No. 840,938. PATENTED JAN. 8, 1907.

L. L. HELLER & C. W. HANCOCK.

TOOL FOR MANIPULATING PNEUMATIC TIRES.

APPLICATION FILED SEPT. 23, 1904.

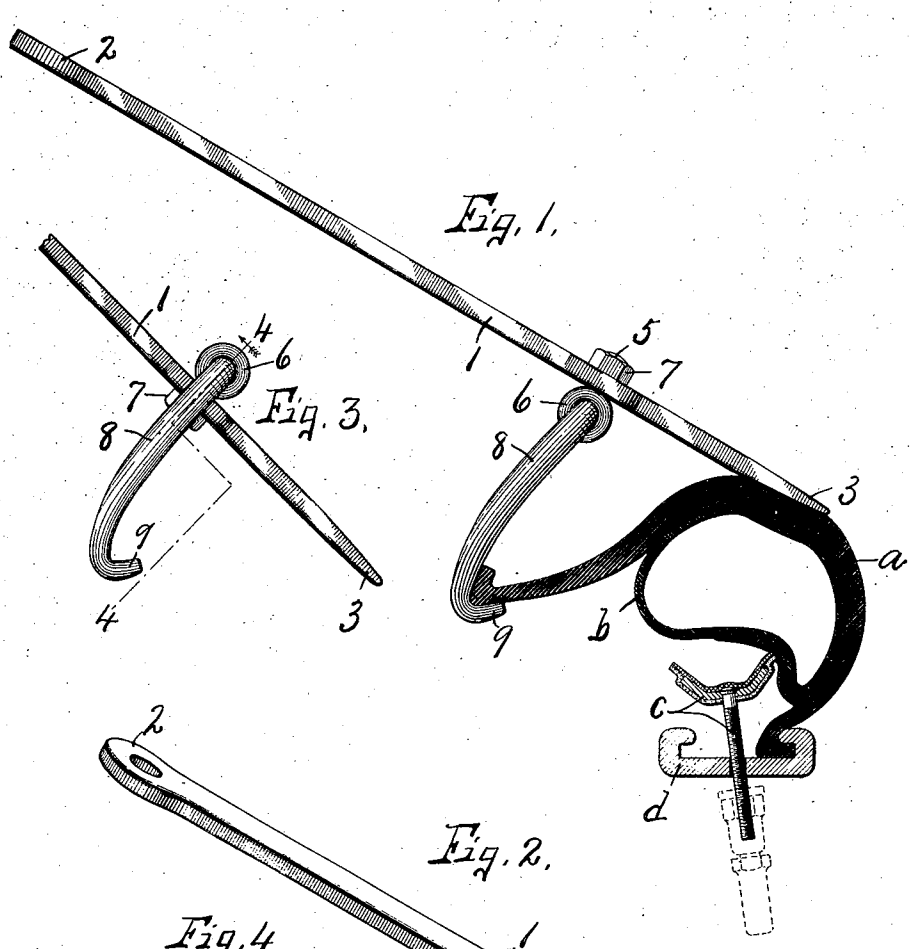
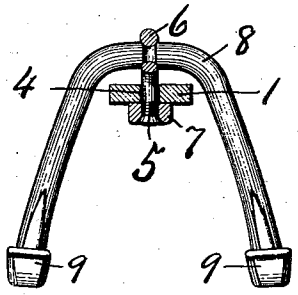


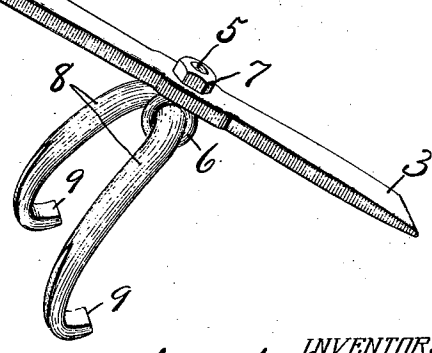
Fig. 1.

Fig. 3.

Fig. 2.

Fig. 4.





WITNESSES:

B. E. Robinson.

C. Hierington.

INVENTORS:

Lewis L. Heller and

Cooper W. Hancock.

BY:

Howard P. Denison

ATTORNEY.

UNITED STATES PATENT OFFICE.

LEWIS LAVANAWAY HELLER AND COOPER WILLIAM HANCOCK, OF BINGHAMTON, NEW YORK; SAID HANCOCK ASSIGNOR TO SAID HELLER.

TOOL FOR MANIPULATING PNEUMATIC TIRES.

No. 840,938. Specification of Letters Patent. Patented Jan. 8, 1907.

Application filed September 20, 1904. Serial No. 225,201.

To all whom it may concern:

Be it known that we, LEWIS LAVANAWAY HELLER and COOPER WILLIAM HANCOCK, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Tools for Manipulating Pneumatic Tires, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a tool for manipulating the shoes of pneumatic tires, and is specially adapted for handling the heavy "clencher-tires" of automobiles, in which an inner inflatable tube is used. These shoes are split circumferentially through their inner sides, and their meeting edges are formed with annular ribs or flanges which interlock with opposed annular grooves and flanges in the rim of the wheel to hold the shoe and inner tube in place, suitable lugs being also interposed between the flap of the shoe and rim and pass through apertures in said rim to prevent creeping of the tire upon the rim.

In order to properly place the inner tube within the shoe and to locate the valve and lugs so as to enter their respective apertures in the rim of the wheel, it is necessary to spread or open the meeting edges of the shoe a considerable distance, and owing to the cross-sectional form and rigidity of the shoe the work is therefore laborious and requires considerable strength.

Our object is to provide a simple and comparatively inexpensive tool which may be operated by one hand to open or spread the meeting edges of the shoe sufficiently so that with the other hand the inner tube and tire-retaining lugs may be easily and quickly placed in operative position.

Another object is to adapt the tool for use with different sizes of tires without additional cost of manufacture or extra labor or time in changing from one size tire to another.

In the drawings, Figure 1 is a side elevation of our invention, showing its use in spreading the meeting edges of the shoe of a large tire; Fig. 2 is a perspective view of the tool seen in Fig. 1. Fig. 3 is a side elevation of a portion of the same tool, showing the hook as reversed for use on smaller tires. Fig. 4 is a sectional view taken on line 4 4 of Fig. 3.

In carrying out the objects stated we provide a suitable bar 1, preferably of flat wrought-iron, with handle 2 at one end and a broad flat bearing 3 at its other end, which in operation is adapted to engage or rest upon the tread of the shoe, as shown in Fig. 1. At a suitable distance from the fulcrum end or bearing 3 this bar is provided with an aperture 4, in which is swiveled a shank or bolt 5, having at one side of the bar an eye 6 and at the other side of said bar a retaining-nut 7, which hold the bolt from endwise displacement, but allows said bolt to rotate in the aperture 4

A U-shape bar 8 has its central portion journaled in the eye 6, and its opposite arms are provided with hooks 9, which are spread a suitable distance apart to engage one of the meeting edges of the shoe at different points in its circumference and are located at a distance from the bar substantially equal to the depth or diameter of the tire. The U-shape bar 8, with its hooks 9, constitutes what may be termed a "swinging reversible grapple," and in Figs. 1 and 2 this grapple is shown in one position for manipulating or spreading the larger size automobile-tires, while in Figs. 3 and 4 it is shown as revolved a half-turn and as rocked to throw its hooks to the opposite side of the bar, which latter is simply inverted to bring the grapple in position for operating upon smaller size tires or shoes.

In the operation of our invention the flat bearing end 3 is rested upon the tread of the shoe, as *a*, and the operator then takes the other end 2 in one hand and rocks the grapple so as to place the hooks 9 under one edge of the shoe. Then with the bearing end 3, fulcrumed on the tread of the shoe, the operator simply raises the handle 2, and thereby lifts or draws the adjacent edge of the shoe outwardly and upwardly until sufficiently open to permit the free insertion of the inner tube, as *b*, and also the several retaining-lugs, as *c*, which may be done with the other hand of the operator. The shoe may be easily held in this spread or open position as long as desired or until the valve of the inner tube and

also the lugs *c* are properly alined with and placed in their respective apertures in the rim, as *d*.

It is believed that the foregoing description and accompanying drawings are sufficiently clear to enable any one skilled in this art to make and use the device.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A tool for the purpose described comprising a bar having a handle on one end and a flat bearing-face on its opposite end, and a U-shape grappling-bar swivel connected to the bar, each arm of the U-shape bar having a hook on its extremity.

2. A tool for the purpose described, comprising a bar having a handle on one end and a flat bearing on its other end, an eyebolt rotatably mounted on the bolt, and a U-shape grapple-bar centrally journaled in the eye of said bolt whereby said U-shape bar may be rotated in planes at right angles to each other to cause it to straddle the first-named bar or to lie wholly at one side of the same.

In witness whereof we have hereunto set our hands on this 14th day of September, 1904.

LEWIS LAVANAWAY HELLER.
COOPER WILLIAM HANCOCK.

Witnesses:
FRANK D. CROFT,
CHAS. P. WALES.