

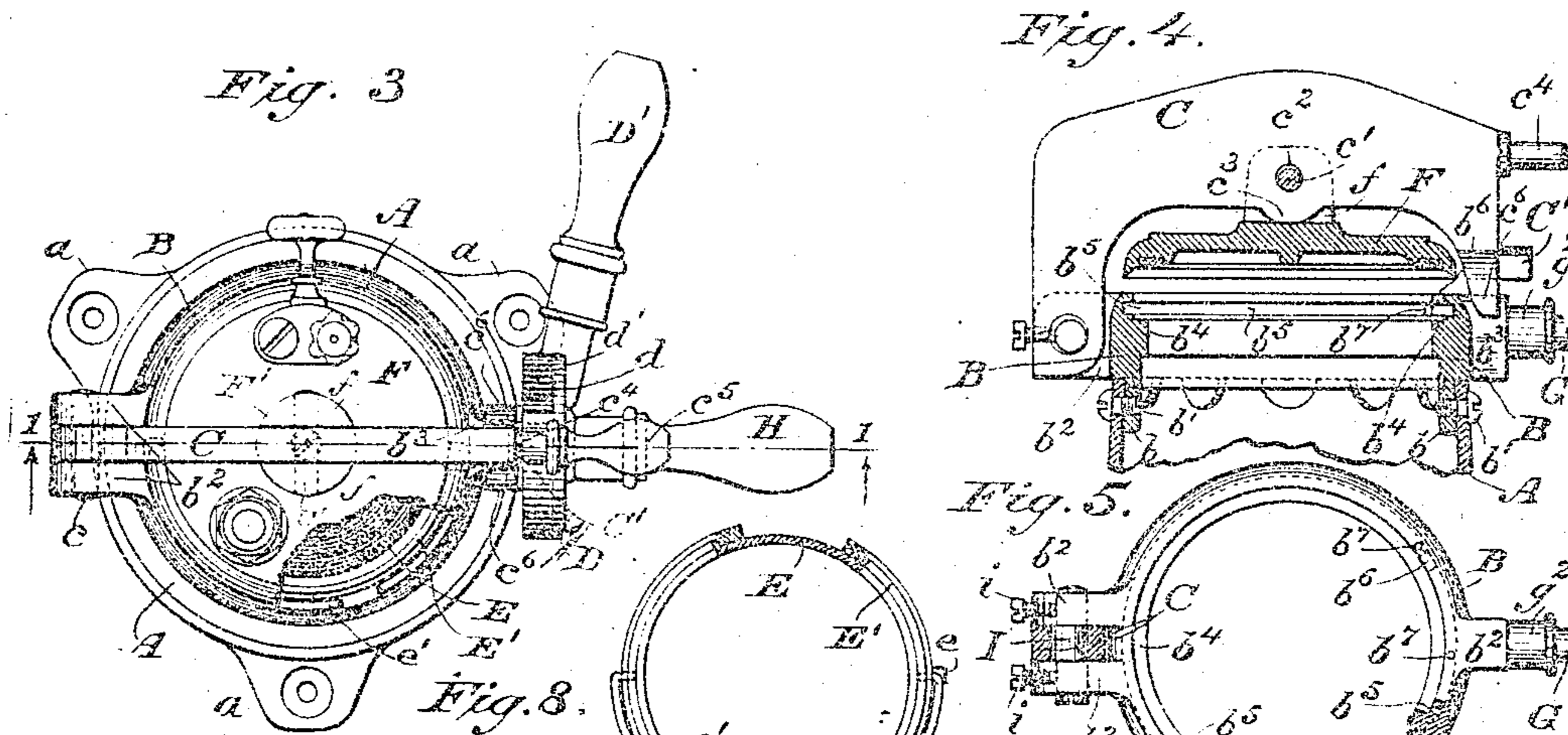
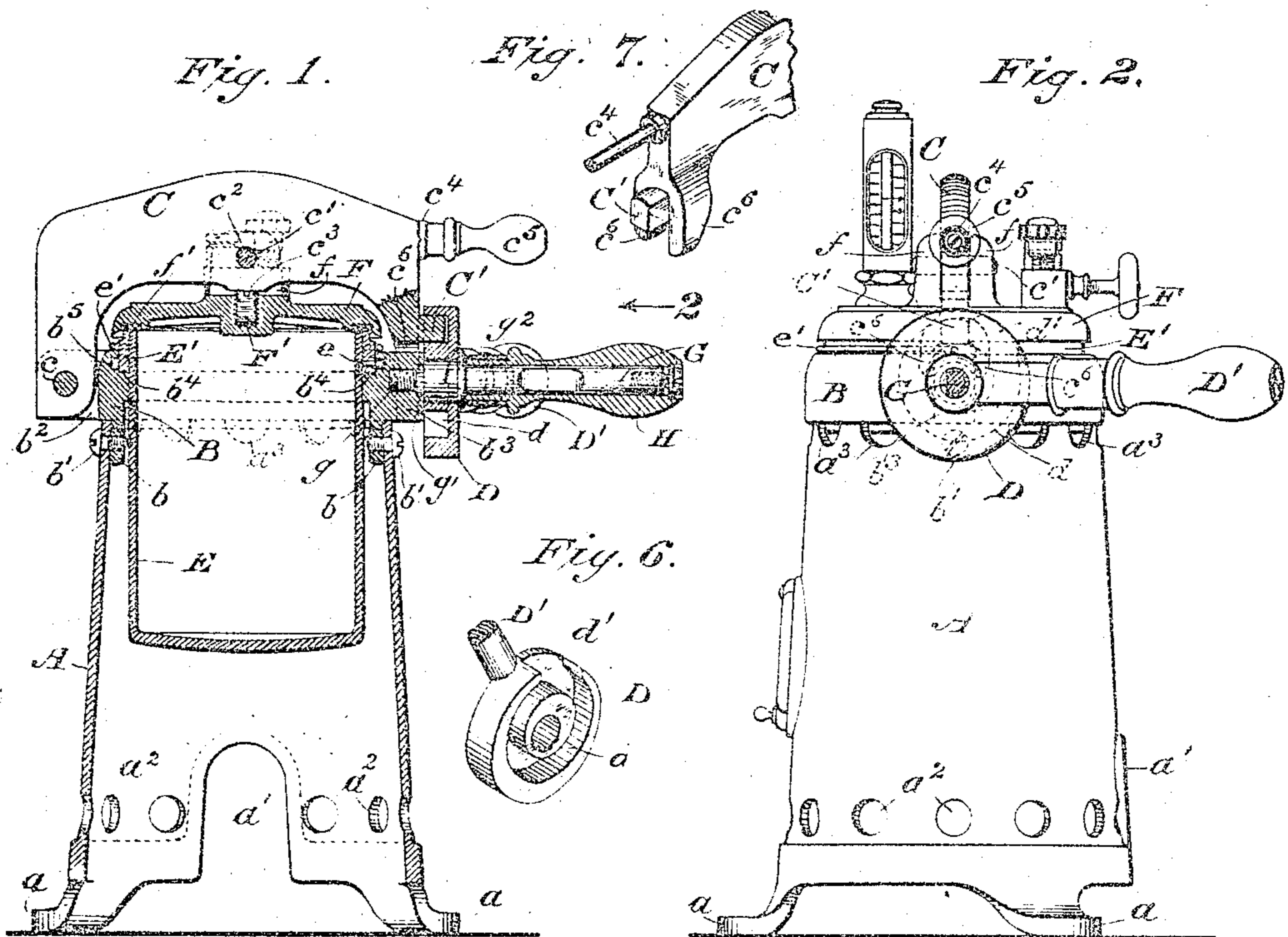
No. 886,300.

PATENTED APR. 28, 1908.

F. W. KORB & W. F. HIEBER.

DENTAL VULCANIZER.

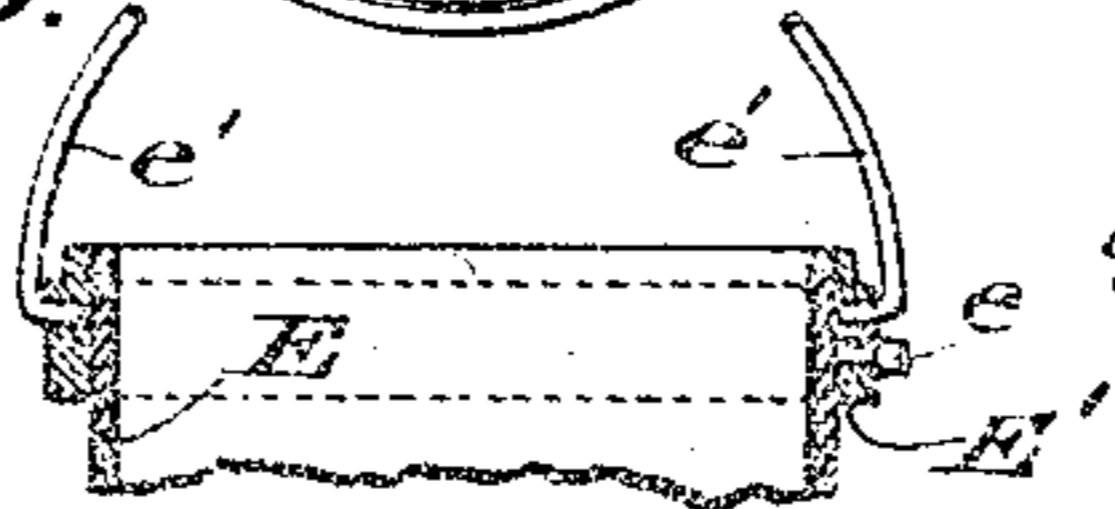
APPLICATION FILED AUG. 18, 1906.



WITNESSES:

Paul Caldwell

Fig. 9.



INVENTORS:

Frederick W. Korb,
William F. Hieber

by their attorney

W. A. Skinkle

UNITED STATES PATENT OFFICE.

FREDERICK WM. KORB AND WILLIAM F. HIEBER, OF CLEVELAND, OHIO, ASSIGNORS TO THE UNITED STATES DENTAL MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DENTAL VULCANIZER.

No. 886,300.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed August 18, 1906. Serial No. 331,150.

To all whom it may concern:

Be it known that we, FREDERICK WILLIAM KORB and WILLIAM F. HIEBER, citizens of the United States, residing at Cleveland, Cuyahoga county, Ohio, have invented certain new and useful Improvements in Dental Vulcanizers, of which the following is a specification that will enable those skilled in the art to which our invention pertains to make and use the same, reference being had to the accompanying drawing, which forms a part thereof.

Our invention relates to dental vulcanizers, consisting mainly of an outer shell or casing provided with suitable heating apparatus, and having a seat adapted to receive and hold a boiler vessel and a cover for said vessel with suitable means for clamping said cover upon the mouth of the vessel; and it consists of an arrangement of mechanism adapted to carry out the objects of the invention as will hereinafter be fully described and claimed.

The accompanying drawing shows our invention in construction of detail and general arrangement of the parts now deemed most desirable by us, but these might be varied without the exercise of invention, and within the skill of a good mechanic, without departure from the spirit of our invention, as set forth in the claims at the end of this specification.

In the drawing Figure 1 is an elevation partly in vertical section on the line 1, 1 of Fig. 3. Fig. 2 is a side elevation of the same as seen from the direction of the arrow 2 on Fig. 1. Fig. 3 is a plan view partly broken away. Fig. 4 is a sectional elevation of the top of the device showing a modification. Fig. 5 is partial plan view of the same. Fig. 6 is a perspective view of the cam for locking the boiler lid. Fig. 7 is a similar view of the lid lever. Fig. 8 is a plan view, and Fig. 9 a sectional elevation of the top of the boiler vessel.

The outer frame or casing consists of a tapering shell, A having suitable feet *a*, a suitable aperture *a'* for the entrance of gas or other fuel pipes to a burner (not shown) and a row of apertures, *a''* for the admission of air to said burner. At the top of the shell is a

series of apertures *a'''* for the escape of the products of combustion, and a reinforcing ring B secured to the shell by depending lugs *b* and screws *b'*. This ring is provided with rear lugs *b''* between which is pivoted a lever C on a pin *c*, and with a front lug *b'''* on which the clamping device D is mounted.

The ring B is formed with an annular internal seat *b''''* for the boiler vessel, which consists of a pressed cup E of heavy copper reinforced at its top edge by a steel ring E'. This ring which constitutes an annular flange or ledge at the top of the boiler is deeper than the seat *b''''* of the casing ring B, and its edge therefore stands above the top of said ring.

The ring B has an internal groove *b''''''*, and a notch *b''''''''* through the upper flange of the groove like the so called bayonet joint. A pin *e*, projecting from the ring E' on the boiler, is adapted to pass through the notch *b''''''''*, and lie in the groove *b''''''*, of the casing ring, to prevent the lifting of the boiler from its seat until the pin *e* is brought into line with the notch *b''''''''*.

Stop pins *b''''''''''* standing across the groove *b''''''* may be used to limit the distance the pin *e* may be moved away from the notch *b''''''''*.

The boiler is furnished with a handle or bail *e'*, which engages the ring E' above the casing ring upon the top of which it may lie, below the cover, as shown in Figs. 1, 2 and 3.

The lever C lies between lugs *f* of a cover F, adapted to fit upon the mouth of the boiler, as shown, and is secured therein by a cross pin *c'* fitting loosely in the aperture *c''* in the lever. At its mid length the lever is preferably formed with a depressed lug *c'''*, which bears upon the raised center boss of the cover. The lever is provided with stud pin *c''''* upon which is a handle *c''''''* of wood or other heat non-conductor. Below this handle is a projecting lug C', adapted to be engaged by a cam; and at this end the lever is forked below the lug, so that the lug *b'''* of the casing ring lies between the prongs *c''''''* of the fork.

A pin G projects from the lug *b'''* of the casing ring and supports an insulating handle H and a clamping cam D. This pin is provided with a reduced threaded portion *g*, which screws into a socket in the lug *b'''* until

an enlarged shoulder g' on the pin bears firmly against the bottom of its socket. Adjacent to this shoulder is another enlargement g^2 of the pin upon which the clamping
 5 cam D is mounted to turn freely. This cam D is provided with an eccentric groove d on its inner face which opens outwardly through a gap d' , the groove and gap being adapted to receive the lug C' on the lever.

10 The cam is provided with a rigid insulating handle D' as shown. When the lever lug is to be engaged or disengaged by the cam, the latter is turned until its gap d' stands vertically, so that the lug C' may
 15 pass in or out. As the cam is turned its eccentric groove will act upon lug C of the lever, either to draw it down and clamp the cover or to throw it back and release the cover. It is intended that when the lug C'
 20 is engaged by that portion of the cam at the gap d' the cover of the boiler shall be held slightly free and loose, and that some considerable movement of the cam shall be
 25 necessary to seat the cover on the boiler before the clamping pressure is applied. By this arrangement, when opening the boiler, we are enabled to use the powerful cam action to break any adhesive seal between the
 30 boiler and cover, which might form while they are clamped, and to lift the cover away from the boiler before the gap d' comes into line with the lug C'.

The cover has an annular groove on its under side in which is placed a ring f' of as-
 35bestos vulcanite, or other suitable packing. In order to compensate for wear in the cam or lug we provide an adjusting screw F' in the central boss of the cover, the lever bearing on this screw as shown, so that raising of the
 40 screw compensates for wear. Another way of securing such compensation for wear of the cam is shown by Figs. 4 and 5, in which the screw just mentioned is dispensed with and the lever mounted on an eccentric pivot
 45 pin I. This pin may be turned to lower the rear end of the lever, and when adjusted is locked in place by set screws i .

The pivotal attachment of the cover to the lever is preferably made loose and free by
 50 making the hole c^2 in the lever slightly larger than the pivot pin c' , which passes through it. This loose connection admits of the cover finding its proper seat on the top of the boiler without restraint from the lever.

55 Under the clamping pressure and heat of the vulcanizing process the packing between the boiler and its lid frequently causes the lid to stick with sufficient force to raise the boiler off its seat, and then if the adhesion
 60 suddenly breaks the vessel will fall back to its seat and splash its hot contents out through the opening thus left between it and the lid which is held suspended from the clamping

lever. The locking of the boiler vessel to its seat on the frame by the bayonet-joint 65 groove and the pin on the boiler, or other equivalent means, is regarded as an important feature of this invention.

Having thus described our invention what we claim as new and useful and desire to se- 70 cure by Letters Patent is:

1. In a dental vulcanizer, the combination of a casing, a boiler vessel adapted to seat in said casing, a cover adapted to close the boiler vessel, a lever pivoted on the casing 75 and adapted to bear on the boiler cover, a lug projecting from the free end of the lever, a bearing pin projecting from the casing, a cam disk mounted thereon at a right angle to the plane of the lever and having an eccen- 80 tric groove cut in its inner face adapted to engage the lug on the lever, with a gap from said groove and means for adjusting the lever to compensate for wear of the cam etc., substantially as set forth. 85

2. In a dental vulcanizer, the combination of a casing, a boiler vessel adapted to seat in said casing, a cover adapted to close the boiler vessel and having an adjusting screw projecting from its top, a lever pivoted on 90 the casing and adapted to bear upon the screw of the cover, with a cam adapted to engage the free end of the lever and draw it down upon the cover, substantially as set forth. 95

3. In a dental vulcanizer, the combination of a casing having an annular seat near its top and a bayonet-joint groove at the side of the seat, a boiler vessel having a flange adapted to rest on said seat, and having a project- 100 ing pin adapted to engage the bayonet-joint groove, a cover adapted to close the boiler vessel, a lever pivoted to the casing and pivotally connected to the cover, a cam adapted to engage the free end of the lever and draw 105 it down upon the cover, the cam being so set that it first draws the cover down into contact with the boiler and then clamps it, and in reverse releases the clamping pressure and then lifts the covers slightly from the boiler 110 substantially as set forth.

4. In a dental vulcanizer, the combination of a casing having an annular seat near its top and a bayonet-joint groove at the side of the seat, a boiler vessel having a flange 115 adapted to rest in said seat and a projecting pin adapted to engage the bayonet-joint groove and hold the vessel against accidentally lifting, with a cover adapted to close the boiler vessel and means for clamping said 120 cover upon said vessel, substantially as set forth.

5. In a dental vulcanizer, the combination of a casing, a boiler vessel adapted to seat in the casing, means for locking the boiler vessel 125 against accidental lifting from its seat, a

cover adapted to close the boiler vessel, a lever pivoted to the casing and also pivotally connected to the boiler cover, a cam disk pivoted on the casing at a right angle to the plane of the lever and having an eccentric groove formed on its inner face adapted to engage the free end of the lever to close and clamp the lid on the boiler or to release and then initially lift the lid from its seat on the boiler, substantially as set forth.

6. In a dental vulcanizer, the combination of a casing having an annular depressed seat at its top, a boiler vessel having an annular flange adapted to rest in said seat, said flange being of greater depth than the seat, a cover adapted to close the boiler and a bail pivotally connected to the boiler above the depth of the casing seat and adapted to lie between the top of the casing and the under side of the cover's overhanging edge when the latter is on the boiler, substantially as set forth.

7. In a dental vulcanizer, the combination of a casing having a seat, a boiler vessel adapted to rest upon said seat and project slightly above the top of the casing, a bail

pivotally connected to the boiler vessel above the line of the top of the casing, substantially as set forth.

8. In a dental vulcanizer, the combination of a casing, a boiler vessel, a cover for the boiler and a clamping lever pivoted to the casing and connected to the cover all substantially as described, with a cam pivoted on the casing and adapted to engage the free end of the clamping lever, a screw and socket recess in the front of the casing and a pivot pin for the cam formed with a screw stud and an enlarged flange or shoulder adapted to fit into the socket in the casing with the shoulder hard against the bottom of that portion of the socket adapted to receive it, substantially as set forth.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

FREDERICK WM. KORB.
WILLIAM F. HIEBER.

Witnesses:

VERNON L. STANFORD,
WM. A. SKINKLE.