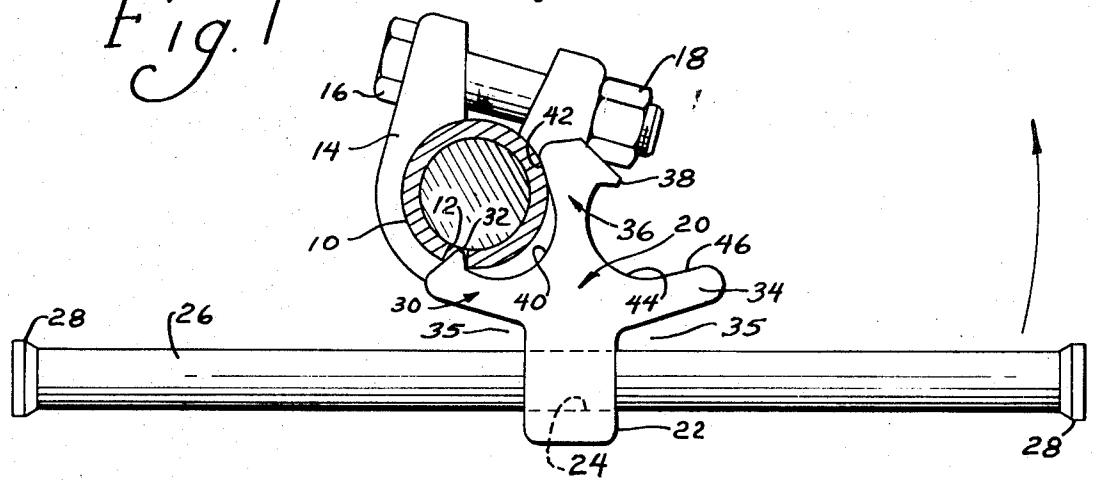
March 20, 1973 C. L. MOSHER 3,721,137

SPANNER TYPE TOOL

Filed Sept. 24, 1971

Fig. 1



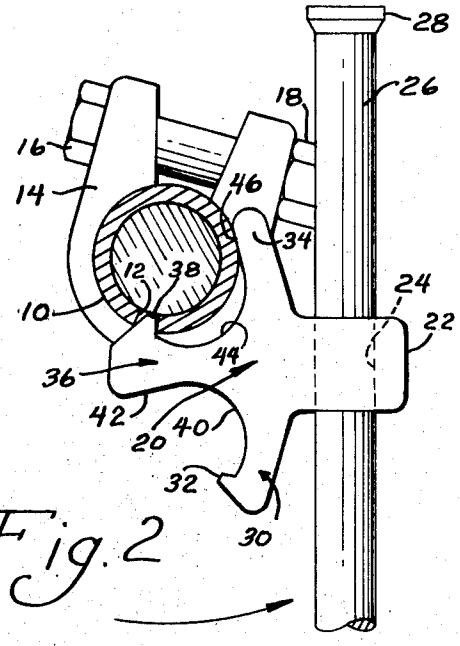


Fig. 2

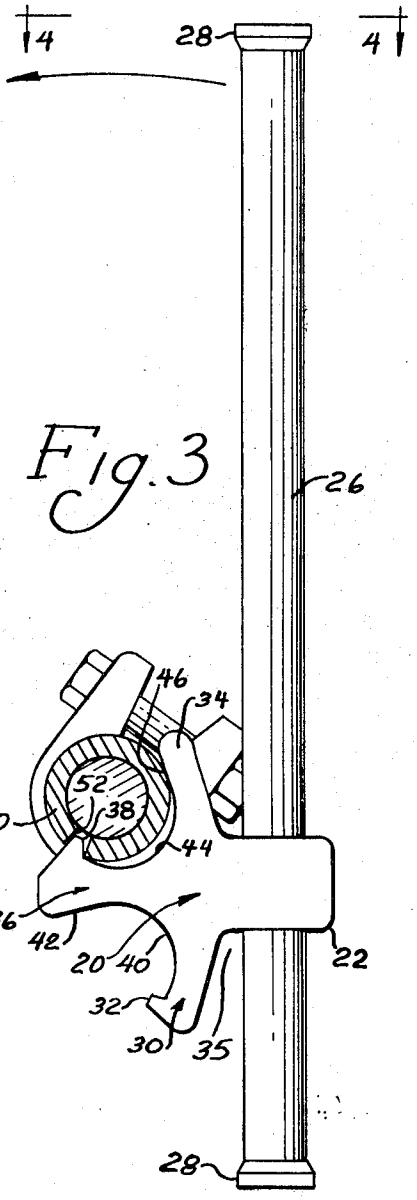


Fig. 3

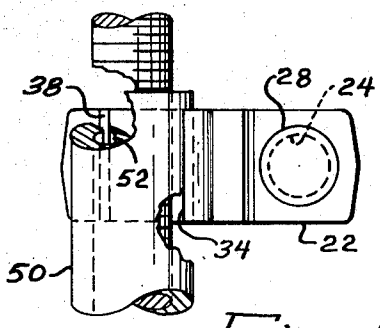


Fig. 4

United States Patent Office 3,721,137 Patented Mar. 20, 1973

3,721,137

SPANNER TYPE TOOL

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Filed Sept. 24, 1971, Ser. No. 183,331
Int. Cl. B25b 13/02, 13/56
U.S. Cl. 81—90 B 6 Claims

ABSTRACT OF THE DISCLOSURE

A spanner type tool particularly suited for working on automobile tie rods. The tool includes an extremely narrow base slidably receiving an elongated handle and mounting two hook-like members opening in the same circumferential direction and spaced approximately 90° apart. Dependent upon adjacent obstructions to movement of the tool when applied to work, either one of the hooks may be employed in a given job and the position of the handle varied to avoid interference.

BACKGROUND OF THE INVENTION

This invention relates to spanner type tools or spanner wrenches and, more particularly, to spanner tools which are particularly suited for manipulating the split sleeve-like connectors as are customarily employed in, for example, automobile tie rod assemblies.

Spanner type tools have been used for many years for performing various types of work and for most types of jobs, the spanner tools heretofore known are completely suitable for their intended purposes. However, most, if not all, are not susceptible to convenient use in one particular type of job, namely, adjustment of sleeve-like connectors employed in automobile tie rod assemblies. In particular, two special difficulties present themselves when working with automobile tie rod assemblies. Firstly, all too frequently, other adjacent parts of the front end suspensions of automobiles are located in the immediate vicinity of the connectors and obstruct free movement of a conventional spanner tool applied to sleeve-like connectors. Secondly, with the advent of the so-called "compact" cars, various size sleeves are used and heretofore it has been necessary to employ multiple tools, one for each size sleeve, or, in the alternative, a multiple hook tool having different size hooks for the different size sleeve connectors.

The first principal difficulty with prior art constructions has been solved in part by the use of a hook bearing head mounting a reversible handle as exemplified by Gaskins Pat. 2,981,132. According to the Gaskins construction, an elongated rod-like handle is slidable relative to the hook bearing head so that force can be applied to the head from either of two sides thereof. Thus, if there is an obstruction on one side of the head, the handle can be moved to the opposite side where hopefully, it will be free from obstruction. The Gaskins construction, however, fails to meet its ultimate object when there are obstructions on both sides of the head.

The second difficulty mentioned above has been partly solved by what is essentially a modification of the construction shown by Gaskins. According to the modification, the head is provided with two hooks, one for relatively large diameter sleeve connectors and one for the smaller size sleeve connectors as are customary in compact cars. According to the modified version, the hooks open in opposite directions.

With either construction the problems still prevail. For example, as mentioned previously, difficulties may be encountered and cannot be solved by the slidable handle construction when there are obstructions on both sides of the sleeve connector. And the use of oppositely opening

hooks can itself increase such problems, for, if the hook opening towards the remote end of the handle is being employed, the oppositely facing hook may encounter an obstruction and preclude easy use of the tool.

SUMMARY OF THE INVENTION

It is the principal object of the invention to provide a new and improved spanner type tool that is constructed so as to be usable with sleeves of varying sizes and which may have a slidable handle locatable in four different positions with respect to a sleeve connector or the like with which it is to be used as opposed to the two positions provided by prior art constructions to thereby double the possibility of use in a position where an obstruction to movement will not be encountered.

The exemplary embodiment of the invention achieves the foregoing object by means of a construction including a head having a relatively narrow base, slidably receiving an elongated, rod-like handle. Extending from the base and to one side thereof is a first hook member having a work engaging extension. Approximately oppositely of the first hook member is a projection from the base.

Intermediate the projection and the first hook-like member is a second hook member, again provided with a work engaging extension. Both of the extensions of the two hook-like members are directed in the same circumferential direction and are located about 90° from each other, the projection from the base serving to define a work engaging flat for the second hook engaging member with the back side of the second hook engaging member defining a work engaging flat for the first hook member.

According to the preferred embodiment, the width of the base is but a minor fraction of the distance between the ends of the projection and the first hook-like member, and as a result of the foregoing construction, two recesses in the base are effectively defined and adapted to receive enlarged ends on the rod-like handle so that the same will not obstruct turning movement of the tool.

By reason of the location of the two hook-like members, as well as the slidable movement of the handle within the base, the handle can be located at four extreme positions relative to a sleeve-like connector by selectively shifting the handle or selectively altering the hook member employed. In addition, the unique construction of the hook members and the projection is such that a variety of sizes of sleeve connectors may be worked upon with the tool.

Other objects and advantages of the invention will become apparent from the following specification taken in conjunction with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation of a tool made according to the invention engaged with a sleeve-like connector shown in cross section;

FIG. 2 illustrates the invention in a different position of engagement with a sleeve-like connector;

FIG. 3 illustrates the tool engaged with a relatively small size sleeve connector; and

FIG. 4 is a fragmentary view taken approximately along the line 4—4 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An exemplary embodiment of a spanning tool made according to the invention is illustrated approximately to scale in FIGS. 1 and 2 in conjunction with a tie rod sleeve 10 of a size customarily used on standard size

U.S. autos. The sleeve **10** has a slot **12** and is surrounded by a yoke **14** which may be tightened by means of a bolt **16** and nut **18** received in aligned apertures in extremities of the yoke.

The spanner tool includes a head, generally designated **20**, having a relatively narrow base **22** with a bore **24** therein. The bore **24** slidably receives an elongated, rod-like handle **26** having enlarged ends **28** for retention purposes. The enlarged ends **28** may be formed by crimping or the like. The head **20** further includes a first hook member, generally designated **30**, terminating in a work engaging extension **32** shown in FIG. 1 as being received within the slot **12** of the sleeve connector **10**. The head also mounts an approximately oppositely extending projection **34**. It is to be noted that the distance between the ends of the first hook member **30** and the projection **34** is such that the width of the base **22** is but a minor fraction thereof. The effect is to define recesses **35** on opposite sides of the head **20** for receipt of the enlarged ends **28** of the handle **26** so that the same will not interfere with rotative movement of the tool by possibly encountering an environmental obstruction.

Intermediate the first hook member **30** and the projection **34** is a second hook member, generally designated **36**, which also terminates a work engaging extension **38**. It is to be noted that both of the work engaging extensions **32** and **38** extend in the same circumferential direction so that the respective hook members **30** and **36** open in the same circumferential direction.

Between the first hook member **30** and the second hook member **36** is a recess defined by an arcuate boundary **40** which begins adjacent the work engaging extension **32** and which terminates in a flat, sleeve connector engaging portion **42**, formed on the back side of the second hook member **36**.

Intermediate the second hook member **36** and the extension **34** is a similar recess including an arcuate portion **44** terminating in a flat, sleeve connector engaging portion **46**.

The total arrangement of the foregoing surfaces defining the hook members **30** and **36** as well as the projection **34** is such that the two hook members **30** and **36** are spaced circumferentially from each other a distance of about 90°. The purpose of such an arrangement is as follows.

As may be ascertained from FIG. 1, the handle **26** may be moved between two extreme positions, the rightmost one of which would avoid an obstruction to the left of the sleeve **10**, while the leftmost one of which would avoid an obstruction to the right of the sleeve **10**. Should it occur that there are obstructions to movement of the tool to both the left and the right of the sleeve **10**, by engaging the sleeve **10** with the second hook member **36** instead of the hook member **30**, as seen in FIG. 2, two additional extreme handle positions are provided. That is, an uppermost extreme position of the handle **26** could be used to avoid obstructions both to the left and to the right as well as one below the sleeve **10**, while a lowermost position of the handle would avoid obstructions to the left or the right of the sleeve as well as one above the same. And, of course, with a variety of intermediate handle positions between its two extremes are available. Thus, the unique construction employing two hooks spaced approximately 90° apart and opening in the same direction virtually assures that the tool may be used in some position of the handle thereof without encountering appreciable obstructions. And, of course, during a fastening or unfastening operation, the particular one of the hook members **30** and **36** used can be changed after each 90° of movement of the sleeve **10** very simply. Thus, the tool is significantly easier to use where environmental obstructions are present.

In addition, it will be appreciated from the illustration in FIGS. 3 and 4, wherein a sleeve **50** having a slot **52** to receive the tool is shown approximately to scale and

represent a typical sleeve employed on a compact car, that the unique arrangement of the projection **34** and the flat surface **46** thereon renders the tool susceptible for use with sleeves of varying sizes. While not shown in the drawings, the flat surface **42** on the back side of the second hook member **36** provides the same advantage. Thus, it is necessary to employ two oppositely opening hooks of different sizes to accommodate sleeves of different sizes, either hook of which might interfere with movement with the handle in one extreme position when the other hook is being used.

From the foregoing, it will be appreciated that a spanner tool made according to the invention overcomes the deficiencies of prior art constructions in terms of ease and flexibility of use. Those features of construction permitting four extreme positions of the handle virtually ensure freedom of movement of the tool in at least one position thereof while the particular construction of the surfaces permits a single tool to be used with sleeves of varying size with equal facility. Finally, the use of the very narrow base ensures that the base itself will not appreciably obstruct movement of the tool as can be the case with prior art constructions including that of Gaskins identified previously.

What is claimed is:

1. A spanner tool comprising a head and an elongated handle extending therefrom, said head including a pair of hook members, each of said hook members opening in the same circumferential direction and being spaced about 90° from each other to provide maximum flexibility of the tool in use.

2. The spanner tool of claim **1** wherein said handle is slidably secured to said head.

3. The spanner tool of claim **1** wherein each said hook member is comprised of a body portion terminating in a work gripping extension, the work gripping extension of one of said hook members facing the body portion of the other hook member, said head further including a radially extending projection, the work gripping extension of said other hook member facing said projection.

4. The spanner tool of claim **1** wherein said head includes a narrow base slidably receiving said handle, said base having a width substantially less than the distance between said hooks measured in a parallel direction to minimize interference between the handle and environmental objects when the handle is at one position of extreme movement within said base.

5. The spanner tool of claim **3** wherein said head includes a narrow base slidably receiving said handle, said base being located intermediate said one hook and said projection, said one hook and said projection extending to the side thereof to define a pair of recesses on opposite sides of said base, said handle comprising an elongated rod having enlarged ends, said ends being adapted to be received in respective ones of said recesses at extreme positions of movement of said handle relative to said base of minimize interference between said handle and environmental objects when one or the other of said hooks is engaged with work and when said handle is rotated.

6. A spanner type tool comprising a head, said head including a narrow, outwardly projecting base having a bore therein, a first hook member extending from said base and terminating in a work engaging projection, a second hook member extending from said base and terminating in a work engaging projection, both of said work engaging projections extending in the same circumferential direction from said base and being located approximately 90° from each other, a recess between said first and second hook members, said recess being generally arcuate beginning at a point adjacent said first hook work engaging projection and terminating in a relatively flat surface on the back side of said second hook member, a projection extending from said base approximately opposite from

said first hook member, and a second recess between said second hook member and said projection, said second recess being arcuate beginning at a point adjacent to said second hook work engaging projection and terminating in a flat surface along one side of said projection, the width of said base being a minor fraction of the distance between the ends of said first hook member and said projection.

References Cited

UNITED STATES PATENTS

2,981,132	4/1961	Gaskins	81—90 B
3,211,029	10/1965	Schlage et al.	81—90 B

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