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FLEXIBLE VULCANIZING SPOTTER

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Fig. 1.

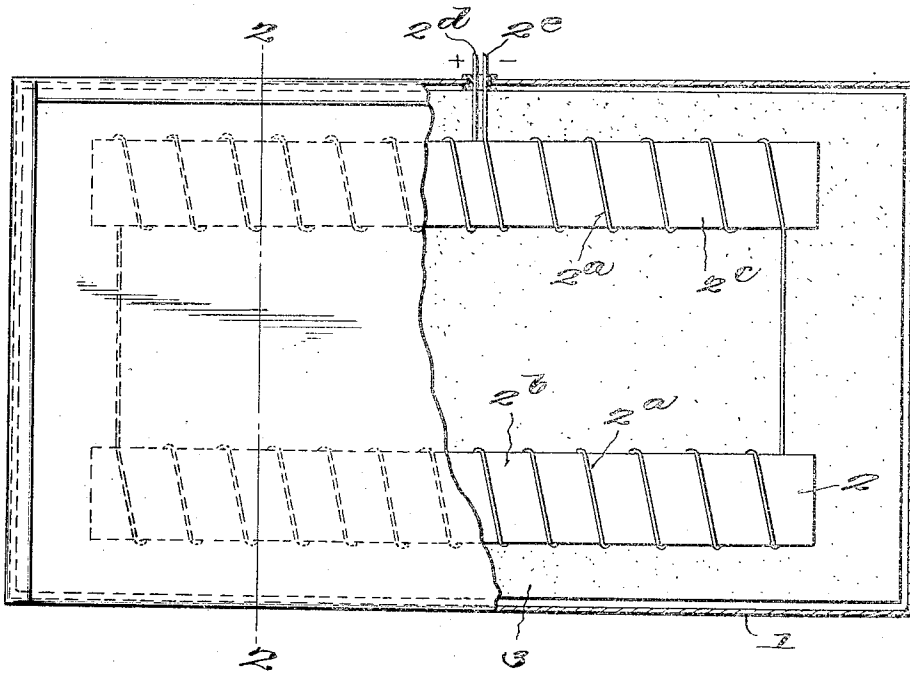
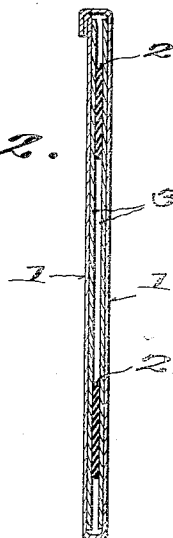


Fig. 2.



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FLEXIBLE VULCANIZING SPOTTER

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My invention relates to the art of working rubber and particularly to means for vulcanizing. The object of my invention is to produce a spotter that will be flexible. Spotters heretofore in use, while operative, are subject to the following faults calling for improvement: (1) structures are relatively complicated and complex; (2) more expensive to build; (3) are not absolutely fireproof; (4) containing fabric, they will only apply over a small portion of a tire at one time because of the tendency of the fabric to buckle when it is bent into a compound curve; (5) being usually constructed in part of rubber, their life is limited because the rubber loses its elasticity, especially in storage; (6) they are usually very thick and therefore require considerable time to receive the proper temperature for vulcanizing.

I attain my object by constructing a spotter with a heating element insulated by means of thin sheets of asbestos paper within an envelope of one or more thin sheets of lead. The outstanding points of such a spotter are extreme simplicity, ease and cheapness of construction, durability, ability to remain in good condition indefinitely in storage, fireproof properties, and being covered by a good heat conductor, assuring uniform distribution of heat to all points. In addition to these desirable properties, my spotter is more than just flexible, because at the vulcanizing temperature lead becomes very plastic and hence may be pressed into the shape desired without buckling.

Since both heat and pressure are required in the process of vulcanizing, heat can be conveniently supplied by means of an electrical heating element of the proper size to give the required temperature, and the perfect flexibility of my device permits pressure to be applied uniformly over the surface of the spotter and over the tire by any one of several methods.

An important additional feature of usefulness of my improved spotter is that owing to its construction and perfect flexibility it may be used inside of a tire casing during the process of vulcanizing to furnish

the heat instead of the steam heated arm that is now in use.

My invention is illustrated in the accompanying drawings, in which Fig. 1 is a side view of the spotter with outer plate and one insulating sheet broken away in part to show the heating element. Fig. 2 is a section on the line 2—2 of Fig. 1.

The drawings represent my spotter as it was built and successfully tested. The flexible covering 1 is made of a sheet of lead $\frac{1}{16}$ inch thick folded over the heating element 2. Between the envelope 1 and said heating element is a sheet 3 of flexible insulating material consisting of a sheet of asbestos paper $\frac{1}{16}$ inch thick folded over the heating element 2 so that it will be between the element and the lead covering. The heating element consists of a nicrome wire 8 feet long with a resistance of 60 ohms per foot, wound upon a core consisting of two strips of asbestos paper 2b and 2c each $\frac{1}{16}$ inch thick. Terminals 2d and 2e are provided with a suitable connecting device to supply heating current to the heating element.

Made of the materials and with the proportions thus stated, my spotter has functioned perfectly throughout the entire tests in which it has been subjected to all possible conditions.

In addition to winding the heating element around a core of asbestos paper it may also be wound in the form of a grid so that all parts of the winding will be in the same plane and hence the need of a core will be eliminated. The winding thus wound will be placed between two sheets of asbestos paper which in turn will be placed in the lead envelope of the spotter. The danger of the turns of the winding coming in contact with each other and causing a short-circuit may be eliminated by stitching the two sheets of the asbestos paper together on each side of each turn of the winding.

What I claim is:

1. A flexible vulcanizing spotter consisting of two opposite layers or sheets of lead fastened together around their edges to constitute an envelope sufficiently flexible to permit the spotter to be shaped at will to fit the

contour of the object being vulcanized, a flexible heating element of sufficient size to give vulcanizing temperature within the envelope, supported upon flat fireproof strips
5 between the two outside layers of the same, and flexible insulating sheets between said heating element and said envelope.

2. The flexible spotter described in claim 1, having an electrical heating element
10 formed of resistance wire wound upon thin flexible strips of asbestos paper with a thin flexible sheet of asbestos paper interposed on each side of the heating element between the same and the envelope.

15 In testimony whereof I hereunto affix my signature.

ARTHUR WILSON GAY.

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