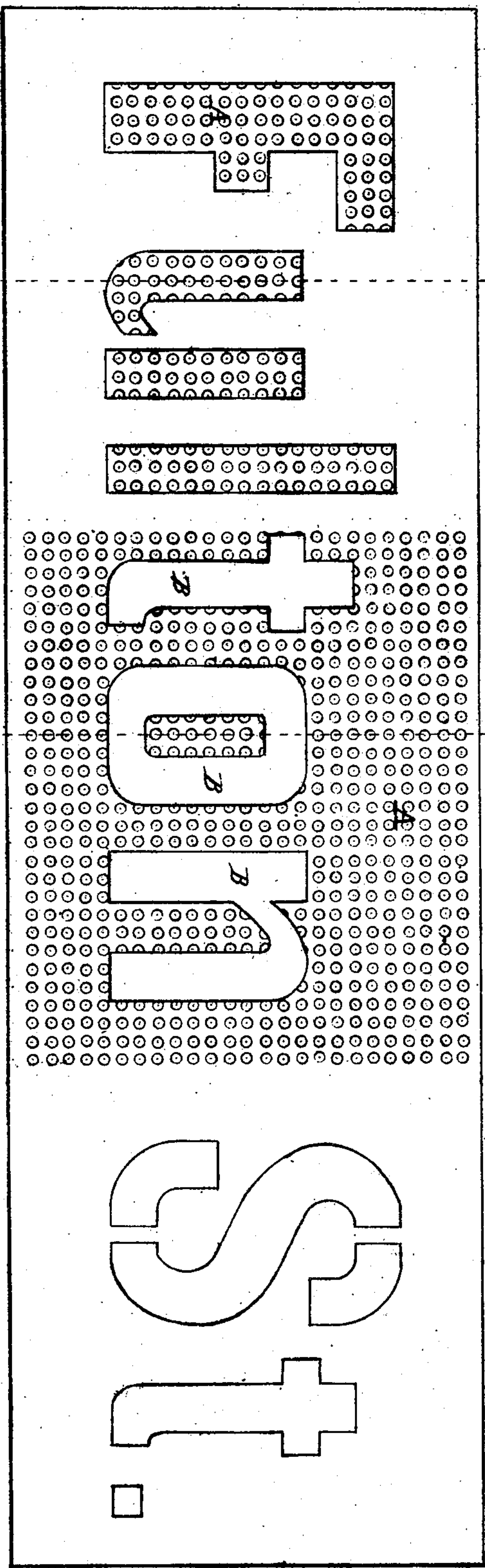


W. POWELL WARE'S *improvement* TRANSPARENT SIGNS.

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Fig. 1.

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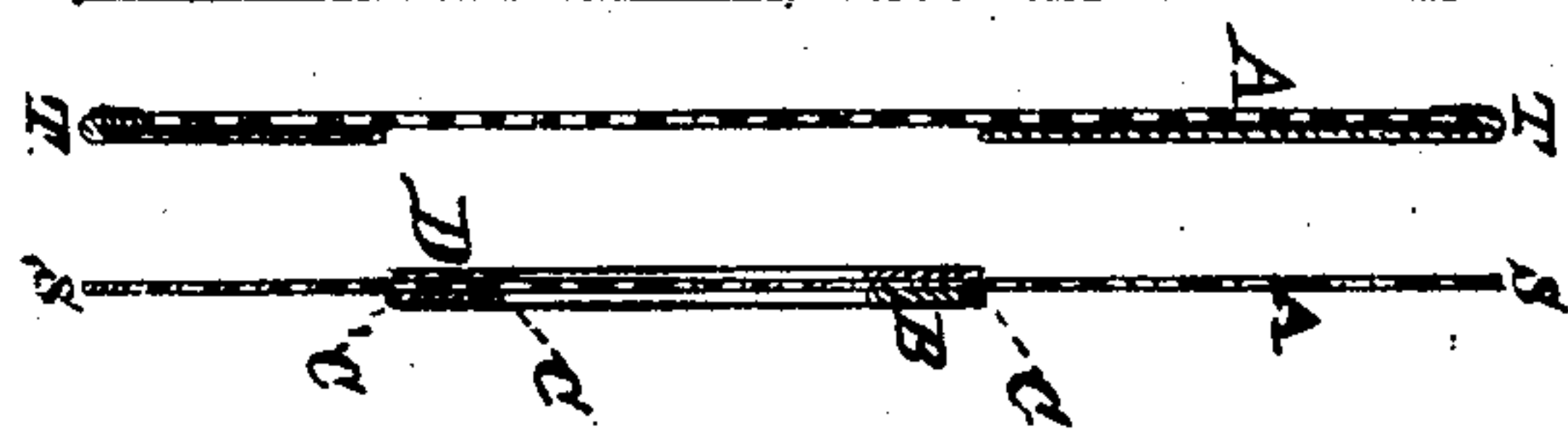


Witnesses.
W. C. Dey.
C. C. Livings

Signature.
W. Powell Ware
by his attorney
J. B. [Signature]

Fig. 3.

Fig. 2.



United States Patent Office.

WILLIAM POWELL WARE, OF NEW YORK, ASSIGNOR TO HIMSELF AND
JAMES J. DE BARRY, OF BROOKLYN, NEW YORK.

Letters Patent No. 75,086, dated March 3, 1868.

IMPROVEMENT IN SIGNS FOR STREET-LAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM POWELL WARE, of the city of New York, State and county of New York, have invented certain new and useful Improvements in Transparent Signs for Use in Street-Lamps or other purposes; and I do hereby declare that the following is a full and exact description thereof.

It has been common to paint the letters giving the names of streets or other desired information on strips of glass, and to place such in the interior of street-lamps. The fragile character of the glass and the liability of the painted letters to rub off with repeated cleanings form objections to this species of transparent signs. I substitute for these strips of glass a corresponding strip of perforated metal, and, for the letters painted on the strips of glass, metallic or other opaque letters, cut by dies, or otherwise, in accurate forms, at very moderate cost. My opaque letters are fixed on the perforated metal very easily by soldering, cementing, riveting, or otherwise.

I will proceed to describe what I consider to be the best means of carrying out my invention, by the aid of the accompanying drawings.

Figure 1 is a front view of the sign complete, and

Figure 2 is a cross-section on the line S S in fig. 1.

Only the middle part of the sign, fig. 1, is represented as made in the manner which I esteem the best. Each end is represented as made in a manner which I esteem very much inferior, although these inferior kinds of signs involve some of the features which I combine in my invention.

Figure 3 is a cross-section of the inferior style shown at the left of fig. 1. It is a section on the line T T.

Similar letters of reference indicate like parts in both figures.

A is a sheet of rolled iron, about No. 25. It is coated with tin, and is perforated, as indicated by *a a*. The holes may be produced by machinery in any approved manner. B B, &c., are letters, and C solder, by which the parts A and B are secured firmly together in the desired position. I believe that, with practice, a workman of reasonable skill and taste will be able to select and place the letters in position, and to affix them, with the suitable means, with very great rapidity, and with absolute permanency.

The letters may be "upper" or "lower case," or they may be all capitals; and other modifications may be used, as required. In order to produce them with economy, it is necessary simply to provide suitable steel dies, having each die the proper size and character. The expense involved in its preparation tends to limit the varieties of the letters, for which reason it may be preferable to employ capitals alone in ordinary cases.

I prefer, in many cases, to apply a corresponding letter in the position to exactly correspond with and cover the same surface at the back side of each plate. This letter is indicated in red outline in fig. 2, and is marked D. The principal advantage of the employment of these backing-letters lies in the usefulness of the signs in street-lamps during the day. The addition of the backing-letters D allows the sign to be read on the back side with great facility, so soon as the reader becomes a little accustomed to the reversed position of the letters.

I can secure the letters by small rivets, in the ordinary manner, or by any suitable cement, screws, &c.; or the letters may be fixed by the process, imperfectly known in many arts, of punching the material of the one into the material of the other. This may be done by machinery with great facility. All the approved modes of joining materials may be employed in joining the parts of my improved signs. I can, by the same dies, or others, cut holes of the shape corresponding to the letters in the perforated metal, and sink a single thickness of the letters, as B, into the holes thus prepared, and secure them, by soldering, along the whole or a portion of the edges. This will produce the same effect as the backed sign A B D, and with less metal, but it will, under ordinary circumstances, require more labor.

I propose, in some cases, to substitute for the letters B a plate of opaque material, having the letters cut therein like a stencil-plate, so as to let the light through the letter, and pass on on the other parts of the surface. Many such modifications may be made without departing from the principle of my invention.

My signs will be very durable. I propose to paint them by hand or by machinery. They can then be cleansed and washed to any extent required without danger of rust.

I can use brass or other material instead of tinned iron, and can stiffen them by bending over the edge, as practised by tinsmiths, or in any other approved manner.

The entire edges of my signs may, if desired, be made to receive a stiffening addition of wire or other material, which will increase their permanency and rigidity; but I prefer, for economy, to use the plain sheets, as represented in the drawing, fig. 2, and the centre of fig. 1.

The left side of fig. 1 shows, as before suggested, a complete plain sheet of perforated metal behind a stencil-plate, and united by the bending over the edges of the latter. The right side of fig. 1 shows such stencil-plate alone.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent is as follows:

I claim the transparent signs herein described, composed of perforated metal, A, and opaque material, B, combined and arranged so as to serve in the manner and for the purposes and advantages herein specified.

In testimony whereof, I have hereunto set my name in presence of two subscribing witnesses.

W. POWELL WARE.

Witnesses:

W. C. DEY,

C. C. LIVINGS.