Aug. 11, 1953 L. A. FLICKINGER 2,648,126

AUTOMOTIVE WHEEL TOOL

Filed June 13, 1950

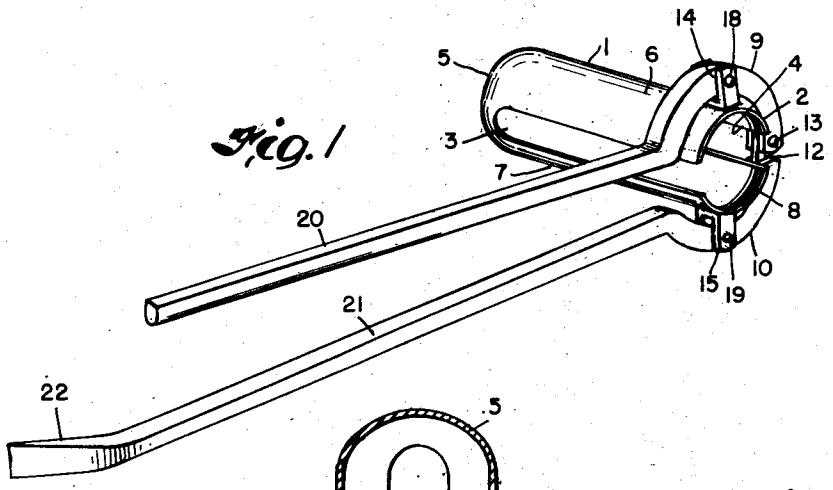


Fig. 1

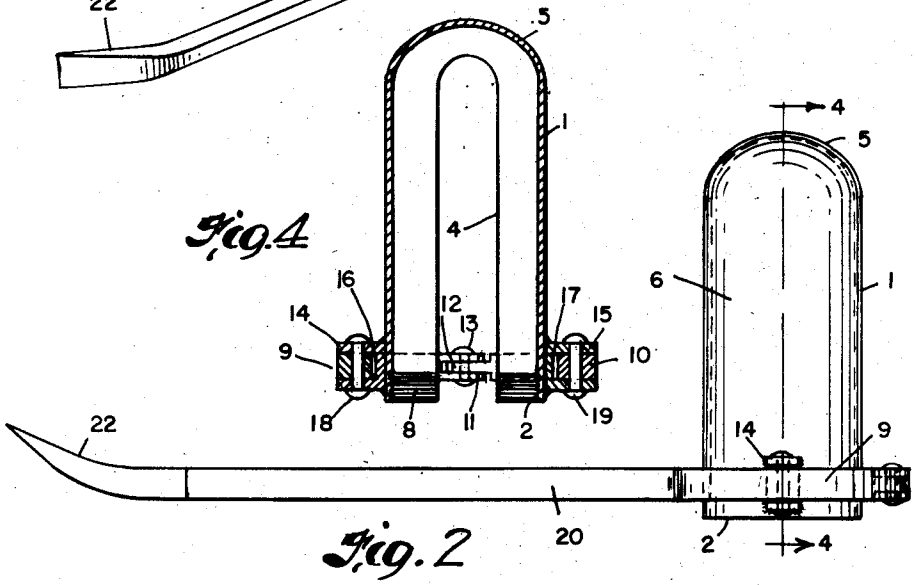


Fig. 4

Fig. 2

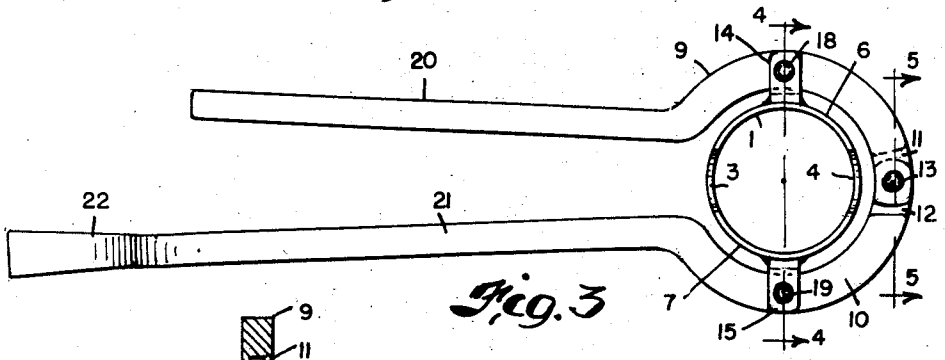


Fig. 3

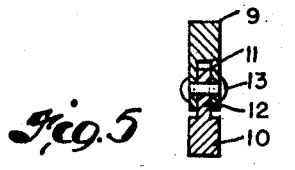


Fig. 5

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Patented Aug. 11, 1953

2,648,126

UNITED STATES PATENT OFFICE

2,648,126

AUTOMOTIVE WHEEL TOOL

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Application June 13, 1950, Serial No. 167,867

4 Claims. (Cl. 29—268)

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This invention relates to automotive wheel tools and more particularly to a form of tool especially suited for the removal of grease cups from auto wheels.

Heretofore mechanics and repairmen have experienced considerable difficulty and time delay in removing auto wheel grease cups since the ordinary shop tools are not well suited for this purpose. It is accordingly a primary object of this invention to provide a tool of simple construction which is especially adapted for quick and easy removal of grease cups from auto wheels.

A further object is to provide a tool which is both inexpensive of manufacture and safe and durable in use.

Other objects and advantages will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is a perspective view of a preferred embodiment of this invention;

Figs. 2 and 3 are side elevation and top plan views, respectively, of the device shown in Fig. 1;

Fig. 4 is a sectional view taken along the line 4—4 on Fig. 3; and

Fig. 5 is a sectional view taken along the line 5—5 on Fig. 3.

Broadly stated, my invention consists of a tubular body or barrel having a longitudinal slot therein and adapted to fit over the grease cup of an automobile wheel, and clamping jaws embracing such barrel adapted to compress the same whereby such grease cup may be firmly gripped and its removal readily effected.

Within the broad statement of this invention as set out above, there are, of course, various specific forms which may be provided to embody the same, these differing mainly as regards the manner of attachment of the clamping jaws to the tubular body, and the specific form of the latter. In the illustrated embodiment which will now be described, the jaw members are pivotally secured to the tubular body, the latter being formed with two diametrically opposed, longitudinally extending slots to permit flexure thereof.

Referring now to the drawing, the preferred form of my automotive tool is there illustrated

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comprising an elongated flexible tubular body or barrel 1 of circular cross-section, preferably formed by drawing sheet steel, such tubular body having an open end 2 adapted to fit loosely over the grease cup of an auto wheel. A pair of diametrically opposed longitudinally extending slots 3 and 4 are provided in such body running from the open end part way to the opposite closed end 5 thereof. Thus two opposed segments 6 and 7 are formed being capable of flexure to grip and effect the removal of a grease cup. Formed on the inner surface of such segments of the tubular body adjacent the open end thereof are a plurality of closely spaced circumferential grooves 8 which provide a gripping surface thereon.

A pair of semicircular jaw members 9 and 10 adapted to embrace the tubular body adjacent such open end are provided to apply clamping pressure thereon. Such jaw members are pivotally connected together, member 9 being bifurcated at one end to provide a recess 11 adapted to receive a flattened tongue 12 formed on the corresponding end of jaw member 10. A pin 13 passing through tongue 12 and legs of such bifurcated end portion effects such pivotal connection. Welded to respective segments 6 and 7 and disposed approximately centrally thereof adjacent the open end 2 of the tubular body are a pair of diametrically opposed, radially extending U-shaped members 14 and 15, providing respective U-shaped cavities 16 and 17 adapted to receive respective jaw members 9 and 10. Pins 18 and 19 passing through respective jaw members 9 and 10 and likewise through legs of respective U-shaped members 14 and 15 effect such pivotal connection. The opposite ends of jaw members 9 and 10 are shaped to extend radially of such tubular body to define handles 20 and 21 respectively, of sufficient length to provide the necessary leverage to compress the open end 2 of such tubular body into tight gripping engagement with a grease cup in order to effect removal of the latter. Handle 21 is formed with a flattened end portion 22, bent as shown, which is adapted to fit under the rim of a hub cap whereby the same will be simply and quickly removed to expose the grease cup of the wheel.

Having thus described my invention, its operation will become readily apparent. The repairman will first remove the hub cap of a wheel by means of flattened end portion 22 of handle 21 to expose the grease cup. The open end 2 of the tubular body is then placed loosely over such grease cup and sufficient clamping pressure applied thereon by means of radially extending handles 20 and 21 to tightly grip the same.

Without releasing such gripping pressure, the tubular body is now firmly gripped and withdrawn, thus removing the grease cup from its seat. In order to replace the grease cup, the same is again gripped tightly in the open end portion of such tubular body and placed over its seat and then locked thereon by means of gentle hammering applied to the opposite closed end 5 of the tubular body.

It will thus be seen that I have provided a device which is simple of construction yet highly effective in the performance of its intended function, viz, the quick and easy removal of grease cups from automobile wheels. Such device is equally convenient for installing grease cups.

Although I have described only one preferred embodiment of my tool, it is clear that other forms may be employed without departing from the principle of my invention. For example, the tubular body may be open at both ends. However, my illustrated form is preferred since a closed end provides a convenient surface for hammering, whereby to effect installation of the grease cup. Also, it is possible to provide pivotal connections by a mere overlapping of respective members rather than in the manner described and illustrated. Then too, the jaws may be fixedly secured to the tube instead of pivotally connected thereto as shown.

It is also contemplated that a compressible tube may be provided which has only one slot therein rather than two as shown and described herein. In such construction, however, it would be desirable that the slot extend the entire length of the tube rather than only partway as shown, in order that the same be not warped or distorted by the application of clamping pressure thereon.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A device of the character described, comprising an elongated flexible tubular body adapted to fit over the grease cup of an automobile wheel, open at one end and having a pair of diametrically opposed, longitudinally extending slots extending from such open end part way to the other end thereof, said tubular body having formed on its inner surface adjacent such open end a plurality of closely spaced circumferential grooves to provide a gripping surface, and a pair of jaws embracing opposite sides of said tubular body adjacent such open end and pivotally connected thereto at diametrically opposed points lying on a line normal to the median plane through such slots, said jaws being pivotally joined at one end and having their other ends extending radially of said tubular body to define handles.

2. A device of the character described, comprising a flexible tubular body adapted to fit over the grease cup of an automobile wheel, open at least at one end and having a longitudinally extending slot extending from such open end at least part way to the other end thereof, said tubular body having formed on its inner surface adjacent such open end a plurality of closely spaced circumferential grooves to provide a gripping surface, and a pair of jaws embracing said tubular body adjacent such open end and pivotally connected thereto at points laterally of such slot, said jaws being pivotally joined at one end and having their other ends extending radially of said tubular body to define handles.

3. A device of the character described, comprising a U-shaped body portion with each leg terminating in a laterally inturned, substantially semi-circular gripper portion, a pair of jaws pivotally connected together at one end, and pivotal connections between such jaws and the respective gripper portions with the pivotal axes thereof parallel to the longitudinal axis of said body portion, said jaws extending substantially radially of said gripper portions and being resiliently biased thereby in such spaced relation that both may be gripped in one hand and forced together.

4. A device of the character described, comprising a U-shaped body portion with each leg thereof terminating in a laterally inturned, substantially semi-circular gripper portion, said gripper portions being serrated on the inner surface thereof to provide a gripping surface, and a pair of jaws pivotally connected respectively to said gripper portions for pivotal movement in a plane normal to the longitudinal axis of said body portion, said jaws being pivotally joined at one end with their other ends extending radially of said body portion to define handles resiliently biased in spaced relation by said gripper portions.

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