

No. 618,452.

Patented Jan. 31, 1899.

W. H. BEEDE & F. W. WRIGHT.
APPARATUS FOR REPAIRING PNEUMATIC TIRES.

(Application filed Sept. 24, 1897.)

(No Model.)

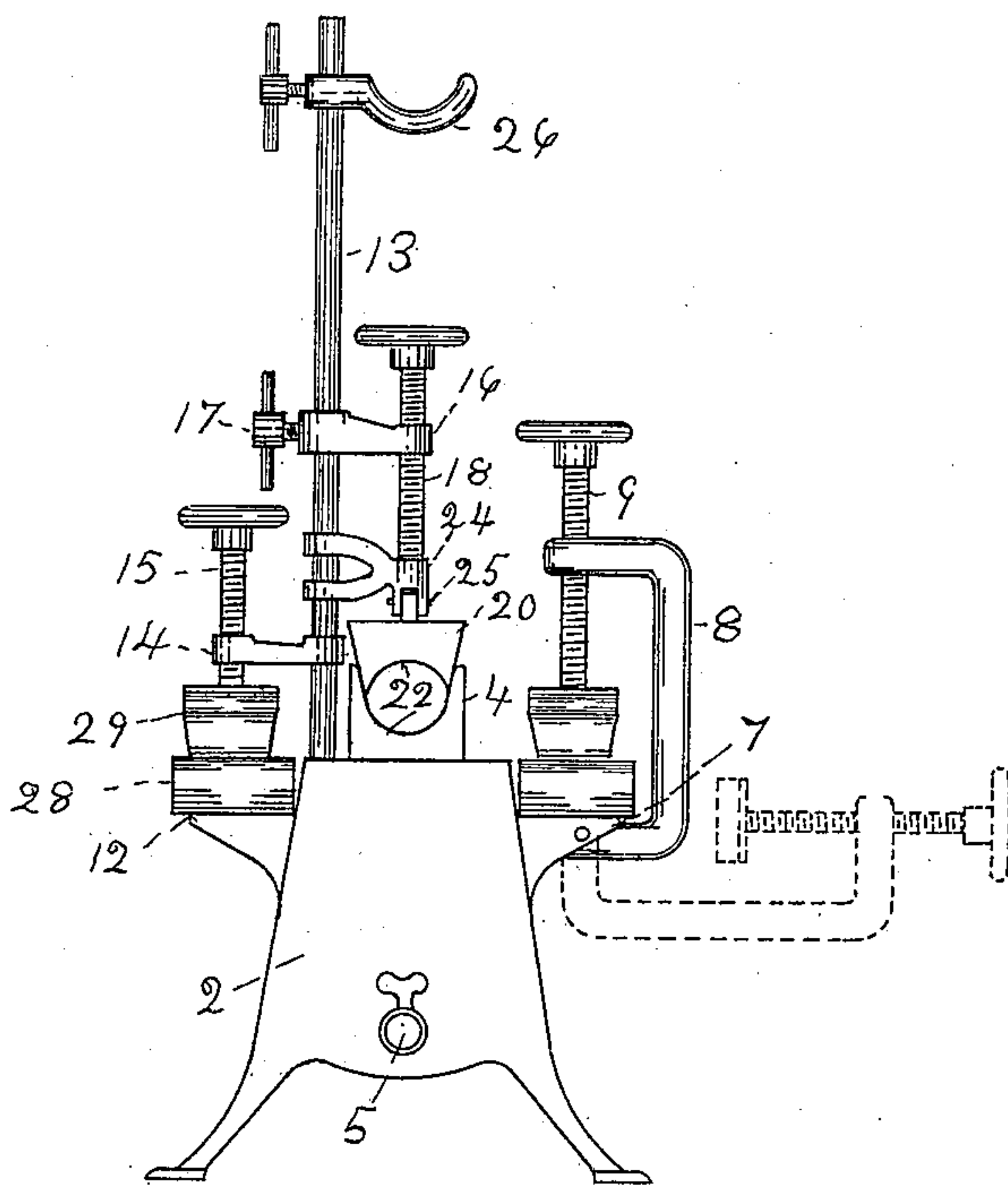


FIG. 1

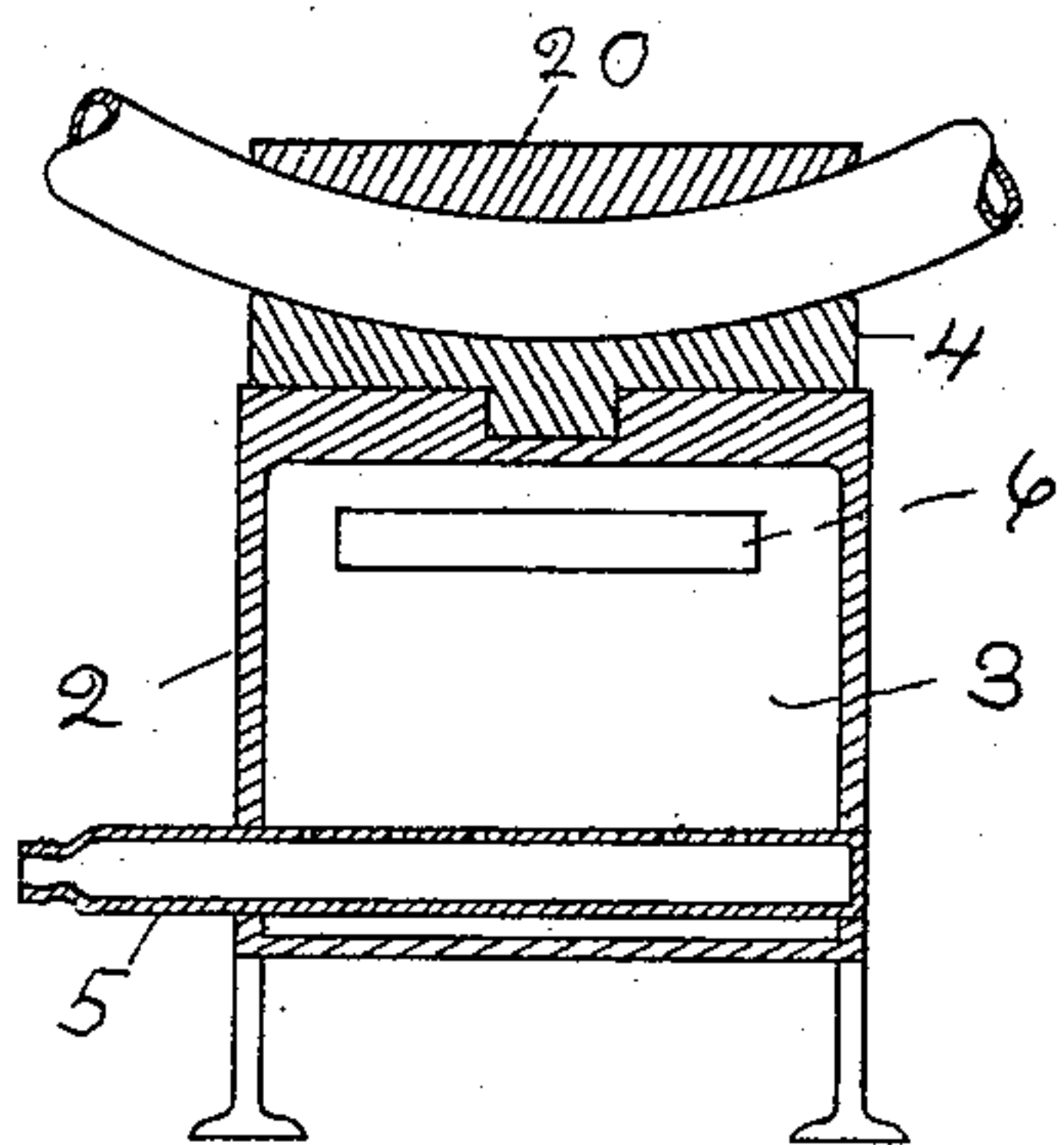


FIG. 2

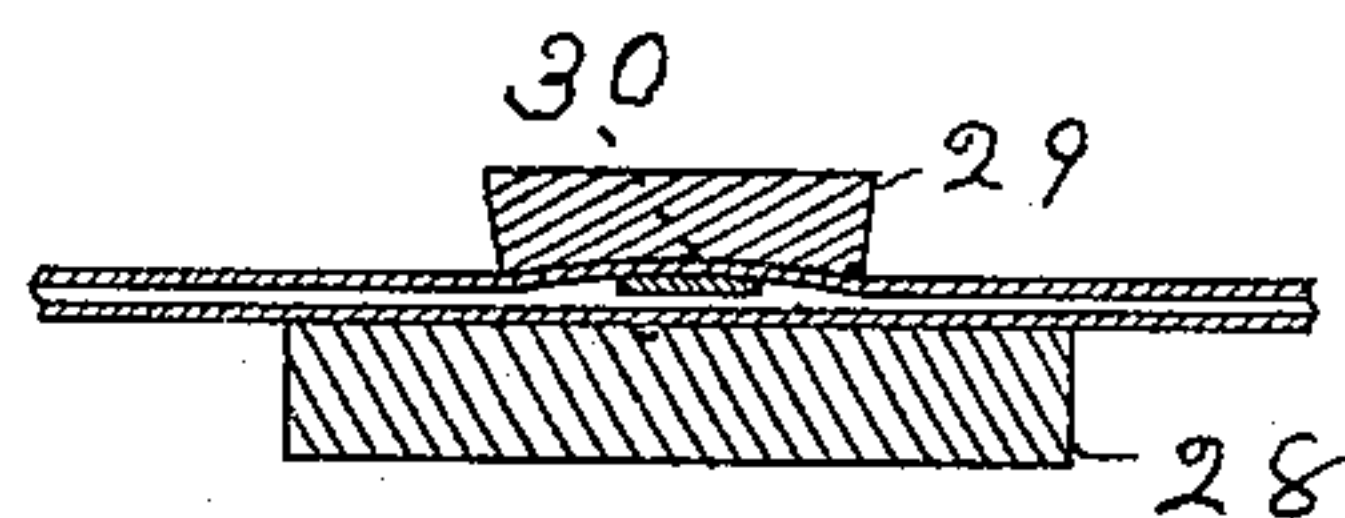


FIG. 3

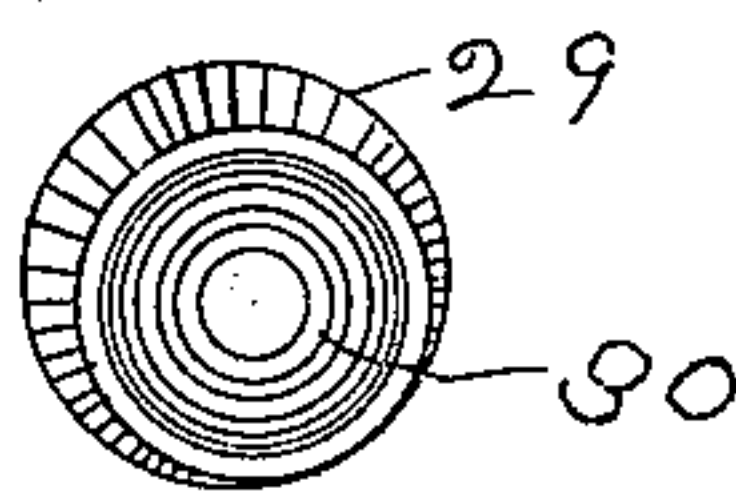


FIG. 4

WITNESSES—

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WARREN H. BEEDE AND FREDERICK W. WRIGHT, OF LYNN, MASSACHUSETTS.

APPARATUS FOR REPAIRING PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 618,452, dated January 31, 1899.

Application filed September 24, 1897. Serial No. 652,799. (No model.)

To all whom it may concern:

Be it known that we, WARREN H. BEEDE and FREDERICK W. WRIGHT, of Lynn, Commonwealth of Massachusetts, have invented certain Improvements in Apparatus for Repairing Pneumatic Tires, of which the following, read in connection with the accompanying drawings, is a specification.

Of the accompanying drawings, Figure 1 is an elevation of one side, and Fig. 2 an elevation of a section, of the machine embodying this invention. Figs. 3 and 4 represent details referred to and further described hereinafter.

The machine comprises a body part 2, arranged for supporting on the top thereof the clamping member 4. Said body part has within it an oven or chamber 3, wherein is located the heating medium 5, the one represented being an ordinary Bunsen burner for using coal-gas; but obviously other heating apparatus may be employed, if desired. At or near the top of said oven are openings 6 6, extending through the walls thereof outwardly on opposite sides of the body part, and integrant with or otherwise secured firmly to the body part and projecting laterally therefrom are shelves 7 12, one above each of the openings 6, said shelves being intended for holding clamping members, as further to be described hereinafter.

The arm 8 has pivoted connection with the body part 2, whereby to permit swinging movement from the horizontal position indicated by dotted lines, Fig. 1, to a vertical position, with its free or top end above the shelf 7. In the top or free end of arm 8 is a wheeled shaft 9, having on its bottom end a shoe and having screw-threaded connection in the arm 8, whereby the shaft when suitably turned may be moved vertically up and down for pressing together the work-repairing clamp members placed therebelow upon the shelf 7.

Supported in the body part 2 is an upwardly-extending post 13, whereon is supported the bracket-arm 14, having in its outer end a wheeled shaft 15, having screw-threaded connections therewith for causing vertical reciprocations of the shaft when turned—all this for pressing together the work-repairing clamp members placed therebelow upon the shelf 12.

On the post 13 is a bracket 16, adapted for

sliding movement on the post in order for quick and easy arrangement to different altitudes, and it is securable to the post at any desirable altitude by the manually-operated set-screw 17. Said bracket 16 has its outer end in line above the body part 2 and supports a wheeled shaft 18, to the bottom end whereof is attached the clamping member 20. Said shaft 18 has screw-threaded engagement in the arm 16, whereby the shaft when suitably turned is reciprocated vertically for lifting and lowering the clamping member 20, and consequently closing it down upon a tire placed therebelow in clamping member 4. The clamping members 4 and 20 are designed for use in repairing a tire while it is in an inflated condition. To this end the members are provided with tire-receiving channels 22, running longitudinally thereof, said channels being substantially semicircular in cross-section and approximately in depth the half-diameter of an ordinary wheel-tire. The members are extended for working upon the outer face or periphery of the tire and also upon the inner face thereof, and to this end the channel 22 in one member, 20, is made longitudinally concaved, while the channel 22 in the other member, 4, is made longitudinally convex. (See Fig. 3.) The vulcanizing member, it will be understood, is always placed upon the top of the body part 2 in order to become heated sufficiently for melting the repairing material, and to this end the members are made interchangeable, each one provided with a tongue-piece to enter the socket in shoe 24 on bottom end of shaft 18, whereto it is secured temporarily by the pin 25.

Obviously when the repair is to be made upon the peripheral face of the tire the clamp member 20 is placed below and the tire-body will extend vertically above the post 13, where it is engageable with the steady-rod 26 for support during the vulcanizing operation; but when the repair is to be made on the inner face of the tire the clamp member 4 is placed below and the tire-body will then hang downwardly, requiring in this case no special means for support.

Besides the work commonly met with that may be done in the clamp members 4 20 with the tire inflated, it at times becomes desirable to conduct the work of repair with the tire in

a collapsed and flattened condition. In such cases clamping members with flat or approximately flat faces are employed, according to the nature of the work to be performed. In Fig. 3 of the drawings is represented in section the work of repairing a tire wherein is employed a flat-faced clamp member 28 and a clamp member 29, having its face concaved or chambered out to form a cavity or depression 30. In use this chamber is located above the puncture or place in the tire intended to be repaired, which place having been filled with the repair material the clamping members are pressed tightly together, firmly compressing the work therebetween. The heat is next applied, and as the repair material becomes melted it runs together in the cavity 30 and is shaped up by the walls of said cavity, being heaped and made thickest in the center or punctured point.

The clamp members 4 20 may be removed entirely and give place for other clamp members to be used in place thereof when desired. In this connection it will be understood that one purpose of the shelves 7 12 is to hold the different clamp members which may happen to be temporarily out of use and which are thereby kept hot and always in readiness for use without the delay required for heating from the cooled state in every instance of primary use, as heretofore. In Fig. 1 the shelves 7 12 are represented as supporting, and consequently keeping hot, the several different sizes and styles of clamping members which are commonly employed in doing different kinds of repair-work; but in the machine represented the shelves 7 12 are further employed at times for supporting a bottom or heated member in actual working use. In such case the work for repair is placed upon the member thus supported and above it is placed a top member to be actuated downwardly by the screw-shaft 9 or 15, as the case may be, whereupon the work of melting and repairing the tire clamped therebetween goes on, as in the case above described.

From the foregoing it will be obvious that the machine represented is adapted for work to be carried on therewith at three different points or places all at one time, and the work at each place may be of a separate or special character, according to the clamping members employed. This very much increases the capacity of the machine for turning off work, besides the economical consideration that one heat is made to serve for all the operations.

We claim—

1. A device of the character indicated comprising a casing having a heating member therein, an opening in the side of said casing and a shelf upon said casing above the opening, the top of the casing being adapted to support members for use in vulcanizing and the like; substantially as described.

2. A device of the character indicated comprising a casing having a heating member therein, the top of said casing being adapted

to support members for use in vulcanizing and the like, an upright, and a member upon said upright above the top of the casing for supporting the portion of the tire not being vulcanized; substantially as described.

3. A device of the character indicated comprising a casing having a heating member therein, the top of said casing being adapted to support members for use in vulcanizing and the like, an upright, and a tire-support upon said upright above the top of the casing, said tire-support being adjustable vertically upon said upright; substantially as described.

4. A device of the character indicated comprising a casing having a heating member therein, the top of said casing being adapted to support members for use in vulcanizing and the like, an upright, a bracket adjustable upon said upright toward and away from the top of the casing, and a clamp-carrying member adjustable in said bracket toward and away from the top of the casing; substantially as described.

5. In an apparatus of the nature indicated, a work clamping and forming member having a concave recess or cavity in the bearing-face thereof with inclosing walls upon all sides of the cavity, and a cooperating work-clamping member having a bearing-face which does not enter the cavity in the bearing-face of the first-mentioned member, whereby a tire or the like is clamped between the second member and the inclosing walls of the first member; substantially as described.

6. In an apparatus of the nature indicated, a work clamping and forming member having a circular concave recess or cavity in the bearing-face thereof with inclosing walls upon all sides of the cavity, and a cooperating work-clamping member having a bearing-face which does not enter the cavity in the bearing-face of the first-mentioned member, whereby a tire or the like is clamped between the second member and the inclosing walls of the first member; substantially as described.

7. In a device of the character specified, a casing having a heating member therein, said casing having a cavity in the outer face of its top, a member movable toward and away from the top of the casing and having provision for receiving and holding a lug, and reversible cooperating clamping members, each member having a lug upon its outer face, whereby in either position of said clamping members the lug of one member is engaged by the movable member while the lug of the other clamping member rests in the cavity in the top of the casing; substantially as described.

Signed at Lynn this 21st day of September, A. D. 1897.

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Witnesses:

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