G. B. WOOD.

TIRE TUBE REPAIRING KIT.

APPLICATION FILED FEB. 23, 1918.

1,281,469. Patented Oct. 15, 1918.

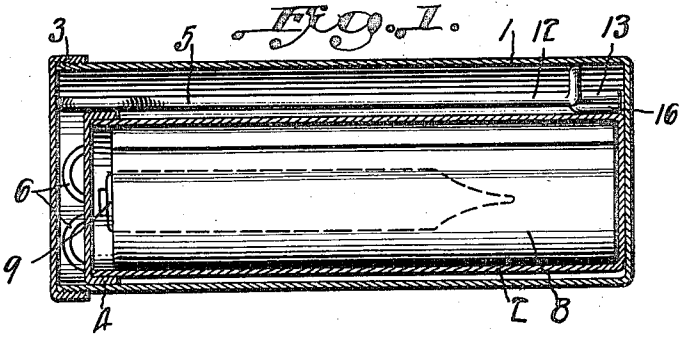


Fig. 1.

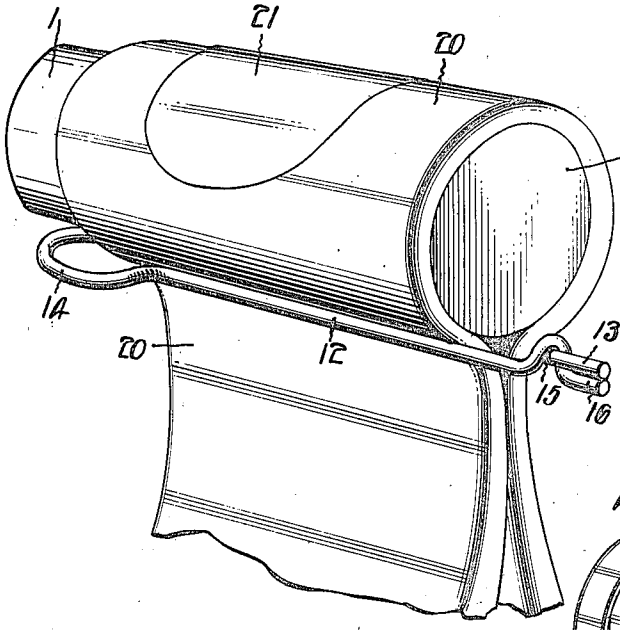


Fig. 2.

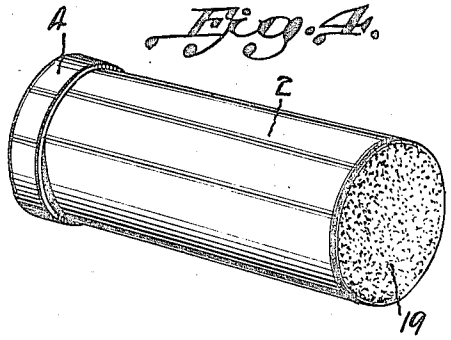


Fig. 4.

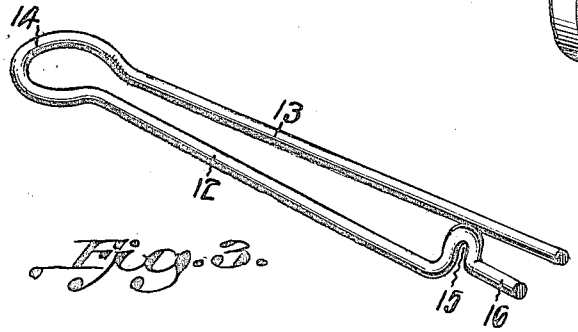


Fig. 3.

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TIRE-TUBE-REPAIRING KIT.

1,281,469. Specification of Letters Patent. Patented Oct. 15, 1918.

Application filed February 23, 1918. Serial No. 218,750.

To all whom it may concern:

Be it known that I, GEORGE B. WOOD, a citizen of the United States, and residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Tire-Tube-Repairing Kit, of which the following is a specification.

In the repairing of inner tubes for the tires of motor vehicles it is common practice to use "self vulcanizing" patches, that is, patches which do not require the use of vulcanizing tools to form the necessary bond with the material of the tire. The cuts are usually found in the outer surface of the tire, and the custom is to lay the tube down on a bench or other flat surface with the outer or cut side uppermost and to then clean the face of the rubber and cement the patch in place. On account of the shape of the tube, it is practically impossible to prevent the latter from forming in local bulges or convolutions both longitudinally and transversely of the tube, and these bulges greatly interfere with the proper application of the patch and are largely responsible for subsequent failures and blowouts. This action is accentuated, particularly in the case of thin tubes, upon application of the cement which has a tendency to cause the torn edges of the rubber to curl under, that is, inwardly into the tube. In other words, the surface presented for the application of the patch is not only uneven, but is likely to be covered with the soapstone powder with which the interior of the tube is usually coated.

The present invention has reference to a process or mode of procedure whereby the above mentioned objections may be overcome. It also consists in a kit or special package for use in the practice of said process.

In the drawings, Figure 1 is a central longitudinal section showing a preferred embodiment of the invention, the parts being assembled as sold. Fig. 2 is a perspective view showing the tube clamped in place on the outer container and a patch applied. Fig. 3 is a perspective view of the clamp. Fig. 4 is a perspective view of the inner container.

The kit or package as sold includes an outer container 1 and an inner container 2 both preferably being strong cylindrical paper cans. These cans have covers 3 and 4, respectively, the former as shown, being of the screw threaded type. There is considerable difference in the diameters of the cans, which provides space for a clamp 5 and a pair of scissors 6 if desired. Within the inner container is a roll of patch material 8 and a can of cement 9.

The clamp may vary greatly in detail. The preferred construction, however, is that shown, and it consists in a single piece of spring wire bent to form two gripping portions or jaws 12 and 13 joined by a loop 14 whereby they are normally held apart from each other. The gripping portions are of a length somewhat exceeding the diameter of the tire tubes, and the portion 12 is offset at its end to form a depression or seat 15 into which the end of the portion 13 is received when the clamp is closed. Beyond the seat the jaw 12 is preferably extended substantially parallel to but offset from the main portion thereof, as indicated at 16.

In the manufacture of the can 2, the end is coated with glue and dipped into emery dust or the equivalent to form an abrasive outer surface 19.

When it is desired to repair a cut or blowout, the contents of the outer container are removed and the tube 20 is drawn rather tightly about the can and held in place by the clamp in the manner shown in Fig. 2. The inner container is then gripped in the hand and the abrading surface is rubbed back and forth over that part of the tire which is to be covered by the patch; the cement is applied and left to dry; the scissors are used to cut off from the patch material a patch 21 of proper shape and size; and the patch is applied and pressed down firmly by hand. Because of the clamping of the tube around—as distinguished from lengthwise of—the cylinder or its equivalent, the tendency of the tube to form bulges or folds is entirely overcome. The work can be done more rapidly in this manner than in the usual way and more uniform results are obtained. When the roll of patch material is exhausted, the old can may be thrown away and a new one inserted in lieu thereof.

The details of the kit are, of course, subject to variation. I do not, therefore, wish to be limited except as indicated by the subjoined claims.

I claim:—

1. Means for repairing pneumatic tire tubes comprising a cylindrical container of considerable diameter around which the por-

tion of the tube containing the puncture or cut is adapted to extend circumferentially in substantially a full loop, and a clamp for holding the tube closely around the container in said loop form, the construction of the clamp being such that it may be entirely received within the container.

2. A tire tube repairing outfit including a cylindrical container around which a portion of the tube containing a puncture or cut is adapted to extend circumferentially in looped form, with the half of the tube which has the greater diameter outside, and a clamp for holding the tube drawn taut around the container, the length and maximum transverse dimension of the clamp being less than the corresponding inside dimensions of the container, whereby the clamp may be entirely inclosed by the container.

3. Means for repairing pneumatic tire tubes comprising a formed element such as a cylinder, and a clamp associated therewith and holding the tube disposed circumferentially about the element in substantially a full loop, whereby the tube is made to conform to the outer surface of the element to permit the ready application of a tire patch.

4. Means for repairing pneumatic tire tubes comprising a formed element such as a cylinder, and a clamp extending longitudinally of said element and embracing a tube to hold said tube in a loop about said element, said clamp being so constructed that substantially the entire outer surface of the loop portion of the tube is freely accessible from the outside.

5. Means for repairing pneumatic tire tubes comprising a substantially cylindrical element around which the punctured portion of the tube is adapted to be drawn circumferentially in looped form with the punctured portion outside, and a one piece clamp whereby those portions of the tube at the neck of the loop are pinched together substantially throughout the whole width of the loop.

6. Means for repairing pneumatic tire tubes comprising a formed element, and a resilient clamp for clamping a torn portion of a tire tube looped about said element, said clamp including two gripping portions connected together at one end, one of the portions having a seat formed in its other end beyond the formed element into which the other portion is entered by swinging said other portion about the end at which it is connected to the first named gripping portion.

7. In an outfit for repairing pneumatic tubes, a closed cylindrical container adapted to receive a roll of patch material for the tire, one end of the container being flat and being faced on the outside with abrading material whereby the container may be used as a hand tool in dressing the surface of the tube around a puncture preparatory to applying a portion of the patch material thereto.

GEORGE B. WOOD.