No. 619,687. Patented Feb. 14, 1899.

W. A. HARVEY.

ELECTRICAL SIGN.

(Application filed Feb. 23, 1898.)

(No Model.)

Fig. 4.

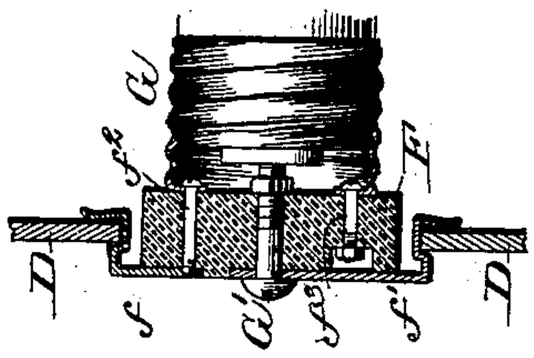

Fig. 5.

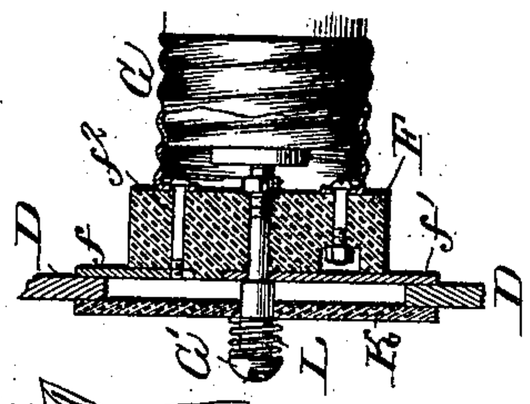

Fig. 3.

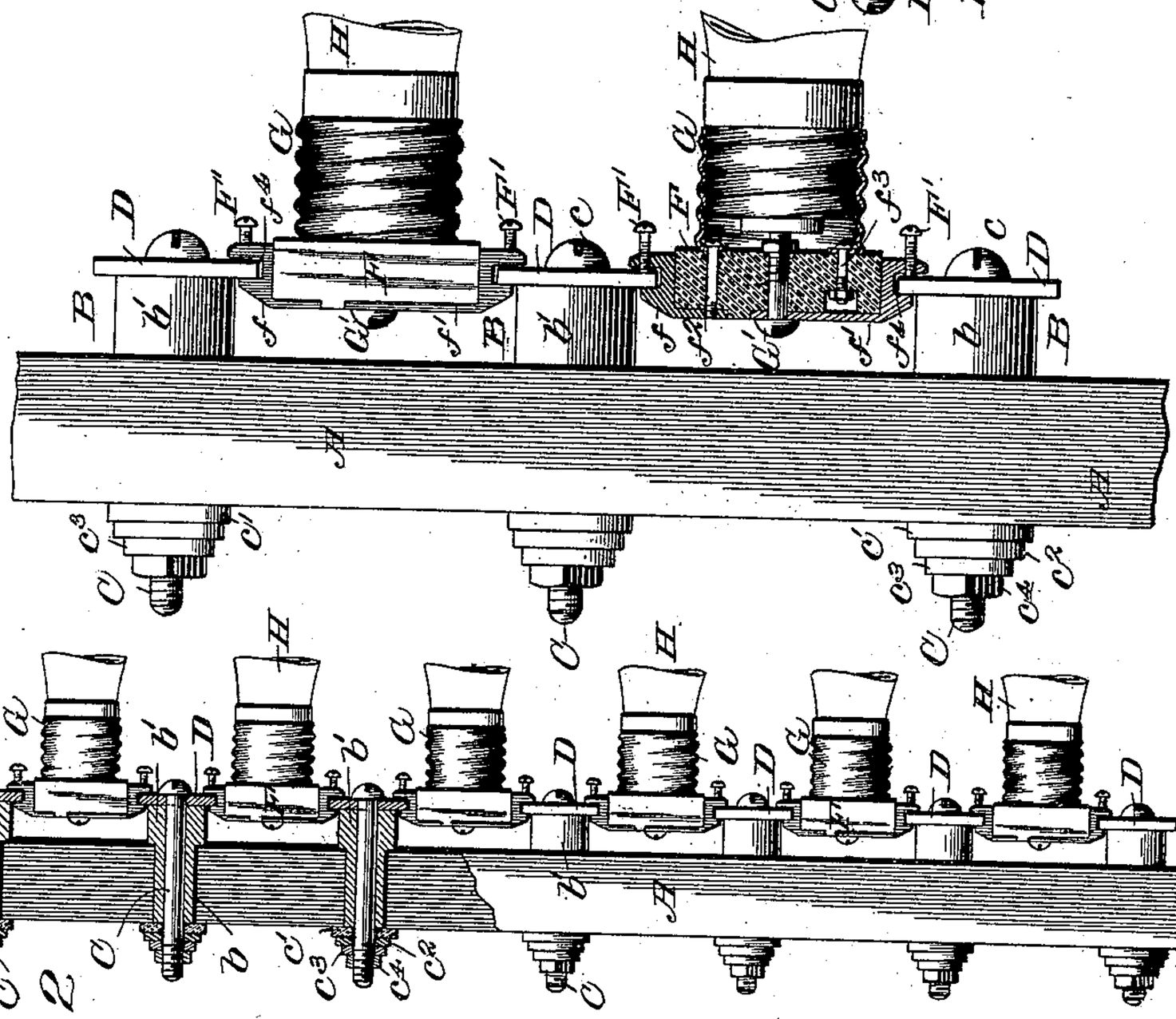

Fig. 2

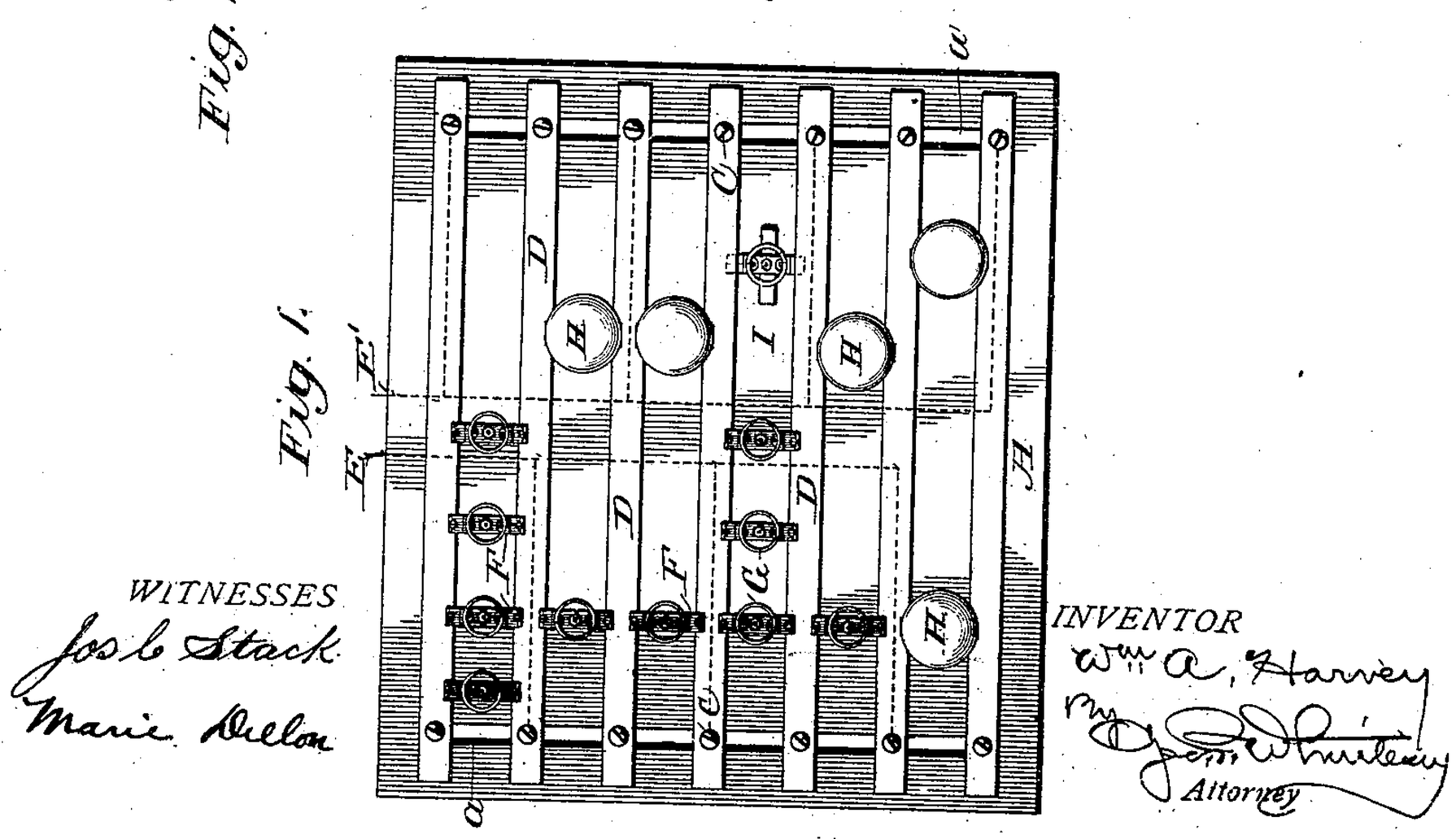

Fig. 1.

WITNESSES

Jos. b Stack.

Marie Dillon

INVENTOR

Wm A. Harvey

by John W. Mulleary

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM A. HARVEY, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO NATHAN VIDAVER AND H. B. REYNOLDS, OF SAME PLACE.

ELECTRICAL SIGN.

SPECIFICATION forming part of Letters Patent No. 619,687, dated February 14, 1899.

Application filed February 23, 1898. Serial No. 671,306. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. HARVEY, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Electrical Signs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to electrical signs or display-boards, and especially those in which the letters or other devices are composed of a number of incandescent electric lamps suitably grouped together.

The object of the invention is to enable the lamps to be readily arranged, shifted, and removed in making up any given sign or in changing from one to another.

The device consists, in brief, of a base of insulating material, on which are supported several parallel bars of metal, between the edges of which are interposed movable and removable holders of insulation, each carrying an electric lamp, whose terminals are connected with metallic contacts on said holders arranged to bear against the supporting-bars. The bars are alternately connected with the main conductors, so that each lamp will close the circuit between the two bars by which it is supported and all the lamps will be connected up in multiple. The lamps can be slid back and forth along the bars to change their positions, and additional lamps can be inserted or superfluous ones removed at will to enable any desired grouping of the lamps to be effected.

In the drawings, Figure 1 is a front elevation of a sign embodying my invention. Fig. 2 is an end elevation on an enlarged scale and partly in section. Fig. 3 is a still larger view of a portion of the device, showing one lamp-holder in section. Figs. 4 and 5 show modified forms of holders.

The base A is a plate of slate or some other good insulating material. It has two parallel slots *a*, preferably near each end, respectively. In each slot are a plurality of bushings B, of porcelain or the like, having stems *b*, which fit easily in the slots *a*, being in length the same as or slightly less than the thickness of the base A. The bushings have enlarged heads *b'*, which project outwardly from the base A. A screw C passes lengthwise through each bushing, its head *c* serving to clamp to the outer end of the bushing one end of a metallic bar D. The threaded end of the bolt projects beyond the back of the base A and receives three washers and a nut. The washer *c'* is wider than the slot *a* and serves as a retaining-washer for the bushing-screw and bar. It is preferably of insulating material, such as porcelain. Washer c^2 is of leather or other elastic material, and washer c^3 is of metal to receive the direct pressure of the nut c^4.

The bars D are supported by the bushings B at a uniform distance in front of the base A, there being a bushing at or near each end of each bar. The bars are somewhat wider than the heads of the bushings, as shown in Figs. 2 and 3. The bushings are adjusted in the slots *a*, so that the adjacent edges of each pair of bars are parallel. The bars are preferably alternately connected with the two mains E E'', preferably by wires clamped under the nuts c^4.

The lamp-holders each consist of a block F, of porcelain or other insulation, whose upper and lower edges have a plate of metal *f f'* secured to them. The plates may be let in flush with the block, as shown. Plate *f* is secured by a screw f^2, which serves also to fasten one side of the lamp-socket G to the block, the other side being held by a short screw-bolt f^3, whose nut is received in a recess in the back of the block, so that the lamp-socket will not be in electrical connection with the plate *f'*, but only with plate *f*. The center contact of the lamp-socket is a screw-bolt G', whose head is tightly clamped against the plate *f'*. When the lamp H is inserted into the socket G, its terminals will then be in connection with the plates *f f'*, respectively.

Each plate is constructed to engage with the edge of a bar D. In Figs. 2 and 3 the

edge of the plate is shown with a groove f^4, which is deep enough to permit the holder to be rotated a quarter-turn in order to disengage it from the bars when it is to be removed, as shown at I in Fig. 1. This enables any lamp to be removed without disturbing the others.

The rear edges of the plates do not overlap the bars D enough to prevent them from sliding past the bushings B, if necessary, this fact being clearly shown in Figs. 2 and 3. A small set-screw F′ in each plate serves to clasp it firmly to the bar when the lamp has been adjusted and also insures a good electrical contact.

In Fig. 4 the plates $f f'$ are carried out beyond the edges of the block F and are then bent outwardly into a hook shape, so as to embrace the edges of the bars D. The plates have a slight spring action, which tends to press the hooks into close contact with the bars.

In Fig. 5 the plates $f f'$ rest flat against the face of the bars and are held there by a cross-bar K, of porcelain or the like, laid across the two bars D and pressed against them by a spring, preferably a helical spring L, surrounding the shank of the screw-bolt G′, which in this case is made longer and is enlarged back of the plate f, so as to form a shoulder to hold said plate in place. The spring abuts between the cross-bar and the head of the bolt. It causes a good electrical contact between the plates $f f'$ and the bars D, but permits the holder to be readily shifted. By giving the cross-bar a quarter-turn on the screw G′ the holder is disengaged from the bars D.

From the foregoing description it will be seen that this invention enables signs or displays of different figures, letters, words, and designs to be readily made up from incandescent electric lamps and that it permits changes to be quickly made from one sign or combination to another by the mere shifting of the lamp-holders. While the holder shown is adapted to receive an Edison lamp, it will be understood that any desired type of lamp may be used.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an electrical sign, the combination with an insulating-base, of a series of parallel conductors supported thereon, and a plurality of lamp-holders having grooved edges to engage the adjacent edges of any pair of conductors, substantially as described.

2. In an electrical sign, the combination with a base of insulating material, of rows of supports mounted thereon, a series of metallic bars carried on said supports, and a plurality of lamp-holders removably engaging with pairs of said bars, substantially as described.

3. In an electrical sign, the combination with an insulating-base, having parallel slots, of insulating-bushings adjustably mounted in said slots, metallic bars carried on pairs of said bushings, with their edges parallel, and movable lamp-holders having metallic plates engaging with the edges of said bars, substantially as described.

4. In an electrical sign, the combination with a base having a slot, of insulating-bushings each having a stem received in said slot and a head projecting in front of said base, a screw-bolt passing lengthwise through said bushing, and a metallic bar secured by said bolts to the outer ends of each pair of bushings, substantially as described.

5. In an electrical sign, the combination with a base having a slot, of bushings of metallic material each having a stem received in said slot and a head projecting in front of said base, a screw-bolt passing lengthwise through said bushing, an insulating retaining-washer at the back of said base, an elastic washer, a metallic washer and a nut, and conducting-bars held by said bolts against the heads of the bushings, substantially as described.

6. In an electrical sign, the combination with suitably-supported conductors, of a lamp-holder composed of a block of insulation, a lamp-socket secured thereto, and metallic plates projecting beyond the opposite edges of the block and having grooved edges adapted to engage with said conductors, substantially as described.

7. In an electrical sign, the combination with suitably-supported parallel metallic bars, of a lamp-holder composed of a block of insulation, metallic plates applied to opposite edges of said block and sunk in flush with the surface thereof, a lamp-socket, a screw connecting said socket with one of said plates, a screw-bolt for further securing the lamp-socket, having its nut held in a recess in said block, a center-contact screw-bolt securing the other plate to the block, and means for keeping said plates removably engaged with said bars, substantially as described.

8. In an electrical sign, a lamp-holder composed of a block F of insulation, plates $f f'$ secured to opposite edges of said block and having grooves f^4, and set-screws F′ in each plate projecting into said grooves, substantially as described.

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

WILLIAM A. HARVEY.

Witnesses:
NATHAN VIDAVER,
JOHN T. MARTIN.