UNITED STATES PATENT OFFICE.

SAMUEL BARR, OF PROVIDENCE, RHODE ISLAND.

COMPOUND FOR COATING GAS-TUBING, &c.

SPECIFICATION forming part of Letters Patent No. 276,998, dated May 8, 1883.

Application filed February 20, 1883. (Specimens.)

To all whom it may concern:

Be it known that I, SAMUEL BARR, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful compound or composition of matter to be used for the purpose of rendering gas-tubing and all other articles of manufacture used for the conduction or holding of gas impermeable to the escape of the same, of which the following is a specification.

My invention has special relation to that class of tubing employed in the conduction of illuminating-gas, known in the trade as "flexible tubing," which has for its foundation a spiral coil of wire surrounded by cotton or other braiding. Many compounds and compositions of matter prior to my invention have been employed to render such flexible tubing thoroughly gas-tight, which have met with success in a greater or less degree; but the great desideratum of producing a compound which would be unaffected by heat, so that it would not soften nor become plastic in damp, muggy weather, which would retain its special virtues unimpaired and without deterioration when in close proximity to the heat generated by chandeliers, gas-stoves, drop-lights, and similar articles of manufacture, had not been accomplished until I invented my compound.

I have been for seventeen years actively engaged in the manufacture of flexible gas-tubing, and from my extended experience with such business am very well acquainted with the merits and demerits of the various compounds, mixtures, or washes which thus far have been used as a coating or coatings for flexible tubing, and I have observed that the tubes so treated with them are liable to, and generally very often do, lose the flexibility and get out of shape, and that the compounds or coatings with which they are treated often crack, thus losing their so-called "impermeability." This is especially the case with tubes coated with a combination of glue and glycerine, and the compound which has amber for one of its ingredients has been found by me, after long-continued trial, to be very much lacking utility in the special functions for which it was designed. To remedy such defects in flexible gas-tubing, and to produce a compound which would be only affected by extreme heat or cold, which would not detract from the flexibility of the tube to which it is applied, and which would render the same perfectly impervious to the escape of gas, has long been a subject of experiment by me, and after trying many articles I have found that by adding a slight quantity of bichromate of potash, or any of its equivalents, to a combination of glue and glycerine, the results so long desired have been accomplished. By using bichromate of potash a hardness is given to the compound, while the tubing loses none of its flexibility. Moreover, I am able to use more glycerine.

To enable those skilled in the art of manufacturing flexible gas-tubing to make and use my invention, I will now describe the ingredients of my compound, the proportions in which the same are mixed to make the compound, and the way in which the compound when made is applied to the tube.

I take in or about the following proportions: glue, thirty pounds; glycerine, thirty pounds; bichromate of potash, one and one-fourth ounce; water sufficient to mix. The glue and glycerine are placed in a proper receptacle and soaked until the mass is swelled through the expansion of the glue, and then the same is reduced to a semi-viscid state by the application of heat. The bichromate of potash, having been previously dissolved, is then added to the glue and glycerine. The compound is then ready for use. The tubes, as they come from the braiding-machine, are then dipped therein as many times as is necessary to produce thereon the requisite thickness of the compound. After dipping, the tube is suspended in such a way that it will receive the rays of the sun, and at the same time permit the superfluous compound to drip therefrom. When the tube has been coated with the desired thickness of compound, and the same has hardened sufficiently, it is in a condition to receive its final envelope of fancy braid, tips, &c., and is then ready for the market.

I am aware that it is well known in the arts that bichromate of potash, when combined with gelatine, will render the same insoluble, as shown in the photographic art; but I am not aware that all of the ingredients of my

compound have ever been used in the manner, in the proportions, and for the purpose which I have specified above.

I am aware that a composition consisting of glue, cork, glycerine, and chromic acid, with other ingredients, has been used for the purpose of coating fabrics to imitate leather, morocco, &c., and that a patent therefor was granted to Wm. Bell, July 28, 1874, No. 153,473; but the use of such a compound I hereby disclaim, as I do not consider it efficacious as a coating for flexible gas-tubing.

My compound can also be used on cotton cloth for the purpose of making an excellent imitation of leather, and it is my intention to apply in the future for a patent for the use of the same for such purpose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In combination with flexible gas-tubing, as a coating to prevent the escape of gas, the compound composed of glue, glycerine, and bichromate of potash, in or about the proportions specified.

SAMUEL BARR.

Witnesses:
SAML. T. DOUGLAS,
GEO. W. CUSHING, Jr.