A. L. BLESSING AND C. O. NELSON.

CONE OR GEAR PULLING TOOL.

APPLICATION FILED JULY 26, 1919.

1,355,028. Patented Oct. 5, 1920.

Fig. 1.

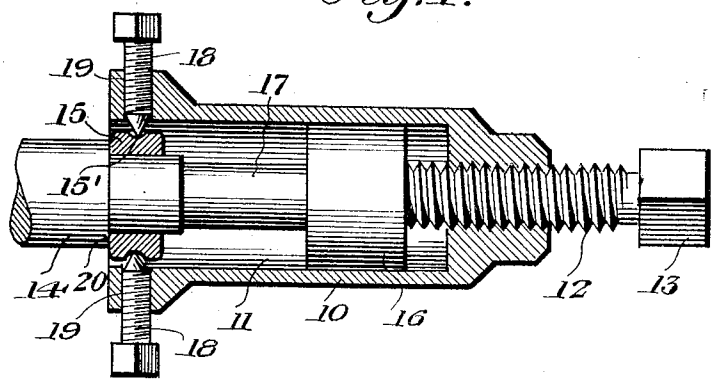


Fig. 2.

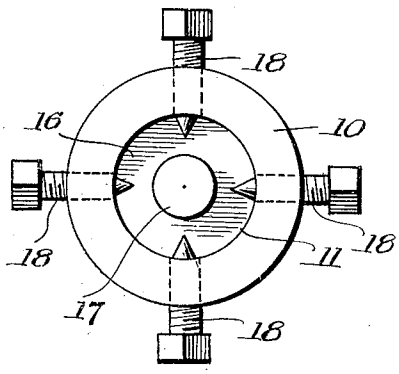
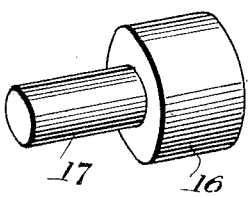


Fig. 3.



WITNESS:

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ARTHUR L. BLESSING AND CARL O. NELSON, OF SALINA, KANSAS.

CONE OR GEAR PULLING TOOL.

1,355,028. Specification of Letters Patent. Patented Oct. 5, 1920.

Application filed July 26, 1919. Serial No. 313,436.

To all whom it may concern:

Be it known that we, ARTHUR L. BLESSING and CARL O. NELSON, citizens of the United States, residing at Salina, in the county of Saline and State of Kansas, have invented new and useful Improvements in Cone or Gear Pulling Tools, of which the following is a specification.

This invention comprehends the provision of a tool for pulling cones, gears or any other parts from a shaft, and is designed to permit it to be readily and conveniently associated with the part to be removed.

Parts such as ball bearings or cones, are frequently pressed upon a shaft, into engagement with a shoulder thereon, and with tools for removing the same, with which we are familiar, it is necessary to engage the cone at the end adjacent the shoulder, thus making it a difficult and tedious work.

To facilitate this work, the invention embodies among other features, a plurality of clamping elements which can be conveniently arranged in the groove of the cone, in combination with a novel construction of means for exerting a pull upon the cone for removing the same from the shaft.

In carrying out the invention use is made of an adjusting screw movable through the bore of the tool from one end thereof, and a plunger movable through the bore of the tool under the influence of the screw, and providing a connection between the latter and the end of the shaft, from which the part is to be removed, so that as the screw is adjusted, a pull is exerted upon the tool thus removing the part from the shaft.

The nature and advantages of the invention will be better understood when the following detailed description is taken in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this specification like numerals of reference indicate similar parts of the several views and wherein:—

Figure 1 is a longitudinal sectional view through the tool showing the manner of using the same.

Fig. 2 is an end elevation.

Fig. 3 is a detailed view of one of the plungers.

While we have shown and are about to describe the invention used for the purpose of removing cones from a shaft, we desire to have it understood that this is merely illustrative and that the general application for use of the tool for removing various parts from a shaft is contemplated by the claims.

The tool forming the subject matter of our invention comprises a body portion 10 having a longitudinal bore 11 opening at both ends of the device. The body portion may be constructed from any suitable material, size and cross sectional configuration without departing from the spirit of the invention. An adjusting screw 12 is arranged axially of the bore 11, and is movable therethrough by reason of its threaded engagement with one end of the body 10. The exposed extremity of the screw 12 is of angular formation as at 13, to accommodate a tool of any suitable character for adjusting the screw. A plunger, preferably of the design illustrated in Fig. 3 is arranged within the bore 11, and constitutes a connecting element between the adjacent end of the screw and the shaft 14 from which the cone 15 is adapted to be removed. This plunger is provided with an enlarged portion 16 and a reduced portion 17. The plunger is arranged within the bore with the enlarged portion 16 adjacent the adjusting screw 12, which engages the plunger and moves the latter, or the opposite end thereof into engagement with the shaft 14 when the tool is in use. The reduced portion 17 obviously permits the cone 15 to be removed from the shaft over the reduced portion 17.

Various means may be employed for taking hold of the cone or other part to be removed from the shaft, but as shown in this specific instance, use is made of a plurality of set screws 18 which are threaded through openings 19 in the end of the tool, and disposed at diametrically opposite points. The set screws 18 as shown in Fig. 2 are adapted to be moved into engagement with the groove 15′ of the cone 15. This construction and arrangement provides for a quick and easy association of the tool with the cone, and eliminates the necessity of prying between the cone and the shoulder 20 on the shaft, which must be done with other tools for the purpose mentioned, with which we are familiar. In practice, the set screws 18 are moved into engagement with the cone 15, and the adjusting screws 12 subsequently operate to move the plunger into engagement with the adjacent end of the

shaft from which the cone is to be removed. Upon further adjustment of the screw 12, the body portion 10 of tool is moved in a direction away from the shaft, moving the cone therefrom as will be readily understood.

While we have shown and described what we consider the preferred embodiment of the invention we desire to have it understood that we do not limit ourselves in this connection and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What we claim is:—

1. A tool of a character described comprising a body portion having a longitudinal bore opening at both ends, clamping elements carried by the tool adjacent one end thereof, and an adjusting screw movable through said bore from the opposite end of said body portion, and a plunger removably fitted in said body portion, and actuated by said screw.

2. A tool of a character described comprising a body portion having a longitudinal bore opening at both ends, clamping elements carried by the tool and movable within said bore transversely thereof, an adjusting screw movable longitudinally within the bore from the opposite end of said body portion, and a plunger removably fitted in said body portion, and a plunger freely slidable within said bore and adapted to be moved in one direction by said screw.

3. A tool of a character described comprising a body portion having a longitudinal bore opening at both ends, clamping means carried by one end of the tool, an adjusting screw movable within the bore from the opposite end of said tool, a plunger fitted within said bore and comprising relatively large and reduced portions, said reduced portion adapted to bear against the shaft upon which the tool is clamped, said screw operating against the large portion of the plunger.

4. A tool of a character described comprising a body portion having a longitudinal bore opening at both ends, a plurality of radially disposed set screws adjustably associated with one end of the tool and movable transversely thereof within said bore, an adjusting screw movable at the opposite end of said tool, and a plunger arranged to slide within the bore and controlled in its movement by said screw.

In testimony whereof we affix our signatures.

ARTHUR L. BLESSING.
CARL O. NELSON.