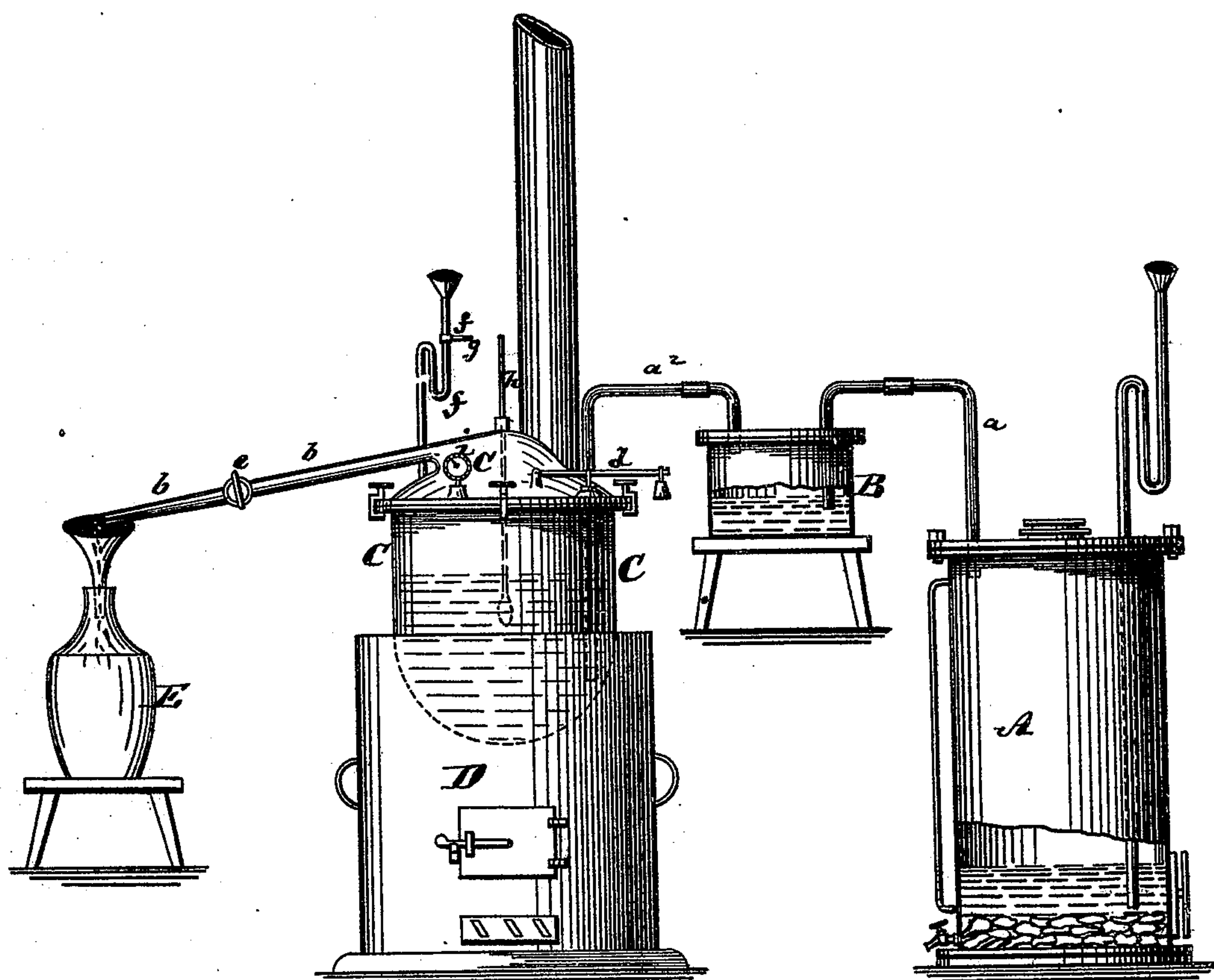


W. E. GRAF.  
Apparatus for the Manufacture of Salicylic Acid.  
No. 166,862. Patented Aug. 17, 1875.



Witnesses:  
A. Moraga.  
O. H. Weidner

Inventor  
W. E. Graf  
by his attorney  
A. B. Giesen

# UNITED STATES PATENT OFFICE.

WILHELM EHRENFRIED GRAF, OF NEW YORK, ASSIGNOR OF ONE-HALF  
HIS RIGHT TO SAMUEL W. CANFIELD, OF PIERMONT, N. Y.

## IMPROVEMENT IN APPARATUS FOR THE MANUFACTURE OF SALICYLIC ACID.

Specification forming part of Letters Patent No. **166,862**, dated August 17, 1875; application filed  
June 22, 1875.

### CASE A.

*To all whom it may concern:*

Be it known that I, WILHELM EHRENFRIED GRAF, of the city of New York, in the county and State of New York, have invented a new and Improved Apparatus for Manufacturing Salicylic Acid, of which the following is a specification:

The drawing represents a side view, partly in section, of my new apparatus.

This invention relates to a new apparatus for producing salicylic acid, and has for its object to permit the production thereof under pressure, thereby insuring a more perfect process. The invention consists in the use, in combination with a carbonic-acid-gas generator and heating apparatus, of a still having a valve in its neck or discharge-pipe, and a pressure-gage and safety-valve, all as hereinafter more fully described.

In the drawing, the letter A represents a carbonic-acid-gas generator, being a vessel of cylindrical or other form of suitable size and material. This vessel is, by a pipe, *a*, connected with a washer, B, for cleaning the gas that escapes from the generator to the still. A pipe, *a*<sup>2</sup>, extends from the washer B to the still C, which is a vessel made of strong sheet copper or iron or other material, preferably enameled on the inner side. The still C is placed on an oven, D, by which its contents will be heated. The neck *b* of the still leads to a drip vessel or receiver, E.

As thus far described, the apparatus does not differ from the apparatus heretofore used in the manufacture of salicylic acid.

My invention, having for its object to permit distillation under pressure, consists in supplying the head of the still with a safety-valve, *d*, and with a pressure-gage, *i*, and the neck *b* with a cock, *e*, so that when the cock *e* is entirely closed the gases generated in the still will be confined and compressed therein, acting by their pressure upon the liquid and solid contents of the still, and insuring thereby a more perfect conglomeration of the contents of the still, and a more perfect distillation. Of course, when the pressure in the still exceeds the requisite limit the cock *e* must be opened, whereupon the vapors will condense in the neck *b* and flow into the receiver E.

In the manufacture of salicylic acid these condensed vapors will be carbolic acid, which may be poured into the still again through a tube, *f*, which has a cock, *g*. *h* is a thermometer fitted into the still to show the degrees of heat therein.

I claim as my invention—

The combination of the generator A, washer B, and pipes *a* and *a*<sup>2</sup> with the still C and receiver E, the still having the cock *e* in its neck, and a safety-valve, *d*, substantially as specified.

W. E. GRAF.

Witnesses:

A. V. BRIESEN,  
E. C. WEBB.