Apr. 24, 1923. 1,452,769

L. V. WARNER

LAPPER

Filed March 6, 1922 2 Sheets-Sheet 1

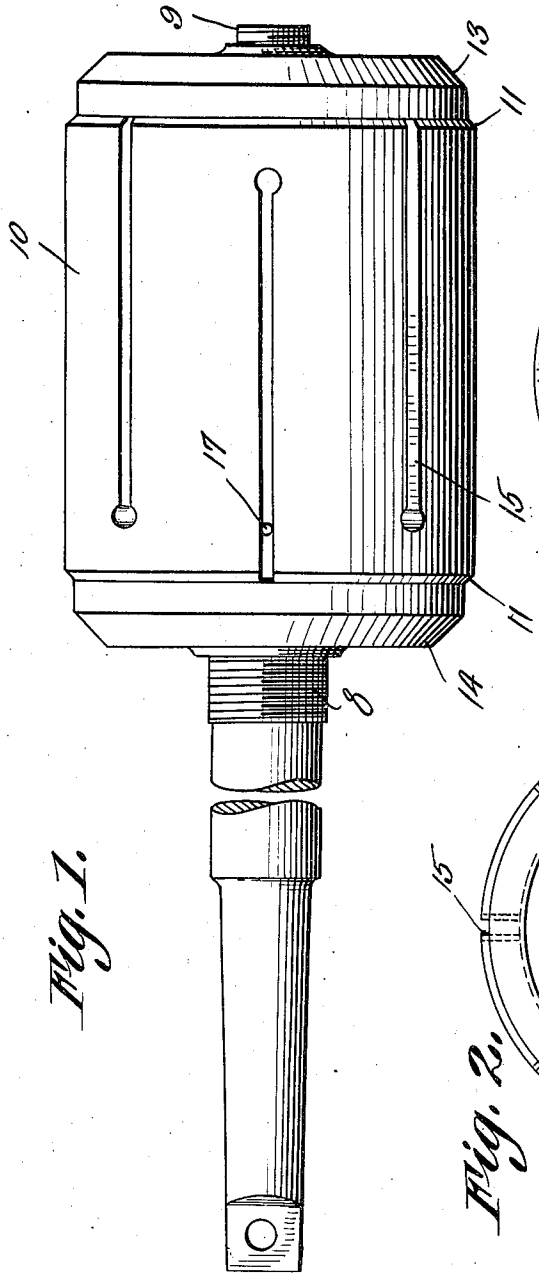


Fig. 1.

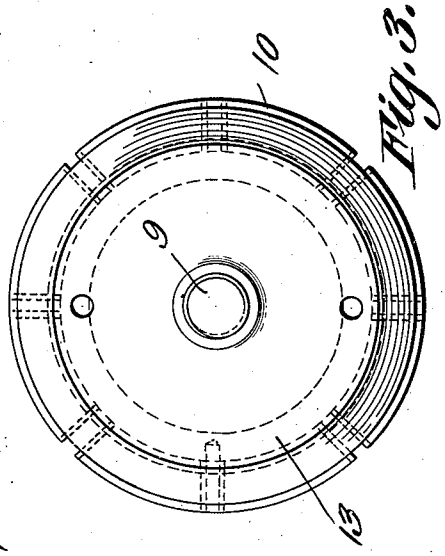


Fig. 3.

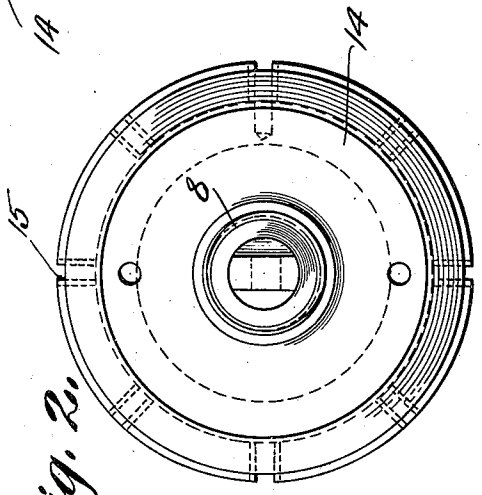


Fig. 2.

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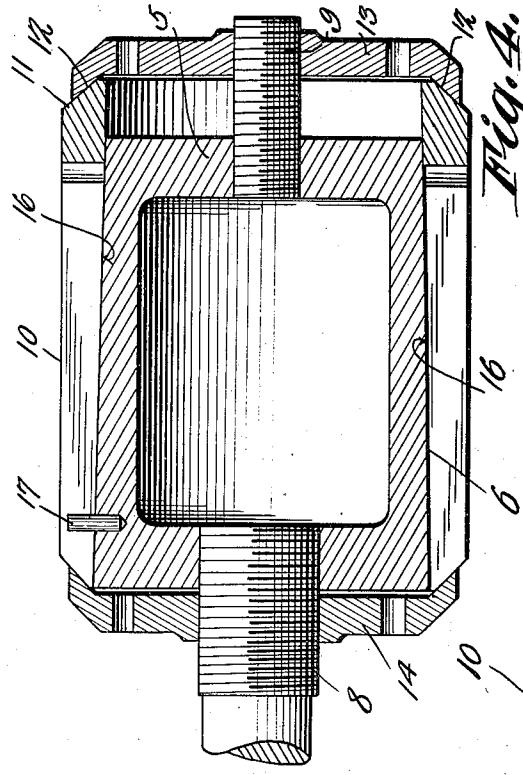


Fig. 4.

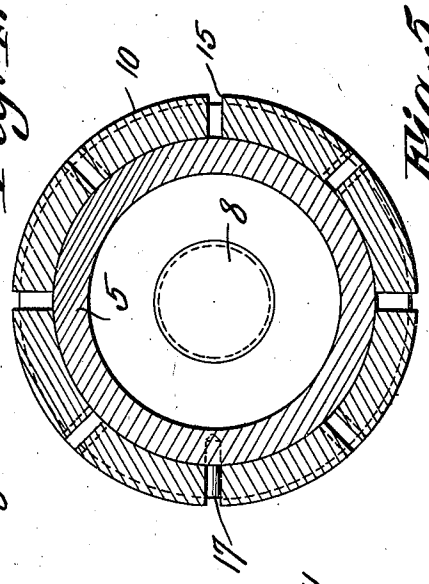


Fig. 5.

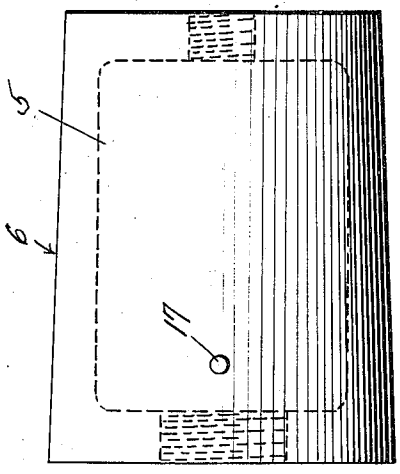


Fig. 6.

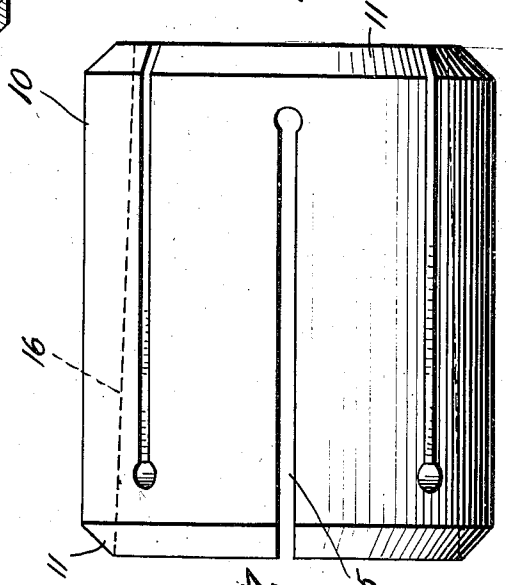


Fig. 7.

Inventor

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Patented Apr. 24, 1923. 1,452,769

UNITED STATES PATENT OFFICE.

LORING V. WARNER, OF FOSTORIA, OHIO.

LAPPER.

Application filed March 6, 1922. Serial No. 541,429.

To all whom it may concern:

Be it known that I, LORING V. WARNER, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Lapper, of which the following is a specification.

This invention relates to a device especially designed for lapping cylinders to resurface the walls thereof and permit the application of over sized pistons.

An object of the invention is to provide a device of this character which may be adjusted to various diameters adapting the device for use in connection with cylinders having various sized bores.

Another object of the invention is to provide a lapping device wherein the adjustment may be readily and easily accomplished, and one wherein the adjustment will be exceptionally accurate.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is a side elevational view of a lapping device constructed in accordance with the present invention.

Figure 2 is an end elevational view of the same.

Figure 3 is an elevational view of the opposite end of the device.

Figure 4 is a sectional view through the device.

Figure 5 is a transverse sectional view through the device.

Figure 6 is a side elevational view of the body portion of the device.

Figure 7 is a side elevational view of the sleeve movable over the body portion.

Referring to the drawings in detail, the device includes a hollow body portion indicated generally by the reference character 5, the same being circular in formation to conform to the contour of a cylinder bore.

The walls of the body portion 5 are tapered as at 6, the end walls thereof being provided with openings to accommodate the threaded members 8 and 9 respectively. Positioned on the body portion 5 is a sleeve 10 which is formed with tapered walls 11 disposed at the ends thereof, which tapered walls cooperate with the inclined surfaces 12 of the nuts 13 and 14 respectively, so that when the nuts are moved over the threaded members 8 and 9, the cooperating inclined surfaces of the nuts and sleeve will cause the sleeve to expand or contract according to the direction of rotation of the nuts.

This sleeve 5 is formed with slotted portions 15 extending from the ends thereof, and terminating at points adjacent to the opposite end thereby providing a body portion with flexible bores to accomplish the expansion and contraction of the sleeve. Cooperating with the tapered walls 6 of the body portion 5, is an inclined wall 16 formed within the body portion, the walls contacting to set up a camming action, when the sleeve is moved over the body portion. In order that rotation of the sleeve with respect to the body portion 5 will be prevented, a pin 17 is provided, which pin has one end thereof embedded in a suitable opening formed in the body portion, the opposite end of the pin being positioned between the walls of one of the slotted portions of the sleeve.

In the use of the device, if the sleeve is to be expanded, the nut 14 is rotated to disengage the sleeve, whereupon the nut 13 is operated moving the sleeve over the body portion 5 and expanding the sections of the sleeve between the slotted portions thereof.

It might be further stated however that after the device has been properly adjusted, the same is operated in the usual and well known manner, that is to say, moved within the cylinder bore, suitable grinding medium being employed with the device.

Having thus described the invention, what is claimed as new is:—

1. A cylinder lapping device comprising a body portion, said body portion having tapered walls, a sleeve positioned on the body portion and having tapered walls cooperating with the tapered walls of the body portion to cause the sleeve to expand and contract upon movement of the sleeve with respect to the body portion, said sleeve having slotted portions and having tapered end portions, said slotted portion permitting ex-

pansion and contraction of the wall of the sleeve, and means cooperating with the tapered end portions of the sleeve for moving the sleeve longitudinally of the body portion.

2. A cylinder lapping device comprising a body portion, having a tapered wall, a sleeve positioned on the body portion and having a tapered wall, cooperating with the tapered wall of the body portion, said sleeve having slotted portions extending from the ends thereof, the opposite ends of the slotted portions terminating in spaced relation with the opposite end of the sleeve, means for moving the sleeve with respect to the body portion, a pin carried by the body portion and movable within one of the slots to prevent movement of the sleeve with respect to the body portion, and means contacting with the sleeve for moving the sleeve longitudinally of the body portion.

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

MR. LORING V. WARNER.

Witnesses:

MR. RALPH E. LANCE,

MR. CHAS. ACKERMAN.