UNITED STATES PATENT OFFICE.

JAMES W. MILLER, OF NEWARK, NEW JERSEY.

JEWELRY AND LIKE ARTICLES.

SPECIFICATION forming part of Letters Patent No. 307,318, dated October 28, 1884.

Application filed May 3, 1884. (Specimens.)

To all whom it may concern

Be it known that I, JAMES W. MILLER, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Ornamental Surface for Jewelry and Like Articles, which invention is fully set forth in the following specification.

This invention consists of a new mode of producing an ornamental surface to be applied to articles of jewelry and the new product thus produced.

It consists in the use of thin scales or particles of different-colored gold, silver, or platinum, which are cut from thin sheets of the metal in irregular forms, and then applied to the surface by soldering.

The mode in which I prefer to carry out my invention is as follows: The article of jewelry to which the ornamental surface is to be applied is in the smooth condition in which it commonly comes from the rolls, it being already shaped into the desired form. I then take, for instance, a thin sheet of platinum, a thin sheet of red gold, and a thin sheet of green gold. I then with a shears clip off small irregular pieces or flakes from each of these sheets in about equal quantities. I then mix these different-colored flakes together thoroughly. I then take these flakes so mixed together and apply them haphazard to the surface.

The mode I usually employ is to take the ordinary solution of borax and water and dip a camel's-hair brush into it, then put the camel's-hair brush among the flakes so mixed together, and apply as many of them as adhere to the brush upon the surface of the plate to be ornamented. This is continued until the surface of the plate is entirely covered, or so much of it as it may be desired to cover. I then sprinkle finely-divided solder in the shape of fine filings over the whole surface. I then allow the moisture to dry out of the borax or cause it to do so by gentle heat, after which heat is applied for the purpose of melting the solder, thus perfectly securing the flakes to the surface of the article of jewelry in the manner well understood. The article is then boiled in dilute sulphuric acid to take off the fire coat in the usual way. If it is desired to color the interstices between the flakes of varied colors, it can be done by the usual acid coloring process, provided the surface upon which the flakes are laid is of gold. Of course the gold must be of sufficient fineness to admit of this process. If the surface upon which the flakes are laid is of base metal, or of gold of not sufficient fineness to admit of the use of the acid coloring process, then a similar effect can be produced by electro-plating the whole with gold. By this process silver or other desired metal in place of gold can be used to form the surface. When the acid process is used, care must of course be taken to use colored gold for the flakes that is not liable to be injured by the acid. The next step after the application of the acid process is to scratch-brush the whole surface of the article. This completes the finish of the portions of the article not covered by the flakes, and also the interstices between the flakes. The next step is to polish the surface of the flakes. This brings out the color of the gold; but at the same time the contrasts are not very striking, owing to the reflection caused by the polish. For some purposes the process may now be considered complete, as the effect produced is very beautiful. If it is desired, however, to produce a strong contrast of color, then a dead finish is made over the surface of the flakes by matting, engraving, or other process suitable to produce the desired effect. Where the battery process has been used, the piece is finished in a similar manner to what has been before described, except that the polishing must of course be carried to a sufficient extent to rub the electro-deposit of gold or other metal off the surface of the colored flakes. The piece is then completed and only has to be rouged and finished in the way well understood. The effect of thus grouping together flakes of different-colored gold so as to form a surface for an article of jewelry of irregularly-variegated color is extremely beautiful, and differs radically from any other ornamentation that has been heretofore used in the jeweler's art. The effect produced upon the eye where the colors are properly chosen is somewhat analogous to the iridescent effect familiar in the opal.

Another mode of carrying out my invention is by using, instead of the flakes, filings of dif-

ferent-colored metals. Great variations in the effect can be produced, depending upon the relative fineness and coarseness of the filings and their variegated color. A very pretty effect can be produced by using platinum and gold filings only. The flakes need not be distributed over the surface of the article of jewelry so as to be in actual contact with each other. The effect may be varied by having them sprinkled over the surface at small intervals. The flakes may vary greatly in size, and the effect is enhanced by their not approaching regularity in shape. Very beautiful effects may be produced by having a raised polished ornamentation upon a background of this variegated flake surface.

It will readily be seen that a similar effect to that produced as above described might be produced by the use of flakes of aluminum and various other metals and combinations of metal, whether base or otherwise, and that surfaces of base metal or of substances other than metal might be used to receive the flakes. It is also obvious that this invention is applicable to watch-cases, silver-ware, and other articles that are not classed as jewelry in its strictest sense.

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

As a new article of manufacture, an article of jewelry or other analogous article having an ornamental surface consisting of irregularly-shaped flakes or particles of metal of varied color, substantially as described.

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

JAMES W. MILLER.

Witnesses:

JAMES F. HORAN,

LOUIS B. PRESTON.