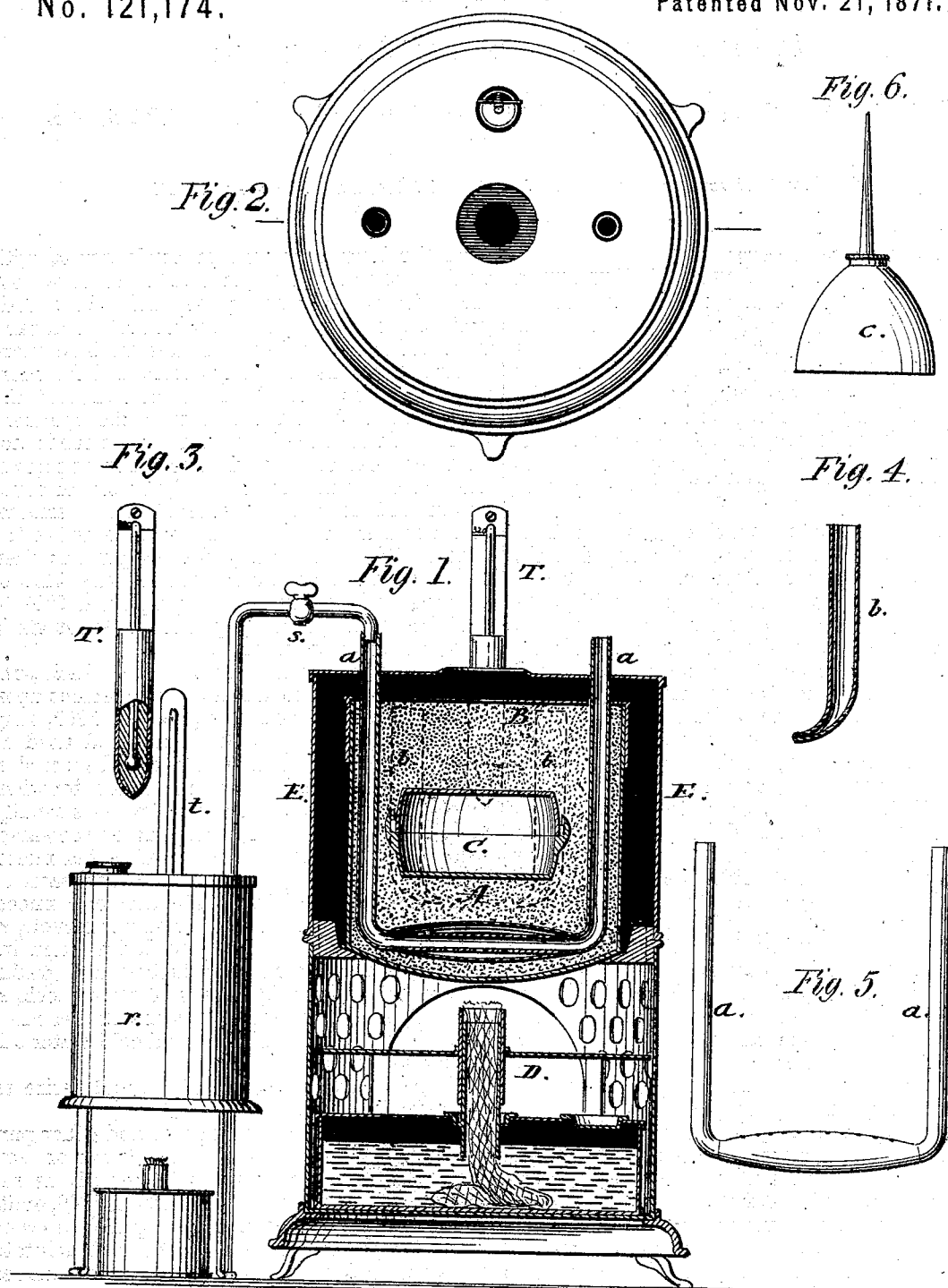


CYRUS M. KELSEY.

Improvement in Vulcanizing Rubbers for Dental Purposes.

No. 121,174.

Patented Nov. 21, 1871.



Witnesses.

Edw. W. Down
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UNITED STATES PATENT OFFICE.

CYRUS M. KELSEY, OF MOUNT VERNON, OHIO.

IMPROVEMENT IN VULCANIZING RUBBER FOR DENTAL-PLATES, &c.

Specification forming part of Letters Patent No. 121,174, dated November 21, 1871.

To all whom it may concern:

Be it known that I, CYRUS M. KELSEY, a citizen of the United States, residing at Mount Vernon, in the county of Knox and State of Ohio, have invented an Improvement on my "Improved Method of Vulcanizing Rubber for Dental and other purposes," patented on the 10th day of August, 1869; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing of my improved apparatus, in which—

Figure 1 represents a vertical central section. Fig. 2 represents a top view or plan of flask. Fig. 3 represents a side elevation of the same.

The nature of my invention consists in packing the flask (containing the rubber, gum, and teeth, prepared as by the old method) in sand or such like material, the sand being placed around the flask and the accompanying tubes or conductors inside the vulcanizer; the object of which is, first, to prevent the rubber from burning, and to retain, modify, and equalize the heat; and, secondly, to afford an opportunity to insert a thermometer, by which the exact degree of heat can be ascertained in and around the flask, substantially in the manner set forth in my patent of August 10, 1869, with these exceptions: first, the try-piece heretofore used is now omitted; and, secondly, tubes or conductors, and an attachable or detachable reservoir of water, in which this improvement substantially consists, are employed to guard against a too rapid heat at the base of the flask to produce steam, extreme heat or hot air beneath it and around it, when desired; to supply moisture to the rubber while vulcanizing; and to regulate or modify the heat by supplying water when needed; and, finally, by connecting said long bent tube with a reservoir of water to be heated to any degree desired, and indicated by a thermometer connected therewith, to force in hot water, hot air or steam, and moisture, at pleasure.

To enable others skilled in the art to use my improved invention, I will proceed to describe the operation, &c.

The vulcanizer A consists of a cylinder of sheet-iron or other material, as in drawing, and the cap or cover B for the same. In the cylinder A (horizontal or perpendicular) is poured sand to the depth of half an inch, more or less;

then the long bent tube or conductor *a*, with perforations on the upper side of its base, covered with a perforated plate, and whose ends project above the cylinder, is put in; then sand is poured in to the depth of half an inch, more or less; then the flask C is set in, and the short tubes or conductors *b* are placed around the flask and down to the bottom of the cylinder; then the flues of the long bent tube or conductor *a* having been closed with caps, corks, or screws, the cylinder is filled with sand, the cap or cover put on, and set upon the heater D. The thermometer T is then inserted and worked down to the base of the flask, and jacket E put on; then heat, produced by steam, gas, or any kind of burning-fluid, is applied, ranging from 270° to 350° Fahrenheit, according to the different kinds of rubber to be vulcanized.

The tubes or conductors *a* and *b*, which substantially constitute the new improvement upon my invention patented August 10, 1869, may consist of iron or any other material used as conducting mediums; and water may be forced in and down the long bent tube or conductor when required by inserting the point of what is usually called "an oil-can," *c*, and pressing on the same, according to the desired degree of heat or moisture about the flask; or, if desired, hot water or steam may be forced in by extending or connecting the long bent tube to or with a reservoir, *r*, of water heated to any degree desired, and indicated by a thermometer attached, and graduated or determined by means of a stop-cock, *s*, which admits or prevents the same, at pleasure; or the last may be detached and cold water admitted, as desired.

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

Vulcanizing rubber for dental and other purposes by means of a sand-bath, tubes or conductors, and thermometer, substantially as set forth in my patent issued August 10, 1869, omitting only the try-piece, and adding said tubes or conductors, which materially affect and facilitate the process of vulcanizing rubber in the manner above described.

But, more specifically:

1. An improvement in the method and manner of vulcanizing India rubber, the use of a sand-bath, combined with a flask, in the manner heretofore and herein substantially set forth.

2. In combination with a sand-bath and flask for vulcanizing India rubber, the employment of a thermometer, substantially in the manner herein and heretofore set forth.

3. In combination with a sand-bath and flask for vulcanizing India rubber, the employment of tubes or conductors, substantially and especially herein set forth.

4. In combination with a sand-bath and flask for vulcanizing India rubber, the employment of a thermometer and tubes or conductors, substan-

tially and particularly in the manner herein described, including also a reservoir of water, attachable or detachable, combined with a heating apparatus and thermometer.

This specification signed and witnessed this 6th day of October, A. D. 1871.

CYRUS M. KELSEY.

Witnesses:

B. A. F. GREER.

W. R. SAPP,

(46)