

(No Model.)

J. JACOBSON.
SPECTRUM COLORED STONE OR BODY.

No. 484,934.

Patented Oct. 25, 1892.

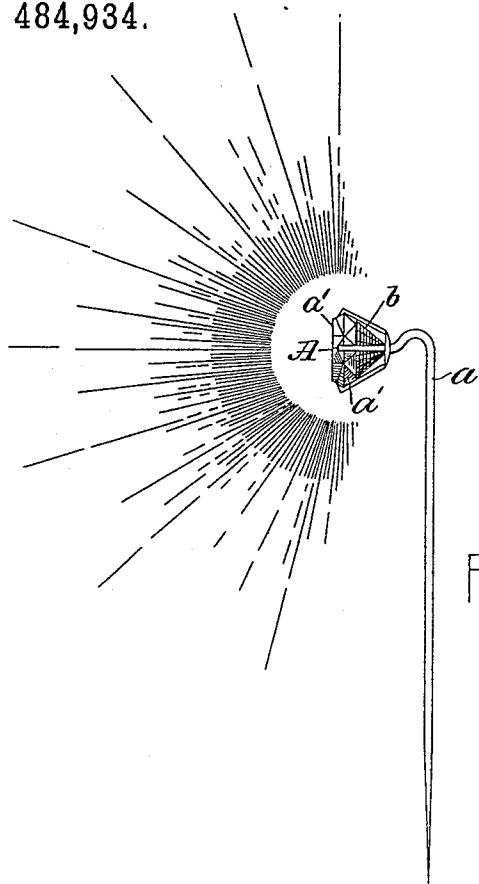


Fig. 1.

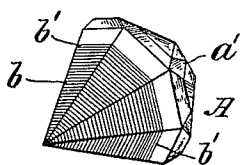


Fig. 2.

WITNESSES.

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SPECTRUM-COLORED STONE OR BODY.

SPECIFICATION forming part of Letters Patent No. 484,934, dated October 25, 1892.

Application filed June 25, 1892. Serial No. 437,942. (No model.)

To all whom it may concern:

Be it known that I, JOHN JACOBSON, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Spectrum-Colored Stones or Bodies, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention is for the purpose of imparting to glass or analogous transparent or translucent bodies the spectrum colors, which from lack of density, and therefore from lack of dispersive power, such bodies are not able to show to any great extent.

15 This invention is especially applicable to glass and analogous bodies having faceted surfaces and made to imitate the diamond. Such imitations of the diamond have often a silver or platinum foil on the back of the cut and finished imitation, giving thereby a highly-reflecting metal backing, which sends a great deal of white light back through the upper face of the body.

25 The object of the present invention is to disperse the incident ray of white light by diffraction into its component primitive or prismatic colors, and I accomplish this result by changing the metallic foil or backing (which up to this point does not vary from processes hitherto followed) from the continuous layer of reflecting metal into a ruled or otherwise divided surface with equidistant lines of a sufficient number to the inch to cause diffraction, and by this means send back with every movement of the stone or body flashes of spectrum colors in place of the bright pure white light sent by the metal backing as now put onto stones or bodies. Especially telling are these effects on the portion immediately under the upper table or central portion of the surface of the stone. Glass being, in comparison with the diamond, poor in refractive power, it is quite impossible to show colors in the center of the imitation stones, whereas the edges are particularly rich in these effects, and even these results are obtained by using very soft-lead glass, by which means a greater density is obtained at the sacrifice of the invaluable hardness of material, thereby shortening the life of the imitation. In the present case the refractive power of the actual

material of the stone or body can be so far dispensed with that the hardest flint-glass can be employed and the ruled-metal backing depended on almost entirely for the spectrum, whereby a lasting body or stone full of color in the center as well as at the edges is obtained.

The particular features in which my invention consists will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation of a pin provided with a stone embodying my invention; and Fig. 2, a detail, on an enlarged scale, of the stone and its ruled-metal backing to enable my invention to be more clearly understood.

The stone or body A with which I have chosen to illustrate my invention is represented as of diamond shape, set in a pin *a*. The stone A is provided with the usual facets *a'* on its sides or edges, and the rear portion of the said stone is provided for the whole or a portion of its surface with a metallic backing or covering *b*, preferably bright— such, for instance, as silver, which may be applied by dipping the back of the stone in a silver solution, such as now commonly employed in silvering mirrors. The metallic back or covering *b*, in accordance with my invention, has its inner surface contiguous to the stone A provided with fine lines or edges, which is best accomplished by cutting or ruling through the metallic backing or covering with a finely-pointed or sharp instrument to form a series of fine slits *b'*. (Represented in Fig. 2 on an enlarged scale.) The rear portion of the stone or body A is usually made in the form of a cone, having facets extending from the apex of the cone toward the edges of the same, and the metallic backing or covering *b*, when applied to the back of the stone, assumes the same shape, which is clearly indicated in Fig. 2. By means of the fine slits *b'* a substantially large number of fine edges are presented at the back of the stone or body A, which subdivide the white light into its component primitive or prismatic colors, thereby producing in the center of the stone, as well as at the edges, strong diffraction colors, which impart to the said stone the appearance of the diamond.

My invention is particularly applicable to glass or analogous stones or bodies having

the shape of the diamond; but I do not desire to limit myself in this respect, as it is equally well adapted to be used in connection with glass or analogous stones or bodies of other shapes with metallic coatings thereon to produce diffraction colors. The white light is dispersed into its component primitive or prismatic colors by the edges of the slits contiguous to the glass or analogous body, and while I may prefer to form the said edges by cutting or ruling through the metallic backing or coating described I do not desire to limit myself in this respect, as the color-dispersing edges may be formed on the inner surface of the metallic coating or backing, which may be affixed to the stones otherwise than by deposition.

I claim -

1. As an improved article of manufacture, the herein-described stone or body composed of transparent or translucent material and provided with a metallic backing or covering having its surface contiguous to the said body provided with fine lines or edges, whereby

the said stone is provided with diffraction colors, substantially as described.

2. As an improved article of manufacture, the herein-described stone or body, provided with a substantially-cone-shaped rear portion or back and having a metallic covering or backing applied to the said back and provided with fine lines or slits, substantially as described.

3. As an improved article of manufacture, the herein-described stone or body, composed of transparent or translucent material and provided with a metallic backing or coating deposited on said stone or body and having fine lines or slits cut into and through it, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JACOBSON.

Witnesses:

JAS. H. CHURCHILL,
SADIE C. FEARING.