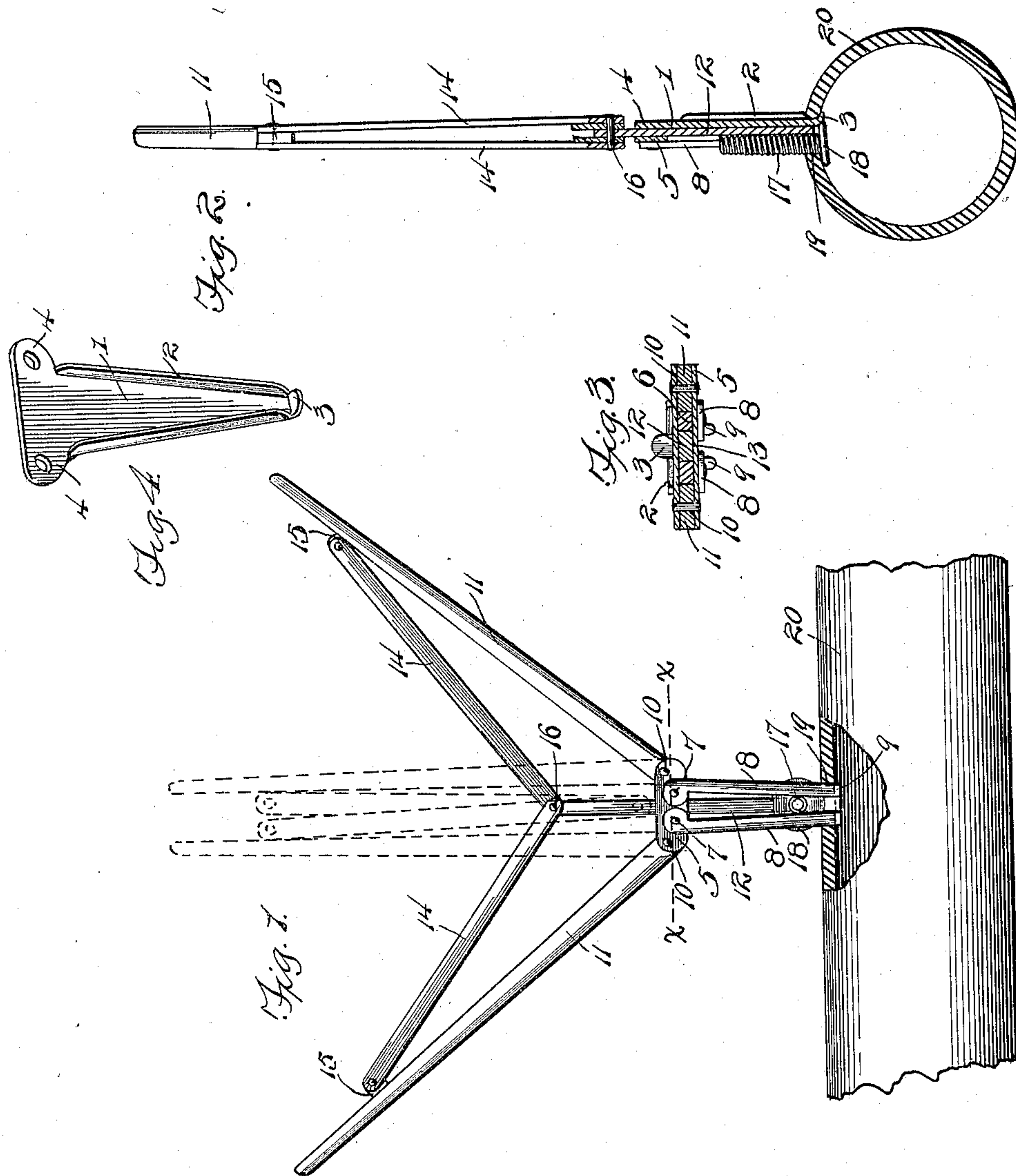


No. 639,476.

Patented Dec. 19, 1899.

A. WHISLER.  
TIRE VALVE INSERTER.  
(Application filed May 23, 1899.)

(No Model.)



Witnesses

Ralph A. Shepard.

By his Attorneys,

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# UNITED STATES PATENT OFFICE.

ALBERT WHISLER, OF GREENTOWN, INDIANA.

## TIRE-VALVE INSERTER.

SPECIFICATION forming part of Letters Patent No. 639,476, dated December 19, 1899.

Application filed May 23, 1899. Serial No. 717,944. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT WHISLER, a citizen of the United States, residing at Greentown, in the county of Howard and State of Indiana, have invented a new and useful Tire-Valve Inserter, of which the following is a specification.

This invention relates to implements for inserting metal stems for inflation-valves or the like into pneumatic tires or other hollow rubber or fiber tubing, and has for its object to provide improved means for operating the plunger thereof so as to obtain a maximum power in the operation of the implement.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details of construction may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a side elevation showing the implement applied to a section of a bicycle-tire and holding the valve-stem in the initial position for insertion. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is an enlarged transverse sectional view taken on the line  $xx$ , Fig. 1. Fig. 4 is a detail perspective view of the plate forming the body of the implement.

Corresponding parts in the several figures of the drawings are denoted by like characters of reference.

Referring to the accompanying drawings, 1 designates the body of the implement and is formed from a single plate of metal tapered downwardly and provided at its opposite edges with rearwardly-extending longitudinal strengthening-flanges 2, and terminating at its lower end in a rearwardly-extending lip 3, the upper end of the plate being provided with oppositely-extending transverse ears 4. Extending across the front face of the plate 1 and alined with the ears 4 is a flat strap 5, which is spaced in front of the body 1 by means of a filling 6. Pivoted, as at 7, to the outer face of the strap 5 is a pair of pendent fingers 8, which extend parallel with and to

the lower end of the body or plate 1. The lower end of each of these fingers terminates in a forwardly-extending lip 9, projecting in a direction opposite to that of the lip 3, which is provided upon the body 1.

It will be noted by reference to Fig. 3 of the drawings that the filling 6 terminates short of the ends of the ears 4 and the strap 5, so that an open space is provided between the latter and at opposite sides of the filling. Mounted within each of these spaces and upon suitable pivoted pins 10 is an operating-lever 11. These levers are pivoted at their lower ends and are inclined upwardly and outwardly at the opposite sides of the implement and are adapted to operate the plunger 12, which works vertically through an opening 13, provided in the filling 6. By reference to Figs. 1 and 2 it will be seen that each lever 11 is operatively connected to the upper end of the plunger 12 by means of a pair of links 14, which are pivoted at their upper ends to opposite sides of an ear or lug 15, provided upon the inner side of the respective levers and near the upper ends thereof. The lower ends of each pair of links embrace the upper end of the plunger 12 and are pivoted thereto by means of a single pivot-pin 16, thereby providing a toggle connection between the opposite levers and the vertically-reciprocating plunger 12.

In the operation of the implement the valve-stem 17 is placed between the fingers 8, as shown in Fig. 1, the head 18 of the stem being located between the body 1 and the said fingers, whereby the body 1 extends diametrically across the head, and the fingers 8 embrace the stem, whereby the latter extends at approximately right angles to the implement. As indicated in Fig. 1, the fingers 8 are cut away longitudinally upon their adjacent edges and pivoted at their upper ends, so that the lower free ends thereof may be brought together and thereby facilitate the introduction of the fingers and the end of the body into the valve-stem opening 19, which is formed in the tire 20. When the implement has been thus placed in position, the lips of the fingers and the body engage against the inner side of the tire, so as to prevent the implement from being accidentally displaced during the operation thereof. The imple-



ment being thus positioned, the upper ends of the operating-levers 11 are forced together, as indicated in dotted lines in Fig. 1, and through the toggle-links 14 the plunger 12, which rests against the edge of the head of the valve-stem, is forced downward there-against and presses the head edgewise through the valve-stem opening 19 and into the interior of the tire. It will be understood that as the valve-stem is forced downward the same will spread the pivoted fingers 8, and thereby enlarge the valve-stem opening 19, so as to facilitate the introduction of the head through said opening. When the valve-stem has been forced against the tire, a fulcrum-point is obtained adjacent to one side of the head, whereby the latter is turned and forced edgewise through the opening in the tire by continuous pressure of the plunger and the valve-stem assumes its proper normal position with its head within the tire and its shank projecting externally through the valve and being received alongside of the body 1 and between the adjacent edges of the fingers 8. The implement can then be easily removed by pulling the same from the tire.

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

30 1. In a device of the character described, the combination with a holder for supporting the valve-stem at approximately right angles thereto, of a reciprocating plunger adapted to engage the valve-stem, and a pair of operating-levers pivoted to the holder and provided with a toggle connection with the reciprocating plunger, substantially as shown and described.

40 2. In a device of the character described, the combination with a holder comprising a body, and fingers pivoted at their upper ends to the body, and a reciprocating plunger working between the fingers and the body,

operating-levers pivoted to the body at opposite sides of the plunger, and links pivoted at respective ends to the levers and to the reciprocating plunger, substantially as shown and described.

3. In a device of the character described, the combination with a holder comprising a body, a strap extending laterally across one face of the body and at one end thereof, a filling provided between the plate and the body and spacing the same apart, and a pair of fingers pivoted to the outer face of the strap and thereby spaced in front of the body, of a reciprocating plunger working through an opening formed in the filling, a pair of operating-levers located at opposite sides of the plunger and pivoted between the body and the strap, and links pivotally connecting the levers to the plunger, substantially as shown and described.

4. In a device of the character described, the combination with a holder comprising a body formed from a flat tapering metallic plate having longitudinal strengthening-flanges and transversely-aligned ears at one end thereof, a flat strap extending across the ears of the body, a filling spacing the strap in front of the ears, and fingers pivoted to the upper outer side of the strap, of a reciprocating plunger working through an opening formed in the filling, operating-levers located at opposite sides of the plunger and pivoted between the respective ears and the flat strap, and links pivotally connecting the levers with the plunger, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT WHISLER.

Witnesses:

CHARLES W. FINLEY,  
JESSE A. GIBSON.