

W. Byron.

Combining Hard Rubber with Jet.

N<sup>o</sup> 90,154.

Patented May 18, 1869.

Fig. 1.



Fig. 3.



Fig. 2.



Fig. 4.



Fig. 5.



Witnesses:

Am. Dailery  
J. W. Cole.  
" " "

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# United States Patent Office.

WILLIAM BYRON, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF  
AND GEORGE S. RICE, OF THE SAME PLACE.

*Letters Patent No. 90,154, dated May 18, 1869.*

## IMPROVEMENT IN COMBINING HARD RUBBER WITH JET AND OTHER SUBSTANCES TO PRODUCE USEFUL AND ORNAMENTAL ARTICLES.

The Schedule referred to in these Letters Patent and making part of the same.

### *To whom it may concern:*

Be it known that I, WILLIAM BYRON, of the city, county, and State of New York, have invented a new and improved Method of Combining Hard Rubber with Jet or other Substances for Ornamental and Useful Purposes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing.

It is well known that it is difficult if not impossible to retain the high polish of a hard-rubber surface which has been exposed to the atmosphere and light for any length of time, without subjecting it to frequent repolishing—an operation which is productive of labor and expense.

It is also known that jet, while presenting a fine appearance, and retaining its polish permanently, is yet too brittle and frail to be used for ornamental or useful purposes by itself, and without the aid of other material. For instance, a jet button, or stud, or pin, would be entirely too frail for practical use, and therefore, when used in this connection, it is set in gold or other metallic frame.

The object I have in view is to effect such a union of the jet or other substance and the hard rubber, that while the jet shall form the upper part or exposed surface, the hard rubber, intimately united with it, shall form the body of the article, or that part in which the strength is required. To this end,

My invention consists in uniting the hard rubber with the jet or other substance, such as glass, cameo, &c., capable of receiving and retaining a high degree of polish, in the manner substantially as hereinafter described, and as shown in the accompanying drawing, in which I have represented, in illustration of my invention, several modes of making a stud of combined jet and hard rubber.

In Figure 1, *a* is the jet or other substance to form the exposed surface of the article, cut away on the under side, so as to form a recess with dovetailed sides. The backing of the jet, as well as the shank and lower button of the stud, is formed of hard rubber, *b*, which is turned, or cut, or otherwise formed in the shape required. The two are united by softening the head of the rubber by heat, and then pressing it, when sufficiently soft, against the jet, so as to fill all parts of the recess, after which the article can be trued, finished, and polished in the usual manner. As the rubber is thus dovetailed into the recess in the jet, the union

between the two is complete and permanent, and it is in fact difficult to determine the line of demarkation between them.

A second method, illustrated in Figures 3 and 4, is to press the rubber into the recessed jet, so that it will fill the recess only. In figs. 1 and 2, the upper half of the disk, or completed button, is composed of jet, and the lower of rubber; but in that now represented, both the face and sides of the button are externally jet, the hard rubber being only in the interior of the jet, and of course forming also the shank and lower button of the stud.

A third method is represented in Figure 5, the jet being drilled with inclined holes, in which the rubber is pressed, forming also a backing, to which the rubber shank and lower button are held.

Other means for thus uniting the parts will readily suggest themselves, but those already indicated will serve fully to illustrate the nature of my invention. In each case it will be seen that the exposed surface of the article is composed of the material which is adapted to receive and retain a high degree of polish, while that portion which should be of greater strength is composed of hard rubber, which, although not capable of properly retaining, without care and labor, the finish required for the exposed surface, is, on account of its strength and toughness, admirably adapted to form the body of the article.

While describing, in illustration of my invention, the manner in which it may be applied to the manufacture of studs, I do not limit myself to this manufacture, but contemplate its application to any and all branches of the useful arts where it may be made available; and, therefore,

What I claim, and desire to secure by Letters Patent, is—

1. The method of combining hard rubber, or vulcanite, with jet or other substances, substantially in the manner and for the purposes set forth.

2. As a new manufacture, jewelry composed of jet, mounted in or upon, or combined with hard rubber, substantially as herein described.

In testimony whereof, I have signed my name to this specification, before two subscribing witnesses.

WILLIAM BYRON.

Witnesses:

HENRY L. FULLER,  
L. ALLEN PITCHER.