

L. J. BROWN.
 TOOL FOR INSERTING PISTON RINGS.
 APPLICATION FILED SEPT. 23, 1911.

1,042,764.

Patented Oct. 29, 1912.

Fig. 1,

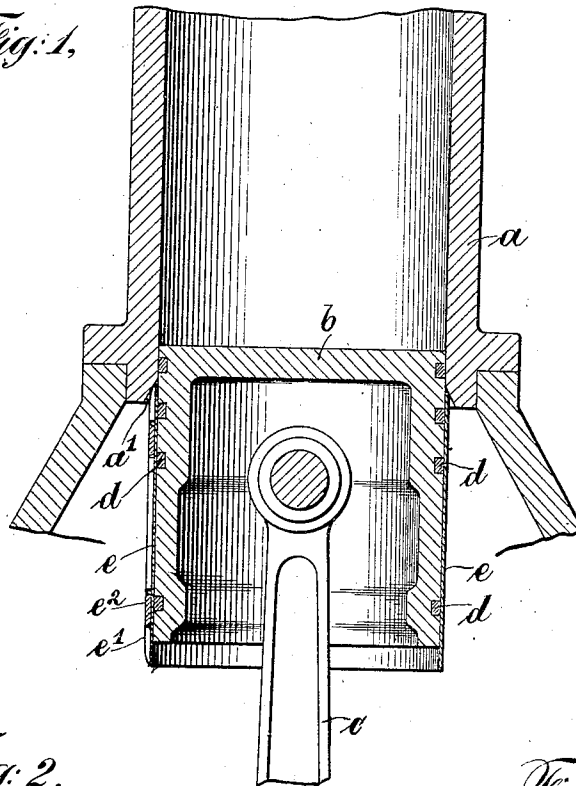


Fig. 2,

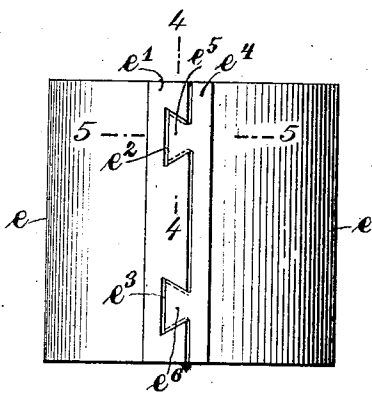


Fig. 4.

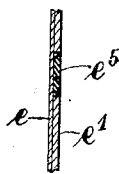
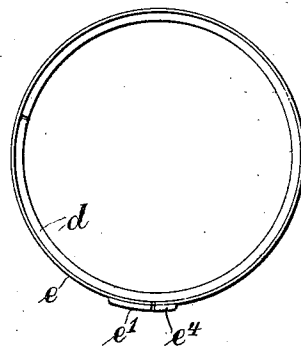


Fig. 3,



Witnesses:
 Max B. A. Doring.
 Corinne Myers.

Inventor
 Lewis J. Brown
 By his Attorney
 L. H. Schmidt.

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UNITED STATES PATENT OFFICE.

LEWIS J. BROWN, OF BROOKLYN, NEW YORK.

TOOL FOR INSERTING PISTON-RINGS.

1,042,764.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed September 23, 1911. Serial No. 650,952.

To all whom it may concern:

Be it known that I, LEWIS J. BROWN, a citizen of the United States of America, and a resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Tools for Inserting Piston-Rings, of which the following is a specification.

This invention has reference to a novel tool for inserting piston rings in internal combustion engines, rotary engines and the like.

It is the special purpose of this invention to produce a tool by means of which two, four or six piston rings or any other multiple may be inserted all at one operation.

The piston rings or piston packing rings are located in grooves of the piston head. Heretofore such rings were inserted singly by hand which required a great deal of time. When such rings had to be replaced especially outside of the works where the engine was built the insertion grew rather tedious for want of proper tools. Furthermore such packing rings being of the finest and the hardest steel are very brittle and break easily when inserted by hand which incurs a loss in time and money.

It is the purpose of the present invention to produce a tool to be used in the works but especially by the owners of machines having internal combustion engines, rotary engines and the like as for instance automobiles and similar vehicles. By means of the novel tool breakage of the expensive packing rings is prevented and time saved because a multiple of rings may be inserted at one operation.

The invention is illustrated in the accompanying drawing in which:

Figure 1 represents in vertical sectional elevation a cylinder with piston and rings and the novel tool applied thereto. Fig. 2 illustrates in front elevation the novel tool embodying in desirable form the present improvements. Fig. 3 is a top plan view of Fig. 2 showing one ring within the tool. Fig. 4 is a section on line 4-4 of Fig. 2 and Fig. 5 is a section on line 5-5 of Fig. 2.

Similar characters of reference denote like parts in all the figures.

On the drawing *a* represents the piston head having a counterbore *a'* at its lower end. The piston *b* with piston rod *c* is

shown in Fig. 1 to be practically out of the cylinder *a*. Piston rings *d* are shown placed in the grooves of the piston head and the tool applied thereto.

The tool consists essentially of a metal tube or band *e* having a longitudinal slot on one side throughout its entire length. A heavy metal strip *e'* is secured to the band *e* adjoining the slot and so arranged that one edge of said strip is flush with one edge of the slitted band portion. The strip *e'* has two dovetail shaped incisions *e''*, *e'''* and the outer end portions of said strip are beveled off as shown in Fig. 1. A like metal strip *e''* is attached to the band opposite the strip *e'* also adjoining the slot and having one edge flush with the opposite end of the slitted band portion. The strip *e''* has formed thereon two dovetail shaped portions *e'''*, *e''''* extending beyond the slot of the band and fitting loosely the dovetail shaped incisions *e''*, *e'''* of the strip *e'* so that there is a little play. For this purpose the broad edges of the dovetail shaped portions *e'''*, *e''''* are beveled off as indicated in Fig. 5. The end portions of the strip *e''* are beveled off in like manner as the corresponding end portions of the strip *e'* as shown in Fig. 4. This dovetail shaped locking device has been shown and described by way of example and any other locking device of approved construction may be substituted therefor.

The operation of the device is substantially as follows: The piston rings *d* are placed on the piston head in their grooves, as shown in Fig. 1 the piston being then practically out of the cylinder. The dovetail shaped lock of the strips *e'*, *e''* is now opened and the tool passed around the piston rod and the lock closed again. The tool is now pressed together and shifted along the piston head keeping all the rings in the desired location. The upper edge of the band and the beveled edges of the two strips rest then against or rather within the counterbore of the cylinder. By moving the piston head into the cylinder all the piston rings are inserted at one operation. When the piston head is within the cylinder the tool is released from the counterbore and from the piston rod by opening the dovetail shaped lock and withdrawing it from said rod. The band being relatively wide is quite elastic and therefore allows of easy

manipulation. It is evident that the tool must fit exactly the size of the piston head and therefore is made in various sizes.

I claim as my invention:

- 5 1. A tool for inserting piston rings comprising a short elastic metal band slit longitudinally, two metal strips thereon each adjoining the slot and having beveled off end portions so as to be even with the end portions of the elastic metal band, means being
10 provided for locking the device when applied.
2. A tool for inserting piston rings com-

prising a short elastic metal band slit longitudinally, two relatively heavy metal strips thereon each adjoining the slot and having beveled off end portions so as to be even with the end portions of the elastic metal band, said metal strips being formed to lock the strips. 15

Signed at New York, N. Y., this 22nd day of September, 1911. 20

LEWIS J. BROWN.

Witnesses:

CORINNE MYERS,
VERA F. PAULSEN.