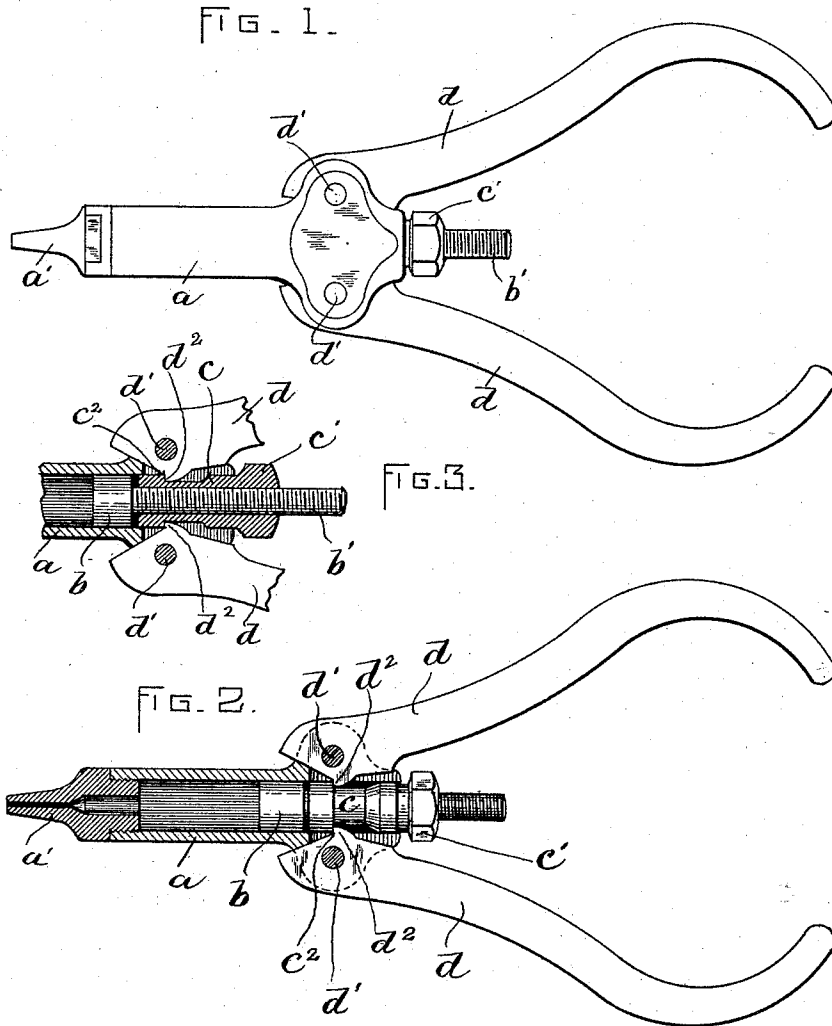


(No Model.)

H. H. CUMMINGS & R. COWEN.  
DEVICE FOR MENDING PNEUMATIC TIRES.

No. 495,454.

Patented Apr. 11, 1893.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY H. CUMMINGS, OF MALDEN, AND ROBERT COWEN, OF CAMBRIDGE,  
MASSACHUSETTS.

## DEVICE FOR MENDING PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 495,454, dated April 11, 1893.

Application filed June 13, 1892. Serial No. 436,425. (No model.)

To all whom it may concern:

Be it known that we, HENRY H. CUMMINGS, of Malden, and ROBERT COWEN, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Devices for Mending Pneumatic Bicycle-Tires, of which the following is a specification.

This invention relates to that class of devices used for stopping holes or perforations accidentally made in pneumatic tires for bicycle wheels, in which a receptacle is employed, holding a quantity of mending material, said receptacle having a suitable nozzle adapted to be forced into an orifice in a pneumatic tire, and means for ejecting a quantity of the material through said nozzle, and thus stopping or plugging the hole into which the nozzle is inserted.

The invention has for its object to provide an improved means for ejecting the material from the nozzle under sufficient pressure to cause it to adequately plug the hole, and to this end it consists in the improvements which we will now proceed to describe and claim.

Of the accompanying drawings, forming part of this specification: Figure 1 represents a side elevation of a tire-mending device, constructed in accordance with our invention. Fig. 2 represents a longitudinal section of the same, showing parts of the device in elevation. Fig. 3 represents a longitudinal section of a portion of the device, showing in section a part that is shown in elevation in Fig. 2.

The same letters of reference indicate the same parts in all the figures.

In the drawings: *a* represents a receptacle, preferably of cylindrical form, adapted to contain a quantity of viscid material, such as is used for stopping or plugging holes in pneumatic bicycle tires. Said receptacle is provided at one end with a nozzle *a'*, which is of attenuated form, and adapted to be inserted in a puncture or break in a bicycle tire.

*b* represents a piston, which is fitted to move in the receptacle *a*, and, when moved toward the nozzle *a'*, is adapted to eject a portion of the viscid material from the receptacle *a* through said nozzle. The piston *b* is provided with a screw-threaded stem *b'*, which is engaged with an internally screw-threaded nut *c*.

Said nut is formed at its inner end to enter and slide lengthwise in the receptacle *a*, and is provided with a shoulder *c'*. The outer portion of the nut *c* is preferably somewhat enlarged, and formed to be grasped and rotated either by the fingers or a suitable wrench.

*d d* represent levers, which are pivoted at *d' d'* to ears formed on the receptacle *a*. Said levers are provided with short arms or projections *d''*, which are engaged with the shoulder *c'* on the nut *c*, as shown in Figs. 2 and 3, the arrangement being such that, when the levers *d d* are swung inwardly or toward each other, the short arms or projections *d''* will exert a powerful pressure upon the shoulder *c'* of the nut in the direction required to force the piston a short distance toward the nozzle of the receptacle *a*. The nut constitutes a bearing for the short arms or projections *d''* of the levers *d*, so that the inward movement of said levers imparts an endwise movement to the nut, and through the latter to the piston.

It will be seen that the engagement of the levers *d d* with the nut *c* is such that the nut can be readily rotated; consequently, when the operator desires to use the device, he inserts the nozzle *a'* in the orifice to be mended, then rotates the nut *c* until the piston bears firmly on the viscid material in the receptacle, and then applying pressure to the levers *d*, swings said levers inwardly, thus giving the piston a forward movement under strong pressure, and causing the cement to entirely fill or be forced under suitable pressure into the orifice. When the levers are released and swung outwardly the operator rotates the nut in the direction required to force the shoulder *c'* of the nut back against the outwardly swung arms or projections *d''* of the levers, and the levers are again enabled to impart an additional forward movement to the nut and piston. The operation is thus continued, the piston being moved forward step by step, each adjustment of the nut enabling the levers to again move the piston forward until the material has been entirely used.

We do not limit ourselves to the details of construction here shown, and may variously modify the same, without departing from the spirit of the invention. For example, a handle or hand-rest, rigidly connected to the re-

ceptacle *a* may be substituted for one of the levers *d*, the other lever, engaged as described with the nut, being relied upon to impart the desired additional movement to the nut and piston.

We do not limit ourselves to the employment of the levers *d d*, as the device can be operated to eject the cement simply by the rotation of the nut, although not with as much force as by the successive employment of the nut and levers. In case the levers are not employed, some means would be required to prevent endwise movement of the nut, and permit its free rotation.

We claim—

1. A tire-mending device comprising a receptacle having an attenuated outlet nozzle at one end, one or more power-applying levers pivoted to the receptacle, and a piston movable in the receptacle and provided with an adjustable bearing for said levers whereby

the levers may be caused to advance the piston in the cylinder, step by step, as set forth.

2. In a tire-mending device, the combination of a receptacle having an outlet at one end, a piston movable in said receptacle and provided with a screw-threaded shank, a nut engaged with said shank and having a limited endwise movement, and one or more levers pivoted to the receptacle and engaged as described with the nut, whereby endwise pressure may be exerted on the nut, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 10th day of June, A. D. 1892.

HENRY H. CUMMINGS.  
ROBERT COWEN.

Witnesses:

K. J. FENNO,  
J. EDWIN DAVIS.