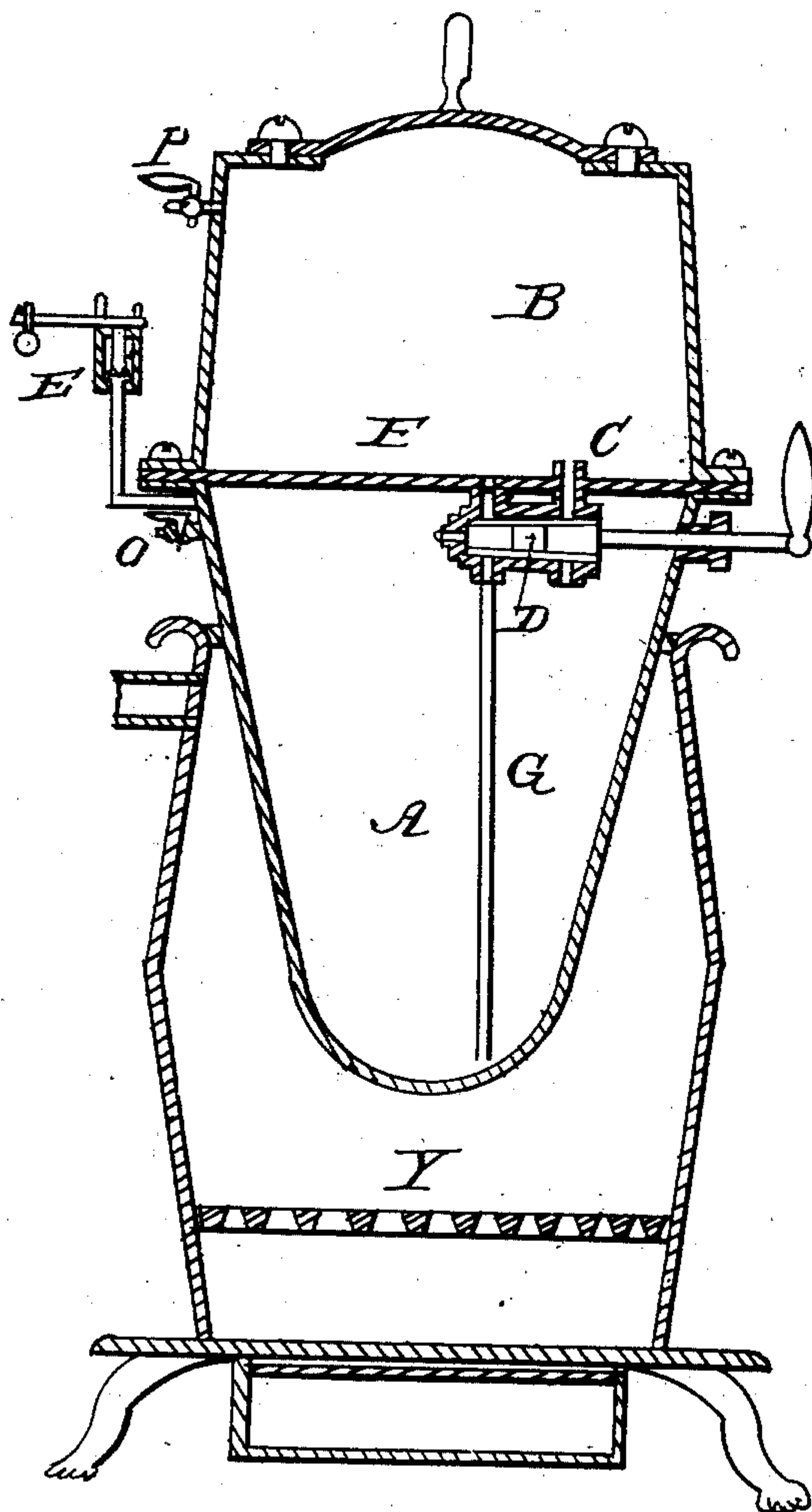


S. W. WARREN.
Vulcanizing Apparatus.

No. 28,428.

Patented May 22, 1860.



WITNESSES

Samuel J. Scott
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UNITED STATES PATENT OFFICE.

SYLVESTER W. WARREN, OF NEW YORK, N. Y.

APPARATUS FOR VULCANIZING CAOUTCHOUC.

Specification of Letters Patent No. 28,428, dated May 22, 1860.

To all whom it may concern:

Be it known that I, SYLVESTER W. WARREN, of the city of New York, State of New York, have invented a new and useful Machine or Apparatus for Vulcanizing India-Rubber, Gutta-Percha, and all other Vulcanizable Gums and Materials; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My said invention consists of a portable apparatus designed especially for the use of dentists for vulcanizing the plates of artificial teeth, and other articles, said apparatus being constructed in such a manner that all necessary heat can be obtained in the same and the articles kept from contact with the water. The machines heretofore used for such purposes have not accomplished the desired object. Their steam chambers are usually so far from the steam boilers that it is difficult to obtain the high and uniform heat required for vulcanizing; further the operations of the valves used as cut-offs between the boiler and steam chamber are attended with difficulties: For example the furnishing steam valve is liable to be closed leaving the return valve open, thereby causing the water in the boiler under pressure to be forced into the steam chamber, thus reducing the temperature of said chamber and arresting the process of vulcanizing, also exposing the boiler to sudden increase of heat and danger of bursting. To obviate all these difficulties I have only a partition between my steam boiler and steam chamber and use a double acting stop-cock between said boiler and chamber placed so as to act at the same time in both the supplying and return tubes communicating between the boiler and steam chamber so that it is impossible by the action of said cock to close or open one tube without at the same time closing or opening the other.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, represents a steam boiler placed in a common stove or furnace Y.

B, represents a steam chamber.

F, is a partition between steam boiler A and steam chamber B.

C, is a tube for conducting steam from A to B.

G, is a return tube for conducting the condensed steam from B into A.

E, is a safety valve.

O, is a stop-cock communicating with boiler A.

P, is a stop-cock communicating with steam chamber B.

By removing the cap from the chamber B, I am enabled to place in the same the molds for forming rubber plates for artificial teeth or any other articles which the apparatus may be capable of containing: I then close said cap and subject the boiler to heat and steam being generated in boiler A passes through cock "D" and tube "C" into steam chamber B imparting to said chamber a high and uniform degree of heat for vulcanizing such articles as may be placed therein for such purpose. During the process of vulcanization the steam in chamber B is constantly being condensed and renewed; the condensed steam passes from said chamber through cock "D" and tube "G" to boiler "A" by which process the aforesaid uniformity of heat in said chamber is secured and maintained. Air cock "O" is the gage or limit for the elevation of water in boiler "A." Safety valve "E" communicating with boiler "A" is gaged for the escape of steam from said boiler at any given pressure. Air cock "P" communicates with steam chamber "B."

When the articles in chamber "B" become sufficiently vulcanized the communication between said chamber "B" and through tubes "C" and "G" and boiler "A" is at once cut off by turning said cock "D."

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

The portable vulcanizing apparatus constructed substantially as set forth and for the purposes specified.

SYLVESTER W. WARREN.

Witnesses:

LAUREN S. SCOTT,
REMSSEN HASBROUCK,
ANDREW KOHLER.