C. H. NEWTON.

TIRE PUMP CONNECTION.

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1,120,228.

Patented Dec. 8, 1914.

Fig. 1

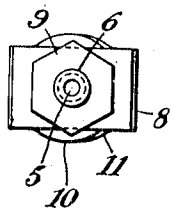


Fig. 2

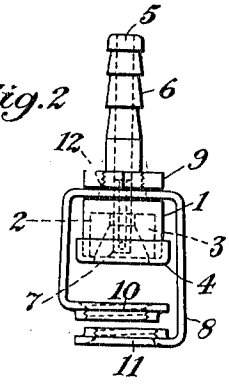
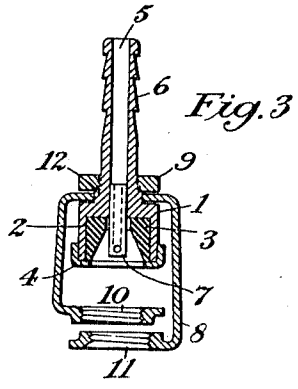


Fig. 3



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UNITED STATES PATENT OFFICE.

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TIRE-PUMP CONNECTION.

1,120,228. Specification of Letters Patent. Patented Dec. 8, 1914.

Application filed October 20, 1913. Serial No. 796,230.

To all whom it may concern:

Be it known that I, CHARLES H. NEWTON, a citizen of the United States, residing at Plainville, Connecticut, have invented certain new and useful Improvements in Tire-Pump Connections, of which the following is a specification.

My invention relates to a coupling which is intended to connect the hose from an air pump with the valve nipple of a pneumatic tire. And my improvements consist in certain details of construction hereinafter pointed out and claimed.

In the drawings Figure 1 is a top view; Fig. 2 is a side view; and Fig. 3 is a vertical sectional view of my improved coupling.

1 is the body of the coupling which is chambered at 2 to receive a washer or packing 3 covered by the annular cap 4, an air channel or duct 5 extends through the body and its hose receiving neck 6. And a valve opening pin 7 projects up into the chamber 2 so as to engage and depress the valve stem when the coupling is applied to a tire valve. A piece of spring metal is pierced with a hole which allows it to pass downward around the neck 6 as shown, and to be held in place by the nut 9 threaded upon the stem 6. The connection, however, is sufficiently loose, owing to the nut 9 being arrested by the shoulder 12 on the body 1, to permit the spring metal strip to be readily rotated around the neck 6. The ends of the strip 8 are bent down and then in so that one is above the other in the position shown in Fig. 2. And the ends of the strip are pierced with openings 10, 11, which are slightly larger than the ordinary valve stem, and which are provided with interior threads each adapted to engage the valve stem upon one of its sides. Normally these openings 10, 11 are slightly out of line with each other as shown in Fig. 2, but by pressing the sides of the spring yoke toward each other, until the upper end comes against the opposite side, the openings may be brought into line so that they will pass readily down over a valve stem. The ends of the yoke, however, do not bear one against the other, but they are separated as shown, and consequently move independently.

In practice, the cap is removed from the tire valve nipple, the coupling is grasped in the hand and the sides of the swiveled yoke are slightly compressed so as to bring the openings 10 and 11 in line and permit it to be slipped down over the valve nipple until the end of the nipple is seated firmly against the packing 3 and the valve opening pin 7 has engaged with the valve stem. The sides of the swiveled yoke being then released, its ends spring outward drawing the threads of the openings 10 and 11 into engagement with the thread on the valve nipple, the independent relation of the yoke ends allowing them to bend slightly up or down as the case may be to accommodate themselves quickly and accurately to the thread of the valve nipple so as to obtain a true grip thereupon without delay or slipping. The swiveled yoke may be then rotated screwing its ends down along the valve nipple and forcing the top of the valve nipple into an air-tight connection with the packing 3, so that a tight connection is established between the air pump and the interior of the valve. The coupling is detached by pressing the sides of the swiveled yoke toward each other when they will immediately free the valve nipple and allow its valve to close.

By drawing out the metal surrounding the holes 10 and 11 into short annular sleeves as shown I obtain increased space to carry the interior screw threads so that I am enabled to place more than one turn of the thread on each side of the openings. This gives the coupling a strong and more efficient grip on the nipple than would be the case if the holes were simply provided with sharp edges to engage between two of the nipple threads; while, as pointed out, the disposition of the ends free from each other allows them to yield slightly up or down so as to accommodate their threads accurately and immediately to the nipple thread, thereby giving a strong grip which is quick and accurately applicable to the nipple. The application, also, of the coupling to the nipple is facilitated by rounding the lower shoulder of the opening in the lower end and the upper shoulder of the opening in the upper end, so that the nipple will slide into the coupling more readily and freely than it would do if the shoulders were angular, and hence liable to catch in the threads upon the outside of the nipple.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. The combination, in a tire-pump coupling, of a tubular body provided with a valve nipple recess and a swiveled spring

yoke with freely disposed, overlapping apertured ends having annular and interiorly threaded sleeves adapted to detachably engage with a valve nipple, the lower shoulder of the aperture in the lower end and the upper shoulder of the aperture in the upper end being rounded.

2. The combination, in a tire-pump coupling, of a tubular body provided anteriorly with an enlarged portion containing a valve nipple recess, a packing therein, an annular packing-retainer, a reduced cylindrical shoulder upon the body behind the enlarged portion, a nut threaded upon the body above the cylindrical shoulder, a spring yoke swiveled freely upon the cylindrical shoulder below the nut, and being provided with freely disposed, overlapping, apertured ends having annular and interiorly threaded sleeves adapted to detachably engage with a valve nipple, the lower shoulder of the aperture in the lower end and the upper shoulder of the aperture in the upper end being rounded.

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