(No Model.)

F. B. JENCKS.

MENDING DEVICE.

No. 596,165. Patented Dec. 28, 1897.

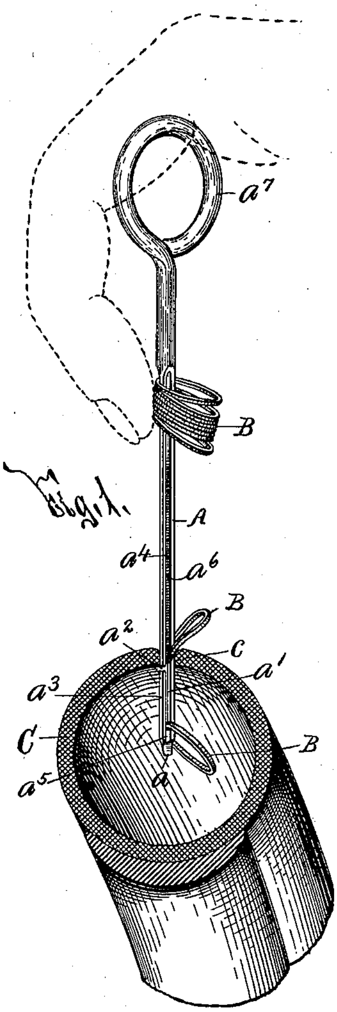


Fig. 1.

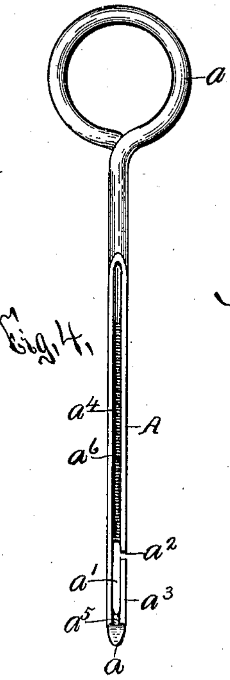


Fig. 4.

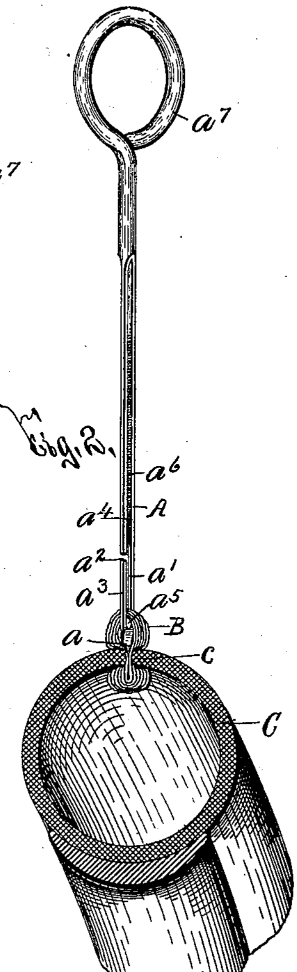
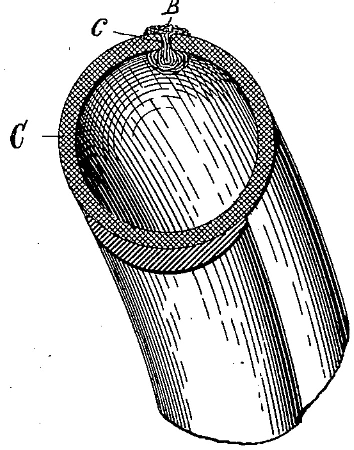


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK B. JENCKS, OF SYRACUSE, NEW YORK.

MENDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 596,165, dated December 28, 1897.

Application filed June 21, 1897. Serial No. 641,554. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. JENCKS, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Mending Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in mending devices particularly applicable for mending bicycle-tires, and has for its object the production of a mending device which is highly efficient in operation, is simple in construction, and is economically manufactured; and to this end the invention consists, essentially, in the combination, construction, and arrangement of the parts of a mending device, as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is a side elevation of my improved mending device illustrated as engaged by a user's finger and as operatively arranged in a puncture or aperture formed in a portion of a bicycle-tire, shown in perspective. Fig. 2 is a similar elevation of my improved mending device and a portion of a tire, the needle of the mending device being withdrawn from the tire and engaged with a number of mending-pieces arranged in the puncture or aperture in the tire. Fig. 3 is a perspective of a portion of a tire having a puncture or aperture therein closed by the mending-pieces used in connection with my improved mending device, and Fig. 4 is a face view of my invention.

My improved mending device is preferably used in connection with mending-pieces B, consisting of rubber bands, and is provided with an elongated portion or needle A, which is movable through and supports a number of said mending-pieces. The lower extremity of the needle A is usually formed with a sharpened point a, an eye or slot a', and an opening a^2, extending inwardly from one of the sides of the needle A through one of the lengthwise walls of the eye or slot a'. The sharpened point a facilitates the entrance of the needle A within a puncture or aperture c in a tire C or other device to be mended; but, if desired, said sharpened point may be dispensed with. The eye or slot a' successively receives corresponding portions of the mending-pieces B, which portions are preferably inserted into said eye or slot through the opening a^2. It is obvious, however, that the opening a^2 may be dispensed with, provided the mending-pieces, which may consist of strips, are threaded through the eye or slot a'. As preferably constructed the eye or slot a' is considerably elongated and the opening a^2 is arranged in close proximity to the upper end of said eye or slot. The lower end of the eye or slot a' thus consists of an elongated hook a^3, having its upper or free extremity arranged in close proximity to the upper end or wall of said eye or slot, which upper end forms an engaging shoulder for successively forcing the mending-pieces through the puncture or aperture c. Opposite sides or faces of the needle A are formed with grooves a^4 a^5, extending longitudinally in opposite directions from the ends of the eye or slot a'. The upper grooves a^4 are generally formed with serrated surfaces a^6, and the lower grooves a^5 may be dispensed with, if desired. The upper extremity of my improved mending device is provided with a suitable handpiece a^7, which is here illustrated as an eye, although it may be otherwise constructed.

In the operation of my improved mending device the end of the lower extremity of its elongated portion or needle A is inserted into the puncture or aperture in the tire, the bulk of the mending-pieces B encircling said elongated portion or needle being held by the user's finger in proximity to the handpiece a^7, and one or more of the mending-pieces are passed through the opening a^2 into the eye or slot a'. The needle A is then moved longitudinally through the puncture or aperture c until the mending piece or pieces arranged in the eye or slot a' are passed through said puncture or aperture. During this movement of the needle A said mending piece or pieces B enter the grooves a^4 and are engaged by the serrated surfaces a^6 of said grooves for preventing undue stretching thereof. After the passage of said mending piece or pieces through the puncture or aperture c the needle A is moved in a reverse direction until the opening a^2 is withdrawn through said puncture or aperture, whereupon one or more of the mending-pieces B are inserted within the eye or slot a' and are subsequently passed through the puncture or aperture c. As soon as a requisite number of the mending-pieces have been forced through the puncture or aperture c the needle A is withdrawn from said puncture or aperture, and simultaneously withdraws corresponding portions or ends of the mending-pieces and stretches the intermediate parts of said mending-pieces, as clearly seen at Fig. 2. The mending-pieces are then cut off in close proximity to the lower end of the needle A and the puncture or aperture c is entirely and tightly closed, as clearly seen at Fig. 3.

The construction and operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings.

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

1. A mending device provided with an elongated portion or needle formed at its lower end with an engaging shoulder for successively forcing the mending-pieces through the aperture to be plugged, and a hook for simultaneously withdrawing corresponding parts of the mending-pieces through the aperture, said hook having its free end arranged adjacent to the engaging shoulder, substantially as set forth.

2. A mending device provided with an elongated portion or needle formed at its lower end with an elongated eye or slot, an opening extending through one of the lengthwise walls of the eye or slot for permitting the successive entrance of the mending-pieces within the eye or slot, an engaging shoulder at substantially one end of the eye or slot for successively forcing the mending-pieces through the aperture to be plugged, and a second engaging shoulder at the opposite end of the eye or slot for simultaneously withdrawing corresponding parts of the mending-pieces through the aperture, substantially as described.

3. A mending device provided with an elongated portion or needle formed at its lower end with an engaging shoulder for successively forcing the mending-pieces through the aperture to be plugged, a hook for simultaneously withdrawing corresponding parts of the mending-pieces through the aperture, said hook having its free end arranged adjacent to the engaging shoulder, and a groove extending upwardly from the engaging shoulder, substantially as and for the purpose specified.

4. A mending device provided with an elongated portion or needle formed at its lower end with an elongated eye or slot, an opening extending through one of the lengthwise walls of the eye or slot for permitting the successive entrance of the mending-pieces within the eye or slot, an engaging shoulder at substantially one end of the eye or slot for successively forcing the mending-pieces through the aperture to be plugged, a second engaging shoulder at the opposite end of the eye or slot for simultaneously withdrawing corresponding parts of the mending-pieces through the aperture, and a groove extending upwardly from the first engaging shoulder, substantially as and for the purpose set forth.

5. A mending device for use with endless mending-pieces, as rubber bands, said device being provided with an elongated portion or needle movable through the endless mending-pieces and formed with an elongated eye or slot in its lower end, an opening extending through one of its lengthwise sides and communicating with the upper end of the eye or slot for permitting the successive entrance of parts of the mending-pieces within the eye or slot, an engaging shoulder at substantially one end of the eye or slot for successively forcing the mending-pieces through the aperture to be plugged, a second engaging shoulder at the opposite end of the eye or slot for simultaneously withdrawing corresponding parts of said mending-pieces through the aperture, and a groove extending upwardly from the first engaging shoulder and formed with a serrated surface for engaging the mending-pieces and preventing undue stretching thereof, substantially as and for the purpose set forth.

6. A mending device for use with endless mending-pieces, as rubber bands, said device being provided with an elongated portion or needle movable through the endless mending-pieces and formed with an elongated eye or slot in its lower end, an opening extending through one of its lengthwise sides and communicating with the upper end of the eye or slot for permitting the successive entrance of parts of the mending-pieces within the eye or slot, an engaging shoulder at substantially one end of the eye or slot for successively forcing the mending-pieces through the aperture to be plugged, a second engaging shoulder at the opposite end of the eye or slot for simultaneously withdrawing corresponding parts of said mending-pieces through the aperture, and grooves extending upwardly from opposite sides of the first engaging shoulder and formed with serrated inner surfaces for engaging the mending-pieces and preventing undue stretching thereof, substantially as described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 14th day of June, 1897.

FRANK B. JENCKS.

Witnesses:
D. LAVINE,
K. H. THEOBALD.