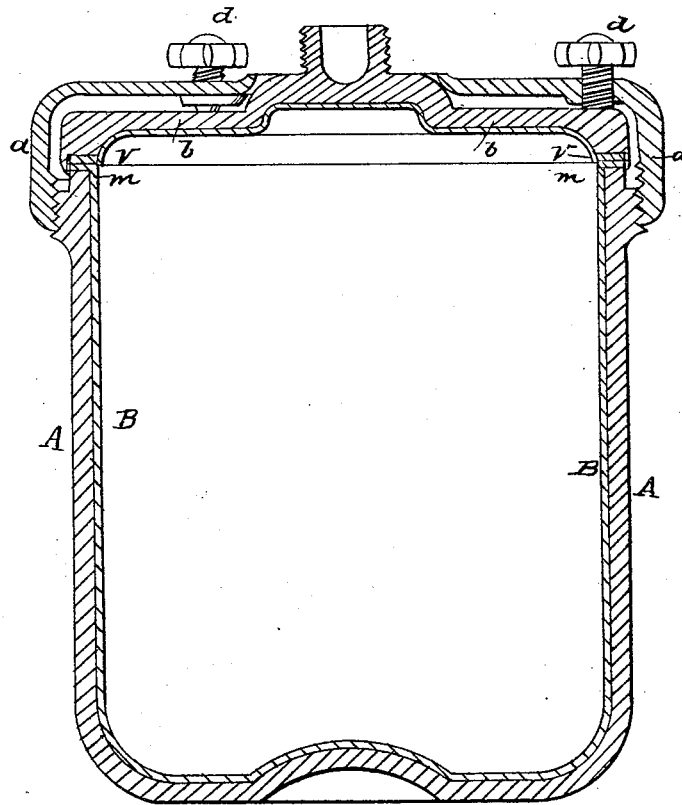


G. E. HAYES.

Vulcanizing Vessel for Dentists' Use

No. 53,612.

Patented April 3, 1866.



witnesses
J. W. Coombs
A. H. Carey

Inventor
G. E. Hayes
per B. W. Coombs
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE E. HAYES, OF BUFFALO, NEW YORK.

IMPROVED VULCANIZING-VESSELS FOR DENTISTS' USE.

Specification forming part of Letters Patent No. 53,612, dated April 3, 1866.

To all whom it may concern:

Be it known that I, GEORGE E. HAYES, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Vulcanizing-Vessels for Dentists' Use; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making part of this specification, which is a vertical section of a vulcanizing-vessel constructed according to my invention.

The copper vulcanizing-vessels heretofore employed by dentists have been extremely liable to become corroded by the action of the acid vapors generated during the vulcanizing process, such corrosion gradually weakening the vessel, thus making it unsafe, and eventually rendering it entirely useless, and, furthermore, there has been no certain criterion by which to judge of the amount of corrosion or the safety of the vessel.

The object of this invention is to insure the discovery of the deterioration of the vessel before it can become dangerous, and also to provide for the removal of the corroded part and its renewal; and it consists in a novel construction of the vessel in two parts—viz., an external part or shell and an internal lining—whereby the above desirable results are obtained.

To enable those skilled in the art to understand the nature and construction of my invention, I will proceed to describe it with reference to the drawing.

A represents the outer portion or shell of the vessel, of malleable cast-iron, and of sufficient strength to bear the pressure of the steam and gases generated within the vessel during the process of vulcanization. Situated within this outer shell, A, is an inner lining, B, of copper, corresponding in shape with the interior of the shell A and driven or fitted closely thereinto, but not otherwise fastened. This lining has a horizontal flange, *m*, formed around its upper edge, the said flange covering and resting upon the upper edge of the shell A, as shown in the drawing.

b represents the lid or cover of the vessel, made of malleable cast-iron, lined with copper, and furnished with a packing-ring, *u*, of vulcanized india-rubber or other suitable material, to bear upon the flange *m* and form a steam-tight joint around the mouth of the vessel.

Formed around the outer circumference of the upper part of the shell A is a strong screw-

thread, upon which is screwed an annular clamp, *a*, which is placed over the cover *b*, and between which and the cover a little space is left when the said clamp is screwed on.

The cover is forced down tightly upon the vessel by means of set-screws *d*, which are situated in and work through the annular clamp *a*, a steam-tight joint being thus formed between the cover and the vessel with the aid of the packing *v*.

The articles to be vulcanized having been previously placed in the vessel, their vulcanization is performed in the usual manner.

The copper lining may be as thick as the ordinary copper vulcanizing-vessels, and may be used until it has become as thin as paper or until corroded entirely through, the strength of the vessel being derived from the iron outer shell.

In case the copper lining should become corroded entirely through, it will be immediately detected by the passage of steam or vapor between the said lining and the iron shell and its escape around the under side of the flange *m* and thence upward through the space between the cover *b* and clamp *a*, thus warning the operator of the condition of the vessel.

The vessel thus constructed, besides being safer, is more durable than those commonly constructed of copper, as when one of those becomes corroded beyond a safe degree it must be entirely discarded; but the copper lining can be renewed at a comparatively small expense.

The outer shell might be of copper as well as the lining, provided the lining is applied in the manner herein described—viz., so that the steam may escape between the lining and shell when the lining is corroded entirely through.

As the greatest corrosion takes place near the bottom of the vessel and is least near the top, the copper lining of the cover might be dispensed with, and when such lining is used, as it cannot be well secured by merely fitting it tightly into the cover, like that of the vessel, it may be soldered or brazed into its place.

What I claim as my invention, and desire to secure by Letters Patent, is—

A vulcanizing-vessel constructed of an outer shell and an inner lining, substantially as herein specified, whereby, on the lining being corroded through, steam may escape between it and the shell, as herein set forth.

Witnesses: GEO. E. HAYES.

WM. KING, Jr.,
JNO. WILLOUGHBY, Jr.