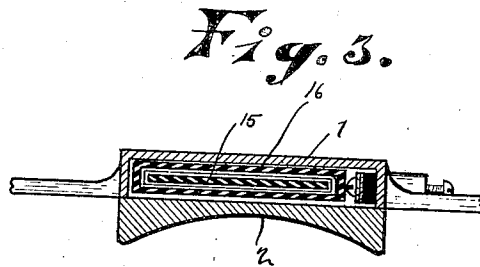
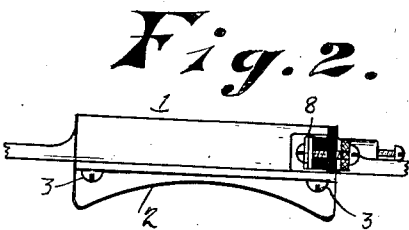
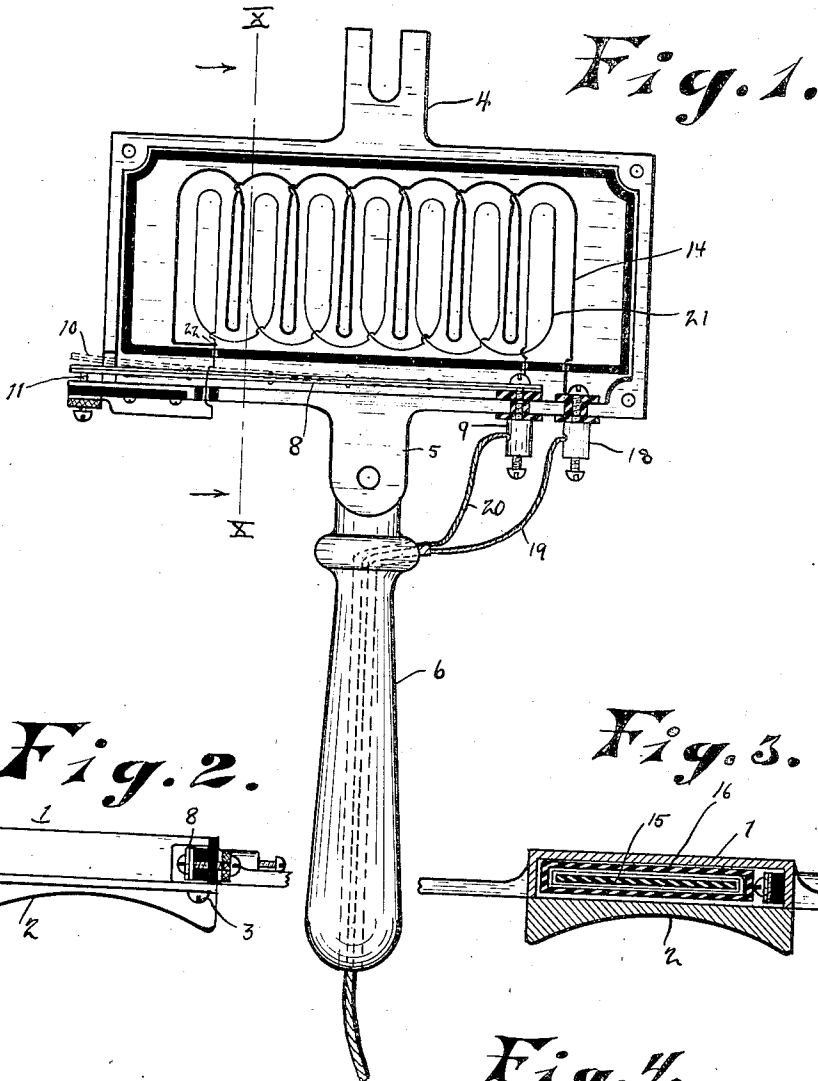


C. A. SHALER.
VULCANIZER.
APPLICATION FILED JUNE 15, 1907.

955,479.

Patented Apr. 19, 1910



WITNESSES:

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CLARENCE A. SHALER, OF WAUPUN, WISCONSIN.

VULCANIZER.

955,479.

Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed June 15, 1907. Serial No. 379,123.

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.

10 The object of my invention is to provide means for automatically regulating the heat through a thermostatic switch arranged to vary the resistance in the electrical circuit without interrupting the current.

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

Figure 1 is a plan view of a vulcanizer embodying my invention with the concave 20 face plate removed, showing the heating coils diagrammatically. Fig. 2 is a view of that end from which the thermostatic switch projects. Fig. 3 is a sectional view drawn on line $x-x$ of Fig. 1, and Fig. 4 is a detail 25 view, in longitudinal section of one end portion of the vulcanizer.

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

The heating coils are inclosed within a 30 casing, preferably having a flat surface 1 and a concave surface 2, the latter being formed with a removable wall or face plate which is secured to the body of the casing by screws 3. The casing is also preferably provided 35 with lugs 4 and 5 to facilitate clamping it to the tire and a handle 6, which may, if desired, be connected with one of the lugs as shown. The thermostatic switch 8 is connected with a binding post 9 and projects 40 along one side of the casing chamber with its free end preferably extending through an aperture 10 in the end wall of the chamber and normally contacting with a screw 11, which serves as an electrode, the switch 8 being 45 arranged, when heated, to swing away from said electrode by reason of the unequal expansion of the material composing the switch. A heating coil 14 is also located within the chamber of the casing, and wound 50 upon a base 15 of insulating material and covered with a body of heat distributing and non-conducting material 16 such as asbestos cement. This coil is connected at one end with a binding post 18, to which a feed wire

19 leads through the handle 6 from a source 55 of electrical energy, the return circuit being normally established through the electrode 11, thermostatic switch 8, binding post 9 and wire 20. An auxiliary coil 21 is also employed, this coil being preferably wound 60 upon the same base 15 but insulated from the coil 14. One end of the auxiliary coil is connected with the binding post 9, and the other end is connected with the coil 14 at 22, whereby, when the heat reaches a prede- 65 termined point, the switch 8 swings away from the electrode 11, and the current from the feed wire 19 then traverses the coil 14 to the point 22, when it follows the coil 21 to the binding post 9 and return wire 20, thus 70 completing the circuit, but with the resistance greatly increased. The coil 21 is preferably formed of comparatively fine wire and the resistance is increased suffi- 75 ciently to cause a material drop in temperature. When the temperature is reduced sufficiently to permit the switch 8 to return to normal position in contact with electrode 11, the current is shunted through the switch 8, thus cutting out the auxiliary coil 21. 80

Various modifications in the arrangement of the coils, or of the thermostatic switch, may be devised without departing from the scope of my invention. It will of course be recognized that the particular location of 85 the switch or of the electrode 11 are not essential. The object of having the switch project through the wall of the casing, and locating the electrode 11 in an exposed position, is to facilitate the adjustment of the 90 latter. The packing 16, which surrounds the coils, serves to distribute the heat uniformly to all portions of the surface 1 and 2 and also prevents sudden changes of temperature within the coils from immediately 95 affecting the vulcanizing surfaces.

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

1. A vulcanizer comprising the combina- 100 tion of a casing, an electric heating device within said casing adapted to conduct a continuously flowing current and means thermostatically controlled to automatically regulate the resistance for said continuously 105 flowing current in said heating device.

2. A vulcanizer comprising the combination of a casing, a set of resistance coils

therein, arranged in series and connected with suitable conductors, and a thermostatic switch within the casing arranged to automatically shunt the current either through
5 or around one of said coils.

3. A vulcanizer, comprising the combination of a heating device consisting of a plurality of resistance coils adapted to conduct a continuously flowing current, connected with suitable conductors, and a thermostatic switch formed of conducting material, adapted to vary the resistance for a continuously flowing current in said heating device.
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4. A vulcanizer, comprising the combination of a casing, a set of electrical conductors connected therewith, a resistance member within the casing, in circuit with said conductors, an auxiliary resistance member in said circuit, and a thermostatic switch controlling the flow of current through the
20

auxiliary resistance member independently of the other member.

5. A vulcanizer, comprising the combination of a casing, a set of electrical conductors 25 connected therewith, a set of resistance coils for a continuous current arranged in circuit within the casing, a thermostatic switch secured to the casing and having a free end projecting therefrom and an exterior adjustable electrode operatively arranged with reference to said switch, and connected in said circuit between the coils, said switch being formed of conducting material arranged to bridge over one of said coils when 35 in contact with the electrode.

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

CLARENCE A. SHALER.

Witnesses:

B. W. DAVIS,

VIVIAN I. HOWARD.