No. 620,836. Patented Mar. 7, 1899.

T. BENNETT.

TOOL FOR REMOVING AND REPLACING COVERS OF PNEUMATIC TIRES.

(Application filed Aug. 29, 1898.)

(No Model.) 2 Sheets—Sheet 1.

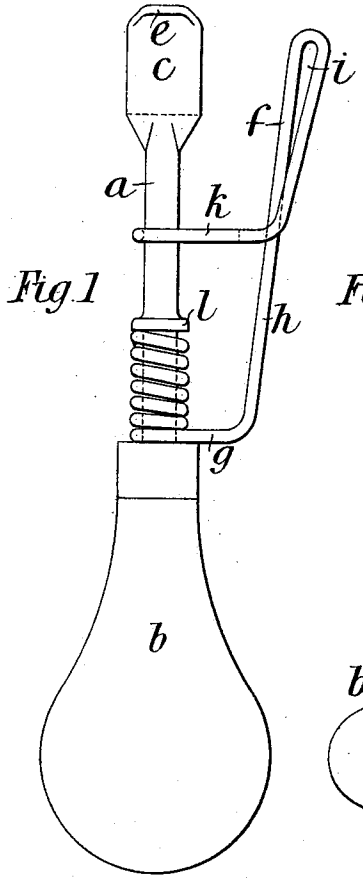


Fig. 1

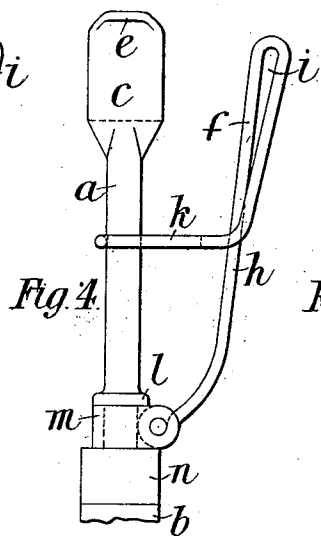


Fig. 4

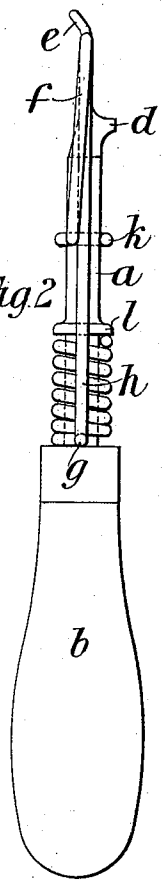


Fig. 2

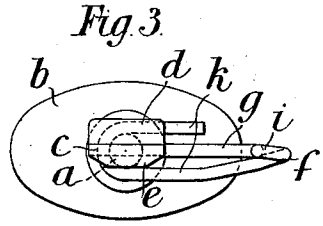


Fig. 3

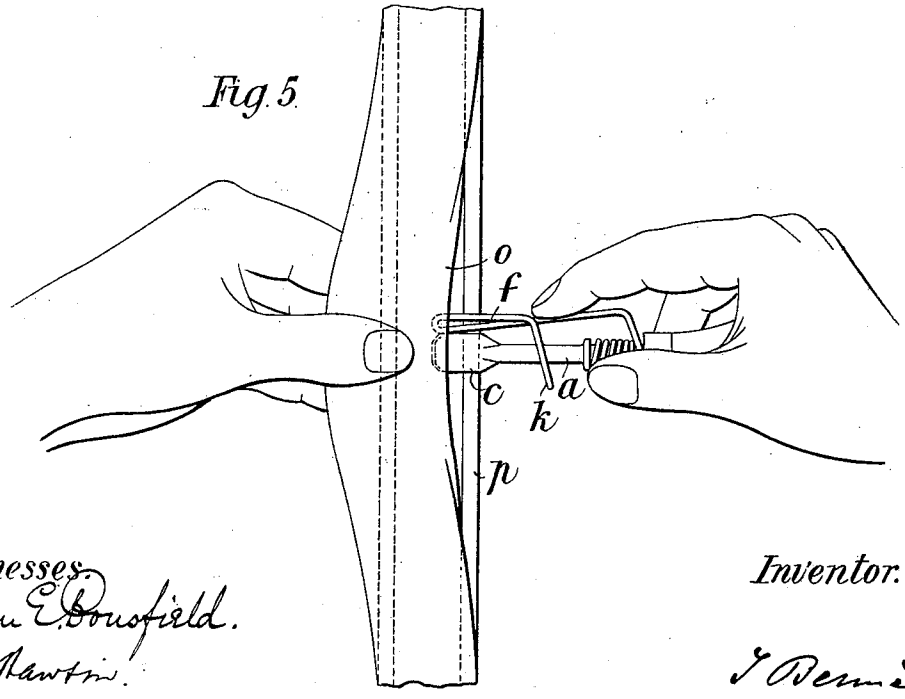


Fig. 5

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Fig. 6.

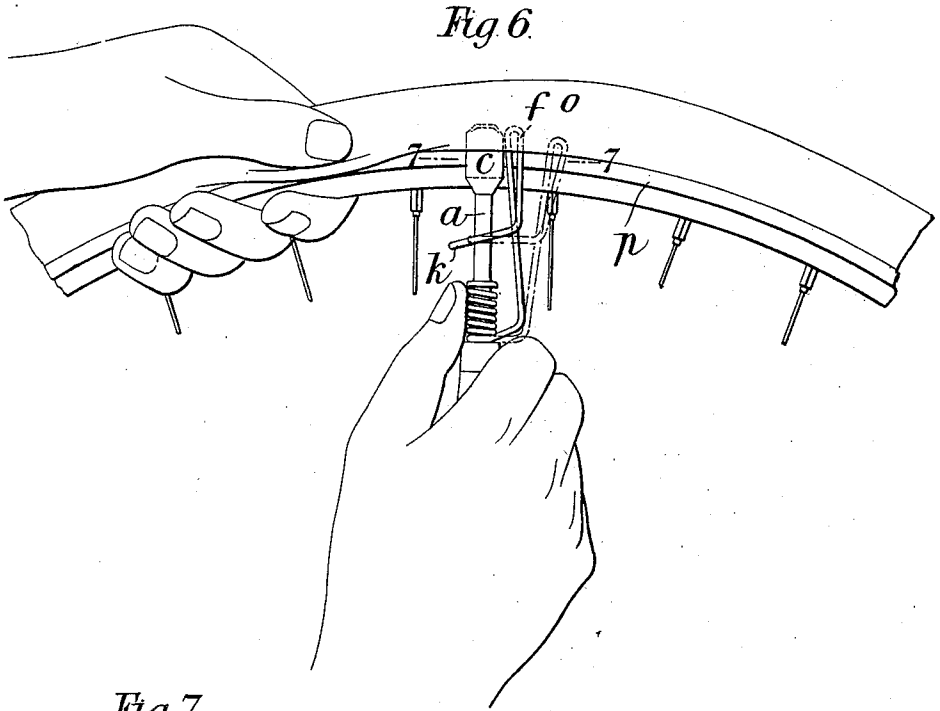


Fig. 7.

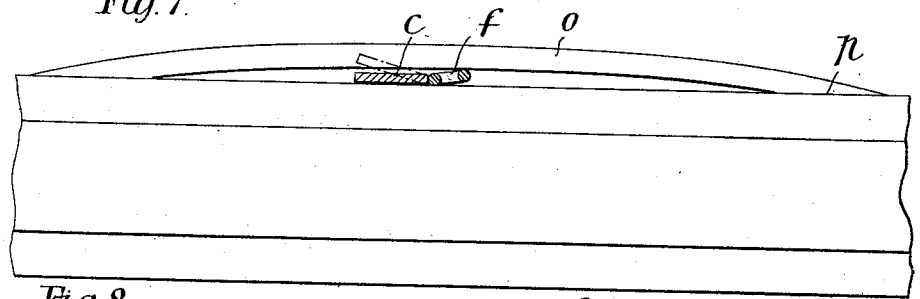


Fig. 8.

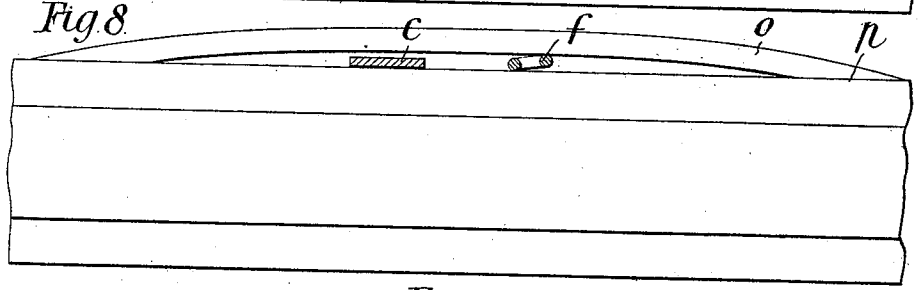
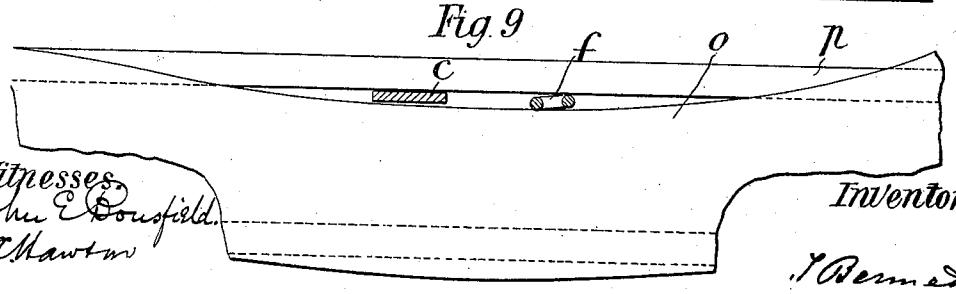


Fig. 9.



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UNITED STATES PATENT OFFICE.

THOMAS BENNETT, OF LONDON, ENGLAND, ASSIGNOR OF ONE-HALF TO HERBERT BENNETT, OF SAME PLACE.

TOOL FOR REMOVING AND REPLACING COVERS OF PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 620,836, dated March 7, 1899.

Application filed August 29, 1898. Serial No. 689,734. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BENNETT, a subject of the Queen of Great Britain, residing at London, England, have invented a new and useful Improved Tool for Removing and Replacing the Covers of Pneumatic Tires, (for which I have applied for a patent in Great Britain, No. 17,370, dated August 11, 1898,) of which the following is a specification.

This invention relates to an improved tool for removing the outer covers of pneumatic tires of the kind provided with endless wires from the rims of wheels and also for replacing them thereon with greater facility.

My improved tool consists of the combination, with a metal rod fitted into a suitable handle and having its outer end flattened out and provided with a projection or flange, of a spring or a hinged arm or horn free to rotate on the rod, as hereinafter more particularly described.

In the accompanying drawings, Figure 1 is a front elevation, and Fig. 2 a side elevation, of a tool made according to my invention and having a spring arm or horn. Fig. 3 is a plan of Fig. 1. Fig. 4 is a front elevation showing the tool provided with a hinged arm or horn. Fig. 5 is a plan showing how the tool is applied for removing the edge of a tire-cover from the rim of a wheel. Fig. 6 is a side elevation showing the next position of the tool. Fig. 7 is an inverted plan of the rim of the wheel on the line 7 7, Fig. 6, showing the tool in section. Fig. 8 is a similar view to Fig. 7, but showing another position of the tool. Fig. 9 is a sectional plan showing how the tool is applied to replace the cover.

Similar letters in all the figures indicate similar or corresponding parts.

My improved tool is made of a round metal rod *a*, fitted into a handle *b*, of a shape to allow the same to be firmly grasped by the hand. The outer end of the rod *a* is flattened out at *c* and is provided on one side with a flange or projection *d*, and the end of the flattened part *c* is advantageously slightly bent over at *e* to allow of the tool being easily inserted between the wheel-rim and the cover of the tire.

f represents the arm or horn adapted to the rod *a*. The said arm or horn may act either springwise, as shown in Figs. 1, 2, and 3, or may be hinged, as shown in Fig. 4. The arm or horn is advantageously formed of wire, and when required to act springwise it can be coiled around the rod *a*, as shown in Figs. 1 and 2, then turned outward from the ferrule end of the handle at *g*, then upward, as at *h*, and formed into a loop *i*, the free end of the wire being then turned inward into a kind of hook *k*, which passes over the rod *a*, as clearly shown in Fig. 3, thereby limiting the extent of movement of the arm, and in the arrangement shown in Figs. 1, 2, and 3 always keeping the spring in tension.

l is a collar on the rod *a* to retain the arm, which can freely turn on the rod.

In Fig. 4 it will be seen that the arm or horn is hinged to a ring *m*, which can turn freely on the rod *a* between the collar *l* and the ferrule *n* of the handle.

To make use of the improved tool shown in Figs. 1 to 3 for removing the outer cover of a deflated tire, the end of the spring arm or horn *f* is pressed against the edge of the flattened end *c* of the tool and the parts are inserted under the edge of the cover *o* of the tire, as clearly shown in Fig. 5, the flange *d* bearing against the edge of the rim *p*. The edge of the cover of the tire is prized over the edge of the wheel-rim *p* by moving the tool-handle downward, the end of the spring-arm and the edge of the flat end of the tool being still in contact, as shown in Fig. 6. The rod being now slightly twisted or turned, as shown by dotted lines in Fig. 7, will bring the edge of the cover farther from the rim and will release the end of the spring-arm *f* from the pressure of the cover, and the arm being thus released will spring forward, as shown in Fig. 8, the amount of this forward movement being, as already mentioned, limited by the hook *k* on the rod *a*. The tool is now turned so as to bring it flat on the rim, and the end of the spring-arm being made thicker than the end of the tool will be held pressed between the cover and the rim, while the flat end *c* of the tool being free from such pressure it can easily be moved forward between the cover and the rim until it is again brought into contact with the arm *f*. The same movements as before are repeated, and so on until the cover is removed. Should,

however, the spring-arm from any reason not move forward, it can be easily moved by pressing the end of the hook by the thumb. To replace the cover, it is put in the rim as far as it will go easily and the end of the tool is inserted between the edge of the cover and the inside edge of the rim where the cover is already on the rim, and as near as it will go to the part which has still to be put on, when the tool is worked as above described and as will be clearly seen by reference to Fig. 9.

The operation of the tool having a hinged arm, as shown in Fig. 4, is substantially the same as that described for the spring-arm tool, except that the arm has to be moved forward instead of springing forward.

In the drawings I have shown a simple form of arm or horn; but it will be obvious that this construction may be considerably modified.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A tool for removing and replacing the covers of pneumatic tires consisting in the combination of a rod having a suitable handle and a flattened outer end provided with a flange or rim, with a spring or a hinged arm or horn adapted to turn freely on the rod, substantially as described.

2. A tool for removing and replacing the covers of pneumatic tires comprising a rod *a* having a flattened end *c* and flange *d* and a spring-arm such as *f* capable of turning on the rod *a* combined and operating, substantially as described.

3. A tool for removing and replacing the covers of pneumatic tires comprising a rod *a* having a flattened end *c* and flange *d* and a hinged arm or horn such as *f* capable of turning on the rod *a* combined and operating substantially as described.

THOMAS BENNETT.

Witnesses:
G. F. REDFERN,
JOHN E. BOUSFIELD.