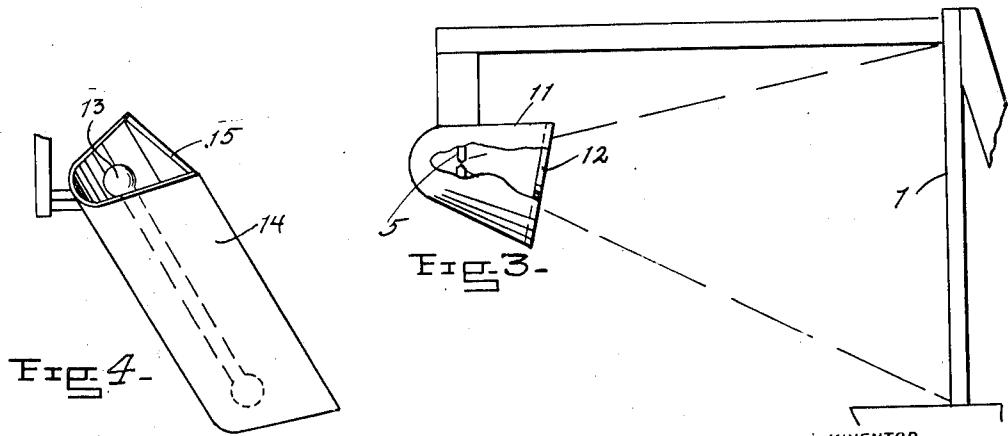
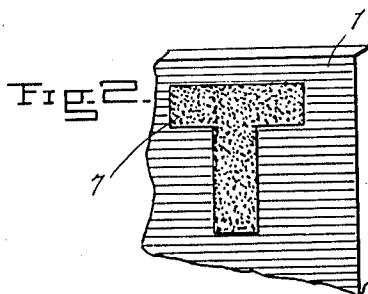
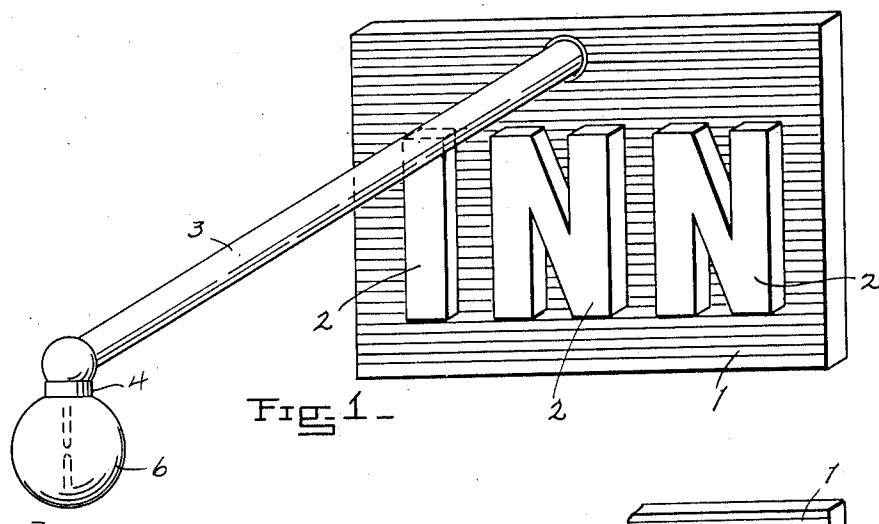


1,004,503.

D. W. TROY.  
APPARATUS FOR ADVERTISING.  
APPLICATION FILED JAN. 31, 1911.

Patented Sept. 26, 1911.



WITNESSES:

Daisy Jones.  
Charles H. Scott

INVENTOR  
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# UNITED STATES PATENT OFFICE.

DANIEL W. TROY, OF MONTGOMERY, ALABAMA.

## APPARATUS FOR ADVERTISING.

1,004,503.

Specification of Letters Patent. Patented Sept. 26, 1911.

Original application filed November 12, 1910, Serial No. 592,117. Divided and this application filed January 31, 1911. Serial No. 605,820.

To all whom it may concern:

Be it known that I, DANIEL W. TROY, a citizen of the United States, and a resident of the city and county of Montgomery, State of Alabama, have invented certain new and useful Improvements in Apparatus for Advertising, of which this is a specification, reference being had to the accompanying drawing.

10 This invention relates to advertising displays wherein the light of fluorescence produced by ultra-violet excitation is employed.

15 The invention is subordinated to the method described and claimed in my application, Ser. No. 592,117, filed Nov. 12, 1910, method for advertising, from which this application is a division.

20 The object of this invention is to provide novel and efficient means for producing at small expense highly attractive illuminated or rather luminous advertising displays, such as signs, through the use of fluorescent material.

25 In the drawing, Figure 1 shows a typical reduction to practice, such as I employ in a simple case; Fig. 2 shows a modification of the manner in which ornaments or characters may be formed; while Figs. 3 and 4 show modifications of the means for exciting by substantially ultra-violet light.

30 The invention is carried into effect by forming the characters, ornaments and the like, of an advertising display or sign wholly or in part only of fluorescent material, and then providing means to excite such material so as to cause it to fluoresce and become self-luminous. It will be understood that the invention permits of highly attractive effects which will be of great value for the purposes intended.

35 In the typical illustration of Fig. 1 I show a sign 1, upon which are characters 2, 2, 2, (which, obviously, may be of any desired number or arrangement), and, if desired, various merely ornamental objects or representations, formed of fluorescent material or coated therewith. By means of a support 3 a source of substantially ultra-violet light 4 (in this case an arc lamp 5 screened by a deeply colored cobalt glass globe or shade 6) is held in proper position to strongly illuminate (or rather, excite) the fluorescent characters, etc., of the sign 40 with substantially invisible light. I find

that a light substantially ultra-violet in character answers perfectly and therefore preferably employ the simple screen of cobalt glass which is not entirely opaque to visible light. The small proportion of dark blue or violet light which passes the cobalt glass is in no wise a detriment. More expensive screens could be employed but I find satisfactory results from cobalt glass. It will be understood, however, that the invention may be carried into effect with any suitable source of ultra-violet or substantially ultra-violet light. As an illustration of a modification of the illuminant see Fig. 4 to be described. I merely provide efficient means for producing the fluorescence, and the type of the source of ultra-violet rays is largely a matter of convenience.

45 I may form the fluorescent characters, designs, or ornamental parts of the sign or display apparatus in a variety of ways. I may employ uranium glass, silicate of zinc, platino-cyanid of barium (although rather too expensive), calcium tungstate, and a variety of other substances which may be had in a powdered or crystalline form and which fluoresce brilliantly. These I may apply in the shape of a paint mixed with or adherent to a binder. See Fig. 2, in which I show a part of a sign 1, having a character 50 7 so applied.

55 Fig. 3 illustrates the preferred manner of arranging the source of substantially ultra-violet excitation so as to obtain the maximum excitation with a given source of light. Obviously, a reflector of some form will accomplish this end; I therefore provide such reflecting means, preferably of substantially or approximately parabolic form, although not necessarily so. See, for example, the reflector 11, partly broken away to show the arc 5 within and closed at the front by a medium such as described capable of allowing substantially no visible light to pass but fairly transparent to ultra-violet light. The nature of the screen 12 is capable of modification. As said above cobalt glass answers very well. A further absorption of visible light may be had with cobalt glass coated with nitrosodimethylanilin and there are doubtless other screens which might be employed but for ordinary advertising purposes I find the plain cobalt glass, particularly if deeply colored, answers perfectly—the deep blue or violet visible light 100 105 110

not only causing no diminution of the effect but actually increasing the beauty of the display by the contrast of back-ground and fluorescent figure. As several types of vapor lamps, such as the Hewitt mercury vapor lamp, are very efficient radiators of ultra-violet light I may sometimes employ them to advantage in lieu of the arc. For such use I may arrange means as shown in Fig. 4; a lamp of the type mentioned being shown at 13, within a suitably shaped reflector 14, closed by the absorber (sheet of cobalt glass, for example) at 15.

Obviously, highly attractive effects can be secured by making letters, characters, and ornamental members integrally independent of the back-ground of the sign. For example see the letters I N N of Fig. 1, which are separately formed, either of uranium glass or some other material, wood or metal, perhaps, coated with a fluorescent material. Signs of great beauty and high attractive capacity can be thus built up of solidly formed characters of uranium glass, etc.

No attempt has been made to more than indicate the various modifications which can be made in details and sign design and all of which lie rather within the scope of the artistic sign constructor, for it will be evident that the invention can be carried out in its essential elements in an enormous variety of displays of this character. It will be understood that the term "substantially

ultra-violet light" as used herein is used to mean and include not only a pure ultra-violet light, if such can be had, but any light sufficiently ultra-violet in character to produce effective fluorescence and not containing enough visible rays to mask the fluorescent effect. A wide range of proportions of the two kinds of light is obviously possible.

Having described my invention, what I claim is:—

1. In apparatus of the class described, a sign provided with characters formed of fluorescent material, an arm extended beyond the face of such sign, a source of light supported by such arm, and a screen between such source of light and such fluorescent material substantially transparent to ultra-violet light and substantially opaque to visible light, substantially as set forth.

2. In apparatus of the class described, an advertising display having a design thereon delineated in a fluorescent material, and a source of substantially ultra-violet light supported near and arranged to excite such material, substantially as set forth.

Witness my hand this 27th day of January, 1911.

DANIEL W. TROY.

In the presence of—

DAISY JONES,

CHARLES H. SCOTT.