Aug. 13, 1929. J. C. NELSON 1,724,509

TOOL

Filed Oct. 26, 1926

Fig. 1

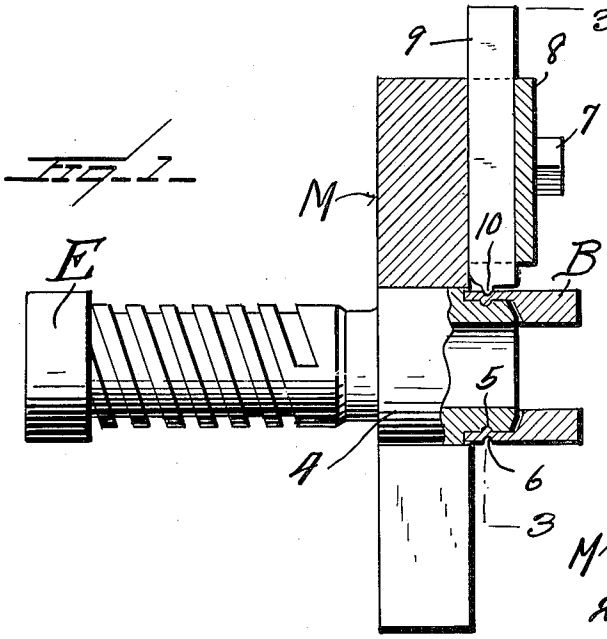


Fig. 4

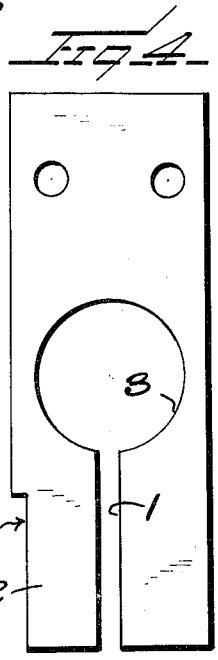


Fig. 2

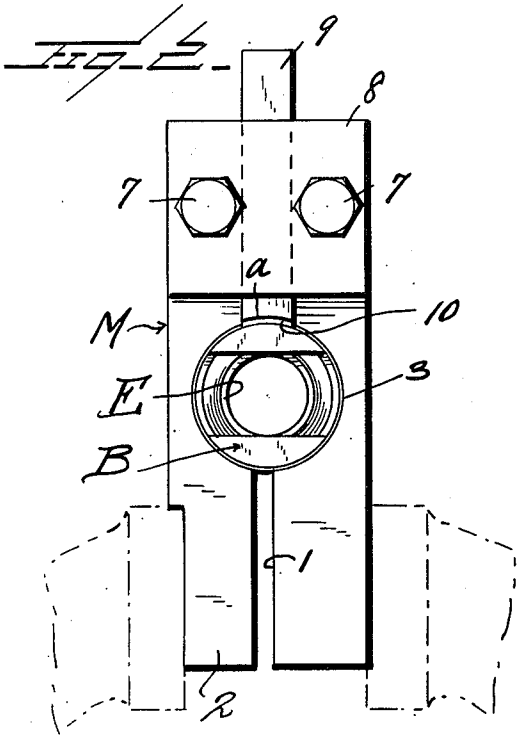
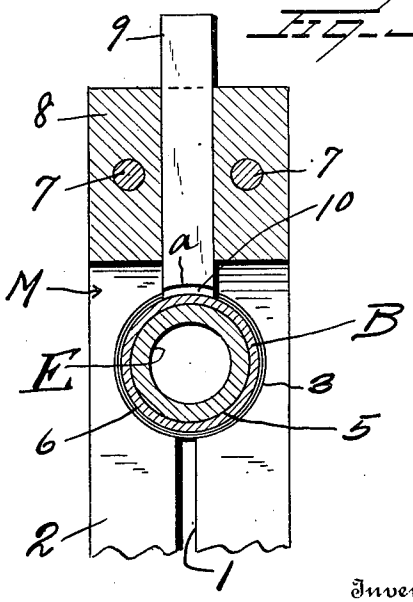


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN C. NELSON, OF ERIE, PENNSYLVANIA, ASSIGNOR TO THE O. K. GARAGE, INC., OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TOOL.

Application filed October 26, 1926. Serial No. 144,374.

This invention relates to certain improvements in tools and it is an object of the invention to provide a tool of this kind whereby a bushing or the like may be beaded or flanged to swivelly connect the same with the desired element.

Another object of the invention is to provide a tool of this character comprising a member adapted, during a working operation, to effectively hold the element to which the bushing is to be applied together with a die member carried by the first named member operable by impact to produce a bead or flange to swivelly connect a bushing or the like with the element.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved tool whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:—

Figure 1 is a view partly in elevation and partly in section illustrating a tool constructed in accordance with an embodiment of my invention and in working assembly;

Figure 2 is a view in front elevation of the structure as illustrated in Figure 1, with the coacting jaws of a vise or the like being indicated by broken lines;

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 1;

Figure 4 is an elevational view of the block or body member as herein disclosed.

As disclosed in the accompanying drawing, M denotes a block or body member of desired dimensions and which has one end portion bifurcated, as at 1, to provide the substantially parallel spaced legs 2. The opposed faces or walls of the legs 2 at their inner end portions are provided with the semi-circular recesses or jaws 3 which are adapted to snugly receive an end portion of an elongated shank or other element E to which a bushing B or the like is adapted to be swivelly connected.

In the present embodiment of my invention, the element E constitutes a tubular screw shaft or sleeve as is generally employed in connection with self-starters for internal combustion engines and which is provided at one end portion with the head 4 with which the bushing B is adapted to be directly engaged. The head 4 has disposed circumferentially therearound an annular recess 5 in which is adapted to be received an annular bead 6 carried by the bushing B.

The outer face of the member M above the jaws 3 has bolted, as at 7, or otherwise engaged therewith a guide block 8 through which is adapted to operate an elongated die member 9. The working end of the die member 9, as at *a*, is arcuate in form and on a radius substantially equal to that of the portion of the bushing B applied upon the head 4 and said end *a* has extending thereacross an outstanding bead forming rib or flange 10.

In practice, when it is desired to swivelly connect a bushing B with the element E, the head 4 of the element E is arranged between the jaws 3 in a position whereby the die member 9 when moved inwardly toward the head 4 will cause the rib or flange 10 to be received within the recess 5. The bushing B is then placed upon the head 4 and after the free end portions of the legs 2 have been tightly clamped between the jaws of a vise or the like, as indicated by broken lines in Figure 2, a suitable impact is imposed upon the outer end of the die member 9 by a hammer or kindred implement, such impact resulting in the rib or flange 10 forcing a bead portion within the recess 5. This operation is repeated until the bead 6 has been entirely formed.

It is to be understood that between each working operation of the die member 9, the bushing B will be rotated a desired distance upon the head 4 of the element E.

It is to be noted that my improved tool is extremely simple, is light in weight, and occupies a minimum of space when not in use. This facilitates its use in a shop or elsewhere as may be required.

It is also to be noted that my improved tool is particularly adapted for use in connection with repairs although I do not wish to be understood as limiting myself in this respect.

It is also to be noted that when the legs 2 of the member M are properly clamped within a vise or the like, the action on the

head 4 of the element E will be such to effectively hold such element E against rotation thereby materially facilitating the functioning of the tool.

From the foregoing description it is thought to be obvious that a tool constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

A beading tool for swiveling a bushing on a member having an annular peripheral groove comprising a block having a portion bifurcated to provide spaced legs, the inner portions of the opposed walls of said legs being recessed to provide jaws to receive therebetween the member to which the bushing is to be engaged, pressure on the outer portions of the legs clamping the member between the jaws, and a die member slidably carried by the block at a point beyond the jaws and movable toward the jaws under impact, said die member having its working face provided with an outstanding head forming a flange for action on the portion of the bushing applied to the first named member and disposed across the peripheral groove in said first named member.

In testimony whereof I hereunto affix my signature.

JOHN C. NELSON.