J. R. KELLY.

SPOKE PULLER.

APPLICATION FILED APR. 4, 1910.

1,019,656. **Patented Mar. 5, 1912.**

Fig. 1.

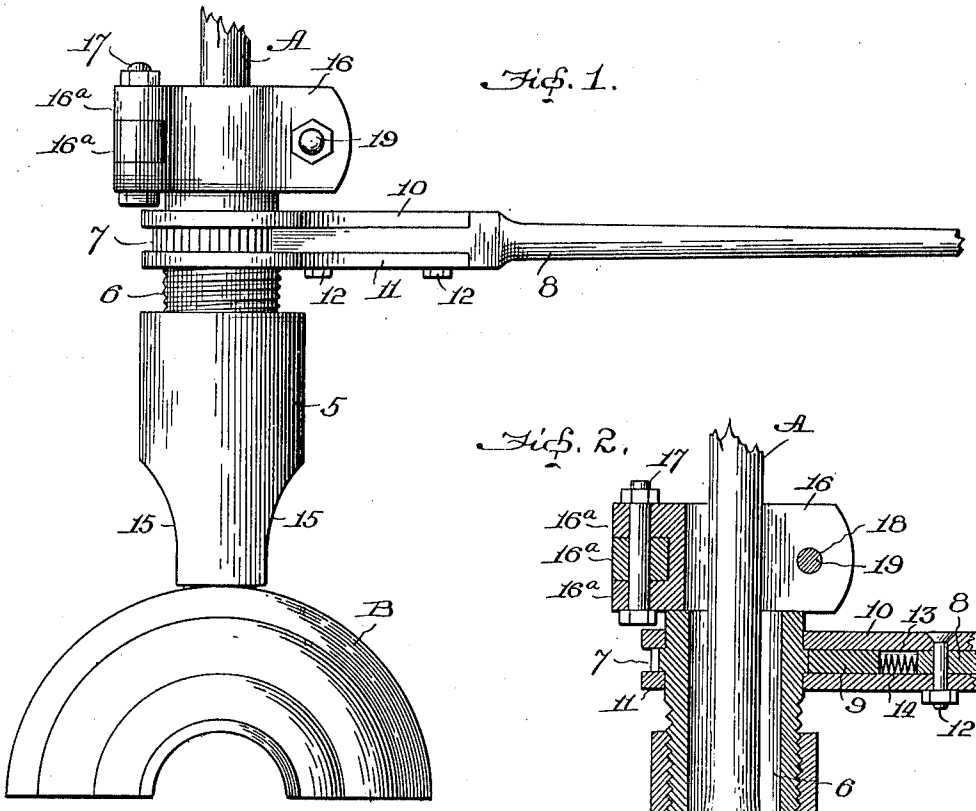


Fig. 2.

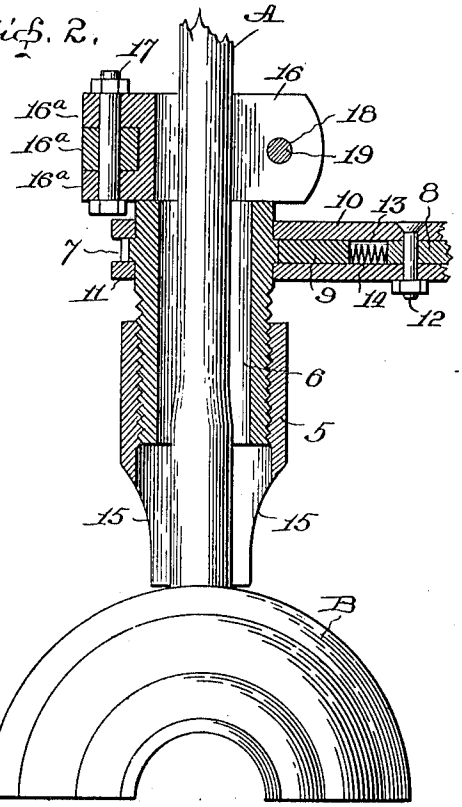


Fig. 3.

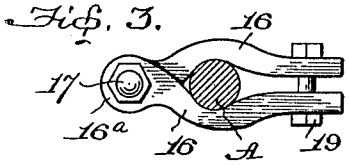
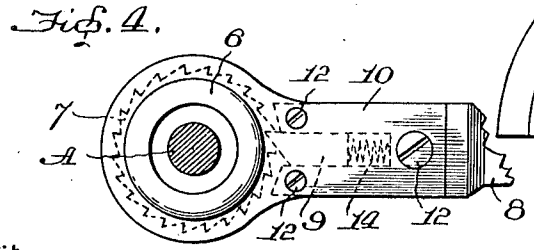


Fig. 4.



Witnesses:

W. S. Reall

W. T. S. Duvall

Inventor:

J. R. Kelly,

By W. T. S. Duvall,

Attorney.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN R. KELLY, OF CHARLESTON, SOUTH CAROLINA.

SPOKE-PULLER.

1,019,656. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed April 4, 1910. Serial No. 553,358.

To all whom it may concern:

Be it known that I, JOHN R. KELLY, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Spoke-Pullers, of which the following is a specification.

This invention is an improvement in devices for repairing vehicle wheels, and relates more especially to those devices which are employed for the purpose of pulling broken or damaged spokes from the hub of a wheel.

The primary object of my invention is to provide a device of this character which is simple in construction, may be easily and quickly applied to the wheel, and in operation will exert considerable pulling force to remove the spoke with the expense of comparatively little manual power.

My invention consists in the particular construction and combination of parts constituting the spoke pulling device; all as hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification: Figure 1 is a side elevation, showing the application of my improved spoke pulling device. Fig. 2 is a longitudinal vertical sectional view through the device. Fig. 3 is a detail view of the clamp. Fig. 4 is a plan view of the screw and operating-lever connected thereto, the ratchet mechanism being indicated in dotted lines.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my invention I employ a tubular base portion 5, and a companion tubular portion or hollow screw 6, said tubular portions 5 and 6 being threaded one within the other so that when the upper portion or screw 6 is turned within the base it will be raised or lowered, according to the direction it is turned. In the present instance the tubular base portion is threaded internally, so that the tubular screw turns therein, but it will be understood, of course, that this arrangement could be modified by having the base threaded externally and the tubular screw threaded thereon.

The screw 6 at its upper end beyond the base is provided with means for turning the same, said means in the present instance being in the form of a ratchet-wheel 7 and operating lever 8, the ratchet-wheel being formed integrally with the screw, while the lever is adapted to turn upon said screw and is provided with a spring-actuated pawl 9 engaging the ratchet-wheel.

The inner end of the operating-lever 8 is formed by two plates 10 and 11 having annular portions or rings which encircle the tubular screw above and below the ratchet-wheel, said plates being secured to opposite sides of the inner end of the handle portion of the lever by screws or bolts 12. The inner end of the handle portion of the lever is cut away centrally between the plates to form a recess 13, in which latter operates the sliding pawl 9, said pawl being actuated to engage the ratchet-teeth by means of a helical spring 14 located at the inner end of the recess, as shown.

As will be seen, the operating lever is held permanently in rotatable engagement with the tubular screw by reason of the plates engaging at opposite sides of the ratchet-wheel, and the teeth of the ratchet-wheel are pitched so that the lever will operate to move the screw outward, for the purpose hereinafter explained. It will be noted, also, that as the parts 5 and 6 are tubular they will fit over the spoke of a wheel so that said spoke will project through and beyond the same; and, furthermore, that the lower portion of the tubular base is cut away at opposite sides, as at 15, so as to clear spokes at either side of the one being operated upon.

In connection with the parts hereinbefore described I employ a clamping device to provide a stop or shoulder for the spoke against which the screw may bear in operation. This clamping device comprises two curved members 16, 16, having ears 16^a through which passes a pintle or bolt 17 for hingedly connecting said members at one end, the outer or free ends of the members being provided with alining apertures 18 through which passes a clamping-bolt 19. This device is adapted to embrace the spoke, and is securely clamped thereon by turning the nut on the bolt 19.

In the operation of the device the tubular screw 6 is turned down in the tubular base 5, and said tubular parts, carrying the operating-lever, are placed over the spoke, as A, so that the lower end of the base will rest upon the hub, as B. The clamping device 16 is then secured to or clamped upon the

spoke immediately above the upper end of the screw, and by turning the lever laterally back and forth the screw is turned out of the base and engaging the fixed clamp will force or pull the spoke out of the hub. In some instances the lower ends of the tubular base may be provided with tips of rubber or other suitable material so as not to mar the surface of the hub.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:—

1. A spoke puller, comprising a tubular base the lower end of which is cut away at opposite sides to enter between spokes and rest upon the hub of the wheel, a screw threaded in said base and having an unobstructed central opening for the passage of a spoke through said screw, a clamping device for application to the spoke above the upper end of the screw to form an abutment for said screw, and means for rotating the screw, as and for the purpose set forth.

2. In a spoke puller, the combination, of a tubular base the lower end of which is cut away at opposite sides to enter between spokes and rest upon the hub of the wheel, a screw threaded in said base and having an unobstructed central opening for the passage of a spoke therethrough, a ratchet-wheel formed on said screw below the upper end thereof, a lever having collars arranged on the screw above and below the ratchet-wheel, and a spring-actuated pawl carried by the lever to engage the ratchet-wheel; together with a clamping device for application to the spoke to form a stop or abutment above the upper end of the screw, as and for the purpose set forth.

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

JOHN R. KELLY.

Witnesses:
J. P. COLLINS,
JNO. F. BRENNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."