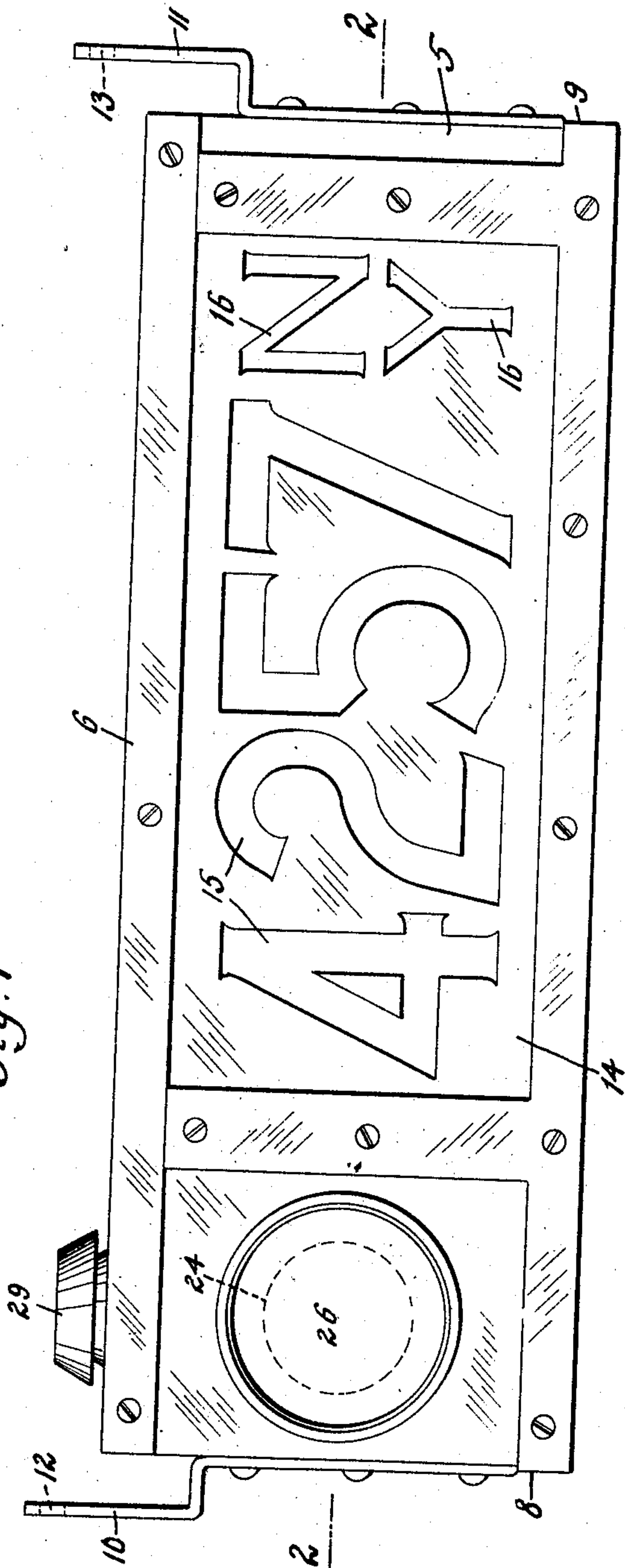


F. ROBINSON.  
 AUTOMOBILE NUMBER DISPLAYING DEVICE.  
 APPLICATION FILED FEB. 11, 1910.

997,469.

Patented July 11, 1911.

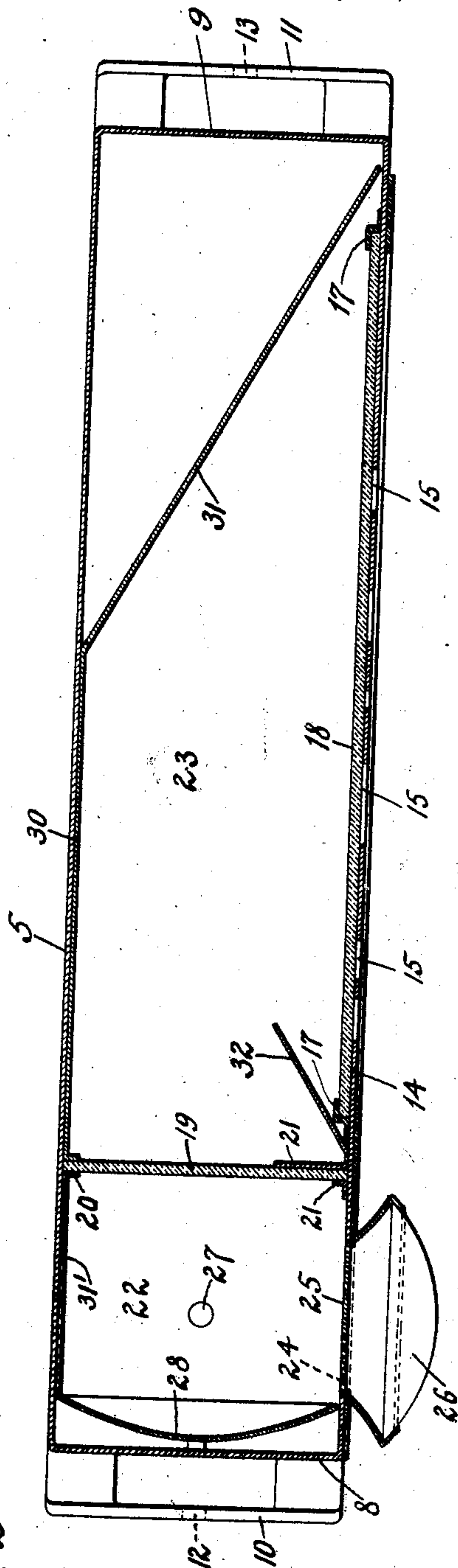
Fig. 1



WITNESSES:

*S. Birnbaum*  
*Ernst Baer*

Fig. 2



INVENTOR  
*Frederick Robinson*  
 BY  
*Sigmund Herzog*  
 ATTORNEY



# UNITED STATES PATENT OFFICE.

FREDERICK ROBINSON, OF NEW YORK, N. Y., ASSIGNOR TO SURE NUMBER LAMP COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## AUTOMOBILE NUMBER-DISPLAYING DEVICE.

997,469.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed February 11, 1910. Serial No. 543,329.

*To all whom it may concern:*

Be it known that I, FREDERICK ROBINSON, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automobile Number-Displaying Devices, of which the following is a specification.

In most of the States automobiles are required to carry their license number conspicuously displayed upon the rear of the machine, whereby said number can be easily detected by a policeman or other officer in case of accident. While no trouble has been experienced in identifying the license number of automobiles in daytime, if such numbers are of the required size, it is almost impossible to distinguish the number at night for the reason that the light is not evenly distributed over the surface of the sign plate.

The object of the present invention is to provide a novel automobile-number displaying device, having a series of reflectors for distributing the rays of a suitable source of light evenly upon a plate, which is provided with openings representing numbers and characters.

With these and other objects in view, which will fully appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of an automobile-number displaying device constructed in accordance with the present invention; and Fig. 2 is a section taken on line 2, 2 of Fig. 1.

In the drawings, the numeral 5 denotes a box which may be of any suitable configuration and of any suitable material. Preferably, the box is made of sheet metal, and provided with a cover 6, which may be hinged to the body thereof whereby access may be had to the interior of said box. The ends 8 and 9 of the box are provided with brackets 10 and 11, having holes 12 and 13 adapted to be engaged by a chain or other means to be attached to and suspended from the body of the automobile. The front side 14 of the box is provided with openings 15,

15 representing numbers, that is the number of the license, and with openings 16, 16 representing characters, indicating the name of the State or other municipality issuing the same. The inner side of the front wall is provided with flanges 17, 17 to permit of a translucent plate 18 to be inserted into the box to cover the openings 15 and 16. Obviously the translucent plate may be secured to the front wall in any other suitable manner, the one shown being only for the purposes of illustration.

A transparent plate 19 is held by means of flanges 20 and 21, or other suitable means, in the box, preferably at right angles to the plate 18, and divides the interior of the box into two compartments 22 and 23. The comparatively smaller compartment 22 forms the lamp box, and is provided in its front wall with an opening 24 covered by a transparent plate 25 and a transparent danger light plate 26, preferably red, which is intended to be displayed to the rear of the machine. In this lamp box is arranged a suitable source of light 27, located in the focus of a parabolic mirror surface 28, which it is attached to the end wall 8 of the box in any suitable manner. A hood 29 prevents rain, snow, etc., from entering the lamp box, but allows the heat generated by said source of light to radiate.

The compartment 23 is provided with a plurality of reflecting surfaces; more particularly a reflecting surface 30, which is secured to the rear wall of the box, a surface 31, arranged at an angle to the surface 30, and a surface 32, attached to the front wall 14 of the casing and being arranged at an angle to the translucent plate 18. A reflecting surface 31' is arranged in the compartment 22, and attached to the rear wall of the box.

Obviously the reflecting surfaces 28, 30, 31, 32 and 31' may be made of glass in the form of mirrors or other suitably polished metallic plates, etc. The translucent plate 18 is, preferably, made of milk glass serving to bring out the indicating numbers and characters with great distinctness in daytime.

It is well known that a ray of light falling upon a plane polished surface of white translucent glass, commonly called "milk glass" is after incidence divided into two parts. Part of the incident light is reflected



from the surface of the white glass. This reflection is of the mirror-like or regular type. The amount of light in the reflected ray varies with the angle of incidence. The amount is least when the incident ray is perpendicular to the white glass surface, and is then about ten per cent. of the intensity of the incident ray. As the incident ray strikes the glass at a more oblique angle the amount of the light reflected is greater, until when the incident ray is nearly parallel to the glass surface almost all of the incident light is reflected. Obviously in providing the shield 32 the incident ray strikes the glass at an oblique angle, whereby a great amount of light will be reflected rather than refracted. The other part of the incident ray, which is not reflected, enters the white glass. Of course, some of this light is diffusely reflected by the white particles of the glass, some is absorbed and the energy turned into heat, while some finds its way entirely through the plate of the glass. The less light is refracted, or in other words, finds its way through the glass, the more even is the illumination of the plate 18. The amount of refracted light is, of course, controlled by the shield 32.

What I claim is:

1. In an automobile-number display device, the combination with a box, of a transparent plate dividing the same into two compartments, the front wall of one of said compartments having an opening covered by a colored transparent member, and the front wall of the second compartment being

provided with openings representing numbers and characters, a translucent plate covering the openings in said second compartment, a parabolic mirror in said first compartment, a source of light located in the same compartment and in the focus of said parabolic mirror, a plurality of reflecting surfaces in both compartments cooperating with said parabolic mirror to reflect the light upon said transparent member and said translucent plate, and a shield in said second compartment arranged at an angle to the surface of said translucent plate, and adapted to cut off the direct rays of said source of light from the portion of said translucent plate adjacent to the shield.

2. In an automobile-number displaying device, the combination with a box having a front wall provided with openings representing numbers and characters, of a source of light therein, a translucent plate covering said openings, a plurality of reflecting surfaces in said box, to direct the rays of said source of light onto said translucent plate and a shield arranged at an angle to the surface of said translucent plate, and adapted to cut off the direct rays of said source of light from the portion of said translucent plate adjacent to the shield.

Signed at New York, in the county of New York and State of New York this 8th day of February, A. D. 1910.

FREDERICK ROBINSON.

Witnesses:

SIGMUND HERZOG,  
S. BIRNBAUM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."