

(No Model.)

E. CHEVASSUS-CLÉMENT.

MANUFACTURE OF ARTIFICIAL GEMS OR PRECIOUS STONES.

No. 270,018.

Patented Jan. 2, 1883.

Fig. 1.

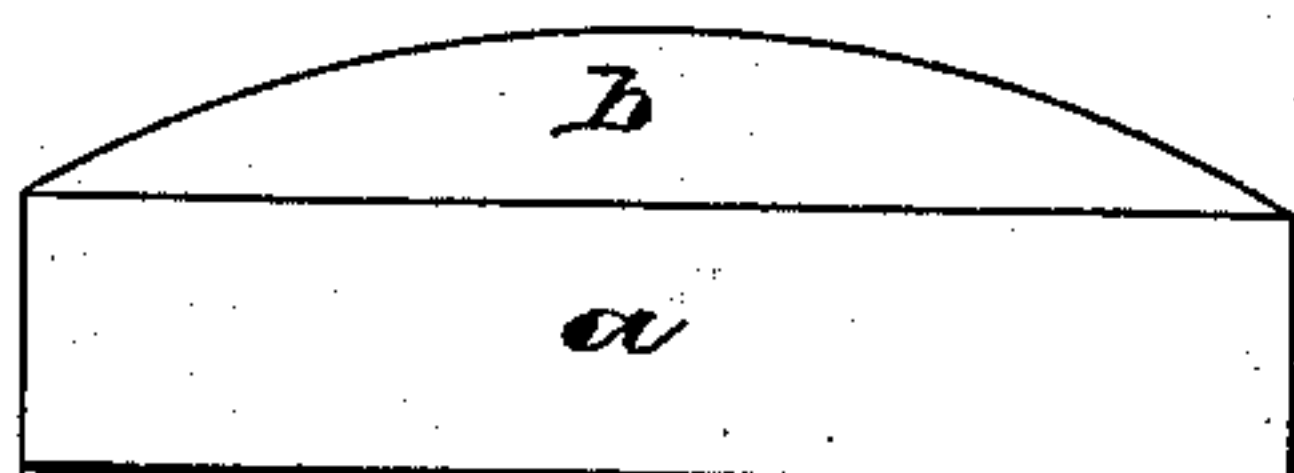
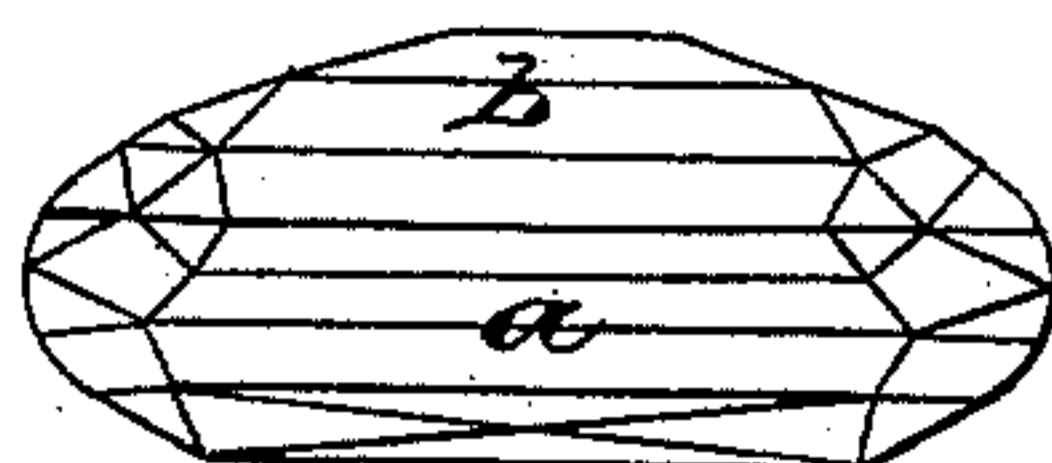


Fig. 2.



Witnesses

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EMILE CHEVASSUS-CLÉMENT, OF PARIS, FRANCE.

MANUFACTURE OF ARTIFICIAL GEMS OR PRECIOUS STONES.

SPECIFICATION forming part of Letters Patent No. 270,018, dated January 2, 1883.

Application filed December 7, 1882. (No model.) Patented in France October 4, 1881, No. 145,155.

To all whom it may concern:

Be it known that I, EMILE CHEVASSUS-CLÉMENT, of Paris, in the Republic of France, have invented a new and useful Improvement in the Manufacture of Artificial Gems or Precious Stones, which improvement is fully set forth in following specification.

This invention has reference more particularly to the manufacture of artificial gems or precious stones from rock-crystal or similar substance with a backing of colored enamel.

In the manufacture of artificial gems as heretofore carried on, garnets have been coated with enamel and baked to secure the adhesion of the latter; but the result has not been entirely satisfactory, because the color of the garnet interferes with the transmission of the color of the enamel, so that the gem had either a false or too dark a color. This is particularly the case with garnets of large size. Other objections also exist to the gems made from garnet; but it is not necessary here to specify them. Rock-crystal or real crystal is not open to the objections attending the use of garnet; but it cracks or chips when submitted to the treatment used with garnet, and has not therefore been heretofore employed. The present invention overcomes the difficulties in the way of employing rock-crystal or real crystal. These terms are generic in their signification and include not only limpid quartz-crystal, but also analogous minerals—such, for example, as amethyst, smoky quartz or cairngorm-stone, citrine or false topaz, and water sapoline.

The invention consists in fusing or soldering by fire enamel to real crystal, and specially in the heating or baking of the stone or gem composed of real crystal and its coating of enamel out of contact with or protected from the air; and it further consists in the new article produced—to wit, real rock-crystal having a backing of enamel soldered thereto by fire, so that the whole forms one piece.

To carry the invention into effect the stone or crystal is polished on one face. This face is then covered with colored enamel applied in the ordinary or in other suitable way. The enamel may be of any thickness and compose the bulk of the stone; or it may be mere paint or anything intermediate. The gem or stone, with the adherent enamel, is placed in a box of re-

fractory material provided with a cover carefully luted or fitted. The box, being closed, is, with its contents, placed in the muffle of a furnace. The enamel melts and adheres to the crystal, while at the same time the air is excluded. After a suitable time—twenty-four to forty-eight hours, more or less, according to the circumstances—the box may be removed and allowed to cool before opening; but preferably the fire is allowed to go out and the box to become cool before removal from the furnace. Cooling ordinarily takes from twenty-four to seventy-two hours. The time of heating and cooling depends on the size of the gem, heat of the furnace, and like conditions. Rapid heating and cooling are to be avoided as liable to cause destruction of the gem; but good results with rapid heating and cooling will sometimes be produced. When cold the gem or stone may be removed and may be cut in any form. The box prevents any sudden changes of temperature, which are liable to crack the crystal. The enamel is soldered to the crystal and forms one piece with it.

In the accompanying drawings, which form a part of this specification, Figure 1 is a view showing the stone or gem *a* coated with enamel *b* on one face, ready for baking; and Fig. 2 shows the stone or gem complete after the facets have been cut.

The side of the stone or gem which is secured in the setting is enameled, and, as shown, the enamel is rather more than one-third of the gem. Stones or gems of all dimensions can in this manner be made. By properly coloring the enamel different stones may easily be imitated, such as ruby, emerald, topaz, and others. The real crystal is transparent or translucent, and transmits the color of the enamel to all parts.

One or more gems or stones may be baked in the same box. It is not necessary that the interior of the box should fit the stone, although it is preferred not to have a large free space.

The particular composition of the enamel, forming no part of the invention, need not be described. A soft or easily-fusible composition is preferred. It may be one of those usually employed in enameling garnets.

The invention is applicable to the production of articles other than precious stones.

I claim—

1. The method of making artificial gems or precious stones or other articles by fusing or soldering by fire enamel to real rock-crystal, 5 substantially as described.
2. The method of fusing or soldering enamel to real rock-crystal by baking the same in a close box to fuse the enamel, and cooling without access of air, substantially as described.
- 10 3. In the manufacture of artificial gems or stones, the baking of the enamel in a close vessel, substantially as described.
4. As a new product or manufacture, real rock-crystal provided with a backing or coat- 15 ing of enamel fused or soldered thereto by fire

and forming one piece therewith, substantially as described.

5. An artificial stone or gem made of real rock-crystal, with a backing of enamel fused to said crystal and forming one piece therewith, 20 the said stone or gem being cut into facets, substantially as described.

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

EMILE CHEVASSUS-CLÉMENT.

Witnesses:

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