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J. E. GLICKERT & A. L. SWIGERT, JR.

CLINCHER TIRE RELEASING TOOL.

APPLICATION FILED MAY 3, 1906.

Fig. 1.

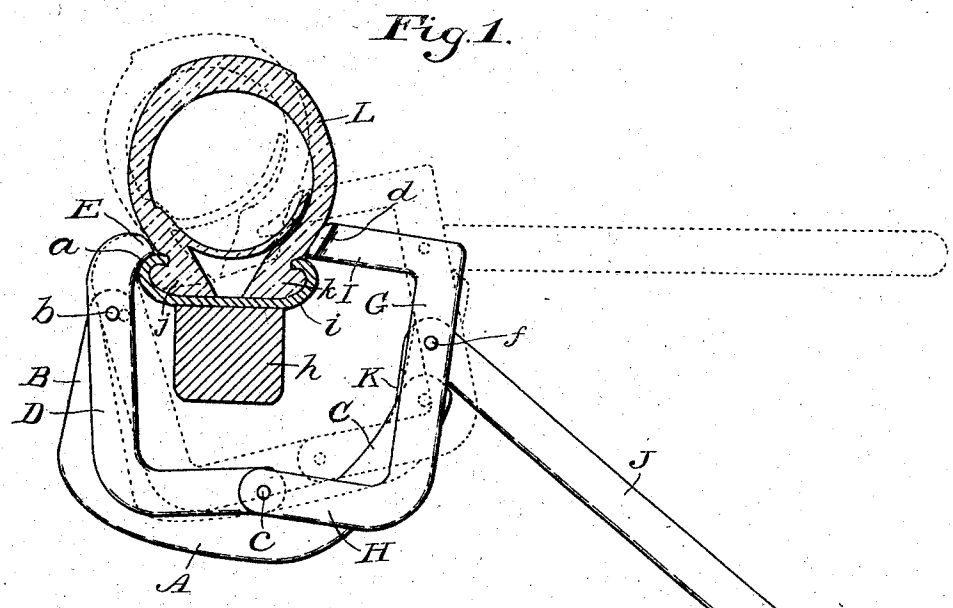


Fig. 2.

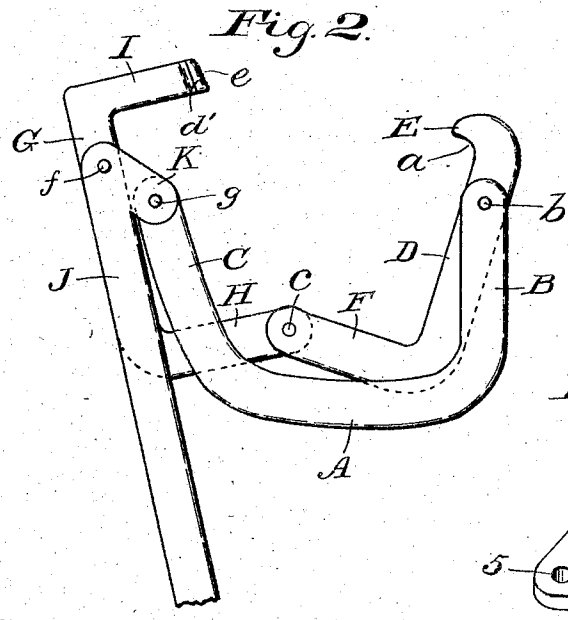


Fig. 3.

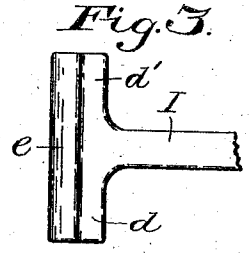
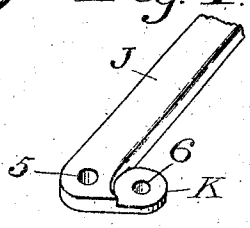


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CLENCHER-TIRE-RELEASING TOOL.

No. 840,207. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed May 3, 1906. Serial No. 315,008.

To all whom it may concern:

Be it known that we, JOHN E. GLICKERT and ALFRED L. SWIGERT, Jr., citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Clencher-Tire-Releasing Tools; and we do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to tools for releasing pneumatic clencher-tires from vehicle-wheels, especially the relatively large and strong tires that are commonly used on automobile-wheels, the purpose of releasing the tires being to permit repairs to be made thereto, or to replace worn-out tires with new ones, or to permit repairs to be made to other parts of the wheels; and the invention has reference particularly to tools that may be hooked to one side of the metallic rim of the felly to which the flanged edges of the tire-casing are directly connected, the tools having parts that are adapted to force the flanged edge of the casing at the opposite side of the rim loose, so that the casing may be readily removed from the rim.

The object of the invention is to provide a tire-releasing tool that will have a wide range of adjustment in order to be able to release tires of considerably different diametrical dimensions, and to provide a simple, cheaply-constructed, and highly-powerful tool for releasing tires, and which will be durable and economical in use.

With the above-mentioned and minor objects in view the invention comprises a novel tire-releasing tool having compound leverage and consisting of a yoke, a lever and a holding-jaw pivoted to opposite sides of the yoke, and a traveling jaw pivoted to the holding-jaw and also to the lever; and the invention consists, further, in the novel parts and combinations and arrangements of parts, as hereinafter particularly described, and referred to in the appended claims.

Referring to the drawings, Figure 1 is a side view of the improved tool shown in its operative position with a wheel-rim and felly and a clencher-tire casing, omitting the air-tube, shown in cross-section, dotted lines indicating the different positions of the parts of the tool and casing when the casing is released from one side of the wheel-rim; Fig. 2, a side view of the tool viewed in reverse direction and adjusted to operate on a tire of maximum sectional diameter, the lever being broken away; Fig. 3, an end view of the traveling jaw; and Fig. 4, a fragmentary perspective view of the lever of the tool.

Similar reference characters in the different figures of the drawings designate corresponding elements or features of the invention.

The tool comprises a yoke that is composed of a body part A, having lateral arms C and D projecting from its ends, the whole being approximately U shape and adapted to span the wheel-felly and rim thereof without interfering contact therewith. A holding-jaw comprises a body D, having a projecting finger E with a curved inner side *a* formed on one end to engage the wheel-rim, and having a lateral arm F formed on the other end thereof, the finger and the arm both extending from one side of the body, and the body is connected near the finger to the end part of the arm B of the yoke by means of a pivot *b*. A traveling jaw comprises a body G, having at one end thereof a lateral arm H, that has its end connected to the end of the arm F of the holding-jaw by means of a pivot *c*, and an arm I is formed on the opposite end of the body G of the traveling jaw, the arm I having lateral projections *d* and *d'* at its end so as to form a relatively broad end face *e* for the arm to present to the rubber casing of the itre, the end *e* being approximately opposite to the end of the finger E. A lever J has a pivot-hole 5 in one end thereof, this end being connected to the body G of the traveling jaw near the arm I by means of a pivot *f*, the same end having a short lateral ear K, having a pivot-hole 6, and is connected to the end C of the yoke by means of a pivot *g*, which is suitably near to the pivot *f*. The arm or handle of the lever J may be moved close to the arm C of the yoke to increase the space between the finger E and the arm I to the maximum, and a movement of the lever in the opposite direction will decrease the space rapidly to the minimum degree.

In practical use the tool is to be placed with the yoke extending across the inner side of the felly *h*, with the finger E in engagement

with one side of the metallic rim *i* and the end *e* of the arm I in engagement with the casing L of the tire at or near the opposite side of the rim. Then without disturbing the edge *j* of the casing the lever J may be moved so as to cause the arm I to force the flanged edge *k* of the casing of the tire out of engagement with the rim *i* toward the edge *j* and then away from the rim entirely, so that the edge *k* may be easily pried or drawn out laterally over the side of the rim to gain access to the interior of the casing. The tool may be found useful also in replacing the edge *k* of the casing.

Having thus described the invention, what is claimed as new is—

1. A tire-releasing tool comprising a yoke formed of a body part and two lateral arms attached rigidly to the body part, the yoke being approximately U shape, a holding-jaw pivoted to one of the arms of the yoke, a lever pivoted to the other one of the arms of the yoke, and a traveling jaw pivoted to the lever and also to the holding-jaw.

2. A tire-releasing tool comprising a rigid yoke, a holding-jaw comprising a body part having a projecting rim-engaging finger on one end and a lateral arm on the opposite end thereof, the body part near the finger being pivoted to the yoke, a lever pivoted to the yoke, and a traveling jaw pivoted to the lever and also to the arm of the holding-jaw.

3. A tire-releasing tool comprising a rigid yoke, a holding-jaw pivoted to the yoke, a lever having a relatively short lateral ear near an end thereof which is pivoted to the yoke, said lever end being relatively short, and a traveling jaw pivoted to the holding-jaw and also pivoted to said short end part of the lever near to said ear.

4. A tire-releasing tool comprising a rigid yoke, a holding-jaw pivoted to the yoke, a lever pivoted near an end thereof to the yoke, and a traveling jaw having a body part pivoted near an end thereof to the end of the lever near which the lever is pivoted to the yoke, said body part having a rigid lateral arm on the end thereof near its connection with the lever and a lateral arm on the opposite end thereof pivoted to the holding-jaw.

5. A tire-releasing tool comprising a yoke having a body part and two lateral arms attached rigidly to opposite ends of the body part, the yoke being approximately U shape and rigid throughout, a holding-jaw comprising a body part having a laterally-projecting rim-engaging finger on one end and a lateral arm on the opposite end thereof, the body part near the finger being pivoted to an arm of the yoke, a lever having a relatively short ear attached rigidly thereto near an end thereof and pivoted to the other one of the arms of the yoke, said lever having a relatively short end part, and a traveling jaw having a body part pivoted near an end thereof to the relatively short end of the lever near said ear thereof, said body part having a rigid lateral arm at one end thereof extending to and pivoted to the end of the arm of the holding-jaw, the opposite end of said body part of the traveling jaw having a tire-engaging arm attached thereto.

6. A tire-releasing tool comprising a U-shape yoke having a body and a plurality of rigid arms, a holding-jaw having a body part pivoted to one of the arms of the yoke and provided at one end thereof with a rigid arm and at the opposite end thereof with a rigid rim-engaging finger, a lever having a rigid lateral ear pivoted to another one of the arms of the yoke and having also a relatively short end part, and a traveling jaw having a body part pivoted near an end thereof to the short end part of the lever and provided at its opposite end with a rigid arm pivoted to the arm of the holding-jaw and having also a separate rigid arm provided with lateral projections at the end thereof for engaging a tire.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN E. GLICKERT.
ALFRED L. SWIGERT, JR.

Witnesses:
WM. H. PAYNE,
E. T. SILVIUS.