No. 636,369. Patented Nov. 7, 1899.

W. S. WEATHERWAX.

DEVICE FOR SEALING PUNCTURES IN PNEUMATIC TIRES.

(Application filed Apr. 25, 1899.)

(No Model.)

Fig. 1.

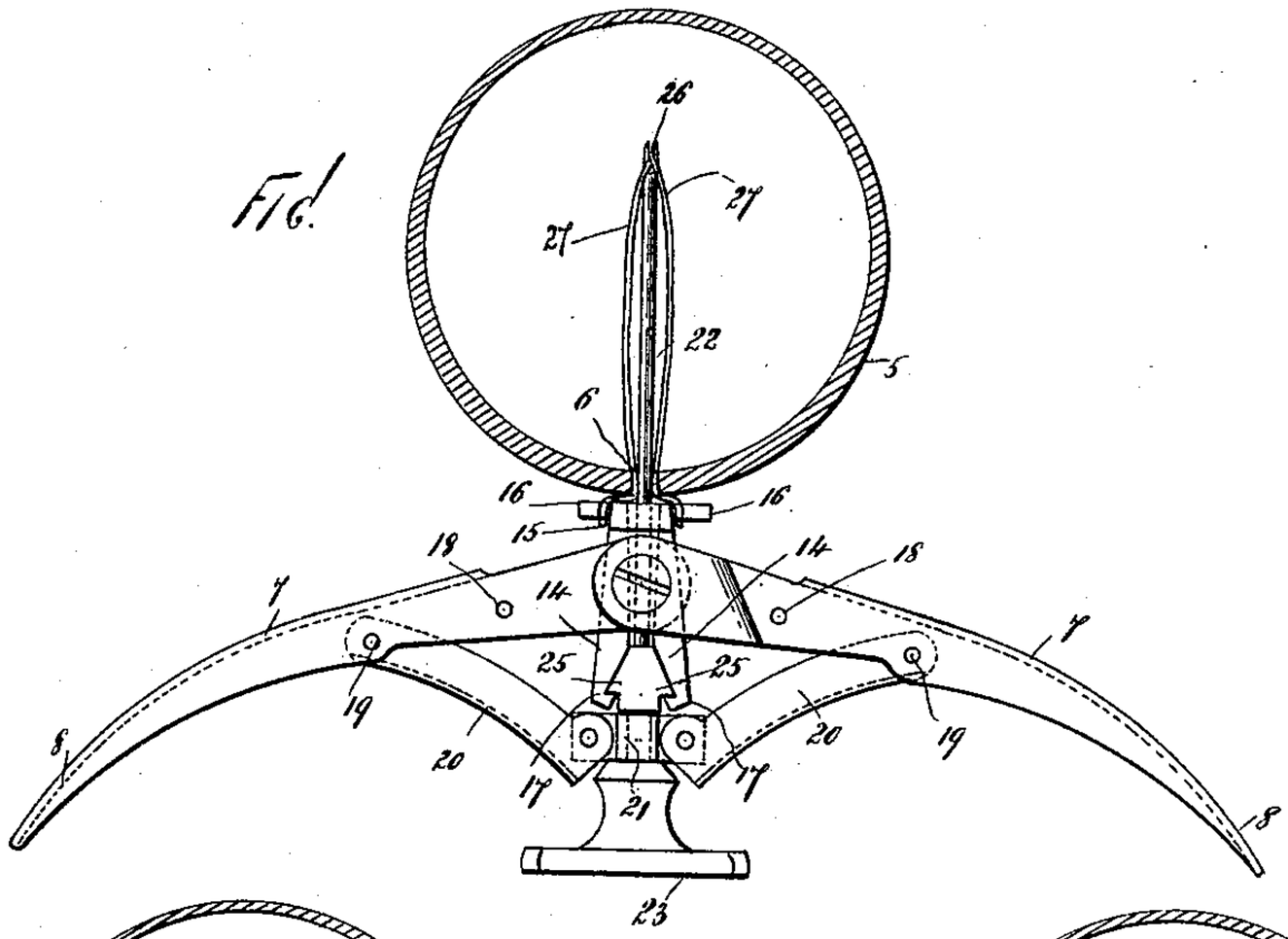


Fig. 2.

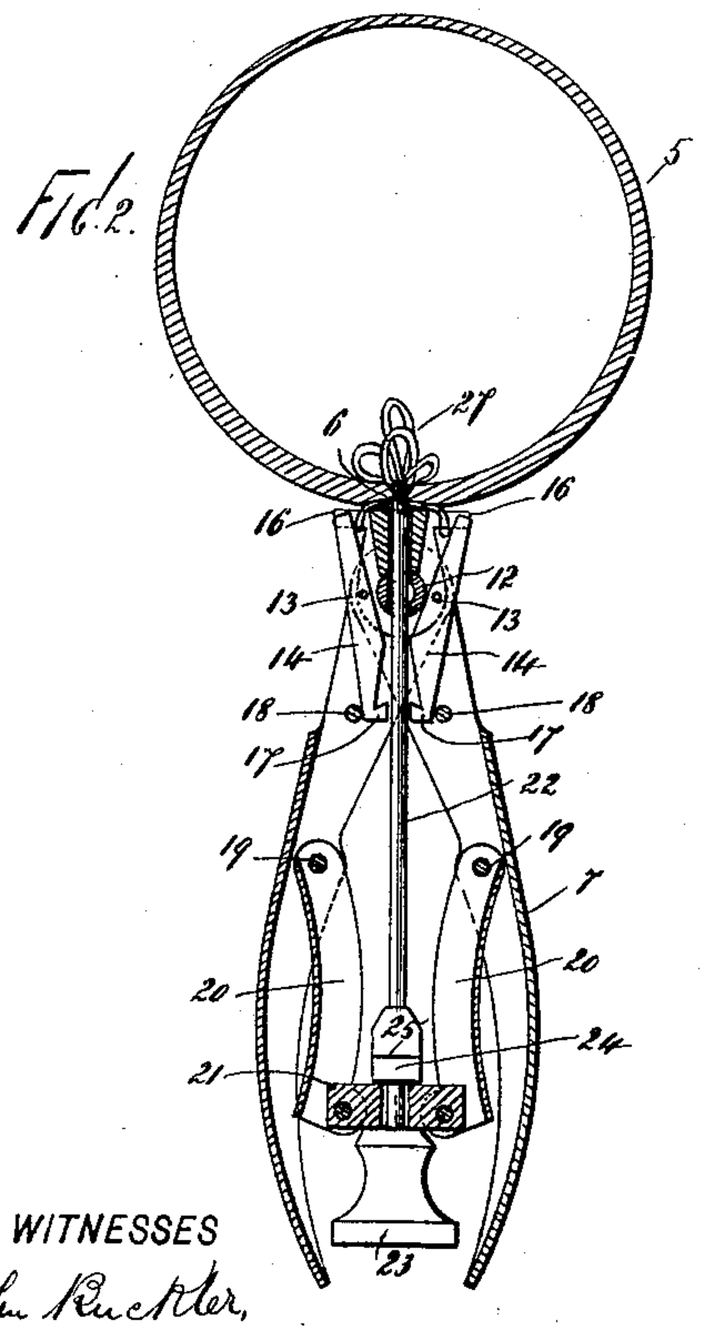


Fig. 3.

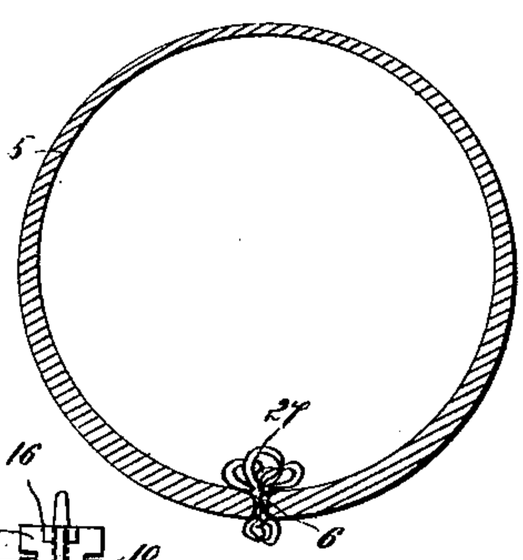
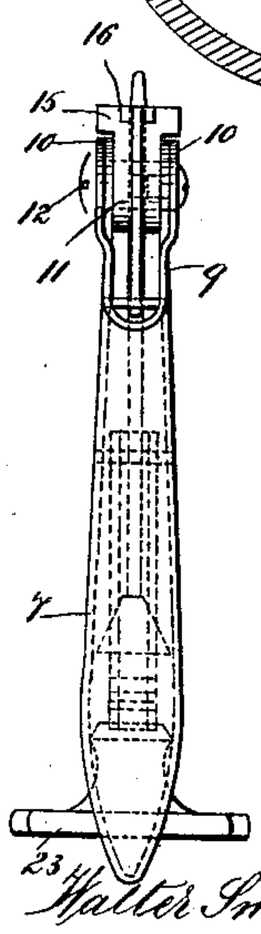


Fig. 4.



WITNESSES

John Buckler,

F. A. Stewart.

INVENTOR

Walter Smiley Weatherwax,

BY

Edgar Tate & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

WALTER SMILEY WEATHERWAX, OF DEMING, TERRITORY OF NEW MEXICO.

DEVICE FOR SEALING PUNCTURES IN PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 636,369, dated November 7, 1899.

Application filed April 25, 1899. Serial No. 714,347. (No model.)

To all whom it may concern:

Be it known that I, WALTER SMILEY WEATHERWAX, a citizen of the United States, residing at Deming, in the county of Grant and Territory of New Mexico, have invented certain new and useful Improvements in Devices for Sealing the Punctures in Pneumatic Tires, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to pneumatic tires for bicycles and similar vehicles, and particularly devices for sealing or closing punctures therein; and the object of the invention is to provide an improved device for this purpose whereby a puncture in a tire of the class described may be quickly, easily, and conveniently sealed or closed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a view of a transverse section of a pneumatic tire, showing my improved puncture sealing or closing device and the method of its operation; Fig. 2, a similar view showing the parts in a different position and the puncture sealing or closing device in section; Fig. 3, a transverse sectional view of the tire, showing the puncture or opening sealed; and Fig. 4, a side view of the puncture-sealing device.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in said drawings I have shown at 5 a transverse section of an ordinary pneumatic tire, in which is formed at 6 a puncture or other hole or opening, and in the practice of my invention I provide a device of the class described which comprises two hand-levers 7, the outer ends of which are preferably curved, as shown at 8, and the inner ends of which are slotted transversely, as shown at 9 in Fig. 4, to form side jaws 10, between which is pivoted a block 11.

The pivot-pin, which passes through the jaws 10 and the block 11, is shown at 12, and pivoted in the opposite sides of the block 11, as shown at 13, are supplemental levers 14, and the outer end of the block 11 is provided with a transverse head 15, having at each side slotted lugs or projections 16, adapted to receive the outer ends of the supplemental levers 14, and the inner ends of said supplemental levers 14 are each provided with an inwardly-directed jaw 17, and each of the levers 7 is provided with a transverse pin 18, which in the operation of the device, as hereinafter described, forces the inner ends of the supplemental levers inwardly and the outer ends outwardly for the purpose hereinafter described.

The inner sides of the levers 7 are grooved longitudinally, as clearly shown in Fig. 2, and pivoted therein centrally thereof, at 19, are links 20, which are also pivotally connected with a block 21, placed between the outer ends of the levers 7, and through which is passed a shaft 22, which is provided at its outer end with a knob or handle 23 and also with a fixed collar 24, between which and the knob or handle the block 21 is placed. The inner end of the shaft 22 passes through the pivot-pin 12 and centrally through the block 11, between the supplemental levers 14, and projects slightly beyond the block 11 when the levers 7 are close together, as shown in Fig. 2; but when said levers are separated, as shown in Fig. 1, the shaft 22 is projected much beyond the head 15 of the block 11. The collar 24 is rigid with the shaft 22 and is also provided at its opposite sides with shoulders or projections 25, and the operation of the device will be readily understood from the foregoing description, when taken in connection with the accompanying drawings, and the following statement thereof.

The outer end of the shaft 22 is slotted, as shown at 26, and whenever it is desired to close a puncture or hole in a tire the levers 7 of the puncture-sealing device are spread outwardly, as shown in Fig. 1. This operation forces the shaft 22 through the block 11 to the utmost limit, and in this operation the shoulders or projections on the collar 24 pass between the jaws 17 of the supplemental levers 14, as shown in said figure, and the shaft 22 is then turned by the handle 23 until the shoulders or projections 25 assume the position shown in said figure and the jaws 17 of

the levers 14 engage therewith. This locks the parts in the position shown in Fig. 1, in which the shaft 22 is projected to the limit of its outward movement. I then loop over one of the lugs or projections 16 small rubber bands 27, which are drawn around the end of the shaft 22 and through the slot in the end thereof and looped over the other lug or projection 16. The rubber bands are then immersed in a suitable liquid cement, and the device is grasped in one hand, and the shaft 22, with the rubber bands 27 connected therewith, is forced inwardly into the tire through the puncture or hole 6, as shown in Fig. 1. The shaft 22 is then turned by the handle 23 until the shoulders or projections 25 on the collar 24 are disconnected from the jaws 17 on the levers 14, and the outer ends of the levers 7 are then gradually pressed together. In this operation the shaft 22 is gradually withdrawn from the tire, and the rubber bands 27 are left firmly compressed in the puncture or hole 6, and the liquid cement thereon causes the same to securely seal said puncture or hole.

The outward movement of the outer ends of the supplemental levers 14, as hereinbefore described, serves to detach the ends of the rubber bands from the lugs or projections 16, and the said rubber bands are detached from the end of the shaft 22 by simply pulling sufficiently hard on said shaft to accomplish said detachment, the result of this operation being to leave the said bands in the position shown in Fig. 3.

This device is simple in construction and operation and perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A device of the class described, comprising two pivoted levers, a slidable shaft passing through the pivotal points of said levers, a block or collar mounted on said shaft and within which said shaft is adapted to turn, and devices pivotally connecting said block or collar with said levers, substantially as shown and described.

2. A device of the class described, comprising hand-levers provided at one end with side jaws, a block mounted between said jaws, a pivot-pin passing through said jaws and through said block, a shaft passing through the said block between the said levers and adapted to turn in said block, a block or collar connected with said shaft, and in which said shaft is adapted to turn, and links pivotally connected with said block or collar with said levers, substantially as shown and described.

3. A device of the class described, comprising hand-levers provided at one end with side jaws, a block mounted between said jaws, a pivot-pin passing through said jaws and through said block, a shaft passing through the said block between the said levers and adapted to turn in said block, a block or collar connected with said shaft, and in which said shaft is adapted to turn, and links pivotally connected with said block or collar with said levers, said shaft being provided at the end thereof which passes through said block or collar with a handle, and also with a stationary collar, and the opposite end being provided with means for holding a rubber band or similar device, substantially as shown and described.

4. A device of the class described, comprising two pivotally-connected hand-levers which are provided with jaws through which the pivot-pin passes, and a block mounted between said jaws through which the said pivot-pin also passes, other supplemental levers pivoted in the opposite sides of said block, and provided at their inner ends with inwardly-directed jaws, a shaft passing through said block between said supplemental levers, and provided with a rigid collar having side projections, a collar or block mounted on said shaft, and in which said shaft is adapted to turn, and links pivotally connected with said levers and with said block or collar, substantially as shown and described.

5. In a device of the class described, two levers pivotally connected at one end, a slidable shaft mounted between said levers and passing through their pivotal point, links pivotally connected with said levers and with a block through which said shaft passes, and in which said shaft is adapted to turn, and means for locking said levers in the open or separated position, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 17th day of April, 1899.

WALTER SMILEY WEATHERWAX.

Witnesses:
CHARLES H. DANE,
ROBERT EARLE DANE.