

No. 608,512.

Patented Aug. 2, 1898.

J. C. DIXON.
CELLULOID PRESS AND VULCANIZER.

(Application filed May 3, 1897.)

(No Model.)

2 Sheets—Sheet 1.

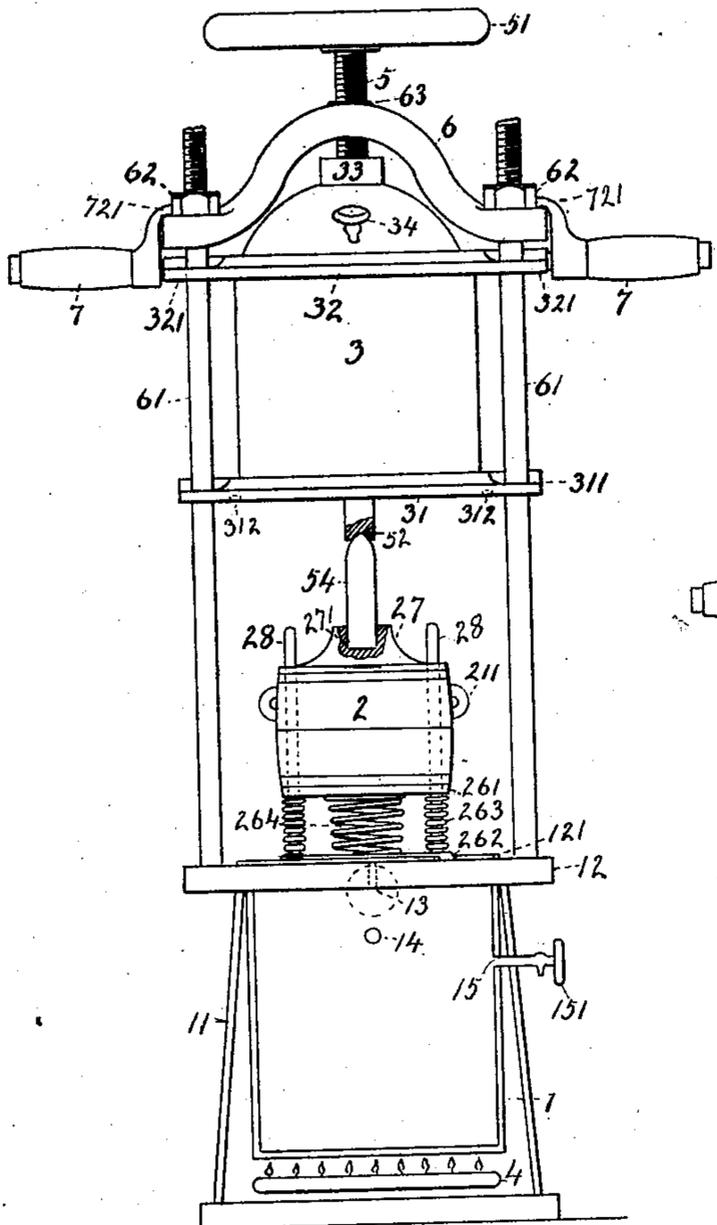


Fig. 1.

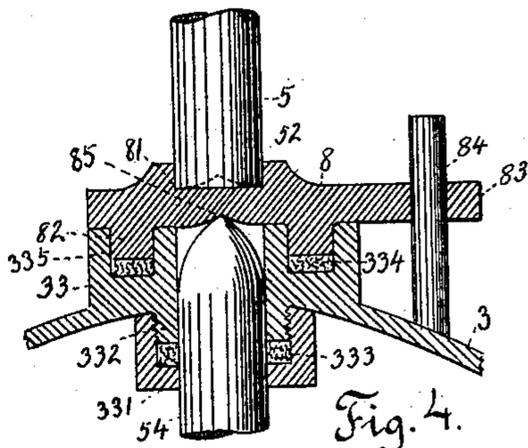


Fig. 4.

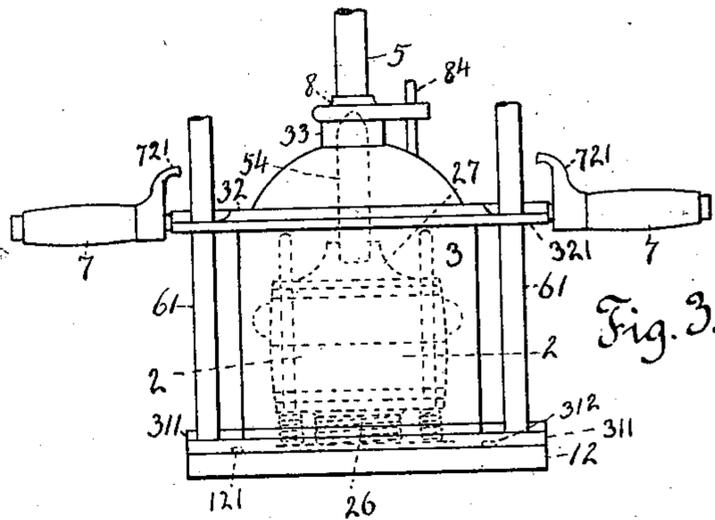


Fig. 3.

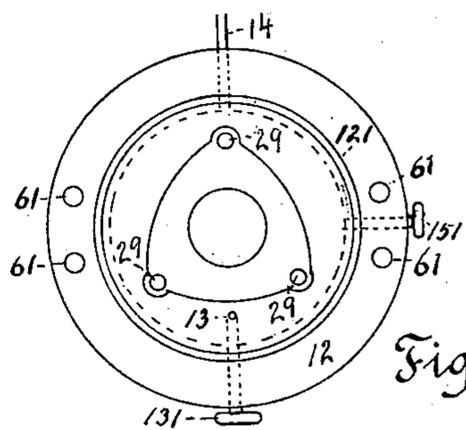


Fig. 2.

Witnesses

John A. Stone,
Leslie H. Boyd

Inventor

John Charles Dixon
By
Samuel A. Budden
Attorney

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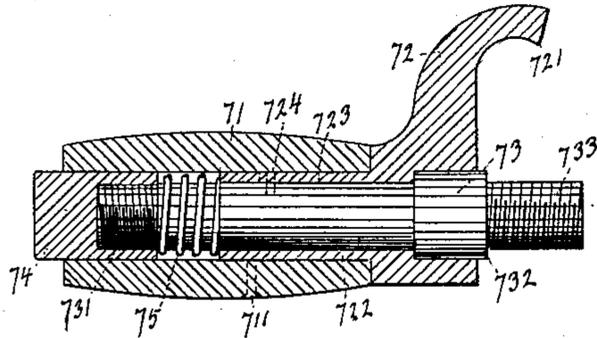


Fig. 5.

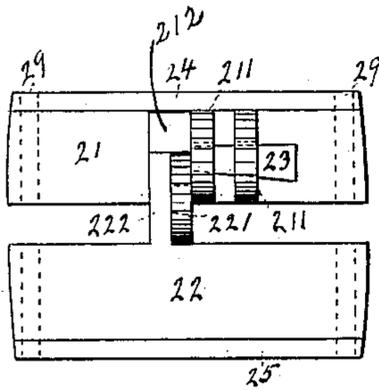


Fig. 6.

Witnesses

John A. Hayes
Leslie H. Boyd

Inventor

John Charles Dixon
By
Samuel A. Budden

Attorney

UNITED STATES PATENT OFFICE.

JOHN C. DIXON, OF MONTREAL, CANADA, ASSIGNOR TO PHILIP SHERIDAN,
OF SAME PLACE.

CELLULOID-PRESS AND VULCANIZER.

SPECIFICATION forming part of Letters Patent No. 608,512, dated August 2, 1898.

Application filed May 3, 1897. Serial No. 634,869. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHARLES DIXON, a subject of Her Majesty the Queen of Great Britain and Ireland, and a resident of the city of Montreal, in the Province of Quebec, in the Dominion of Canada, have invented a certain new and useful Celluloid-Press and Vulcanizer; and I declare the following to be a true and exact specification and description thereof.

My invention relates to an improved form of celluloid-press and vulcanizer adapted to be used in dental work.

The object of the invention is to provide an apparatus which can be used as a vulcanizer and also as a celluloid-press in which the heating-chamber is movable, pressure is applied to the flask automatically, rapidity and simplicity of method shorten the time required for the operation, and facility is given to examine the flask without releasing the pressure. A new form of flask is also used, which closes evenly and distributes the pressure upon its contents. I also include a spring-catch handle adapted to hold the heating-chamber when in a raised position.

Hitherto it has been customary in vulcanizers to place the flask in the retort containing water and then to apply the required amount of heat and pressure. In this method the retort had to be closed and examination of the flask during the operation was impossible without opening the water-chamber, and thereby wasting heat and considerable time. Furthermore, the direct application of hot water to the flasks was a disadvantage owing to corrosion and uncleanness.

In vulcanization it was necessary to constantly increase the pressure by means of screwing the flask-press.

In my device the flask is placed in a movable heating-chamber, which is supplied with steam or hot air from a distinct source of supply. The pressure is applied automatically in vulcanization, and the flask when treating celluloid can be examined without releasing the press. The heating-chamber being readily opened allows the flask to be inserted or removed at pleasure.

Reference is made to the annexed drawings, in which—

Figure 1 is a front view of the apparatus with heating-chamber raised, showing flask in position. Fig. 2 is a plan view of base of heating-chamber. Fig. 3 is a front view of chamber when closed and with flask in position when adapted for vulcanizing. Fig. 4 is an enlarged sectional view of neck and cap of chamber when adapted for vulcanizing. Fig. 5 is a sectional view of the spring-catch handle. Fig. 6 is a side view of flask partially open.

The construction of my invention in the form I have found to be most convenient is as follows: A frame 11 supports the plate 12, to the lower side of which is attached the boiler or heat-generator 1. From each side of the plate 12 run two bars 61 to the cross-head 6, to which they are firmly attached by the nuts 62. Between the bars 61 slides the heating-chamber 3, which has the guides 311 and 321 to hold it in position.

Handles 7 are provided at the sides of the chamber 3 by which to raise and lower it, and by means of the spring-catches 721 the chamber can be held in a raised position, as shown in Fig. 1. A central threaded spindle 5, provided with a hand-wheel 51, fits the female screw 63 and passes into the neck 33 of the chamber 3 or the cup 81 of the cap 8.

The lower rim 31 of the chamber 3 has a groove 312, into which the flanged ring 121 on the plate 12 fits when the chamber is lowered and makes thereby an air-tight connection. The upper part of the chamber is provided with a stop-cock 34, and a thermometer may also be attached, if required.

The neck 33 has a flange 332 projecting downwardly and threaded on the outside. On this is screwed the cap 331, which retains the packing 333 in position. On the upper edge of the neck is a groove 335, containing packing 334, on which the flange 82 of the cap 8 presses when in position for vulcanizing. The cap is pivoted on the pin 84 by the extension 83 and swings aside when not in use.

The flask 2 is supported on a spring base or chair 26 and slides vertically on the pins 28, which pass through the corners 29. The spring-base 26 is composed of the lower part 262, to which the pins 28 are attached, and an upper part 261, between which are the

springs 263, surrounding the pins 28, and the central and larger spring 264, which fits in suitable cups in the center of the opposite faces of the two parts 261 and 262. The flask 2 then goes on the pins 28 and is covered by the top 27, which has a cup 271, into which the plug 54 or the spindle 5 fits. The plug 54 is pointed at one end. This point enters the cupped end 52 of the spindle or the lower side of the cap 85, as desired.

The flask is constructed in four parts, consisting of the top 24, upper section 21, lower section 22, and bottom 25. The upper section has two lugs 211 on each side, which are conically bored to hold a conical pin 23. The lower section 22 has an upward projection 222 on each side, which slides in a groove 212 in the upper section 21. On these projections 222 there are similar lugs 221 to the lugs 211 and they are bored to match, so that the pin 23 can be pushed in, and thus fasten the two parts together.

The boiler 1 has an inlet 14, to which can be attached the water-supply steam-indicator, safety-valve, and automatic gas-regulator. There is also a stop-cock 151 to an opening 15, by which the height of water can be regulated and steam allowed to escape. The steam is let into the heating-chamber at 13 and controlled by the stop-cock 131. The gas-burner 4 is arranged beneath the boiler.

The handles 7 are composed of a spindle 73, threaded to attach to the rim 32 at one end, 733, and at the other, 731, to fit the screw-cap 74. The sleeve 722 fits over the spindle 73 and collar 732, but does not extend to the cap 74, a space being left for a spring 75. A slot 723 and pin 724 hold the sleeve in position. A wooden handle 71 covers the sleeve 722 and spring 75 and is fixed by means of the screw 711. The sleeve-head 72 has a hooked projection 721, which catches the cross-head 6 when the chamber 3 is raised. By drawing the handles outwardly against the springs the hooks are released and the chamber can be lowered.

The operation of my invention is as follows: When used for the purpose of vulcanizing and both heat and pressure are required, the flask containing the material to be treated is placed on the spring-chair 26 and covered by the top piece 27. A plug 54 is placed in the cup 271. This plug is long enough to protrude a little above the neck 33 of the chamber 3 when the latter is lowered. The cap 8 is then fitted over the point of the plug 54, and the spindle 5 is screwed down till the flange 82 of the cap reaches the packing 334 and completely closes the chamber. The pressure on the point of the plug forces the flask down on the spring-chair, so that the pressure on the flask by the springs is exerted to close the flask without any further attention and is therefore self-closing. The steam is then let in through the opening 13 and the desired amount of heat and steam-pressure obtained. When treating celluloid and me-

chanical pressure is the essential feature, the flask 2 is placed in position as before, but the cap 8 is removed and the spindle 5 is screwed down directly on the plug 54 through the neck 33 of the chamber 3. The pressure is increased by turning the hand-wheel 51.

The chamber can be readily raised without changing the pressure on the flask and without loss of time.

The slide-bars 28, guiding the sections of the flask 2, give an evenly-distributed pressure to its contents.

When the flask 2 is completely closed, the pins 23 are pushed home and the two sections are firmly held together.

By means of the inlet 13 and the outlet 34 of the chamber 3 the heat and steam-pressure can be regulated with ease and exactness.

I do not limit the use of my device to a supply of steam, as other means of applying heat to the flask will answer.

Various modifications in the details may be employed without altering the functions of the apparatus.

Having now described my invention and the manner in which the same is to be applied, what I claim, and desire to secure by Letters Patent, is—

1. In a vulcanizer a detachable heating-chamber combined with a heat-generator.
2. In a vulcanizer, a heat-generator combined with a movable heating-chamber adapted to be moved without altering the position of the flask.
3. In a vulcanizer the combination of a heat-generator with a movable heating-chamber and means of connecting the two together.
4. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber and a frame to guide the movements of the said chamber.
5. In a vulcanizer, the combination of a heat-generator, with a movable heating-chamber, a frame to guide the movements of the said chamber and means of raising and lowering the chamber.
6. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a flask within the chamber, a frame to guide the movements of the said chamber and a threaded spindle adapted to supply pressure on the flask contained in the heating-chamber.
7. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded spindle to supply pressure to the flask and a spring flask-supporting chair.
8. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded pressure-spindle, a spring flask-supporting chair and flask-guide pins.
9. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a frame to guide its

movements, a threaded pressure-spindle and a cap to close neck of chamber.

10. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded pressure-spindle, an adjustable plug, a spring flask-supporting chair and flask-guide pins.

11. In a vulcanizer, a movable heating-chamber having a guide-frame, the neck provided with a packing-ring and the lower side grooved to receive a flanged ring on the base, and a threaded pressure-spindle adapted to pass through said packing-ring for the purposes set forth.

12. In a vulcanizing-flask the combination of two side sections, one of which has projecting lugs the other having slotted sides to fit the lugs, and corner pin-holes in top, bottom and sides adapted to fit on pins of the flask-chair.

13. In a vulcanizing-flask the combination of two side sections one of which has projecting lugs, the other having slotted sides to fit the lugs conically-bored ears to the lugs and to parts adjacent to slots, conical pins to lock such sections, and corner pin-holes in top, bottom and sides, and a flask-chair having pins adapted to fit in such holes.

14. In a vulcanizer, a movable heating-

chamber vertical guide-bars and spring-catch handles adapted to raise and lower chamber and to retain it in position when raised.

15. In a vulcanizer the combination of the cross-head, a spring-catch handle, consisting of a spindle, a hooked sleeve sliding thereon between a collar and a spiral spring retained by a cap adapted to press the sleeve toward the collar and a movable heating-chamber.

16. In a vulcanizer or celluloid-press, the combination of a steam-generator, a flanged plate supporting a guide-frame and spring flask-chair, a chamber moving vertically in such frame and pressure-spindle adapted to operate in the center thereof.

17. In a vulcanizer, the combination of a steam-generator, a plate supporting the guide-frame and spring flask-chair, movable chamber, spring-catch handles thereto, and a central pressure-spindle.

18. In a vulcanizer, the combination of a pressure-spindle, a flask and a spring flask-chair adapted to close the flask automatically.

19. In a vulcanizer, the combination of a pressure-spindle, a flask a spring-chair and a movable heating-chamber.

JOHN C. DIXON.

Witnesses:

HANBURY A. BUDDEN,
PHILIP SHERIDAN.