

UNITED STATES PATENT OFFICE.

JOHN W. HYATT, JR., OF ALBANY, NEW YORK, AND ISAIAH S. HYATT, OF
ROCKFORD, ILLINOIS.

IMPROVED METHOD OF MAKING SOLID COLLODION.

Specification forming part of Letters Patent No. 91,341, dated June 15, 1869.

To all whom it may concern:

Be it known that we, JOHN W. HYATT, Jr., of the city of Albany, in the State of New York, and ISAIAH S. HYATT, of the city of Rockford, in the State of Illinois, have invented a new and useful Method of Making Solid Collodion, or compounds of pyroxyline; and we do hereby declare the following specification to be a true and exact description of the nature of our invention.

Our convention consists of a new and improved method of manufacturing solid collodion and its compounds; its essential feature being the employment of a very small quantity of ether or other appropriate solvent, and dissolving pyroxyline therewith, under a heavy pressure, so that a comparatively hard and solid product is obtained, with great economy of solvents and saving of time.

The following description will enable others skilled in the art to use our process:

We place soluble cotton, pyroxyline, or prepared cellulose into a strong cylinder or suitably-shaped mold. With the pyroxyline may be mixed ivory-dust, bone-dust, asbestos, flake-white, or any other desirable substance, according to the nature of the product required.

This compound is then pressed into a tolerably compact mass by means of a plunger in the cylinder, or by a movable part of the mold. The plunger to said cylinder or part of the mold is then retracted to give room for the ether or other solvent. The proportion of solvent to the pyroxyline is as five to ten, seven to ten, or equal parts, by weight, according to the nature and proportions of the compound. When the pyroxyline is used alone, from one-half to three-fourths, by weight, of solvent will be sufficient; but when ivory-dust or other material is added, a somewhat greater proportion of solvent will be required, which can readily be determined by trial. After the plunger to the cylinder or part of the mold has been retracted, as aforesaid, the

solvent is poured or forced in through a hole, which is then closed, and the plunger or movable part of the mold is immediately forced against the contents with great power—a pressure of from five to twenty tons per square inch being required to produce the best results. The pressure must be applied quickly, so that the solvent will be forced into contact with every particle of the pyroxyline before the dissolving process has time to commence. This, however, may be varied according to the degree of activity of the solvent employed. The cylinder or mold must be made or packed to work so closely that none of the solvent can escape the pressure. Other mechanical means may be employed equivalent to the foregoing, and we do not confine ourselves to the precise apparatus described.

The product is then taken out of the cylinder or mold, and will be found to be hard and solid, of uniform quality throughout, and liable to only a very slight degree of shrinkage, because of the very small proportion of volatile elements which it contains.

After the solid compound thus formed is taken out of the cylinder or mold, and before it thoroughly seasons, we subject it, in the manufacture of many articles, to additional pressure in molds, whereby it is caused to conform perfectly with all the configurations of the mold.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. Dissolving pyroxyline under pressure, substantially as described.
2. Dissolving pyroxyline under pressure, when combined with ivory-dust or other material, substantially as described.

JOHN W. HYATT, JR.
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Witnesses:

HENRY DEITZ,
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