March 22, 1966 O. B. ANDERSON 3,241,223

BEARING PULLER HAVING GRIPPERS PARALLEL TO A SCREW ELEMENT

Filed April 10, 1964

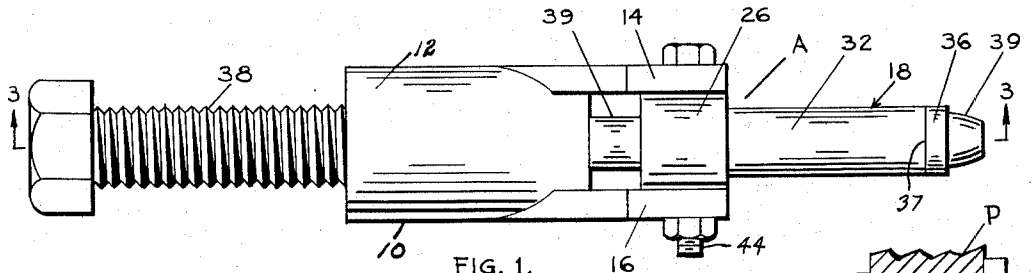


FIG. 1.

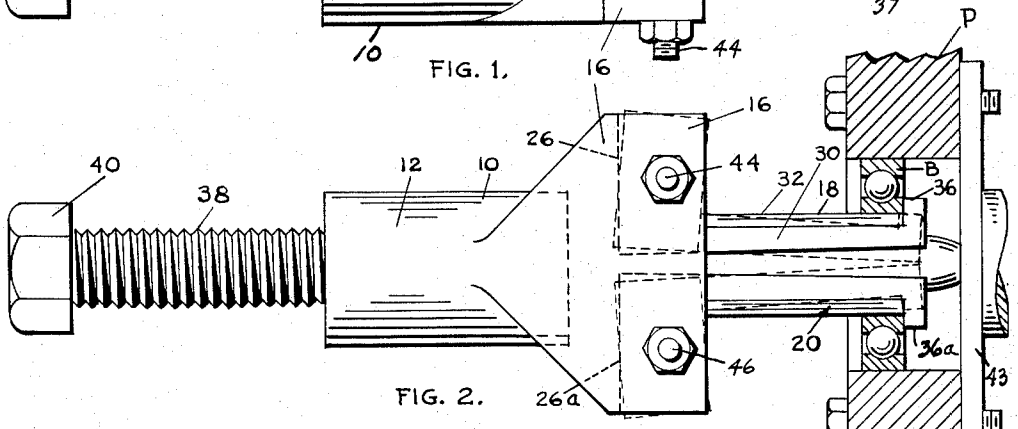


FIG. 2.

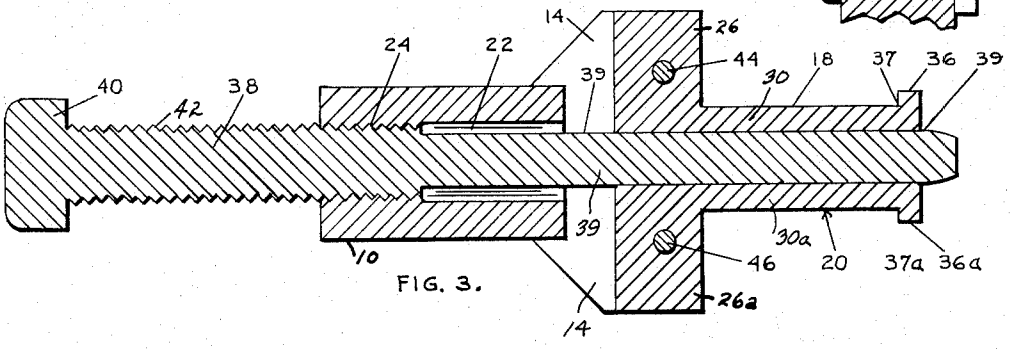


FIG. 3.

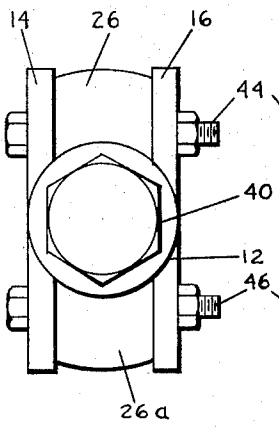


FIG. 4.

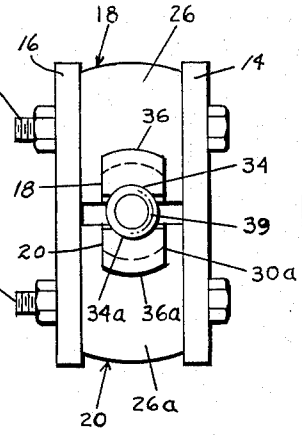


FIG. 5.

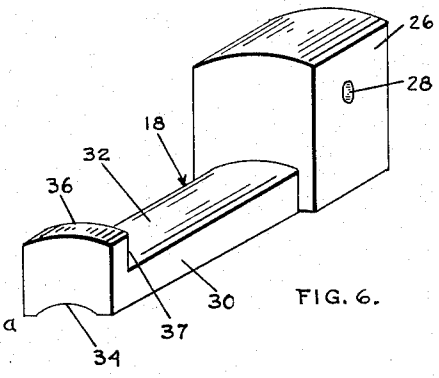


FIG. 6.

INVENTOR.
OLIVER B. ANDERSON
BY
Caswell, Lagoard & Hicks
ATTORNEYS

United States Patent Office 3,241,223 Patented Mar. 22, 1966

3,241,223

BEARING PULLER HAVING GRIPPERS PARALLEL TO A SCREW ELEMENT

Oliver B. Anderson, 1714 W. 3rd St., Grand Rapids, Minn.

Filed Apr. 10, 1964, Ser. No. 358,819
1 Claim. (Cl. 29—259)

This invention relates to an improvement in a tool of a special class for pulling or extracting bearings firmly seated in members having cylindrical interiors, for example for extracting internally seated bearings, bearing cups and the like and has for the primary object the provision of a device of this character which provides a durable, compact and complete tool for the above purposes and which will quickly, easily and safetly remove the part.

It is a further object to provide a bearing puller which may be used to pull bearings and the like of various diameters by means of a construction allowing the use of different size jaw members which are quickly and easily interchangeable.

It will not be here attempted to set forth and indicate all of the various objects and advantages incident to the invention, but other objects and advantages will be referred to in or else will become apparent from that which follows.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawings, showing by way of example a preferred embodiment of the inventive idea wherein like numerals refer to like parts throughout.

In the drawings forming part of this application:

FIGURE 1 is a top plan view of the bearing puller.

FIGURE 2 is a side elevational view including a section through a bearing to be removed.

FIGURE 3 is a section on the line 3—3 of FIGURE 1.

FIGURE 4 is a rear end view.

FIGURE 5 is a front end view.

FIGURE 6 is a perspective view of one of the jaws removed from the device.

Referring to the drawings in detail, the bearing puller A includes the base **10** including the cylindrical body portion **12** from which extends the spaced support portions **14** and **16**. The support portions **14** and **16** mount the jaw members **18** and **20** and are parallel to the longitudinal axis of the cylindrical body portion **12**. The body portion **12** is formed with an axial bore **22** which is threaded for a portion thereof as at **24**.

The jaw members **18** and **20** are identical, and as a result only one jaw **18** will be described in detail; however, the corresponding portions of the jaw **20** will be identically numbered but with an accompanying "*a*." The jaw **18** includes the base end portion **26** which has formed therethrough the pin hole **28** which is normal to the longitudinal axis of the jaw. Extending from the jaw base portion **26** is the arm portion **30** which is formed with the transversely convex surface **32** extending longitudinally of the top edge thereof and the transversely concave surface **34** on the bottom thereof both of which extend longitudinally of the arm portion in parallel relation. The outer free end of the arm portion **30** of the jaw **18** terminates in the upstanding lug **36** which is normal to the longitudinal axis of the jaw and provides the stop shoulder **37**. The jaw **18** is pivotally mounted between the supports **14** and **16** by means of the nut-equipped bolt **44** extending through holes formed in the supports and the hole **28** of base portion **26** of jaw **18**. The jaw **20** is pivotally mounted in the same manner as jaw **18** by means of the nut-equipped bolt **46**. With the jaws **18** and **20** in place as described above the concave surface **34** of jaw **18** together with the opposed concave surface of jaw **20** form a partial bore through which the reduced portion **39** of rod **38** extends. The portion **39** of rod **38** extends slightly outwardly of the shoulders **36** and **36***a* of the jaws **18** and **20**, respectively, in position for use.

The rod **38** includes the head **40** and is threaded along an enlarged portion indicated as **42** sufficient to engage the threads **24** of the bore **22** of the body **12** in which the rod is positioned. The rod **38** is rounded slightly at the outer free end to facilitate moving the same between the jaws **18** and **20** and forcing the jaws apart when the enlarged threaded portion **42** is engaged with the threads **24** of body **12** with the portion **39** of the rod extended between the jaws **18** and **20**.

In using the device A, the portion **39** of the rod **38** is withdrawn rearwardly from between the jaws **18** and **20** whereby the jaws may be pivoted together as illustrated in broken lines in FIGURE 2. This brings the outer ends of the jaws together to produce a minimum diameter of the combined ends of the jaws whereby the same may be inserted through the inner race of the bearing B. The rod **38** is then screwed forwardly whereby the outer end is extended between the jaws to separate or expand the same thereby increasing the diameter of the lugs **36**. As a result the stop shoulders **37** are engageable with the inner race of the bearing B. The rod **37** is rotated so that the outer end abuts the stationary plate portion **43** of the pulley P and further rotated to thereby force the bearing B from the pulley P.

It will be seen that the size of the jaws may be increased and used with the given rod **38** whereby larger bearings may be pulled. Also, a rod such as **38** may be made smaller in diameter at **39** and thus used in conjunction with smaller jaws to use in pulling smaller bearings, for the inner diameter of the inner race governs the extent of the use of a given pair of jaws. In the various size jaws the base portion **26** remains the same for use with the base **12**.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claim without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

A bearing puller comprising:

(a) a body portion having an

(b) internal threaded bore,

(c) said body having a pair of spaced support portions

extending therefrom normal to the longitudinal axis of said bore,

(d) a rod member threadedly engaged with and extending outwardly of said bore and said supports,

(e) a pair of jaws each having a base end and

(f) a straight arm portion extending from said base end,

(g) each of said jaws pivotally connected at said base thereof to and between said support portions with the arms thereof overlying and in working contact substantially throughout its length with said rod in parallel relation thereto,

(h) each of said arm portions of each of said jaws having a stop shoulder formed thereon extending normal to the longitudinal axis thereof for engagement with an annular member,

(i) said rod adapted to extend outwardly from and between said stop shoulders for abutment with a fixed member, whereby threaded rotation of said

rod causes said jaws to move relative to said rod and the fixed member.

References Cited by the Examiner

UNITED STATES PATENTS

1,429,567	9/1922	Carlisle	29—262
1,473,075	11/1923	Bates	29—261
1,478,964	12/1923	Klay	29—261
1,650,023	11/1927	Maxwell	29—262
2,098,134	11/1937	Cook et al.	29—265
2,376,721	5/1945	Piper	29—261
2,971,254	2/1961	Fairfield	29—261

FOREIGN PATENTS

1,045,330	11/1958	Germany.

EDWARD C. ALLEN, *Primary Examiner.*

MYRON C. KRUSE, *Examiner.*