No. 622,377. Patented Apr. 4, 1899.

H. C. MARCH.

REPAIR TOOL FOR PNEUMATIC TIRES.

(Application filed Feb. 21, 1899.)

(No Model.)

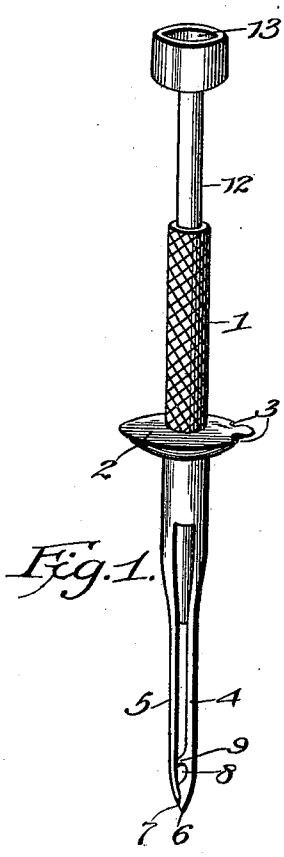


Fig. 1.

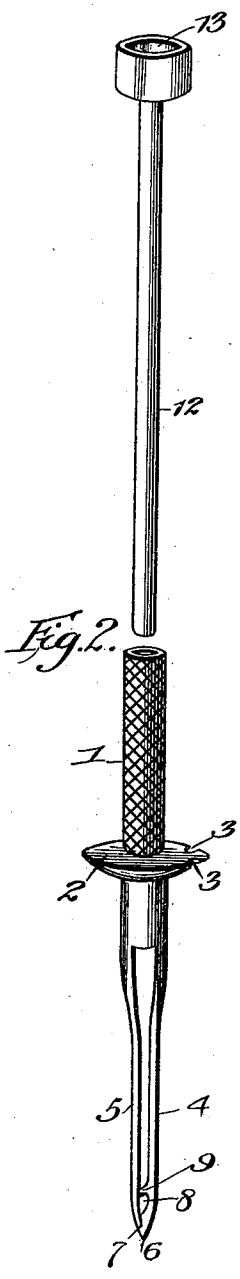


Fig. 2.

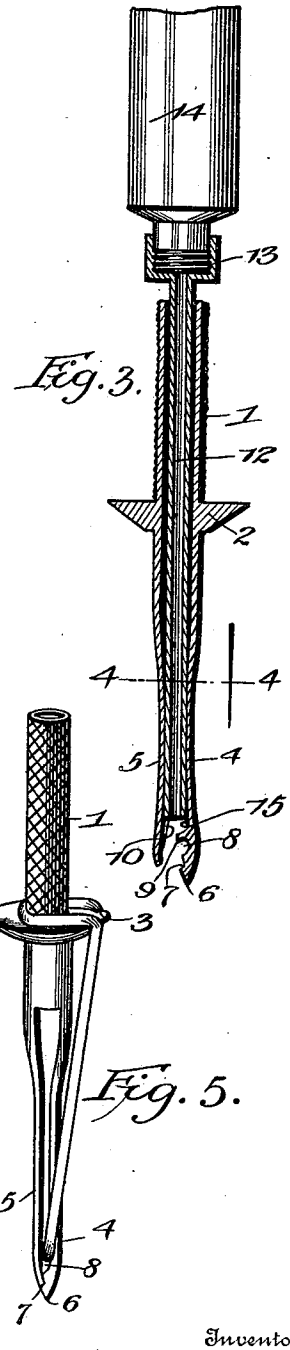


Fig. 3.

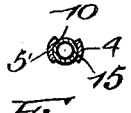


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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REPAIR-TOOL FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 622,377, dated April 4, 1899.

Application filed February 21, 1899. Serial No. 706,426. (No model.)

To all whom it may concern:

Be it known that I, HOWARD C. MARCH, a citizen of the United States, residing at Portage, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Repair-Tools for Pneumatic Tires; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in repair-tools for bicycles, and more particularly to that class employed in repairing punctures in pneumatic tires; and the object is to provide a simple, inexpensive, and effective, as well as convenient, device for this purpose.

With this object in view the invention consists in certain features of construction and combination of parts, which will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is an enlarged perspective view of my improved pneumatic-tube-repair tool. Fig. 2 is a similar view showing the members separated. Fig. 3 is a longitudinal section with the cement-tube inserted in the puncture-tool. Fig. 4 is a cross-section on the line 4 4 of Fig. 3. Fig. 5 shows a rubber band in position on the tool and ready for insertion in the tire.

1 denotes a sleeve or tube having its surface milled or knurled, as shown, to form a handle for convenience in manipulation, and 2 denotes a collar or flange formed with two radial notches 3 3.

4 and 5 denote longitudinal spring-jaws, the tension of which is exerted to spring their free ends together. The jaws 4 terminate in a point 6, behind which is a rabbeted recess or shoulder 7 to receive the correspondingly-shaped free end of the jaw 5.

8 denotes a recess or notch formed in the inner face of the jaw 4, and behind this is a teat or tooth 9, which extends into a longitudinal groove 10, formed in the meeting face of the jaw 5. 12 denotes the cement-tube, which is provided with a threaded socket 13 to receive the correspondingly-threaded neck of the usual collapsible cement-dispensing tube 14. A longitudinal groove 15 is also formed in the inner face of the arm 4, so that where the tube 12 is inserted between the jaws these grooves 10 15 form a guide for said tube 12 and prevent it from slipping sidewise between the jaws.

The manner of using the tool is as follows: The tube 12 is inserted through the sleeve 1, and as it is pressed forward it separates the spring-jaws 4 and 5, as shown in Fig. 3. The looped end of a small rubber band is then placed in the notch or recess 8 in the arm 4, and the tube 12 is then withdrawn and the arm 5 closes down and secures the looped end of the rubber band in place. The opposite end of the looped band is now stretched backward through the radial notches 3 3 in the collar and its end passed over the sleeve 1, the tension of the rubber drawing the band down around the sleeve and collar, as shown in Fig. 5, which retains it in place. The point 6 of the tool is now inserted through the puncture in the tire, carrying with it the forward end of the rubber band. The rear end of the band is now released or thrown off from the collar, so as to hang loose. The tube 12 is again inserted between the jaws to separate them and release the forward end of the rubber band, which is now within the tire. The collapsible cement-tube is now connected to the socket 13 and a sufficient amount of cement forced in the tire to cement the band in place. The tool is now withdrawn from the tire, which closes about the cemented band and hermetically seals the puncture.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claim at the end of this specification.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

In a repair-tool of the class described, the sleeve provided with the notched collar, and the parallel spring-arms, one of which is formed with a retaining-recess, and a pointed end in combination with the tube 12, adapted to be inserted in said sleeve, and between said arms to spring them apart, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HOWARD C. MARCH.

Witnesses:
ALVIN MARCH,
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