A. B. WOODARD.

Vulcanizing Flask.

No. 52,107. Patented Jan'y 16, 1866.

Fig. 1.

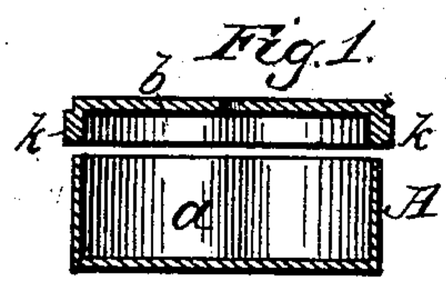


Fig. 2.

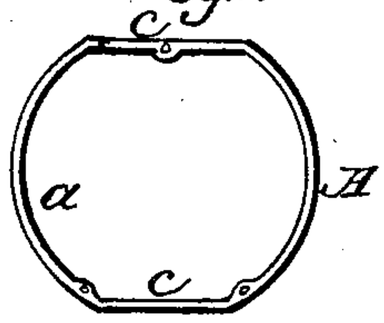
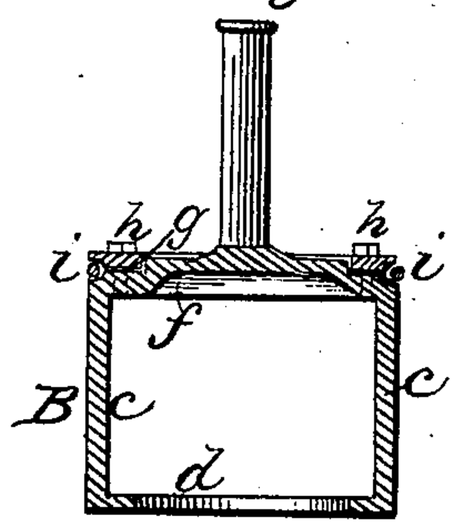


Fig. 3.



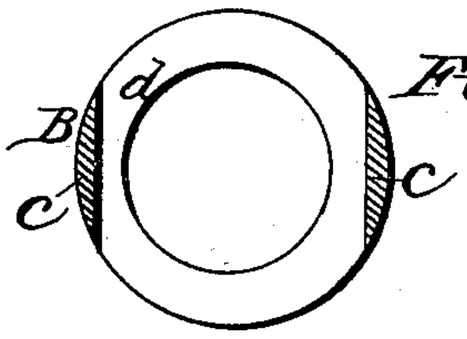


Fig. 4.

Fig. 5.

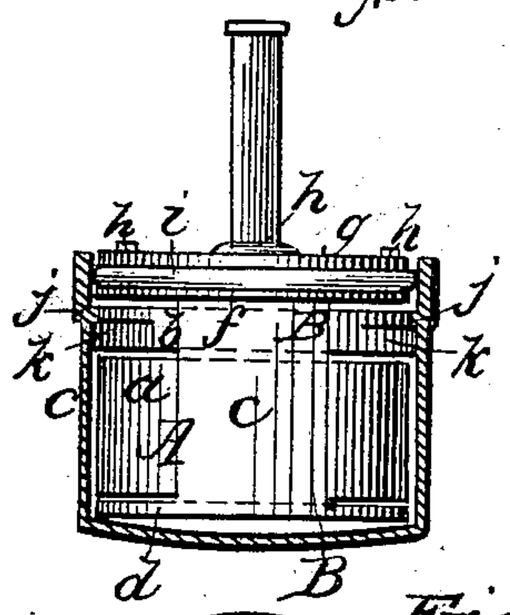
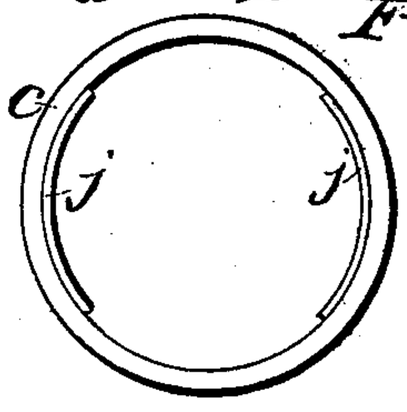


Fig 6



Witnesses.

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UNITED STATES PATENT OFFICE.

A. B. WOODARD, OF ALFRED CENTRE, NEW YORK.

IMPROVED VULCANIZING-FLASK.

Specification forming part of Letters Patent No. **52,107**, dated January 16, 1866.

To all whom it may concern:

Be it known that I, A. B. WOODARD, of Alfred Centre, in the county of Allegany and State of New York, have invented a new and useful Improvement in Vulcanizing-Flasks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of the flask detached. Fig. 2 is a plan or top view of the same. Fig. 3 is a vertical central section of the clamp. Fig. 4 is a horizontal section of the same. Fig. 5 is a vertical central section of the boiler with the flask and clamp in position. Fig. 6 is a plan or top view of the boiler.

Similar letters of reference indicate like parts.

This invention consists, first, in closing the flask by the pressure of the steam itself, so that the rubber is gradually heated and the flasks compressed automatically, and all danger of crushing the plaster mold or the teeth is avoided; second, in the arrangement of a packing-ring and compressing-flange, in combination with the boiler, clamp, and flask in such a manner that by said flange the packing-ring can be made to bear tight against the inner surface of the boiler, and the escape of steam from the boiler can be prevented without difficulty; third, in the arrangement of inclined planes on the inner surface of the boiler, in combination with the clamp and flask, in such a manner that by inserting the flask into the boiler and turning it round its cover is firmly depressed and held in position until the steam begins to act and the final compression of the rubber in the flask is effected; fourth, in the arrangement of segmental connections in the clamp, in combination with flat surfaces on the sides of the flask, so that said flask, together with the segmental connections, forms a complete cylinder, which nearly fills up the boiler and reduces the volume of steam and the danger in case of explosion.

A represents a vulcanizing-flask of that class which are generally used for dental purposes. It is made of two parts—viz., the body *a* and the cover *b*—and it is provided with flat surfaces *c* on its sides, so that when the same is slipped into the clamp B a cylindrical body is produced. This clamp is composed of an annular bottom, *d*, which connects by the segmental standards *e* with the disk-shaped top *f*. The distance of the inner flat surfaces of segmental standards from each other corresponds to the distance of the flat surfaces of the flask, and the top is secured on a loose flange, *g*, which is fastened down by suitable screws *h*. Said flange serves to clamp and retain a packing-ring, *i*, and by tightening the screws *h* this packing-ring is squeezed out and caused to bear steam-tight against the inner circumference of the boiler C. This boiler is made of cast-iron or any other suitable material of sufficient strength for the occasion, and its inner diameter is but little larger than that of the cylindrical body formed by putting the flask into the clamp. From the inner surface of said boiler project two inclined planes, *j*, and lips *k*, projecting from the circumference of the cover *b* of the flask, can be made to catch under these inclined planes, so that by turning said flask its cover is depressed.

The operation is as follows: The plaster mold is adjusted in the flask A and the requisite quantity of rubber is introduced in the same. The cover *b* is then applied and compressed sufficiently to allow of introducing the flask into the clamp. The clamp and flask are then introduced into the boiler, into which a small quantity of water is poured, and by turning the clamp the lips *k* of the flask are made to catch under the inclined planes *j*, and the cover *b* is still further depressed. The flange *g* of the clamp is then screwed down, so that the packing-ring is squeezed out against the inner circumference of the boiler, and the escape of steam from the interior of the boiler is prevented. By placing the boiler on a stove or over a flame or fire the water contained in the same is formed into steam, which acts on the top and bottom of the flask and gradually presses the cover of said flask down as the rubber becomes heated. By this arrangement the cover of the flask is closed down automatically by the action of the steam itself, and the danger of injuring the mold during this process is avoided. The joint between the clamp and the boiler is easily kept tight, and the danger in case of an explosion is greatly reduced, since the flask, when inserted in the

clamp, forms a perfect cylinder, which, when placed in the boiler, reduces the steam-space, and consequently the bulk of steam, contained in the boiler.

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

1. Closing the flask by the pressure of the steam itself, substantially as herein described, so that while the rubber is gradually heated the flasks are automatically compressed, and all danger of crushing the plaster mold and the teeth is avoided.

2. The loose flange *g* and packing-ring *i*, in combination with the boiler, clamp, and flask, constructed and operating substantially as and for the purpose set forth.

3. The inclined planes *j* on the inner surface of the boiler, in combination with the clamp and flask, constructed and operating substantially as and for the purpose described.

4. The segmental connections *e* of the clamp, in combination with flat surfaces on the flask and with the boiler, substantially as and for the purpose set forth.

The above specification of my invention signed by me this 16th day of November, 1865.

A. B. WOODARD.

Witnesses:
M. M. LIVINGSTON,
C. L. TOPLIFF.