A. E. HOOK.

CHUCK.

APPLICATION FILED OCT. 27, 1919.

1,359,992. **Patented Nov. 23, 1920.**

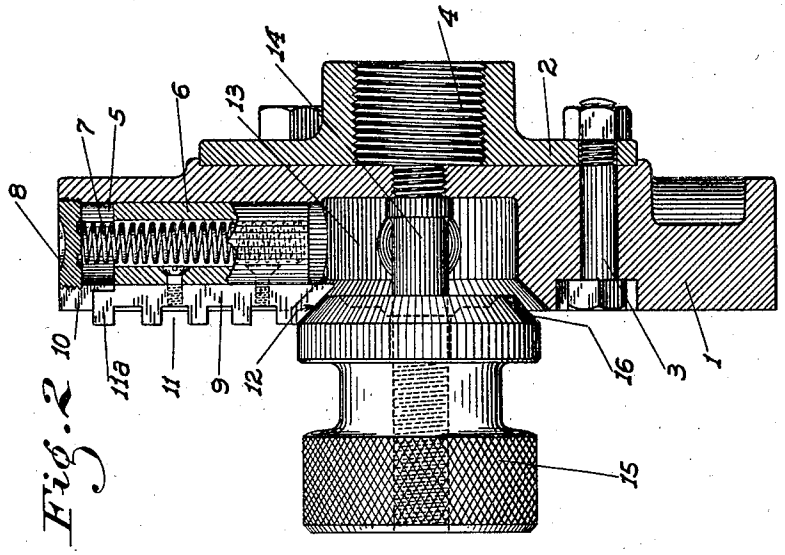


Fig. 2

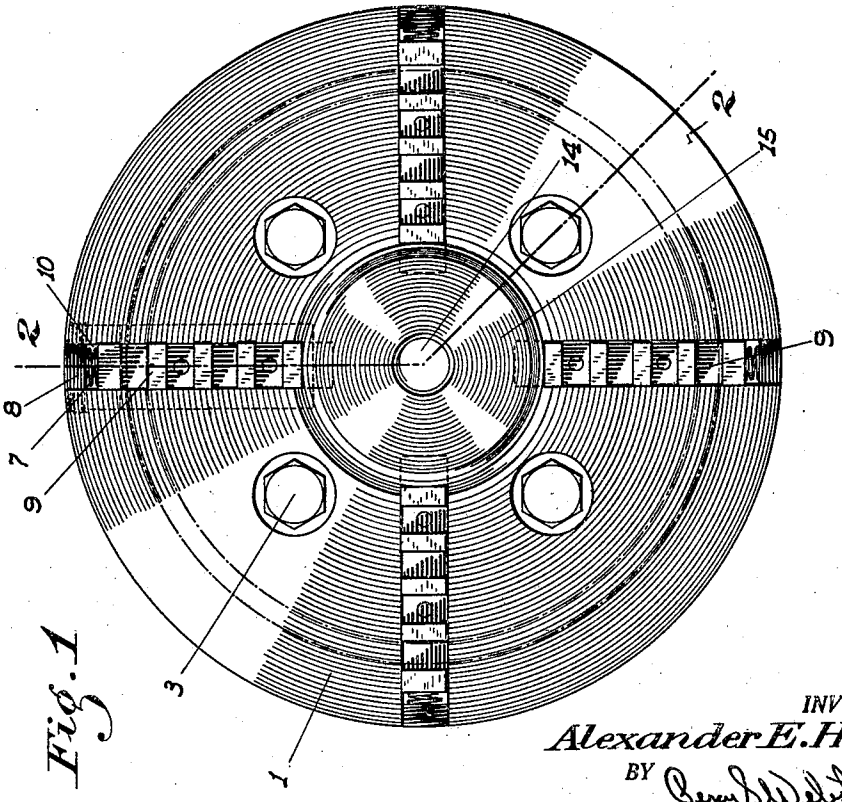


Fig. 1

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ALEXANDER E. HOOK, OF STOCKTON, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WAYMAN W. STEED, OF STOCKTON, CALIFORNIA.

CHUCK.

1,359,992. Specification of Letters Patent. Patented Nov. 23, 1920.

Application filed October 27, 1919. Serial No. 333,446.

To all whom it may concern:

Be it known that I, ALEXANDER E. HOOK, a citizen of the United States, residing at Stockton, county of San Joaquin, State of California, have invented certain new and useful Improvements in Chucks; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in chucks, and particularly to a type especially intended and adapted to hold piston rings in order to face the same, the principal object of the invention being to provide a chuck by means of which piston rings of any diameter may be securely held without danger of warping the same by so doing.

Another object is to produce a chuck for the purpose specified by the use of which the time necessary to place a ring in position for the facing tool will be cut down to practically nothing.

In the manufacture of piston rings, a cylinder or tube is first finished to the correct diameter, and the rings of approximately the correct width cut therefrom.

In the casting of the ring-cylinder, certain cooling strains are developed in the metal, the effects of which do not show till each thin ring is cut therefrom, when each ring is apt to be somewhat warped on its face.

The strength of the magnetic chuck usually used is such however that while the ring is held thereagainst the warp is temporarily straightened out of the ring, and when the same is faced off apparently true, and then removed from the chuck, the warp of course is still present and thus a true and accurate job cannot be done.

With my form of chuck, this objectionable feature is eliminated, and the ring is held in a perfectly natural position, so that any warp will be cut therefrom, and the resulting finished product will be perfectly accurate and flat.

A further object of the invention is to produce a simple and inexpensive device, and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a front elevation of my improved chuck.

Fig. 2 is a cross section taken on a line 2—2 of Fig. 1.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the face plate of the chuck, finished smooth on its front side, and provided with a removable flange-coupling 2 on the rear end thereof and secured to the plate 1 by means of bolts 3 countersunk into the finished face thereof.

This coupling is preferably supplied blank to the buyer, who then taps it as at 4 to adapt it to his own particular lathe spindle.

The periphery of the plate 1 is provided with a plurality of radially drilled pockets 5 in which are slidably mounted plungers 6, which are normally forced toward the center of the plate by reason of springs 7 therein bearing against caps 8 screwed into the outer ends of the pockets.

Ring holding jaw members 9 are secured to the plungers, being of hardened steel, and projecting beyond the finished face of the plate, being slidable in slots 10 which are cut from the pockets to the said face. Each jaw is provided with a plurality of transverse and straight edged grooves 11 having a width somewhat greater than the thickness of standard piston rings. These grooves of course leave lugs 11^a projecting from the jaws. The inner ends of the jaws, that is, the ends nearest the center of the plate 1, are beveled away from said plate as at 12, and normally project into a circular chamber 13 provided centrally of the plate.

Screwed into the back of the face plate centrally thereof is a threaded pin 14 projecting a certain distance beyond the face of the plate.

On this pin is a handle member 15 having a beveled portion 16 on its inner end adapted to bear against the beveled edges 12 of the jaws to force the same outwardly.

In the operation of the chuck, the ring is held by the outer faces of corresponding ones of the lugs 11^a, which, being straight-

edged, bite at two points against the inner surface of the ring being held.

The back of the ring rests against the face of the plate 1, since the grooves are cut deeper than the said face. The ring is held by tightening up of the handle 15.

It is evident that the range of diameters of rings the chuck may hold is limitless within reasonable bounds, since the number of lugs or grooves and the fact that the jaws have a reasonable range of radial movement, makes it possible to hold a ring of any diameter between the largest and smallest it is adapted to take.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

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

A chuck for holding piston rings comprising a face plate, and jaws mounted therein for simultaneous radial movement, such jaws comprising radial portions sunk below the level of the face plate and a plurality of lugs of equal height projecting at spaced intervals from said radial portions and adapted to engage the periphery of a ring, such lugs terminating short of the outer face of the ring.

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

ALEXANDER E. HOOK.

Witnesses:

BERNARD PRIVAT,

FRANK H. CARTER.