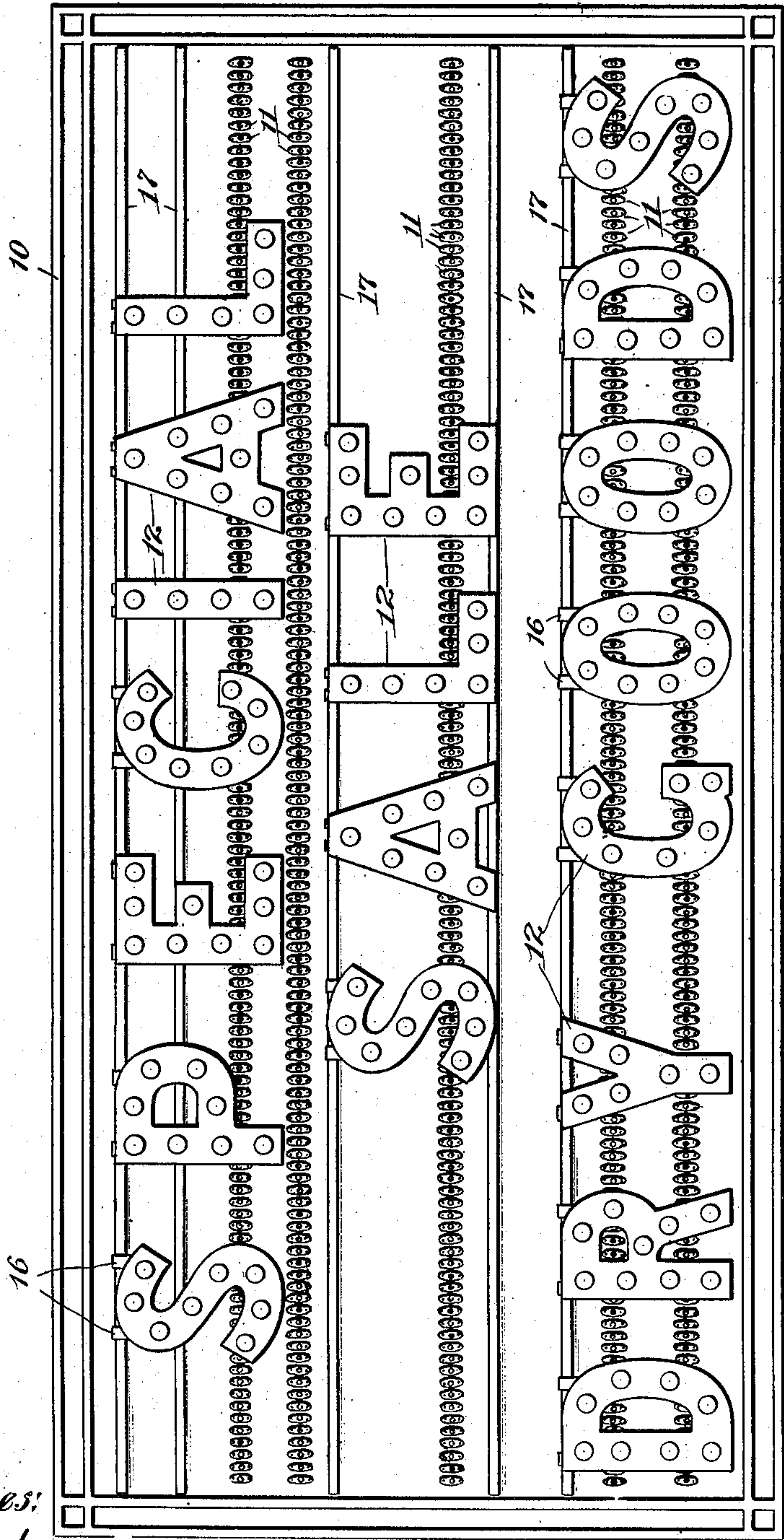


W. A. F. BECKER.
ELECTRIC SIGN.
APPLICATION FILED OCT. 26, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
J. H. Alfred.
W. L. Hall.

Inventor:
William A. F. Becker,
by Paul Brown
Attys

No. 867,635.

PATENTED OCT. 8, 1907.

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2 SHEETS—SHEET 2.

Fig. 6.

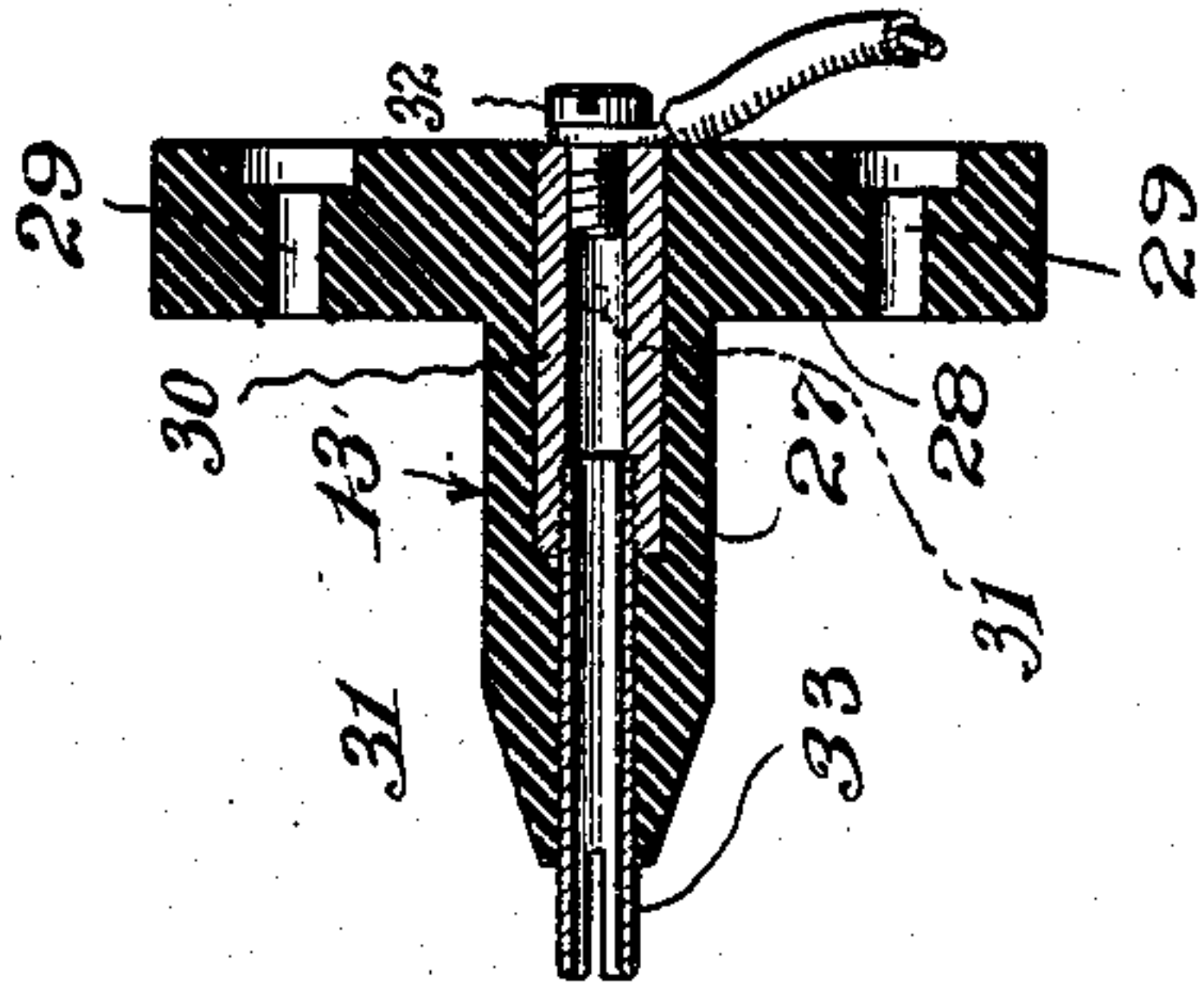


Fig. 5.

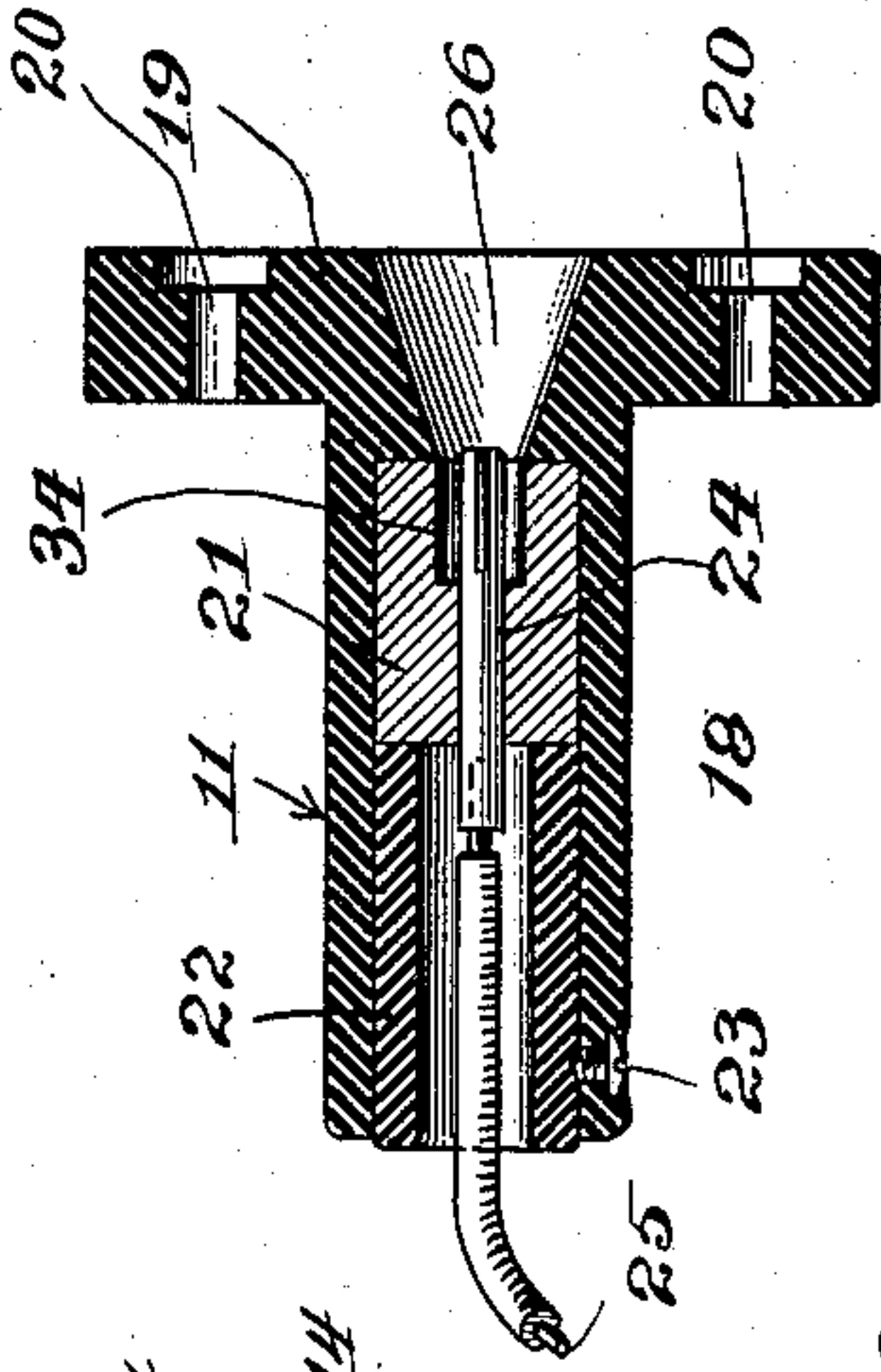


Fig. 3.

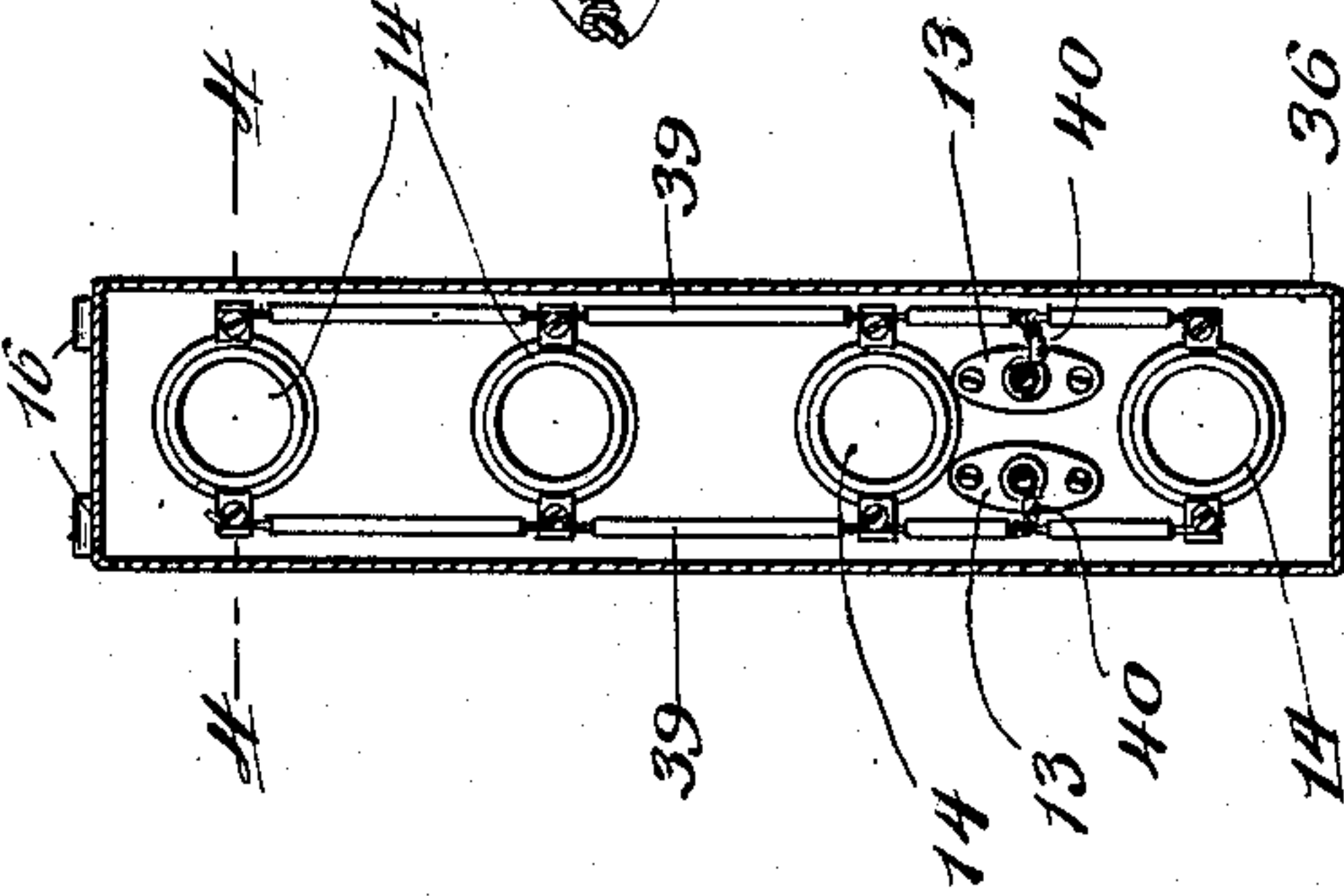


Fig. 2.

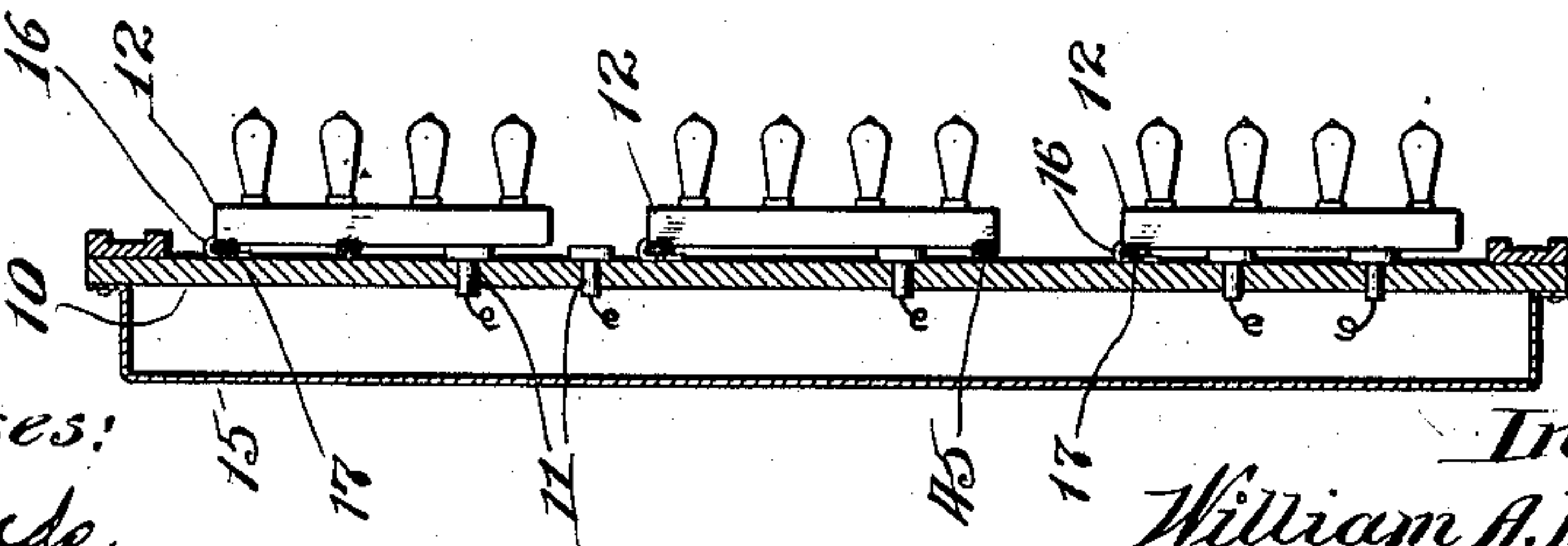


Fig. 8.



Fig. 7.

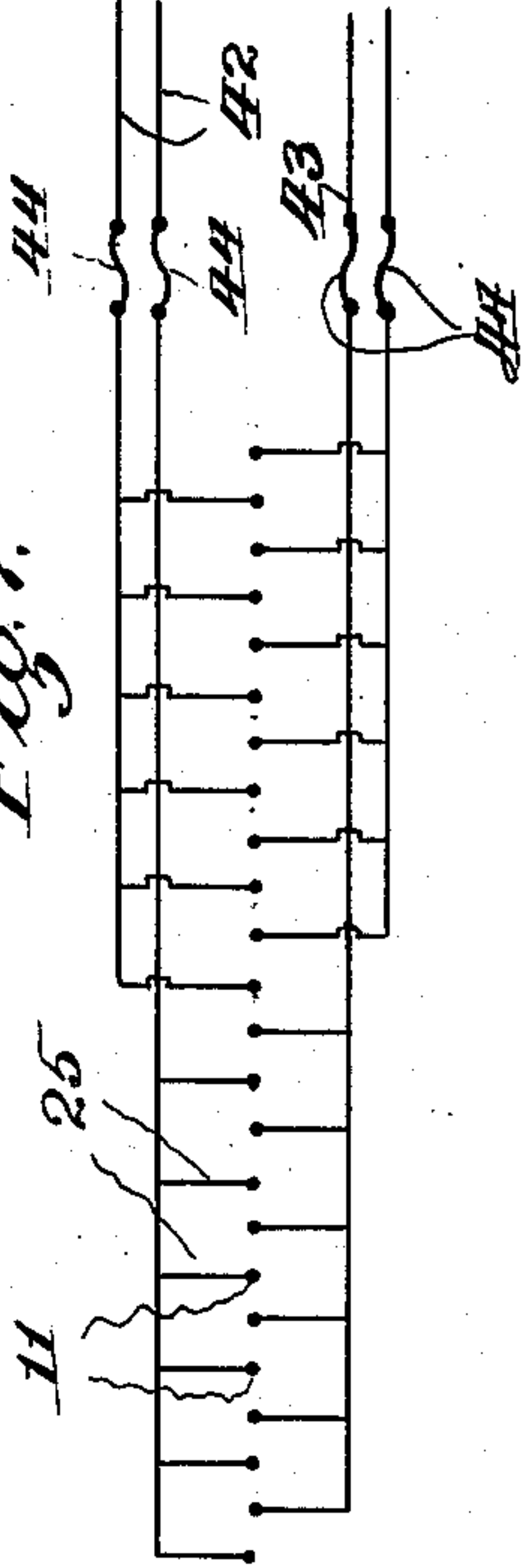
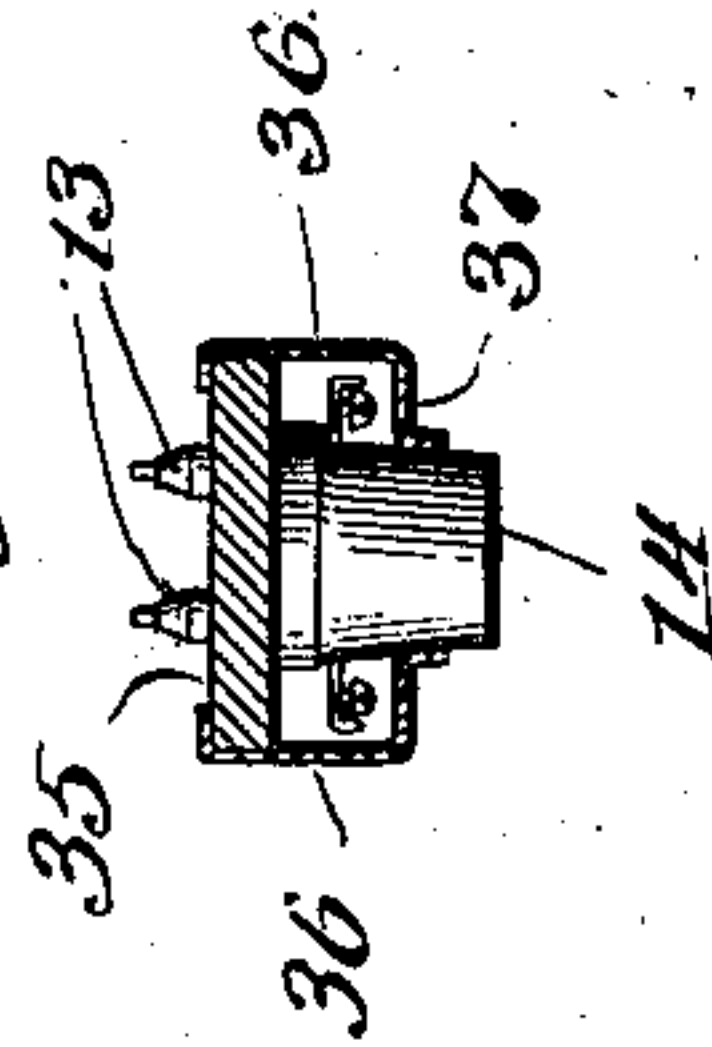


Fig. 4.



Witnesses:

J. H. Alford.
W. L. Hall.

Inventor:

William A. F. Becker,
by Poole Brown

Attys.

UNITED STATES PATENT OFFICE

WILLIAM ASHRIEL FREDERICK BECKER, OF CHICAGO, ILLINOIS.

ELECTRIC SIGN.

No. 867,635.

Specification of Letters Patent.

Patented Oct. 8, 1907.

Application filed October 26, 1906. Serial No. 340,784.

To all whom it may concern:

Be it known that I, WILLIAM ASHRIEL FREDERICK BECKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Electric Signs for Interchanging Electric Letters, of which the following is a specification.

This invention relates to improvements in electric signs and refers more specifically to that type of sign comprising a base-board or support and a plurality of letters adapted be removably and variously arranged on the face of the base-board to provide for changing the subject matter of the sign as desired.

Among the objects of my invention is to improve and simplify the construction of electric signs of this general type; to provide improved detachable electric connections between the permanently wired interchangeable letters or characters of the sign and the permanently wired terminals carried by the base-board or support; to provide means for insulating the body of the letters or characters from the base-board or support; to provide improved means for spacing the sign letters or characters on the base-board, and to provide for supporting the sign letters or characters a distance from the face of the face-board and thereby avoid leaving a dust outlined imprint of a letter or character on the board when the letter or character is removed therefrom. These and other objects of my invention I attain by the construction hereinafter described, constituting one specific embodiment of my invention, and the invention is more fully set forth in the appended claims.

In the drawings:—Figure 1 is a face view of a sign embodying my invention. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a vertical section of one of the sign characters, taken in a plane parallel with the face of the base. Fig. 4 is a transverse section of said character, taken on line 4—4 of Fig. 3. Fig. 5 is an axial section of one of the base-board sockets. Fig. 6 is an axial view of one of the plugs carried by the letters. Fig. 7 illustrates a spring or clamping pin constituting a detachable part of the sign character socket. Fig. 8 is a diagram illustrating the manner of wiring the base-board sockets.

As shown in the drawings, 10 designates the base-board or sign support which is made of any suitable material and any desired dimensions. Said base-board carries a plurality of special sockets 11 which open outwardly on the face of the base-board, and shown in detail in Fig. 5.

12, 12 designate the sign characters removably carried on the front face of the base-board. They are provided with suitable rearwardly extending plugs 13 that enter the base-board sockets, thereby affording electrical connections between the base-board terminals and sign

character plugs. The said base-board sockets 11 are permanently wired at the back of the base-board, as hereinafter described, and the sign characters are provided with lamp sockets 14 that are permanently wired and electrically connected with the plugs 13, as shown in Fig. 3. The removal and replacement of the sign characters is, therefore, effected without derangement or change of the wiring.

The base or support 10 is provided on its rear face with a suitable casing 15 which incloses the circuit wires leading to the various base-board sockets, said casing being detachably secured to the back of the base-board in any suitable manner. The said base-board sockets 11 are arranged in a plurality of rows on the base-board extending in a direction in which the sign characters are to be read, and the individual sockets of each row are connected alternately with the positive and negative sides of the branches of the feed circuits through which current is furnished thereto. Each sign character is provided with two plugs 13, shown in detail in Fig. 6, one adapted to engage a negative socket and the other an adjacent positive socket of a given row on the base-board, whereby is completed a circuit between the lamp sockets carried by the sign character and branch circuits with which the base-board sockets are connected. The sign characters 12 are supported on the front face of the base-board, as herein shown, through the medium of suspending hooks 16 that engage or hook over suspending bars 17 raised from the front face of the base-board and disposed parallel with the rows of base-board sockets 11.

Referring now in detail to the construction of the base-board sockets and sign character plugs by which the electrical connection is afforded between the branch circuits of the base-board and sign characters, and to the construction of the sign characters, the same is made as follows: A base-board socket 11 is shown in detail in Fig. 5. It comprises a hollow shank or sleeve 18, adapted to extend rearwardly through a suitable opening in the base-board, and a flanged head 19 which fits against the face of the base-board and is provided with suitable apertures 20 through which attaching screws extend to fasten the socket in place. Said shank and head are made of porcelain or other suitable insulating material.

21 designates a sleeve removably secured in the hollow shank 18 of the socket, axially therewith. Said sleeve is inserted in place through the rear end of said hollow socket shank and is locked in place between a shoulder in said shank and a hollow plug 22 that is fastened in said hollow shank by a set-screw 23. 24 designates a terminal pin that is seated in an axial opening in said sleeve 21 and extends rearwardly therefrom for connection with one of the wires 25 of a

branch of the feed circuit. Said terminal pin is adapted for contact at its outer end with a suitable contact carried by the sign character plug 13. The outer end of said socket is formed with a tapered opening 26 to receive the plug.

The sign character plug 13 comprises a short hollow shank 27 extending rearwardly through a suitable opening in the rear wall of the sign character and a hollow flanged head 28 that fits flat against the inner face of said wall of the sign character and is attached thereto by screws extending through suitable openings 29 in said flanged head. The bore of said plug, shank and head receives a plug or pin 30 which is removably secured therein by means of a set-screw 31. Said pin is made hollow and is provided at one end with a binding post 32 that has screw-threaded connection therewith and is fashioned to form at its other end a terminal that is adapted for contact with the terminal pin 24 of the socket. As herein shown, said terminal comprises a detachable extension pin or plug 33 that extends into the rear end of the shank 27 of the plug 13 and has screw-threaded engagement with the rear end of the pin or plug 30. The rear end of said shank 27 is suitably tapered to fit the conical opening 26 of the base-board socket. The said terminal pins 27 and 33, or one of them, are split at their ends to fit with a spring or clamping engagement. As herein shown, the terminal pin 24, which is hollow, is thus split at its end to render the same collapsible, while the terminal pin 33 is also split and adapted to fit over the split end of the pin 24. The sleeve 20 is provided around the split end of the pin 24 with an annular socket 34 to receive the end of the pin 33.

An approved construction of sign character is shown in Figs. 3 and 4 wherein is indicated the manner of constructing the letter "I". Said letter comprises a base 35, constituting the back wall of a hollow letter, and a hollow sheet metal casing attached thereto, comprising side walls 36 36 and a front wall 37. The lamp sockets 14 carried by the sign characters are attached to the back wall or base of the letter and extend outwardly through suitable openings in the front wall 27 thereof. The said lamp sockets are connected up permanently by wires 39, 39, in a familiar manner, and said wires are connected by conductors 40, 40 with the binding posts 32 of the adjacent sign character plug, as shown in Fig. 3.

In Fig. 7 is illustrated diagrammatically the manner of wiring a number of adjacent base-board sockets. As therein shown 42, 43 designate the positive and negative conductors of branch circuits that are connected by the wires 25 with the sockets 11, indicated diagrammatically in Fig. 7. Each of the branch circuits includes a cut-out box or fuse, indicated diagrammatically at 44 in Fig. 7. The cut-out boxes or fuses for the several circuits are placed in any convenient place on the back of the board, whereby access may be readily had thereto. The number of base-board sockets carried on each circuit will depend upon the restrictive requirements of underwriter associations and like conditions. By the arrangement shown, it is to be noted that the necessary cut-outs are connected in circuit with the base-board sockets and that no occasion arises for placing the cut-outs in the sign characters themselves. The cut-outs may, therefore, be located on

the base-board in such manner as that free and ready access may be had thereto.

By reason of the alternate connection of the base-board sockets with the positive and negative sides of the circuit, and the close spacing of the sockets, ample flexibility is afforded to properly space any combination of sign characters on the face of the base-board. That is to say, the said sockets are placed so closely together that shifting of the plugs a distance equal to the distance between adjacent sockets will not be sufficient, relative to the size of the sign characters, to interfere with the proper spacing of the letters. Furthermore, this arrangement permits of the provision of a number of rows of sockets on the base-board and the shifting of the sign character towards and from the margins of the base-board.

In Fig. 1 I have shown a sign board as provided with five rows of sockets and five suspending bars for suspending the sign characters, said rows being disposed so as to provide for three rows of sign characters when spaced as therein shown. In accordance with such arrangement, the lower row of sockets is used for the lower row of letters. If a two line sign is desired with this arrangement, the middle row of letters will be omitted and the upper row moved downwardly so as to bring the plugs thereof into register with the second row of sockets from the top, while the lower row will be correspondingly moved upwardly to bring their plugs into register with the second row of sockets from the bottom. It will be furthermore noted that the suspending bars 16 are disposed to correspond with the spacing of the rows of sockets 11 and that each suspending bar is appropriated to or associated with one of said rows of sockets in a manner to support sign characters to bring the plugs thereof in line with the sockets of the associated row of sockets. The said suspending bars are so constructed or mounted as to insulate the sign characters from the base board. This may be effected by making said bars of insulating material, or mounting the bars on short studs 45, as shown in Fig. 2. Moreover, the said sign characters are held separated from the base board partially by the flanged heads of the base board sockets, as shown in Fig. 2.

An advantage of supporting the sign characters spaced from the face of the base board, as shown in Fig. 2, is that this arrangement avoids the formation of dust outlined imprints of the characters on the base-board, such as occurs where removable letters are placed directly against the face of the base-board. Such imprints are highly objectionable in an interchangeably character sign, as will be obvious, rendering it necessary to clean the front face of the base-board, at a considerable expense of time and labor, when the subject matter of the sign is changed.

It will be understood that the particular construction of the parts herein shown is to be regarded merely as illustrative of the application of my invention, so far as the broader aspects of the invention are concerned. Such details may assume various forms within the scope of the claims appended hereto.

I claim as my invention:-

1. In an electrical sign, the combination with a base-board and a plurality of electric sign characters adapted to be removably supported, and variously arranged, on the face of the base-board, of a row of closely spaced sockets car-

ried by the base-board and alternately connected with the opposite sides of the feed circuit, and plugs carried by the sign characters and arranged to enter two sockets of alternate polarity on the board, said plugs being permanently wired to the opposite sides of the sign character circuits.

- 5 2. In an electric sign, the combination with a base-board provided with a plurality of individual, closely spaced, separated sockets permanently connected to the feed and return wires of the circuit, sign characters supported on the front face of the board and plugs carried by the sign characters and permanently wired to the opposite sides of the sign character circuits, said plugs being separated such distance that when one plug is engaged with a negative socket of the base-board the other plug is engaged with a positive socket thereof and the sockets being so closely spaced that a character may be shifted from one pair of sockets to an adjacent pair without indicating an objec-
- 10
- 15

tional separating space between the characters on the base board.

3. In an electrical sign, the combination with a base-board and a plurality of electric sign characters adapted to be removably supported, and variously arranged, on the face of the base-board, of a row of closely spaced sockets carried by the base-board and alternately connected with the opposite sides of the feed circuit, plugs of opposite polarity carried by each sign character designed to enter said sockets, and a suspending bar extending outwardly from the face of the base-board on which the sign characters are suspended.
- 20
- 25

WILLIAM ASHRIEL FREDERICK BECKER.

Witnesses:

E. C. BECKER,
MAX FENNEMANN.