

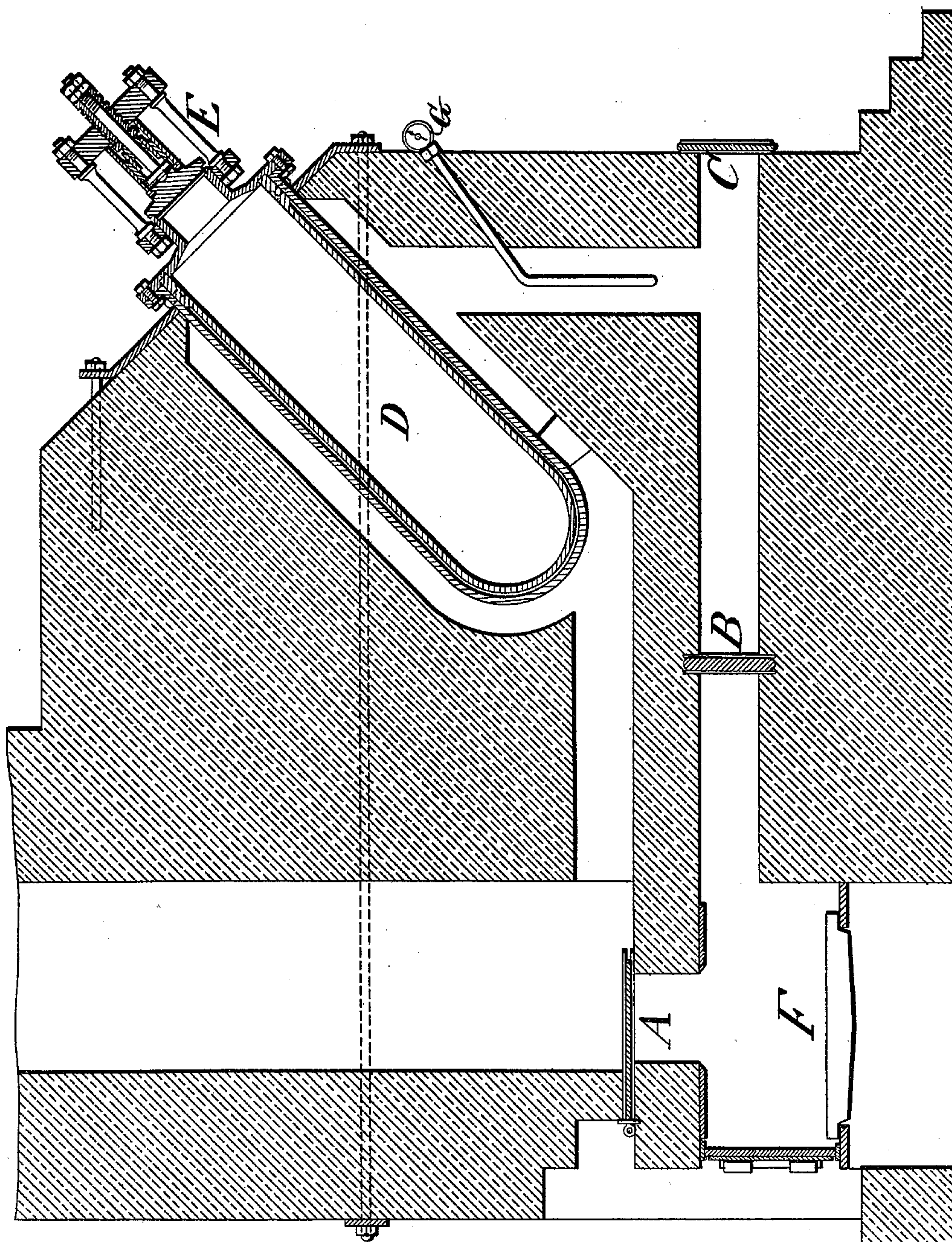
No. 631,679.

Patented Aug. 22, 1899.

A. J. SMITH.  
MANUFACTURE OF VARNISH.

(Application filed May 21, 1898.)

(No Model.)



*Witnesses.*  
*Albert H. Norris.*  
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# UNITED STATES PATENT OFFICE.

ARTHUR J. SMITH, OF LONDON, ENGLAND.

## MANUFACTURE OF VARNISH.

SPECIFICATION forming part of Letters Patent No. 631,679, dated August 22, 1899.

Application filed May 21, 1898. Serial No. 681,354. (No specimens.)

*To all whom it may concern:*

Be it known that I, ARTHUR JAMES SMITH, a citizen of England, residing at No. 21 Park Row, Greenwich, London, in the county of Kent, England, have invented certain new and useful Improvements in the Manufacture of Varnish, of which the following is a specification, and for which I have applied for a patent in Great Britain, dated November 9, 1897, No. 26,065.

The manufacture of varnish as it is at present carried on involves great labor, difficulty, and loss. Much of the expensive material employed goes to waste in the process and the operation is accompanied by evolution of deleterious vapors.

The object of my invention is to overcome the difficulties referred to and to render the manufacture of varnish simple, easy, and comparatively inexpensive. This object is accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawing, in which the figure is a longitudinal sectional view of a furnace and vessel suitable for the manufacture of varnish according to my invention.

In carrying my invention into effect I provide a closed vessel D, capable of sustaining great internal pressure and provided with a spring-closed safety-valve E and pressure-gage G. I gradually heat a mixture of purified linseed or such like oil and gum, such as cowrie or copal, preferably finely pulverized, carrying the heat up to 300° Fahrenheit or higher, according to the character of the gum treated.

As shown in the drawing, the vessel D is arranged in a furnace structure provided with a fireplace F and flues controlled by dampers A, B, and C. By means of the dampers the products of combustion from the fireplace F can be directed onto the jacket of the vessel for heating said vessel. As the vessel is closed there is no escape of vapor, causing loss or nuisance, as in the ordinary manufacture of varnish. The heat and pressure are maintained for several hours and then the contents of the vessel are allowed to cool to a certain extent, and the necessary quantity of turpentine and driers being added the manufacture of the varnish can be completed in the same vessel by the usual boil-

ing, with or without pressure, till the product is sufficiently siccative.

The particular means illustrated in the drawing for heating the vessel D are only typical of many means that may be employed. I may use high pressure or superheated steam or water heated under pressure and applied in any suitable manner.

I prefer to put the material under pressure before it is heated, and for this purpose I charge the vessel by means of a pump or otherwise with air compressed to a pressure of several atmospheres. The pressure and temperature employed vary according to the nature of the gums treated, the harder requiring a higher temperature and pressure than the softer. In no case should the temperature be raised beyond the point where the gums melt, as may be ascertained by sampling.

The proportions of the materials may be varied within certain limits. Practically I find that a good proportion is one part by weight of gum, two parts of oil, and three parts of turpentine. The proportion of driers must depend much on the nature of the oils employed. They may be from half per cent. up to three per cent. of the total mixture.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. The process or method herein described of manufacturing varnish, which consists in introducing oil and gum into a closed vessel capable of sustaining internal pressure, heating said gum and oil under pressure in said closed vessel, until the gum is melted and mixed with the oil, then cooling the mixed gum and oil and adding turpentine and a drier, substantially as set forth.

2. The herein-described method of preparing varnish, which consists in heating the oil and gum in a closed vessel under high pressure, allowing the mixture to cool, then adding turpentine and a drier, and then boiling in the same vessel, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR J. SMITH.

Witnesses:

WALTER J. SKERTEN,  
JNO. P. M. MILLARD.