G. T. McCLARRAN.

GEAR REMOVER OR PINION PULLER.

APPLICATION FILED JAN. 15, 1921.

1,417,265. Patented May 23, 1922.

Fig. 1.

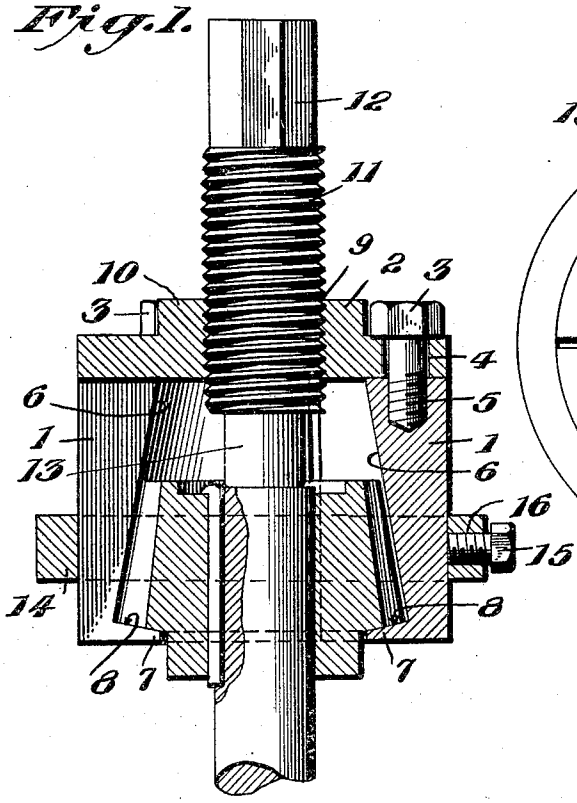


Fig. 3.

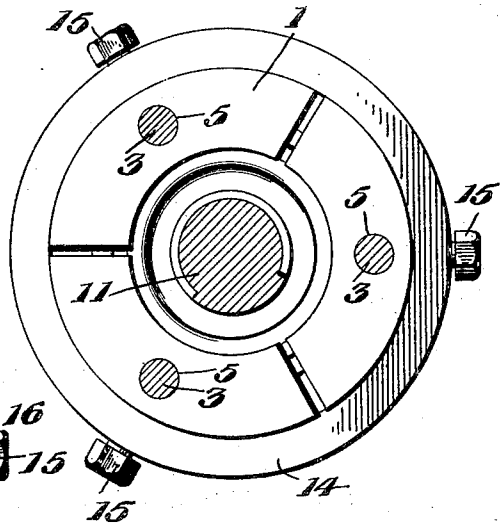
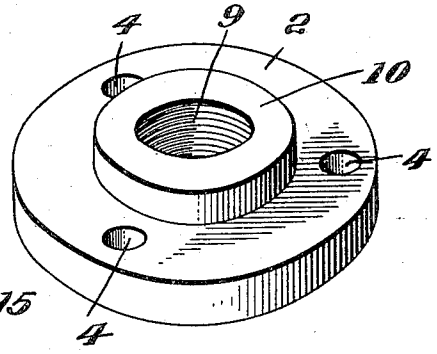


Fig. 4.



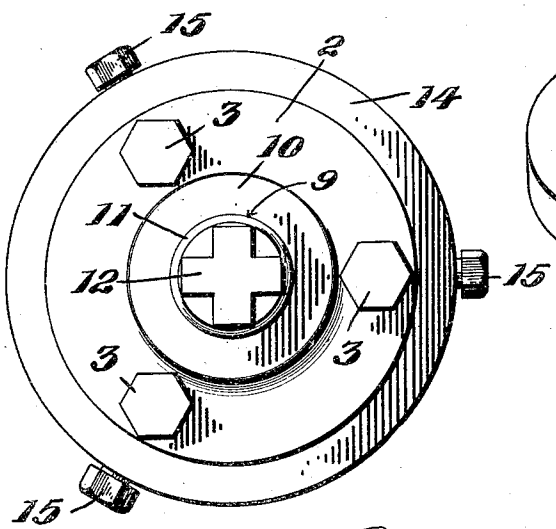


Fig. 2.

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GEAR REMOVER OR PINION PULLER.

1,417,265. Specification of Letters Patent. Patented May 23, 1922.

Application filed January 15, 1921. Serial No. 437,534.

To all whom it may concern:

Be it known that I, GEORGE T. McCLARRAN, a citizen of the United States of America, and a resident of Greensburg, Pennsylvania, have invented certain new and useful Improvements in a Gear Remover or Pinion Puller, of which the following is a specification.

The invention relates to a gear remover or pinion puller.

The object of the present invention is to provide a simple, practical and efficient gear remover or pinion puller of strong, durable and comparatively inexpensive construction designed for removing pinions from the driving shafts of automobiles and for removing gears of various other mechanisms and capable of being rapidly applied to a drive shaft and pinion and of enabling the pinion to be rapidly and easily removed from the shaft without injuring either of the parts or affecting the threads of the adjustable connection of the device.

With these and other objects in view, the invention consists in the construction, arrangement and novel combination of parts hereinafter fully described and shown, it being understood that various changes in the form, proportion and minor details of construction within the scope of the claims appended hereto may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings in which like characters of reference designate corresponding parts in the several figures:—

Figure 1 is a longitudinal sectional view of a gear remover and pinion puller constructed in accordance with this invention;

Figure 2 is a plan view of the head of the body portion;

Figure 3 is a sectional view of the same;

Fig. 4 is a perspective view of the head of the body portion.

In the accompanying drawings, in which is illustrated the preferred embodiment of the invention, the gear remover and pinion puller comprises in its construction a cylindrical casing or housing composed of curved sections 1 and a circular head 2, which is secured to the sections at the outer edges thereof by means of screws 3 extending through openings 4 in the outer portion of the head and engaging threaded sockets 5 in the adjacent abutting edges of the sections 1. The openings 4 are preferably of slightly greater diameter than the screws 3 as clearly indicated in Figure 1 of the drawings to admit of an adjustment of the sections 1 and a proper positioning of the same contiguous to each other and to the inner face of the circular head. The curved sections 1 are spaced slightly from one another and form a cylindrically shaped casing, the sectional character of the cylindrical body permitting the sections to be readily separated and assembled around a pinion preparatory to removing the same from a driving or other shaft.

The device shown in the accompanying drawings is especially designed for removing the pinion from driving shafts of automobiles, but the invention is applicable to various other pinions and gears for removing the same from their shafts. The cylindrical body is tapered interiorly as shown at 6 to conform generally to the configuration of a pinion, and the sections are provided at their engaging ends with inwardly extending flanges 7 having beveled inner faces 8 conforming to the bevel at the inner face or end of the pinion to be operated on and the said flanges which fit together and provide a complete annular flange when the sections are assembled, engage the back of the pinion throughout the entire periphery of the engaged portion and exert a uniform pull on the pinion in removing the latter.

The head 2 is provided with a central opening 9 and it has an annular boss or enlargement 10 at the exterior around the said opening 9, which is threaded to receive a screw 11. The screw 11, which is of cylindrical form, is provided with an outer polygonal portion and an inner, reduced terminal cylindrical portion. The outer polygonal portion 12 is adapted to receive a wrench or other tool for adjusting the screw to arrange the inner cylindrical portion 13 tightly against the end of the shaft on which the pinion is mounted and by tightening the screw the flanges are drawn tightly against the back of the pinion and the device is placed under tension. When the device is in this position, the outer end of the screw 11 is struck a blow with a hammer or other tool which forces the shaft inward or causes a relative movement of the device so that the flanges 7 are forced slightly away from the engaged rear face of the pinion and the re-

bound will produce a pull on the pinion and effect the removal of the same from the end of the shaft. It has been found by experience that a single blow is usually sufficient to effect the removal of the pinion from the drive shafts of an automobile.

The sections of the cylindrical body are confined and held against outward movement radially of the device by means of a ring 14 removably fitted around the exterior of the sections and provided at the said sections with radially arranged screws 15 mounted in threaded openings 16 in the ring and engaging the sections exteriorly thereof as clearly illustrated in Figure 1 of the drawings.

The device is rapidly assembled and separated and is adapted to be quickly applied to and removed from a driving shaft and it will effect a quick removal of the driving pinion therefrom. Also it will be clear that in adjusting the device around the pinion of a drive shaft, that the adjustment or compression of the separable sections to maintain them in firm and solid engagement will not affect the threads of the screw 11 or in any manner injure the same, and that when the outer end of the screw 11 is struck by hammer, the casing or housing moves over the pinion and in rebounding effects a pull on the same thereby causing a ready removal of the pinion from the drive shaft.

What is claimed is:—

1. A pinion puller or gear remover including a substantially cylindrical body composed of sections and provided at one end with pinion engaging flanges and having threaded sockets in their other ends, a head fitted against the latter ends of the sections and having openings registering with the said sockets, screws passing through the openings and engaging the threaded sockets, and a central shaft engaging screw mounted in the head.

2. A pinion puller or gear remover including a casing divided longitudinally into separable sections provided at one end with inwardly extending pinion engaging flanges and adapted to be fitted around the pinion, a member detachably arranged on and encircling the sections, a head fitted against the other ends of the sections and secured to the same, and a screw mounted in the head and adapted to engage the end of the shaft on which the pinion is mounted.

In testimony whereof I have hereunto set my hand.

GEORGE T. McCLARRAN.