Feb. 24, 1953 W. J. CAVANAGH 2,629,412

HANDLE CONSTRUCTION FOR BIT BRACES OR THE LIKE

Filed Dec. 18, 1947

Fig. 1.

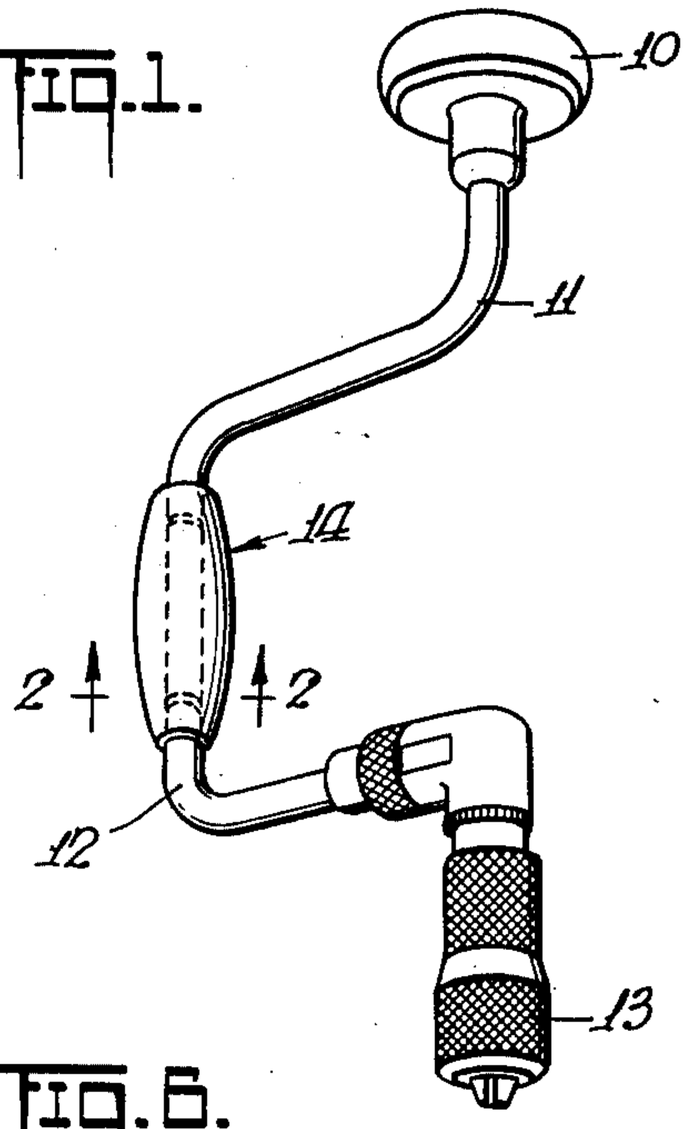


Fig. 2.

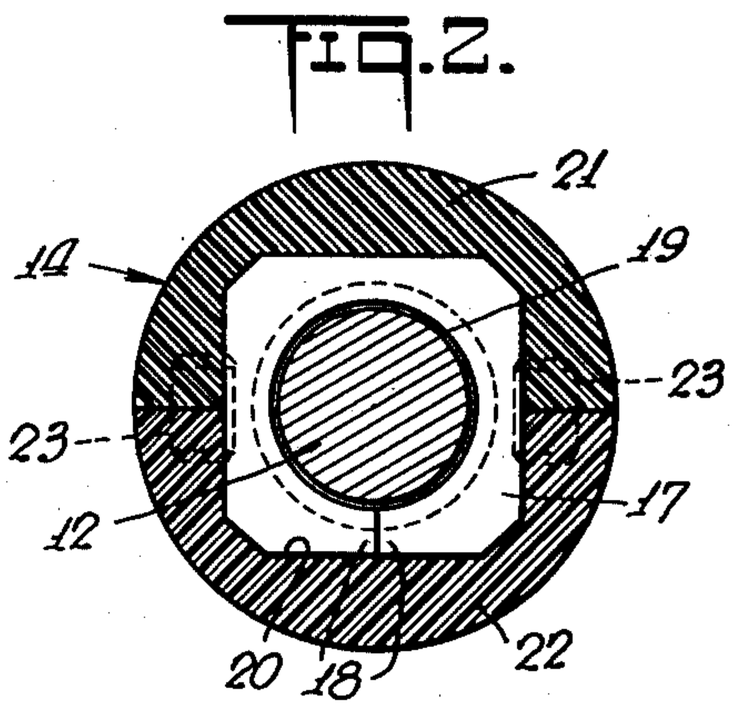


Fig. 3.

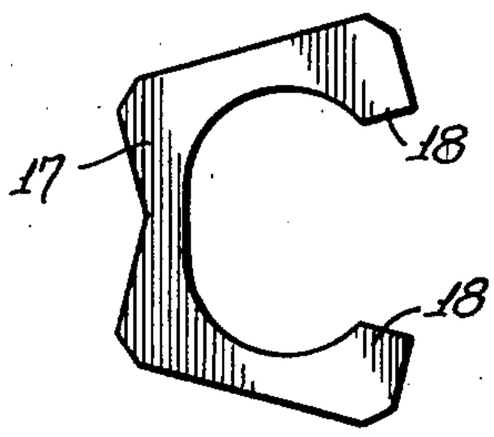


Fig. 6.

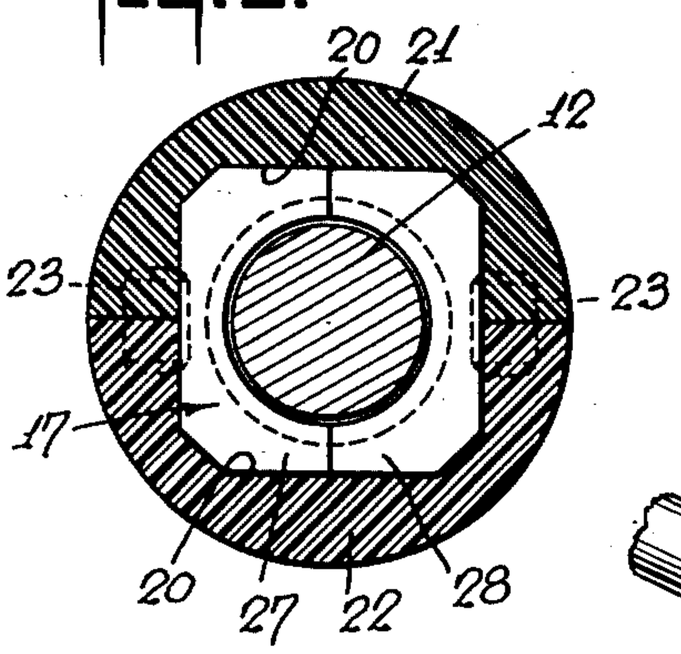


Fig. 4.

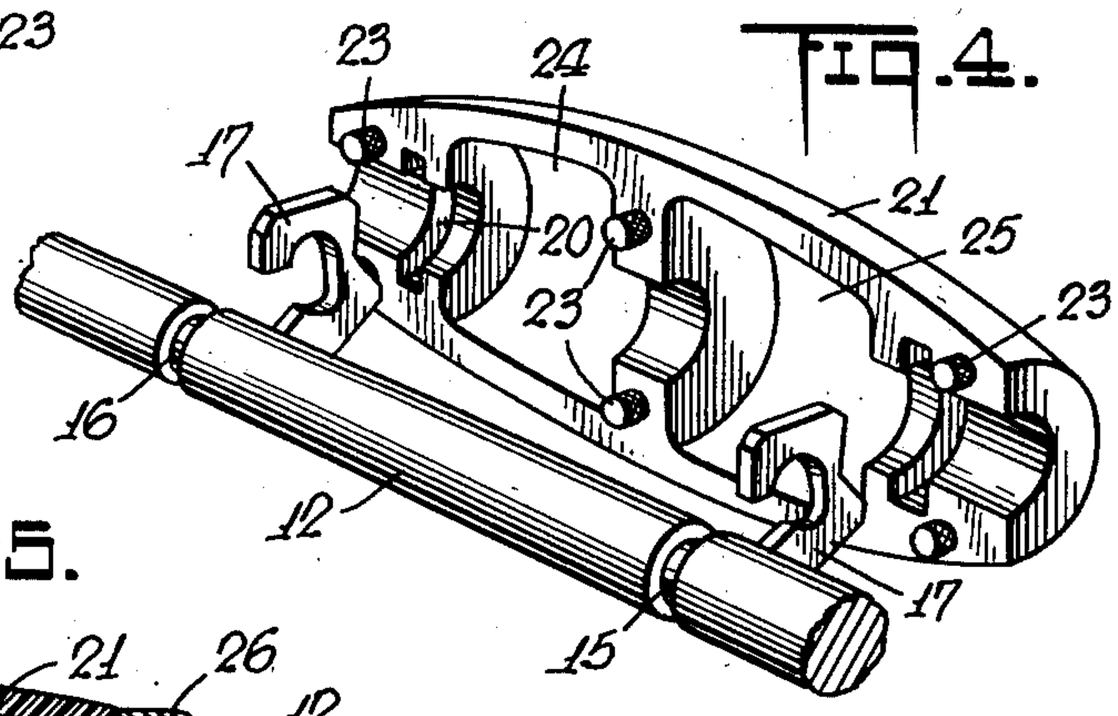
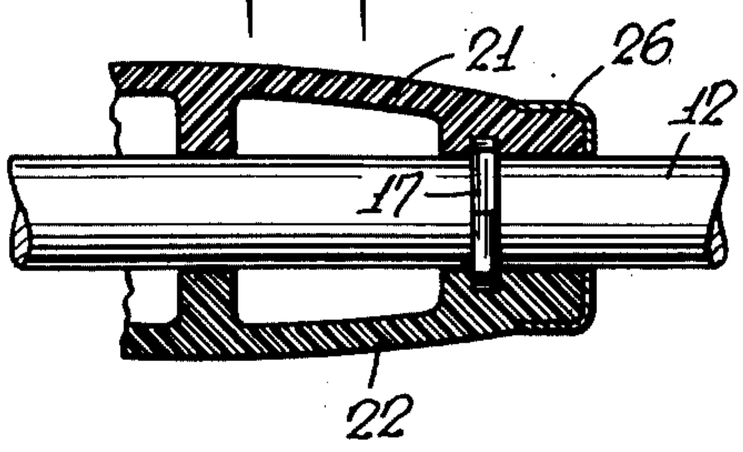


Fig. 5.



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HANDLE CONSTRUCTION FOR BIT BRACES OR THE LIKE

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2 Claims. (Cl. 145—61)

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My invention relates to handles for tools, and in particular to a center-handle construction for a bit brace or the like.

It is an object of the invention to provide an improved construction of the character indicated.

It is a more specific object to provide an improved construction for a molded-plastic handle to be revolubly mounted upon a supporting rod, shaft, crank, or the like.

Other objects and various further features of the invention will be pointed out or will occur to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, a preferred form of the invention:

Fig. 1 is a perspective view of a bit brace to which a center handle has been applied in accordance with the invention;

Fig. 2 is an enlarged sectional view taken substantially in the plane 2—2 of Fig. 1;

Fig. 3 is an enlarged plan view of an element used in the construction of Fig. 1;

Fig. 4 is an exploded view of some of the parts used in the construction of Fig. 1;

Fig. 5 is a fragmentary sectional view illustrating an alternative center-handle construction; and

Fig. 6 is a sectional view similar to the view of Fig. 2, but illustrating still another alternative construction.

Briefly stated, my invention in a preferred form contemplates an improved handle construction for revolubly mounting a handle upon a rod, crank, or the like, as in the case of a center handle for a bit brace. The frame to which the handle is to be applied is preferably annularly grooved to receive abutment means in loose-fitting relation thereto, and the abutment means preferably extends circumferentially of the frame, rod, or the like. The handle itself may be of plastic and in a plurality of parts suitably recessed to receive the outer projecting parts of the abutment means when the handle parts are secured to each other. Since the handle may thus be locked on the abutment means, and since the abutment means is loose on the frame or rod, the handle may be free to rotate with respect to the rod; and all supporting stresses may be borne by the abutment means, rather than directly by the handle.

Referring to the drawings, my invention in a preferred form is shown in application to a bit brace comprising a top handle 10 at the upper end of a frame member 11. The frame member

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11 may include an offset centrally located cranking portion 12 for the manual driving of a drill bit or the like, which may be supported in a chuck 13. The offset or cranking portion 12 may be grasped at a novel center handle 14 revolubly supported on the cranking portion 12 of the rod 11.

In accordance with the invention, the center handle 14 may be made to take relatively great mechanical stresses when the brace is cranked, and these stresses may be readily assumed without the wear or strain on the handle 14. In the forms to be described, the cranking portion 12 is annularly grooved, as at 15—16, to provide spaced means for locating abutments such as washer means for the support of the handle 14. In the forms of Figs. 1 to 4, each of the washer means is a single piece 17 which, before application to the rod 12, may be split, with open jaws 18—18 on one side thereof (see Fig. 3). Upon application to one of the grooves 15—16, the washer 17 may be clamped, as by pliers, until the jaws 18—18 abut, as shown in Fig. 2. When in clamped position, the inner contour of the washer 17 is preferably circular and of a radius to provide a clearance 19 with the inner surface of the annular groove 15—16 to which it is applied.

When assembled to the rod portion 12, the washer 17 may extend circumferentially of the rod for substantial engagement with an appropriately formed recess 20 in one of a plurality of handle segments 21—22. In the form shown, the handle 14 is formed of two halves 21—22, respectively, and, if desired, these halves may be of molded-plastic construction. One of the halves 22 is preferably applied to the washer means 17 so that its recess 20 spans the jaw ends 18 of the washer means 17, thus providing a means for perpetually clamping the jaw ends 18 together. The two handle halves 21—22 may then be secured together by any desired means, such as by cementing, by screwing them together, or otherwise, but in the form shown I employ a number of dowels or pins 23 sunk in appropriately formed holes or recesses in the handle-half moldings. The dowels 23 are preferably knurled or otherwise roughened so that when cemented or otherwise bonded to the handle halves 21—22, there may be a permanent secure bond of the handle halves together.

It will be understood that when assembled in the described manner the handle 14 may be permanent in its mounting on the cranking portion 12 of the bit brace and that it may be free to rotate about the said portion 12. Excessive

stresses, in fact all stresses, are directly assumed by the washer means 17, which is in effect unitarily carried with the handle halves 21—22. If desired, for a saving of handle plastic or other material, each of the halves 21—22 may be cored out, as at 24—25, without sacrificing strength, appearance, or effectiveness of the handle 14.

As indicated generally above, alternative means may be employed for securing the handle halves 21—22 together in tight-fitting relation with each other and with the washer means 17. In Fig. 5 I show the employment of a metal ferrule 26 for this purpose. Ferrules, such as the ferrule 26, may be circumferentially continuous and fit as caps over both ends of both handle halves 21—22.

Although in the preferred forms described above I employ a single-piece washer 17 in each of the grooves 15—16, it will be understood that other forms may be equally satisfactory, as for example in the case of the construction of Fig. 6. In Fig. 6, the washer means 17 is of two pieces 27—28 formed as halves of a fully assembled washer 17. By assembling the handle halves 21—22 so that their washer recesses 20 each span adjacent ends of the washer halves 27—28, it will be appreciated that each handle-half 21—22 of itself serves the function of clamping the washer halves 27—28 together. The unit may be made into a permanent assembly by the dowel or pin means 23 of Fig. 2, or, if desired, the ferrule means of Fig. 5 may be employed.

It will be seen that I have described an exceedingly simple handle construction, which may have particular utility when it is desired to have a molded-plastic handle revolubly mounted upon a crank, rod, or the like, as in the case of a center handle for a bit brace. My novel construction permits assembly even after the frame member or rod 11 for the bit brace has been bent and assembled with other parts of the bit brace; even so my center-handle construction may be completely rugged and readily assume the working stresses which develop upon cranking the bit brace.

While I have described my invention in detail

for the preferred forms shown, it will be understood that modifications may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a device of the character indicated, a rod having a pair of spaced apart circumferential grooves therein, washers in said grooves and in loose-fitting relation thereto, a handle member surrounding said rod and locked on and carried by said washers, said handle and locked on washers being freely rotatable with respect to said rod, all stresses between said rotatable unitary handle and washers and said rod during cranking thereof being taken by said washers rather than directly by said handle.

2. In a device of the character indicated, a rod having a circumferential groove therein, a washer in said groove and in loose-fitting relation thereto, a handle member surrounding said rod and locked on and carried at one end by said washer, said handle and locked on washer being freely rotatable with respect to said rod, all stresses between said handle and rod being taken by said washer rather than directly by said handle, and bearing means at the other end of said handle fixed thereto and providing a free running of said handle on said rod at said other end.

WILLIAM J. CAVANAGH.

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