C. E. LLOYD.

PISTON RING REMOVER.

APPLICATION FILED OCT. 2, 1914.

1,178,404.

Patented Apr. 4, 1916.

Fig. 1.

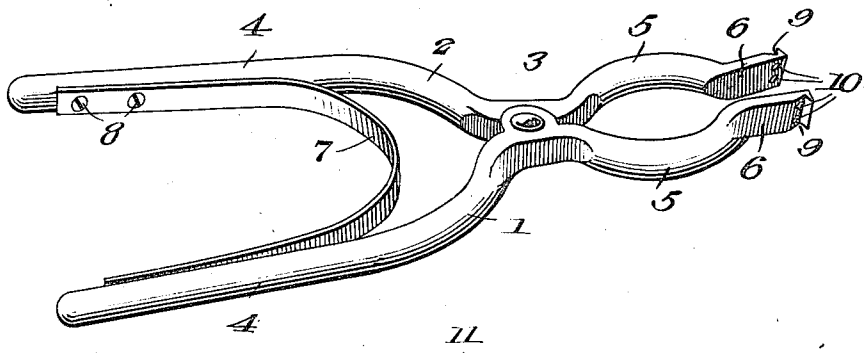


Fig. 2.

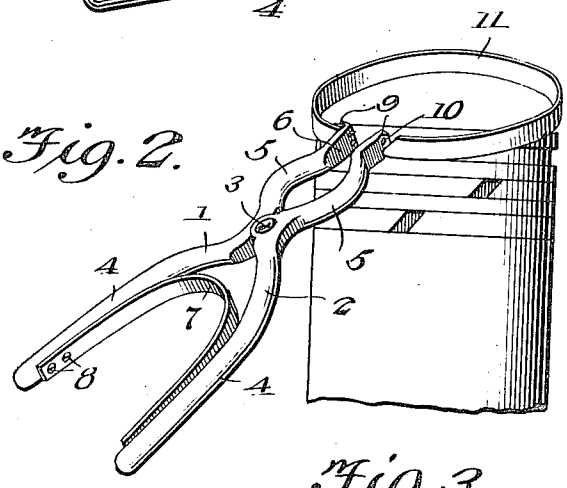


Fig. 4.

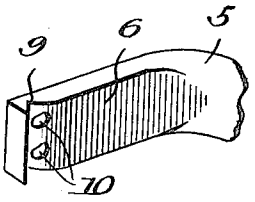
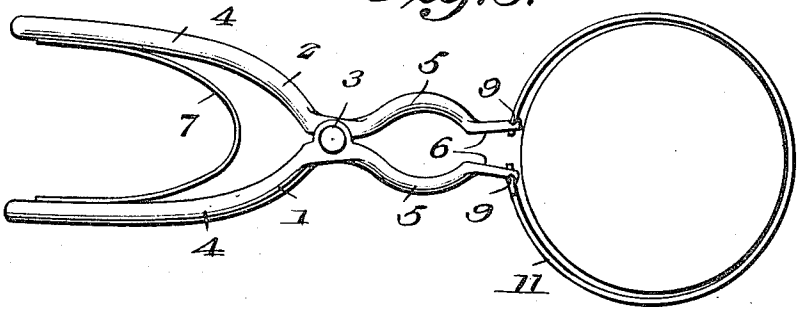


Fig. 3.



Witnesses

Hugh H. Hott,

R. M. Smith.

Inventor

C. E. Lloyd

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

CECIL E. LLOYD, OF PENSACOLA, FLORIDA.

PISTON-RING REMOVER.

1,178,404. Specification of Letters Patent. Patented Apr. 4, 1916.

Application filed October 2, 1914. Serial No. 864,661.

To all whom it may concern:

Be it known that I, CECIL E. LLOYD, a citizen of the United States, residing at Pensacola, in the county of Escambia and State of Florida, have invented new and useful Improvements in Piston-Ring Removers, of which the following is a specification.

This invention relates to piston ring tools, the object in view being to produce a simple, effective and convenient tool for applying and removing piston rings in relation to the pistons of engines of all kinds, the tool hereinafter described being adapted to handle piston rings the extremities of which are formed in various ways.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of the piston ring tool. Fig. 2 is a view showing a piston in elevation and the manner of using the tool, illustrating one of the rings in process of being applied to or removed from the piston. Fig. 3 is an end view of the piston further illustrating the manner of using the tool. Fig. 4 is a detail perspective view of one of the tool jaws.

The tool contemplated in this invention comprises two members 1 and 2 which are pivotally connected intermediate their extremities at the point 3.

Each of the members 1 and 2 is extended on one side of the pivot 3 to form a handle 4 and on the opposite side of said pivot, the members 1 and 2 are bowed outwardly in opposite directions as at 5 and then extended longitudinally to form a pair of jaws 6. A U-shaped spring 7 is terminally fastened to the end portions of the handles as at 8 so as to spread apart the handles 4 and move the jaws 6 toward each other.

Each of the jaws is provided in the outer face thereof and immediately adjacent to its extremity with a V-shaped groove or depression 9 and each jaw is further provided with a plurality of holes 10 formed therein in a series extending in a plane parallel to the groove 9 or, in other words, transversely of the extremity of the jaw.

In the use of the tool hereinabove described, the extremities of the jaws 6 are introduced between the extremities of the piston ring as clearly shown in Figs. 2 and 3. Then by pressing the handles 4 toward each other, the ring is expanded or increased in diameter so as to adapt it either to be placed over the piston indicated at 11 or removed from the piston groove therein. The V-shaped grooves 9 provide for the engagement of said jaws with all rings which are cut zig-zag or in overlapping style or with U-shaped extremities, the protruding lip formed at the extremity of each jaw by means of the groove 9 serving to hold firmly all classes of piston rings. The holes 10 are designed to receive the angular extremities of all piston rings which are cut on the bias or obliquely, whether such angle of division inclines to the right or to the left. This is clearly illustrated in Fig. 2 in which a ring is shown cut on an oblique angle, one of the points or angles thereof being engaged with the lower hole of one jaw and the other angular extremity of the ring being engaged with another hole in the other jaw. This enables the tool to be operated in a plane substantially the same as the ring itself thus avoiding the liability of the ring to twist itself and spring out of engagement with the jaws.

The tool hereinabove described is well adapted to every type of piston ring now in use and particularly those used in connection with internal combustion engines.

What I claim is:—

A tool for applying and removing piston rings, comprising pivotally connected levers embodying jaws movable toward and away from each other, each of said jaws being formed in the outer face and near the extremity thereof with a groove V-shaped in cross section and extending transversely of the jaw, and each jaw being further provided with a plurality of holes intersecting the base of its groove and extending through the jaw.

In testimony whereof I affix my signature in presence of two witnesses.

CECIL E. LLOYD.

Witnesses:

ANNA M. LAUGHTON,

D. A. NEE.