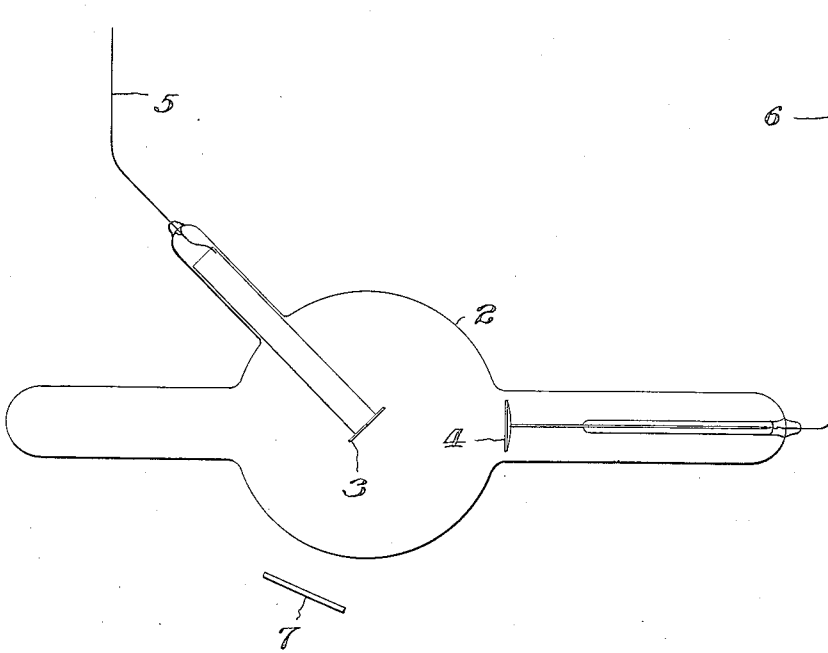


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ART OF COLORING GLASS.  
APPLICATION FILED JAN. 21, 1914.

1,169,571.

Patented Jan. 25, 1916.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HARRY ROSENTHAL, OF CAMDEN, NEW JERSEY.

## ART OF COLORING GLASS.

1,169,571.

Specification of Letters Patent. Patented Jan. 25, 1916.

Application filed January 21, 1914. Serial No. 813,605.

*To all whom it may concern:*

Be it known that I, HARRY ROSENTHAL, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in the Art of Coloring Glass, of which the following is a specification.

The object of my invention is to provide a novel art of producing, within a comparatively short space of time, colors or tints in glass and analogous substances, the colored or tinted glass having the same qualities and characteristics and being capable of performing the same functions as originally clear glass tinted or colored by the slow action extending over many years of rays of sun light thereon.

To this end my invention consists in the novel art of treating clear glass and the production of the desired tinted or colored glass therefrom hereinafter fully described and claimed.

The accompanying drawing illustrates a means of carrying my invention into effect.

Referring to the drawing, 2 designates an X-ray tube provided with the usual anode 3 and cathode 4, and wires 5 and 6 leading from the anode and cathode, respectively, and adapted to be connected to a source of high tension electric current to supply current to the X-ray tube 2 and the production of the X-rays, in the usual well known manner.

In carrying out my invention, I supply electric current to the X-ray tube 2 and thereby produce the X-rays in the usual manner; and I place a piece of clear glass 7, shown in edge view in the drawing, adjacent to the X-ray tube and in such position that the X-rays, including the short wave lengths of light, will reach and act upon the glass to be treated. The short wave lengths of light act upon the glass 7 in a manner to tint the same and give it the same characteristics possessed by the sun tinted glass, hereinbefore mentioned. I have obtained very desirable results by placing the glass 7 in the position illustrated in the drawings, about two inches from the X-ray tube 2 and located with respect to the source of X-rays, as shown, and permitting the X-rays to act upon the glass for from six to twenty-four hours, the length of time depending upon the density of the tint de-

sired; and the density of the tint being increased with the increase of the length of time. I desire it to be understood, however, that I do not limit myself to the above described range of time for the treatment of the glass nor to the particular location of the glass with respect to the X-ray tube while being treated.

In practising my invention I have produced within twenty-four hours the same results that it has required from ten to twenty years to produce by the action of the sun.

I have produced both amethyst and amber tints, the difference in color being perhaps due to the difference in the character of the glass tinted or to the location of the glass with respect to the anode and cathode of the X-ray tube during the tinting process.

It has long been known that when eye glass lenses are made of the sun tinted glass, herein mentioned, that such lenses will relieve the eyes of the person wearing them of the irritating rays of the spectrum in cases of hypersensitive retinae, and that different persons require lenses tinted to different degrees of density, in accordance with the degrees of retinal irritation. I have found that lenses made of glass tinted in accordance with my invention will relieve the eyes of the person wearing them of the irritating rays of the spectrum precisely the same as the sun tinted glass. Glass tinted according to my invention may be used for this or for any other useful purpose.

I claim:

1. The art of tinting glass which consists in subjecting the glass to artificially produced short wave lengths of light.

2. The art of tinting glass which consists in placing the glass adjacent to an X-ray tube and subjecting the glass to the action of X-rays from said tube.

3. The art of tinting glass which consists in subjecting the glass to artificially produced short wave lengths of light emanating from a container inclosing metallic electrodes.

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

HARRY ROSENTHAL.

Witnesses:

ARTHUR STERN,  
S. I. HARPER.