

977,972.

Patented Dec. 6, 1910.
2 SHEETS—SHEET 1

Fig. 1

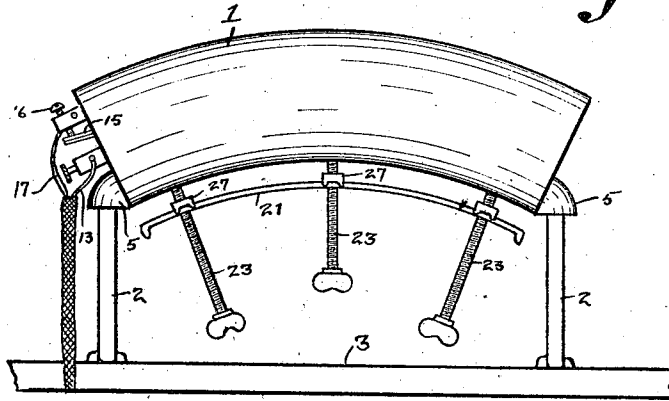


Fig. 2.

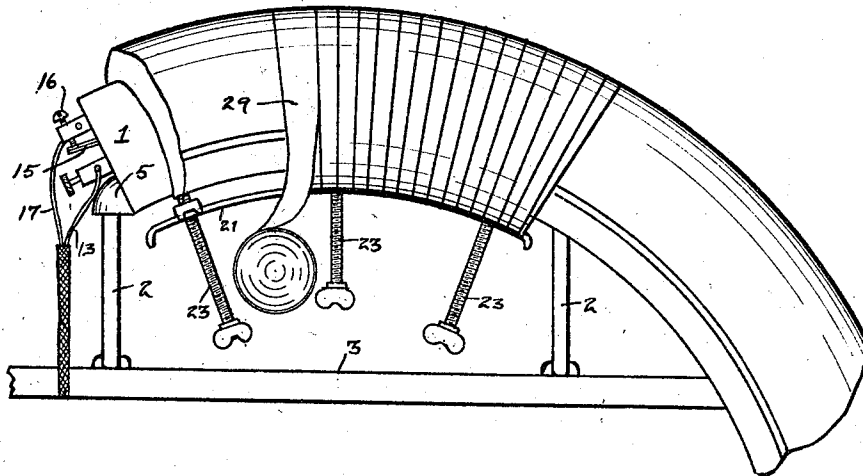
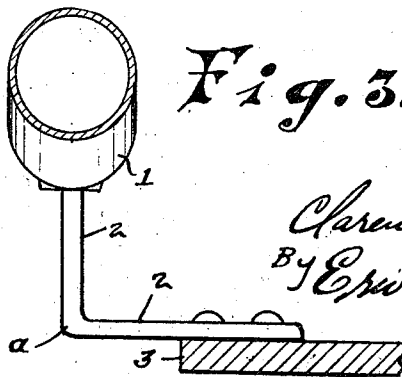


Fig. 3.

WITNESSES:

O. R. Erwin
H. H. Schatz



INVENTOR

Clarence A. Shaler
By *Erwin & Shuler*

ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 4.

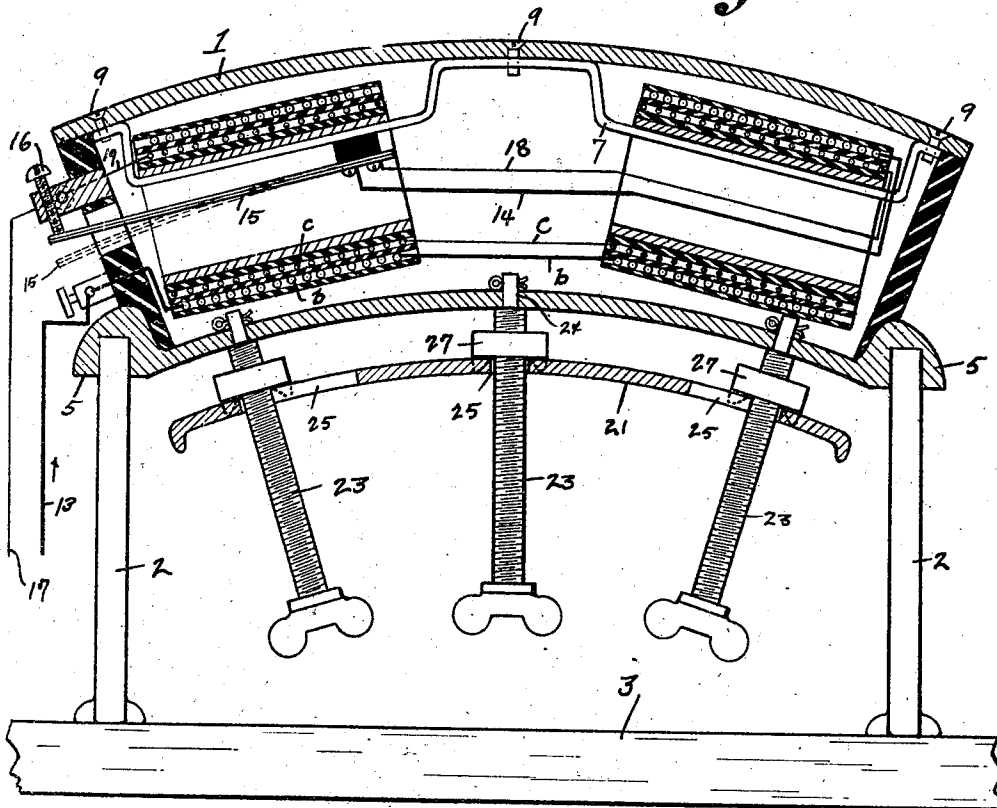
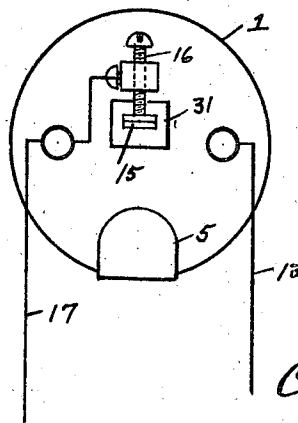


Fig. 5.



WITNESSES

O. R. Erwin
H. A. Shuler

INVENTOR

Clarence A. Shaler

By Erwin & Shuler

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CLARENCE A. SHALER, OF WAUPUN, WISCONSIN.

VULCANIZER.

977,972.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed November 20, 1907. Serial No. 403,018.

To all whom it may concern:

Be it known that I, CLARENCE A. SHALER, a citizen of the United States, residing at Waupun, county of Fond du Lac, and State of Wisconsin, have invented new and useful Improvements in Vulcanizers, of which the following is a specification.

My invention relates to improvements in vulcanizers.

The object of my invention is to provide means for vulcanizing the interior surfaces of rubber tubing such as the outer casing of vehicle tires in which not only the tread surface but also the sides may be vulcanized.

In the following description reference is had to the accompanying drawings in which,—

Figure 1 is a front elevation of a device embodying my invention. Fig. 2 is a similar view showing a portion of a vehicle tire as it is adjusted thereto preparatory to the vulcanizing operation. Fig. 3 is a detail view showing the off-set standards and a portion of the vulcanizer casing. Fig. 4 is a view of the vulcanizer in longitudinal section. Fig. 5 is an end view showing the thermostatic current controlling bar.

Like parts are identified by the same reference characters throughout the several views.

The vulcanizer casing 1 is tubular in form, and where tires are to be repaired is curved segmentally. The casing is mounted upon supporting standards 2 which are adapted to be secured to a table 3 at their lower ends, from which the standards extend horizontally to an elbow *a*, and vertically, and are connected to projecting ears 5 at the respective ends of the casing.

A bracket 7 is secured to the casing by screws 9 and is off-set inwardly between the screws, and carries heating coils, each of which coils is preferably provided with a double set of insulated windings *b* and *c* through one of which, (*b*), the current passes continuously while the vulcanizer is in use, and when the heat reaches a predetermined point, the current is directed by a thermostatic switch through the two coils in series, whereby its volume is diminished by the increased resistance and the heating capacity of the coils diminished.

In the construction shown the main circuit is established through a conductor 13, coils *b*, conductor 14, thermostatic bar 15, ad-

justable contact screw 16 and conductor 17. When the heat is sufficient to cause bar 15 to move away from the screw 16, the current returns from the bar through the conductor 18, coils *c* and conductor 19 to the conductor 17. The space surrounding the coils may, if desired, be filled with air or any suitable heat distributing material.

An adjustable bar 21 of resilient material is arranged below the casing 1, and may be connected thereto by set screws 23, which may be swiveled to the casing as illustrated at 24 so as to support the bar therefrom, or if desired may be normally un-connected. The screws 23 pass through slots 25 in the outer end portions of the bar 21, and also operate through feed nuts 27, which are yoke shaped or otherwise loosely connected with the bar to prevent them from turning, whereby as the screws are rotated the bar is raised or lowered. The slots permit a relative movement of the bar on the end screw in correspondence with the radial position of the screws at the point of intersection. The central screw requires no slot as it retains its relative position.

In use the tire is adjusted to the casing and permitted to hang therefrom at the side of the table, the off-set form of the standards permitting the tire to hang vertically. A band of tape 23 is wound around the tire and the bar 21, the latter being then depressed by turning the screws 23 into the feed nuts. This tightens the tape around the tire and binds the latter to the casing. It will be observed that the tire hangs from the casing 1, which fits its upper portion and the weight of the tire therefore has no tendency to twist or turn it upon the casing, or to produce gaps between any contacting portion of the tire and the casing. The tape binds the tire to the casing equally well at the sides as along the tread surface, so that vulcanizing operations can be performed at any point where a puncture or blow out may occur. The electric current is then turned on until the vulcanizing operation is complete. The operation of the thermostatic bar may be observed through the aperture 31 in the end of the casing.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is,—

1. The combination of a tubular arched casing, offset standards for the ends of said

casing adapted to support the latter in a position with the central portion curving upwardly from the standards, means for heating the casing, a flexible binding member encircling the casing, and down drawing devices extending along the casing underneath its axis, and over the flexible binding member on the under side.

2. The combination of a tubular arched casing provided with heating means, means for supporting said casing in a position with its intermediate portion curving upwardly from its ends in a position to receive a tubular tire and hold it in a suspended position, and means for binding the sides and top of the tire to said casing, comprising a curved bar underneath the axis of the casing, a flexible binding member encircling said casing and the bar, and means for actuating said bar downwardly to draw said

flexible member forcibly in the direction of the top and sides of the casing.

3. The combination of a tubular arched casing provided with heating means, means for supporting said casing in a position with its intermediate portion curving upwardly from its ends in a position to receive a tubular tire and hold it in a suspended position, and means for binding the sides and top of the tire to said casing, the interior of said casing being provided with electrical heating coils and a thermostatic device controlling the flow of current through a portion of the coils.

In testimony whereof I affix my signature in the presence of two witnesses.

CLARENCE A. SHALER.

Witnesses:

LEVERETT C. WHEELER,
O. R. ERWIN.