

(No Model.)

J. HORSWILL, Jr.

TOOL FOR REMOVING CASINGS OF PNEUMATIC TIRES.

No. 597,286.

Patented Jan. 11, 1898.

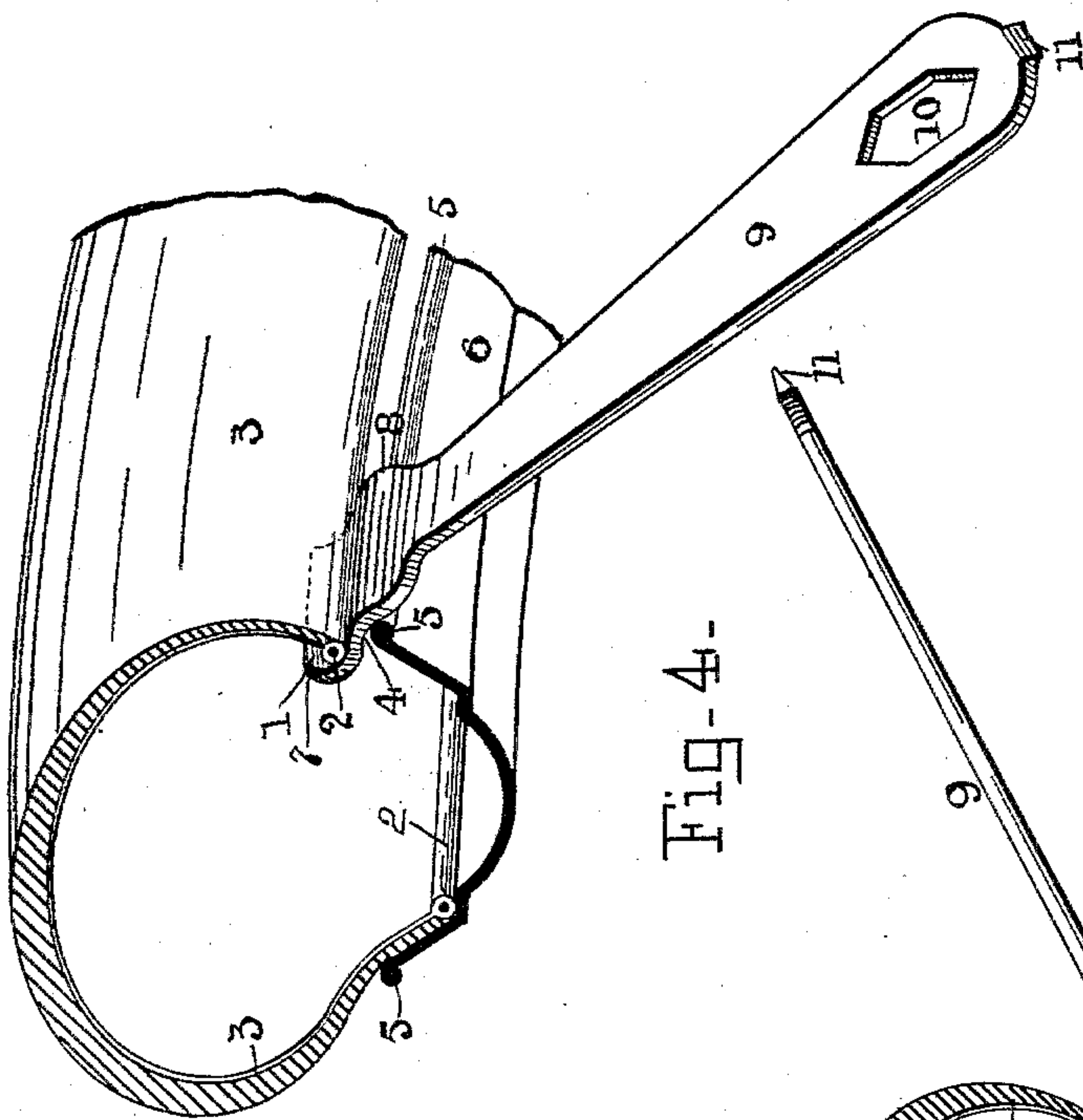


Fig. 4-

Fig. 3.

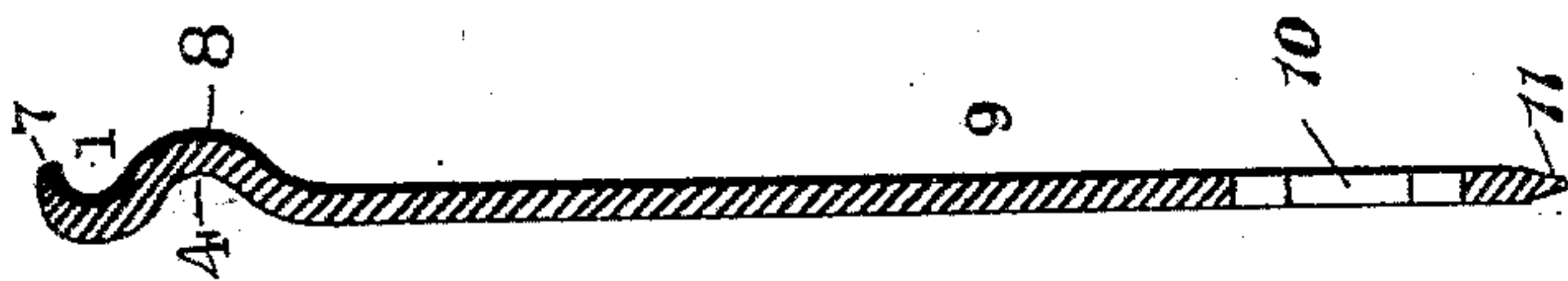
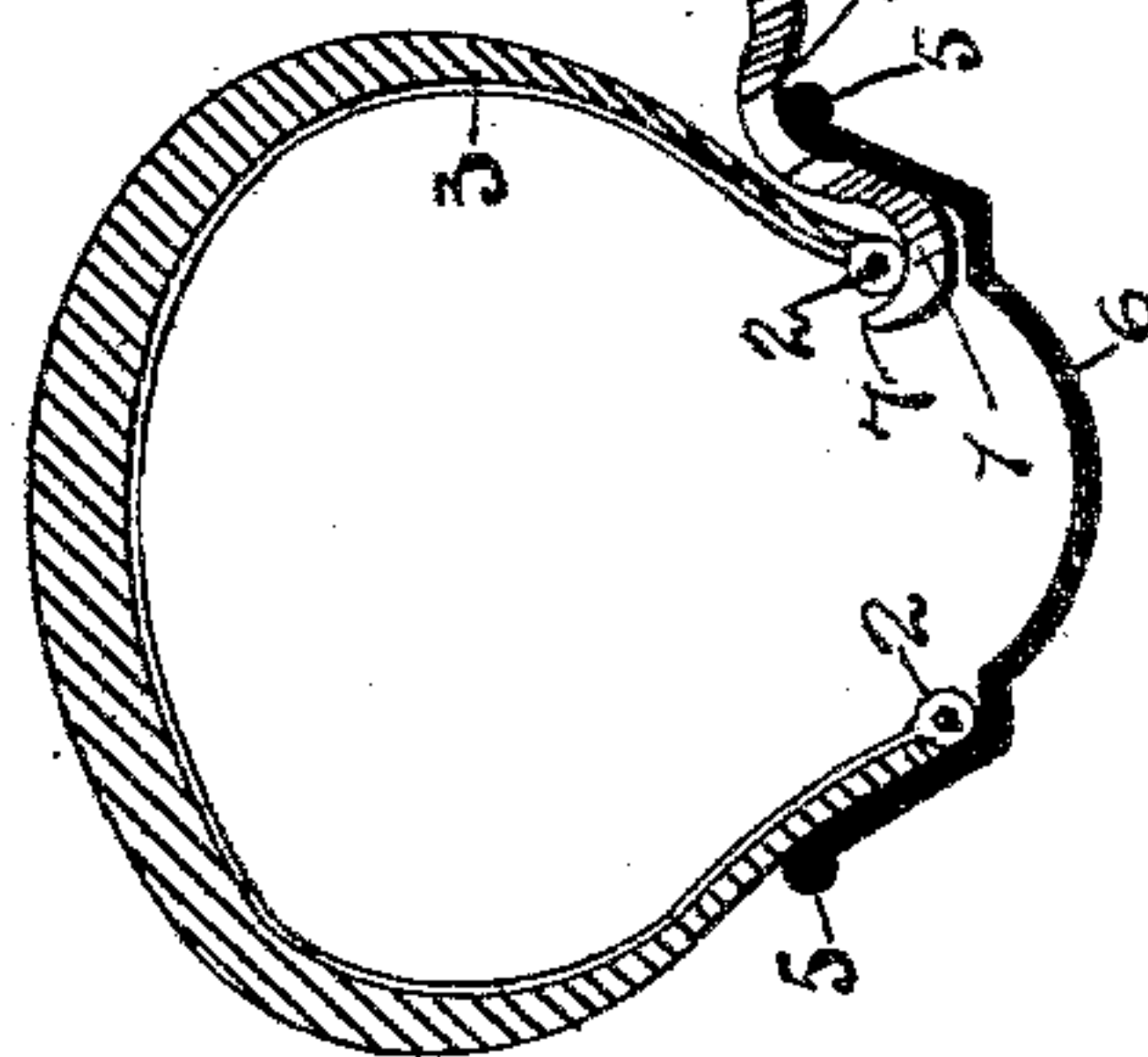


Fig. 2.

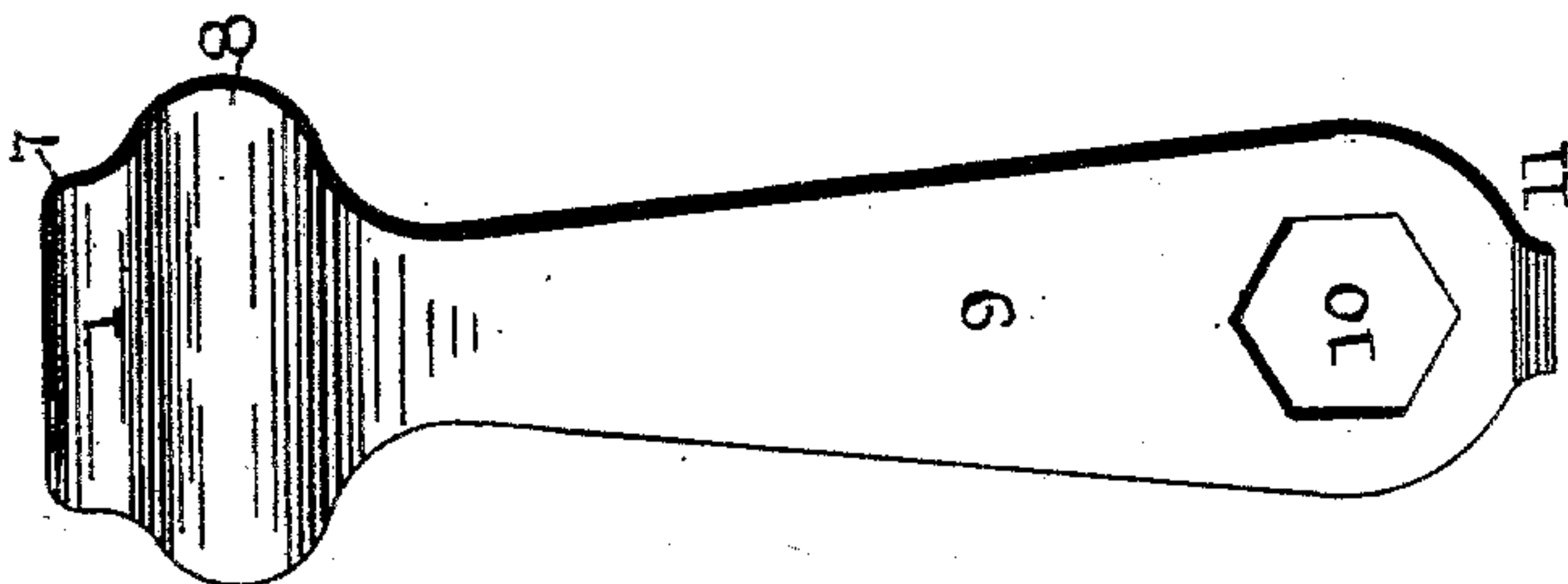


Fig. 1-

Witnesses.

Geo. E. Truck,
A. S. Pattison

Inventor

John Horswill Jr.
per Thos. E. Beck
att'y

UNITED STATES PATENT OFFICE.

JOHN HORSWILL, JR., OF CHESTER, ENGLAND, ASSIGNOR TO JOSEPH HENRY IREDALE, OF LIVERPOOL, ENGLAND.

TOOL FOR REMOVING CASINGS OF PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 597,286, dated January 11, 1898.

Application filed May 10, 1897. Serial No. 635,924. (No model.) Patented in England August 18, 1896, No. 18,251.

To all whom it may concern:

Be it known that I, JOHN HORSWILL, Jr., a subject of the Queen of Great Britain and Ireland, residing at Chester, in the county of Chester, England, have invented an Improved Tool for Use in Removing the Outer Casings of Pneumatic Tires from Wheel-Rims, (for which I have secured English Patent No. 18,251, dated August 18, 1896,) of which the following is a specification.

This invention relates to a special form of tool, which it is proposed to call "the moon-light tire-lever," for extracting the wired retaining edges of the outer casings of the air-tubes of pneumatic cycle-tires from the hollows of grooved wheel-rims without injuring the delicate air-tubes or damaging the wheel-rims. Various tools have before now been employed for this purpose, but they have all been found defective, as they are invariably liable to puncture the air-tubes and sometimes distort the wheel-rims when used by inexperienced hands, there being considerable difficulty in such cases to obtain access to the air-tubes when the wired retaining edges are close-fitting, as is the case with tires of some makers. To overcome this difficulty and risk experienced by many riders in removing the outer casings for inspecting or repairing the air-tubes, there is provided, according to this invention, a tool in the form of a lever, having at opposite sides of it and at or near one of its ends two curved grooves adapted, respectively, to receive one of the wired retaining edges and the corresponding edge of the wheel-rim, on which the tool can consequently be worked without slipping and without injury to the rim.

Figure 1 of the accompanying drawings is a plan of a tool according to this invention. Fig. 2 is a longitudinal section thereof, and Figs. 3 and 4 illustrate the mode of using it for removing an ordinary pneumatic tire.

The tool may be made of cast metal, but is preferably made by dies from a sheet of mild steel cut to a suitable shape, one end being joggled or bent so as to form a groove 1 for the reception of the wired edge 2 of the casing 3, and at some little distance away from the groove 1 and at the opposite side of the plate another groove 4, adapted to fit the edge 5 of the wheel-rim 6. The nose or part 7 of the tool, that contains the groove 1, is made somewhat narrower than the part 8, that contains

the groove 4, and is ground off so as not to cut the air-tube. It is also rounded to a curvature having a radius equal to or a little less than that of the retaining-wires 2 when they are in position on the rim. The part 8 is similarly curved, but in the opposite direction, so as to suit the radius of the edge 5 of the wheel-rim 6, and is made wide, as shown, to give a large bearing-surface, so that should undue force be employed by an inexperienced person no injury would result to the rim. The part 9, forming the handle of the tool, may be about the same curve as the part 8, so as to give it additional strength, or it may be made flat, and also have a hexagon or square hole 10 punched through it, so as to adapt it to serve as a spanner or screw-key, and it may advantageously terminate in an edge 11, such as to enable it to be used as a screw-driver.

When a deflated air-tube fits tightly in the bottom of the wheel-rim, its edges are apt to project outwardly and get beneath the wired edges of the outer casing, and difficulty has hitherto been experienced in placing the air-tube in position with ordinary tools, but with a tool according to this invention this can be quickly and easily effected, as the curved edge can be used to force the air-tube inwardly, and by drawing it back the wired edge of the outer casing can be moved outwardly against the wheel-rim. Thus with a tool of this description a lady or inexperienced person can quickly and without injury to the air-tube or wheel-rim remove the tire-casing and replace the same.

What I claim is—

A tool for extracting the wired retaining edges of the outer casings of pneumatic tires from wheel-rims, consisting of a lever having on opposite sides of it and at or near one of its ends two grooves adapted respectively to receive one of the said edges and the corresponding edge of the wheel-rim, both of the said grooves being curved to suit the curves of the wheel-rim and the retaining-wires, substantially as described and shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN HORSWILL, JR.

Witnesses:

GEO. C. DAWSON,
F. M. C. SCOTT.