

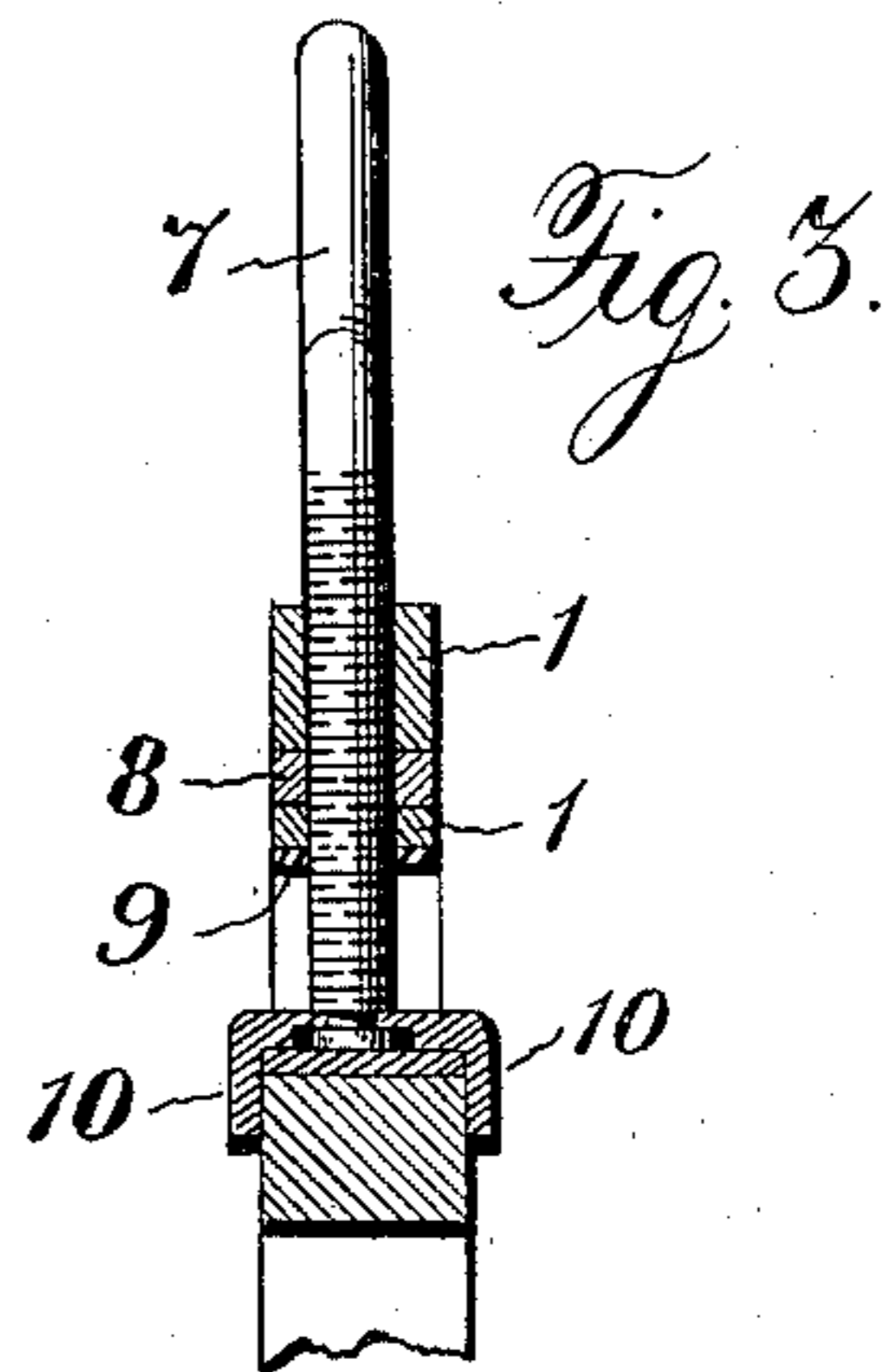
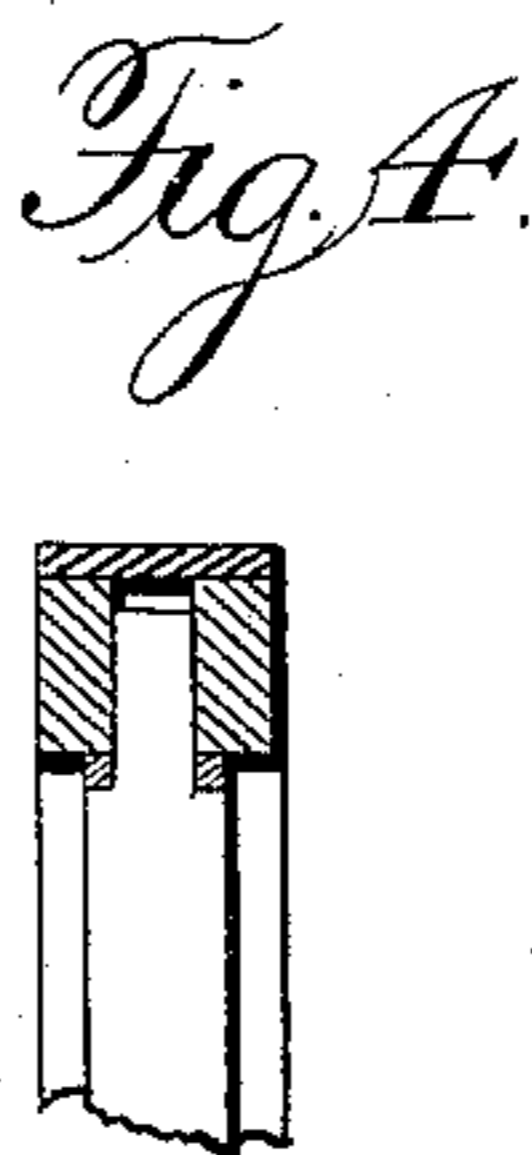
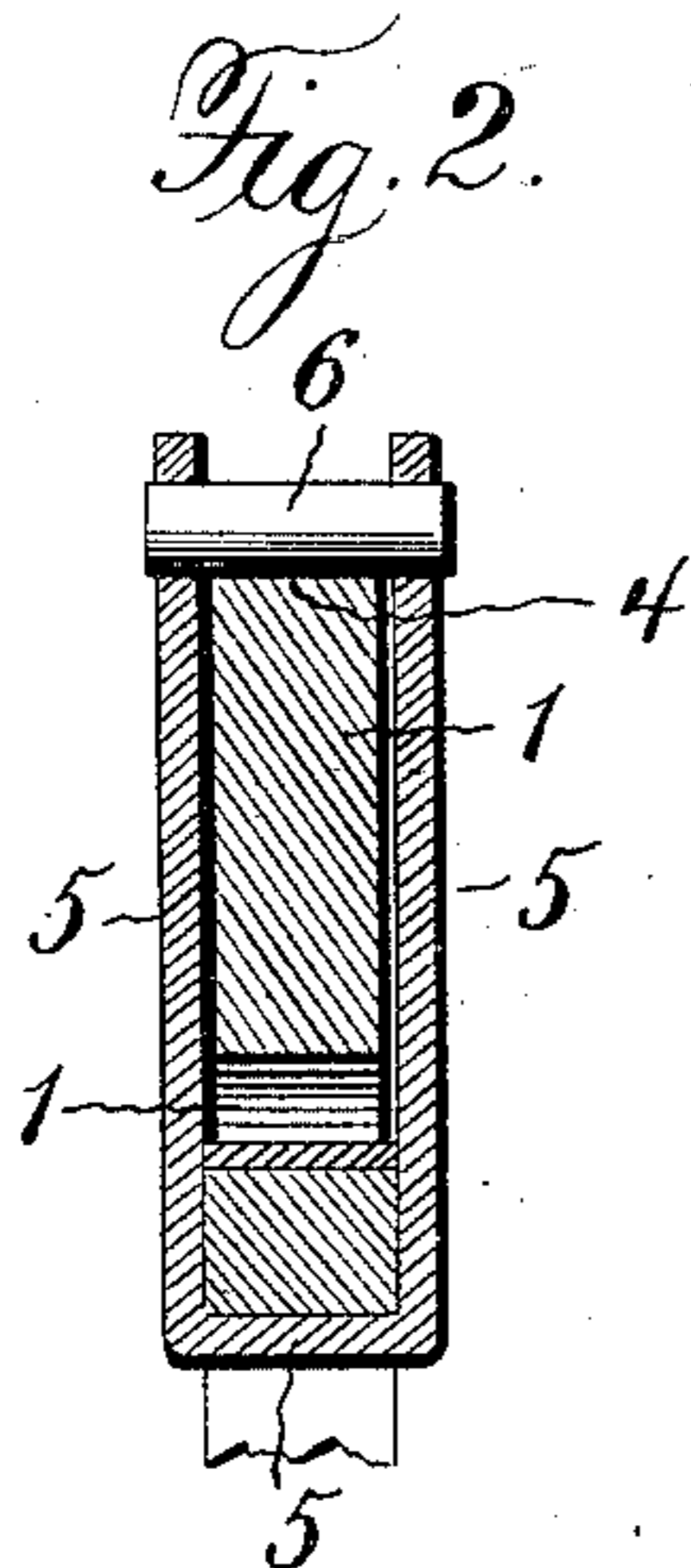
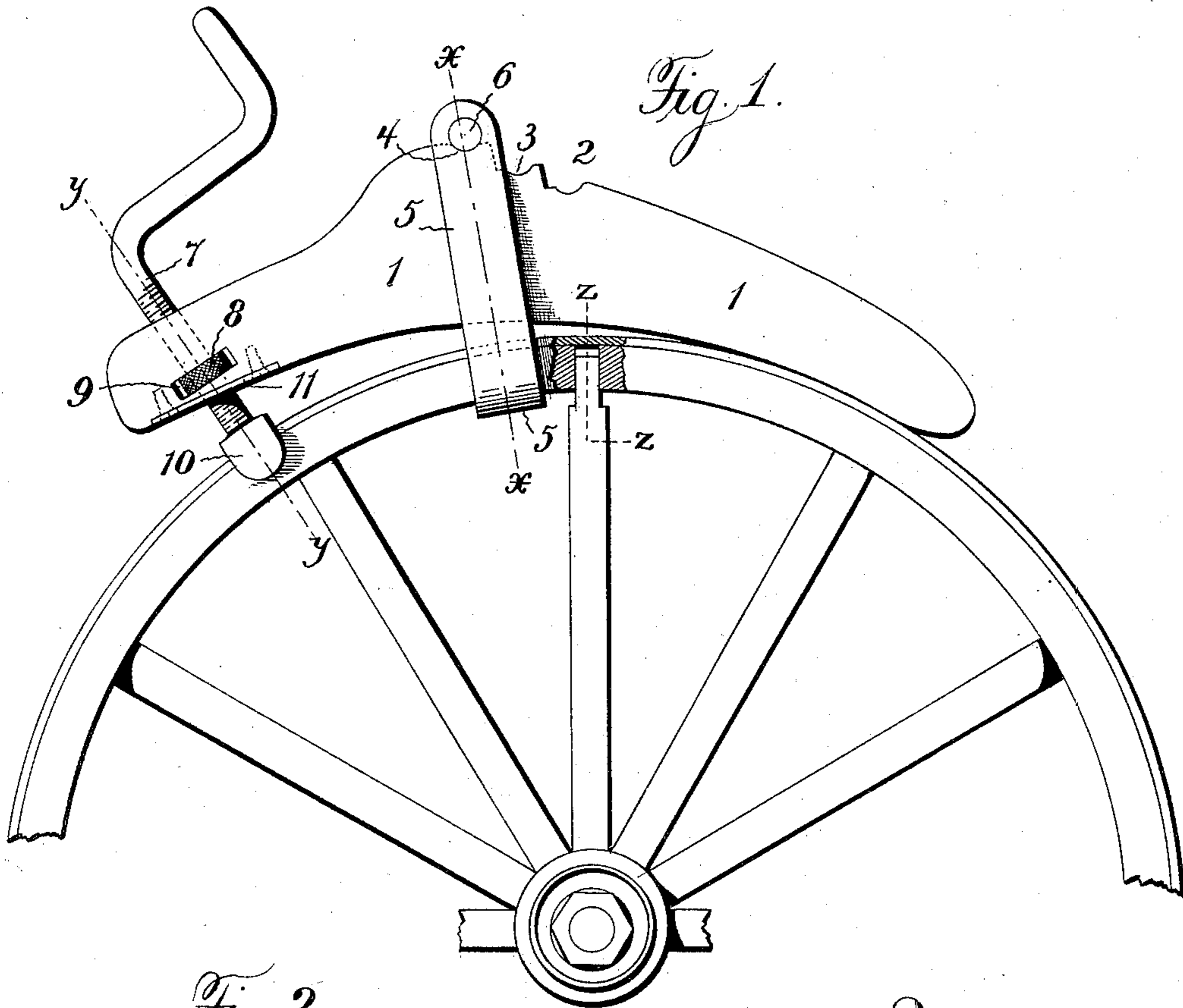
No. 610,958.

Patented Sept. 20, 1898.

S. E. BURKE.
TIRE TIGHTENER.

(Application filed Oct. 30, 1897.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

STEPHEN E. BURKE, OF EDON, OHIO.

TIRE-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 610,958, dated September 20, 1898.

Application filed October 30, 1897. Serial No. 656,868. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN E. BURKE, a citizen of the United States, residing at Edon, in the county of Williams and State of Ohio, have invented certain new and useful Improvements in Tire-Tighteners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to tire-tighteners, and has for its object to provide a tightener which will possess great leverage; also, a tightener in which the weight to be lifted or the point at which the tightener will exert its force on the felly will be brought nearer to or farther from the fulcrum of the lever, according as the felly may be heavy or light or conditions otherwise be such as to require greater or less power in lifting the felly.

It has also for its object to provide a tightener in which the fulcrum end of the lever will rest upon the tire and the power end of the lever will be at an opposite point above the tire, so as to enable the tightener to be quickly applied and detached and to be supported without detachment to either the hub or to the spokes.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, the invention consists in the construction and in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a side view of the tightener applied to a wheel. Fig. 2 is a cross-section on the line *xx* of Fig. 1. Fig. 3 is a section on the line *yy* of Fig. 1, and Fig. 4 is a section on the line *zz* of Fig. 1.

In the drawings the numeral 1 designates a lever of any suitable material and which is preferably made concave or curved on its under face and which between its ends at or about its central portion and on its top face is provided with a series of steps or seats (indicated by the numerals 2, 3, and 4) and of which there may be any desired number, so

as to adjust a clevis or yoke 4 to be used in connection with the lever to accommodate the yoke to the thickness of the felly around which the yoke will pass and on which it will exert the force of the lever so as to lift the felly, in order that one or more washers may be placed around the spoke or spokes and next to the under side of the felly, so as to take up the space made in tightening the tire.

It will be observed that the distance between the top and the bottom faces of the lever 1 is less at the point where the step or seat 2 is located than at the point where the other steps or seats are located. This is for the purpose of enabling the clevis or yoke 4 to be placed at the point where the lever is the narrowest—for instance, at the step or seat 2—so that there may be more space between the bottom of the clevis or yoke and the under face of the lever at such point, thus adjusting the clevis or yoke to the thickness of the felly, assuming the step or seat 2 to be located at a point to accommodate a felly of the greatest thickness ordinarily used. This also enables the power to be applied at a point nearest to the fulcrum of the lever 1—that is, the point where the rear end of the lever rests upon the tire—and thus enables me to get increased leverage for the fellyes of the greatest thickness, so that the same may be more easily lifted by the lever. The clevis or yoke 4 has its two upper ends connected by the transverse pin 5, which is adapted to fit removably in suitable holes made in the opposite members of the clevis, which pin, when the device is in operation, rests upon one of the steps or seats and against which pin the lever pulls when power is applied to lift the felly. This pin, being removable, admits of the clevis being inserted beneath the felly and its opposite sides brought upward on opposite sides of the lever, after which the pin is inserted in place and the lever is ready to be operated.

The lever is operated by means of a screw 6, which passes through the forward end of the lever 1, and its threads engage the threads of a bur or nut 7, which is fitted into a socket or recess 8, formed in the forward end of the lever 1, said bur or nut fitting against angular sides of the recess in which it is placed, so that it will not turn, thus enabling the

screw when turned to force up or down the lever, so as to exert its force upon the clevis and yoke and through it upon the felly. The lower end of this screw is connected with a plate 9, adapted to fit over the tire and on opposite sides thereof, so as to hold the lever and screw against side movement. The lower end of the screw is preferably swiveled to this plate, so that the two parts will not become separated. It is preferred to insert the bur or nut 7 in place through the side of the lever into the cavity 8; but it may be otherwise placed in position.

I prefer to attach a metallic plate 10 to the under side of the lever at the point where the screw is applied, so as to protect the under side of the lever against unnecessary wear if it be made of wood.

The screw 6 is operated by means of a crank 11, which I have illustrated as made integral with the screw, as that is the preferred form; but it may be otherwise connected to the screw.

It will be observed that under the form of the device described the lever has its fulcrum upon the tire and the power is applied at the opposite end so as to bear upon the tire, thus enabling the lever to be applied to the outside of the felly or tire. It will also be observed that the clevis or yoke is adjustable lengthwise of the lever, so as to vary the leverage to suit different conditions and also so as to enable the clevis to fit fellyes of different thicknesses.

So far as I am aware I am the first to devise a tire-tightener of such construction as will admit of its application in the manner described, the tire-tighteners heretofore made, so far as I have knowledge of the same, being so constructed that a portion of the same will bear either upon the hub of the wheel or else be attached to one of the spokes of the wheel. Under my construction the tightener is easier to apply and to adjust to different positions on the felly, and the leverage is at such points so as to do no injury to either the hub or to the spokes. It also enables me to get a greater leverage than would be obtained by other constructions of which I have knowledge and also admits of varying the leverage by shifting the point of connection between the clevis or yoke and the lever, so that when the device is applied to the heavier fellyes increased leverage can be obtained.

I have illustrated and described with particularity what I consider to be the preferred details of construction; but changes can be made therein without departing from the essential features of the invention.

Having described my invention and set forth it merits what I claim is—

1. In a tire-tightener, a lever adapted to extend lengthwise of the tire and to have its fulcrum on the tire to one side of the weight or member to be lifted and the power end of the lever at the opposite side of said point, means to pass beneath the felly and connect the le-

ver thereto, and means connected with the lever and pressing against the tire for lifting the power end of the lever, substantially as and for the purposes described.

2. In a tire-tightener, the combination of a lever extending lengthwise of the tire and having its fulcrum to one side of the weight or member to be lifted, means applied to the opposite end of the lever for lifting the same and adapted to bear against the tire, and a yoke or clevis adapted to pass beneath the felly and having a part thereof resting on top of the lever, substantially as and for the purposes described.

3. In a tire-tightener, the combination of a lever adapted to bear at one point against the tire, power-applying means connected to the opposite end of the lever and adapted to press against the tire, and a yoke or clevis adjustable lengthwise of the lever and adapted to pass beneath the felly, substantially as and for the purposes described.

4. In a tire-tightener, the combination of a lever of varying thicknesses between its ends adapted to bear at one point against the tire, power-applying means connected to the opposite end of the lever and adapted to press against the tire, and a clevis or yoke adjustable lengthwise of the lever and adapted to pass beneath the felly, substantially as and for the purposes described.

5. In a tire-tightener, the combination of a lever adapted to bear at one point against the tire and formed on its upper side with stepped seats, power-applying means connected to one end of the lever and adapted to press against the tire, and a yoke or clevis adapted to pass beneath the felly and at its upper end provided with means to fit in the different seats, substantially as and for the purposes described.

6. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted to the lever between its opposite ends and adapted to pass beneath the felly, means applied to one end of the lever to one side of the clevis for applying the power, and means to prevent that end of the lever slipping sidewise, substantially as and for the purposes described.

7. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, and an operating-screw applied to one end of the lever and adapted to bear upon the tire to adjust the lever, substantially as and for the purposes described.

8. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, a bur or nut connected to one end of the lever, and an adjusting-screw working in said bur or nut and adapted to bear upon the tire to adjust the lever, substantially as and for the purposes described.

9. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, an adjust-

ing-screw applied to one end of the lever, and
a plate at the lower end of the screw and
adapted to fit upon the tire and lap the sides
thereof, substantially as and for the purposes
5 described.

10. A tire-tightener, comprising a lever
adapted to extend lengthwise of the tire and
having at its top stepped seats, a yoke or
clevis adapted to pass beneath the felly and
10 provided at its upper end with a pin to fit in
the stepped seats, a bur or nut applied at the

power end of the lever, and an adjusting-
screw operating in said bur and adapted to
bear upon the tire to operate the lever, sub-
stantially as and for the purposes described. 15

In testimony whereof I affix my signature
in presence of two witnesses.

STEPHEN E. BURKE.

Witnesses:

I. N. KINTNER,
JOHN MARK.