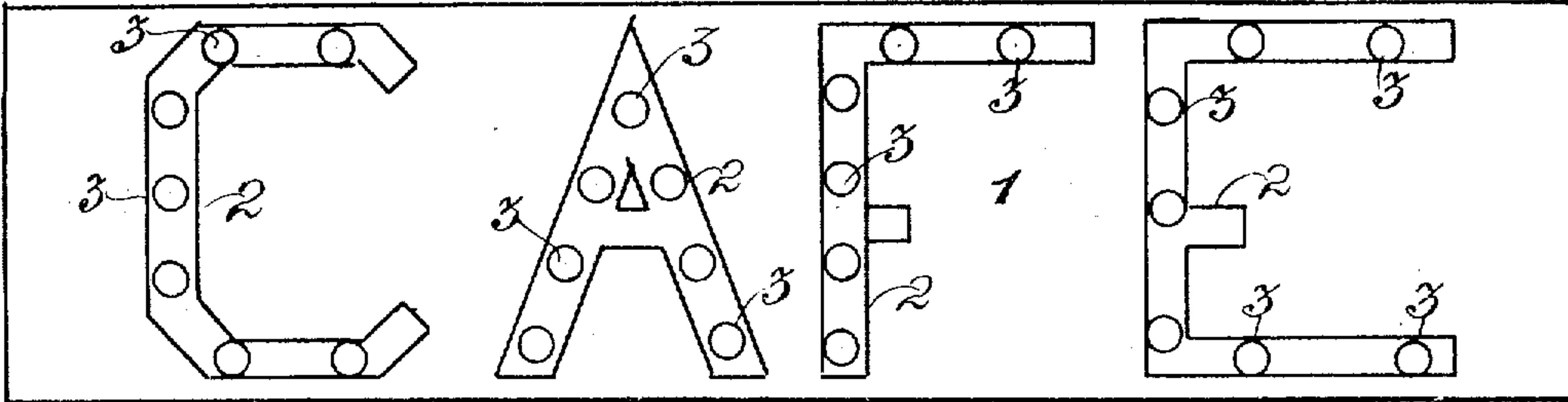


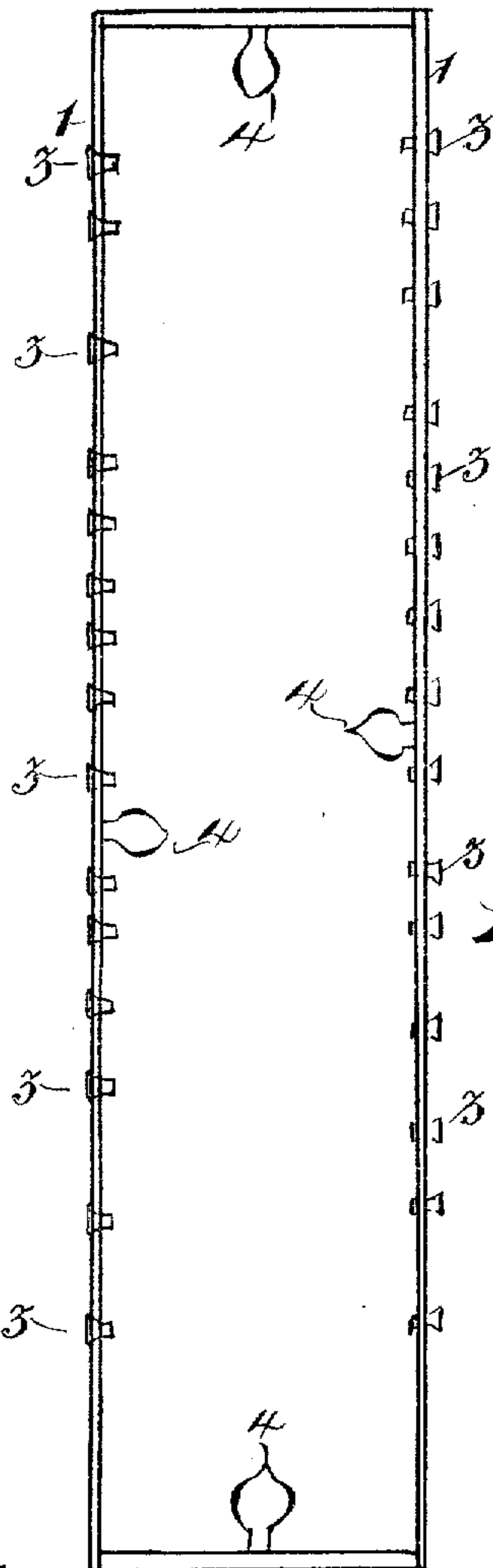
J. W. CROW.  
ILLUMINATED SIGN.  
APPLICATION FILED JAN. 21, 1909.

944,951.

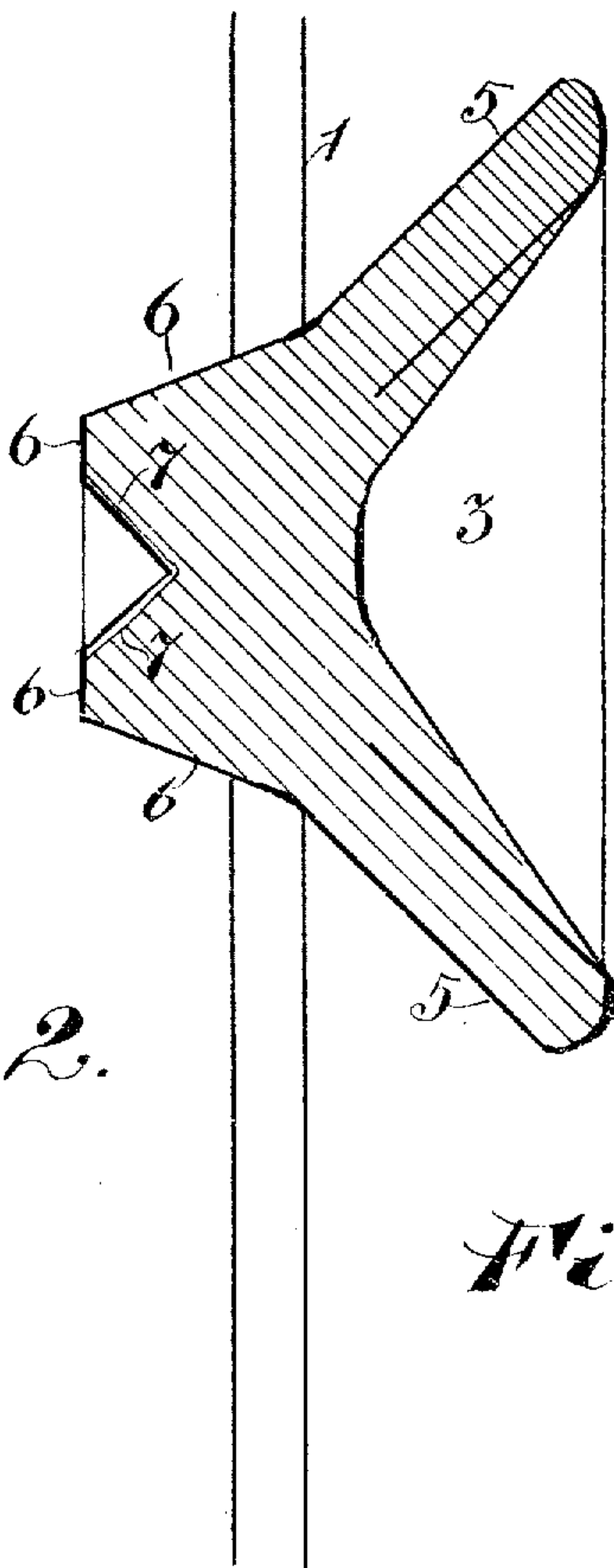
Patented Dec. 28, 1909.



*Fig. 1*



*Fig. 2.*



*Fig. 3.*

Witnesses  
E. G. Medina  
Jm. Thomas

Inventor  
John W. Crow  
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Attorneys

# UNITED STATES PATENT OFFICE.

JOHN W. CROW, OF OAKLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WILLIAM T. BRADSHAW AND ONE-HALF TO MARY E. CROW, OF OAKLAND, CALIFORNIA.

## ILLUMINATED SIGN.

944,951.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed January 21, 1909. Serial No. 473,477.

*To all whom it may concern:*

Be it known that I, JOHN W. CROW, a citizen of the United States, residing at the city of Oakland, in the county of Alameda and State of California, have invented a new and useful Improvement in Illuminated Signs, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

My invention relates to illuminated signs and has for its object to provide means for economizing light, and of beautifying said signs in a novel manner.

Another object of my invention is to provide in an illuminated sign means for refracting and reflecting rays from an electric light, or from electric lights, in such a manner as to economize the light and beautify the sign.

Another object of my invention is to provide in an illuminated sign having transparent spaces about its outer surface, novel means for concealing the interior portions of the sign and at the same time giving the light a clear path outwardly.

Another object of my invention is to provide in a device of the character referred to a novel refracting device which shall refract the light over the entire front.

I accomplish my objects by the means illustrated in the accompanying drawing, of which—

Figure 1, is a front elevation of an illuminated sign showing my invention; Fig. 2, a top view thereof; Fig. 3, is a vertical, sectional view of my novel refracting device.

The same numeral of reference marks the same part throughout the various views.

Referring to the drawing, 1 is the board forming the frame of the sign on which the letters are placed. The letters 2 are of any suitable character, and are pierced by a number of holes. Through these holes the refracting devices 3 project, the inner parts of the same being exposed to the interior of the sign and capable of receiving the light from a suitable number of lamps 4 which are pref-

erably of the incandescent filament type; or they may be replaced by a single arc light in the midst of the sign. The cup portion 5 of the refracting device is turned outwardly and projects beyond the surface of the frame.

The body portion of the refracting device which admits the light is shown at 6, 6; and it is to be noted that the curved surfaces of the refracting device are so arranged that light striking them at any angle at their interior surface will be carried through the substance of the glass and emerge at the cup shaped portion in a refracted and dispersed form, the unequal refraction of the various rays producing an iridescent effect and adding to the beauty of the sign. At the same time the whole front is illuminated.

Adding to the effectiveness of my device is the mirrored portion shown at 7. The mirrors are arranged at such an angle as to reflect the incident light outwardly; and at the same time they form a screen covering the interior parts of the sign from view.

My invention consists of the above described parts and arrangements, and my objects are attained in the manner described.

Having described my invention what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In an illuminated sign, refracting devices comprising a cup-shaped portion expanding outwardly, and a body portion having a conical depression, the lines and angles of said cup shaped portion, body portion and conical depression being arranged to refract light received on said body portion.

2. In an illuminated sign, refracting devices comprising a cup shaped portion and a body portion having a conical depression the surface whereof is a reflector.

In testimony whereof I have set my hand this 14th day of January A. D. 1909, in the presence of the two subscribed witnesses.

JOHN W. CROW.

Witnesses:

FRANK P. MEDINA,  
MARY E. CROW.