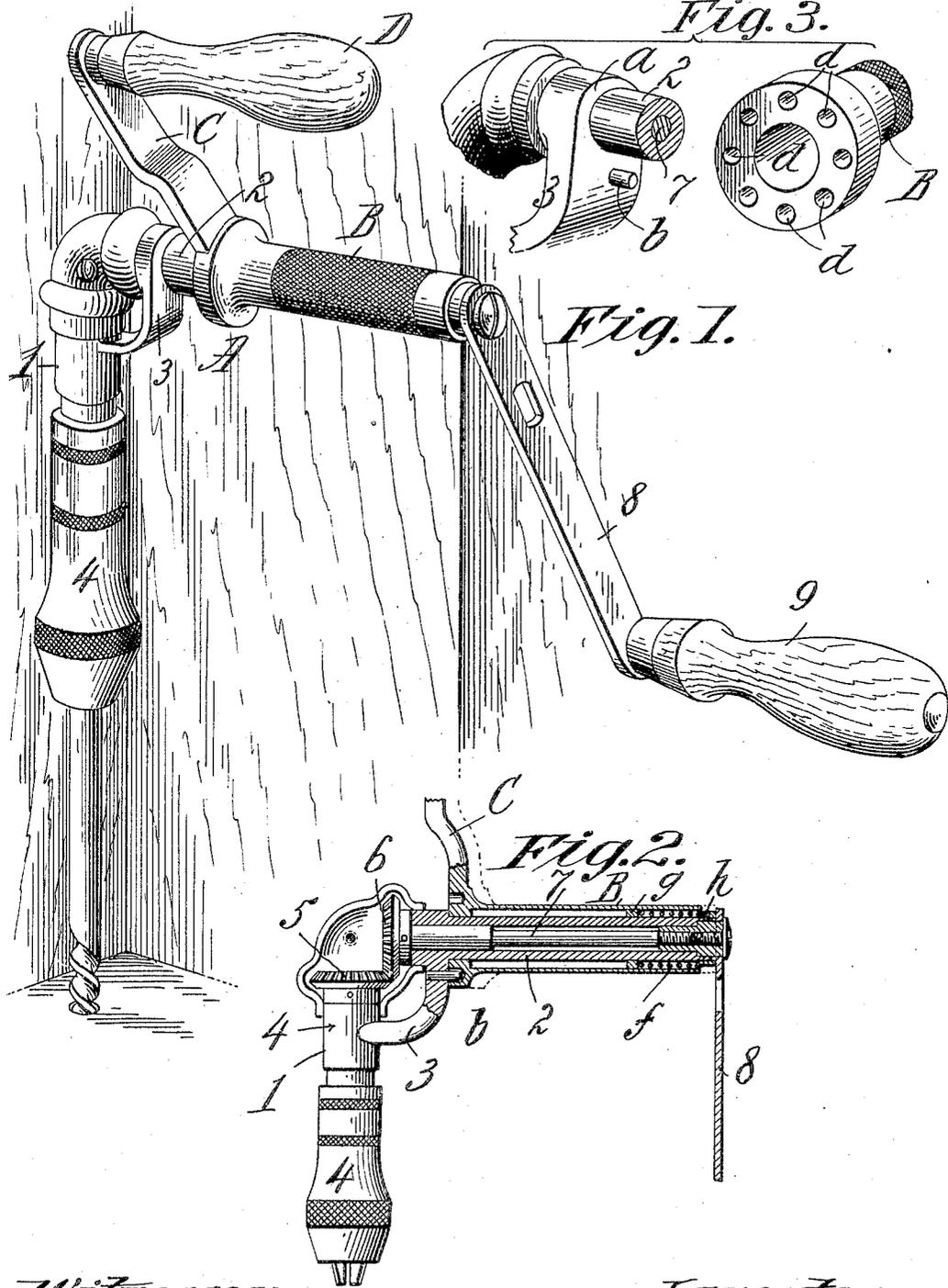


A. D. GOODELL.  
CORNER BRACE.

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# UNITED STATES PATENT OFFICE.

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## CORNER-BRACE.

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*To all whom it may concern:*

Be it known that I, ALBERT D. GOODELL, a citizen of the United States of America, and a resident of Shelburne Falls, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Corner-Braces, of which the following is a full, clear, and exact description.

This invention relates to improvements in corner-braces or bit-stocks, and more particularly to that particular type embodying a relatively vertical stock member by which the bit or other tool holder is carried with capability of rotation and a horizontal rigidly-united handle member and crank-operated connections through the angularly-arranged stock members for rotating the tool-holder, all whereby the rotations of the crank may be in a plane remotely offset from the axial line of the tool-holder and the bit or other tool carried thereby.

The object of this invention is to improve the above-indicated type of brace by providing a handle member additional to the usual handle member comprised as a part of the stock, whereby the availability of the implement for convenient use is possible in a greatly-increased number of situations and whereby the brace may be very much more steadily held to its work.

The invention consists in the combination, with a brace comprising the vertical tool-carrying and the horizontal stock members, a crank revoluble at the end of the handle member, and connections extending through the stock members actuated by the crank rotatably driving the tool-holder, of an extension radial to the horizontal stock member adjustable therearound with means for its confinement as adjusted and having a handle member offset from and substantially parallel with the said horizontal member of the angular stock.

The invention furthermore and specifically consists in the combination and construction of parts, all substantially as hereinafter fully described, and set forth in the claims.

The improved corner-brace is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing one of the many manners of its use. Fig. 2 is a side elevation and partial sectional view of the brace. Fig. 3 is a perspective view to illustrate a feature of construction hereinafter referred to.

The brace A comprises, as already heretofore known and made, the relatively vertical and horizontal axially-bored stock members 1 and 2, the same being rigidly united by the integrally-formed or otherwise constructed bracket 3. The tool-holder 4 for carrying the bit, screw-driver, reamer, or other tool has a shaft-like shank 4, rotatable through the vertical member 1 of the angular stock and having at its upper end a bevel gear-wheel 5, in mesh with which is another bevel-gear 6, affixed on the end of the shaft 7, which extends through and has bearings for rotation in the horizontal stock member 2, said shaft 7 having the crank 8 affixed at its outer end provided with a crank-handle 9, the crank in this type of brace having its rotation in a plane offset from and parallel with the axis of the tool-holder instead of rotating in a plane right-angular thereto. The angle-brace made as described is of course available in some situations where the most common kind of bit-stock could not be operated; but the range of utility of the angle-brace is increased by the further provisions constituting the present improvements and which will now be particularly described. The said horizontal member 2 of the angular stock has near its inner portion, which is adjoined to the vertical stock member, a shoulder *a*, provided with a stud *b*, and a sleeve B, slightly shorter than the length of the stock member 2, encircles the latter and has a capability for an endwise play thereon. At its inner end portion the sleeve member B is made with a circularly-arranged series of sockets *c*, any one of which may become interlocked with the aforementioned stud *b* by the endwise outward forcing of the sleeve against the spring *f* and the rotating of the sleeve for its proper positioning, so that the radial arm C of the sleeve B may be extended in any direction from the axis of the crank-shaft and the surrounding sleeve B and so that the handle D,

which ranges substantially parallel with the shaft 7, stock member 2, and sleeve B, may have its position either at the front, back, or above said parts, or, in fact, it may be positioned and maintained as a rigid part of the angular stock at any point in an orbit about the axis of the crank-shaft. The sleeve is chambered, as represented in Fig. 2, so as to give space for occupancy of the spiral spring *f*, which encircles the cylindrically-formed stock member 2, said spring being in compression between an internal shoulder *g*, provided to the sleeve, and the stop-collar *h* at the outer end of the stock member 2.

In order to adjust the supplemental handle D, revoluble about the horizontal part of the stock, it is only necessary to slide the integral sleeve, its radial extension, and the handle D outwardly to free such parts, movable as an entirety from the dowel and socket engagement, the new adjustment when made being maintained against accidental derangement by the reaction of the inclosed spring *f*.

It is of course immaterial whether the circularly-arranged sockets *d* are provided at the end of the sleeve member B in the stud *b* on the shouldered portion *a* of the stock or a reversal in the arrangement of such features is observed.

In the view Fig. 1 it will be perceived that the brace being used in a corner, and where the horizontal stock member could not be conveniently grasped by reason of its proximity to the vertical wall, it becomes expedient to have the extension C forwardly and upwardly (obliquely) adjusted, so as to bring the secondary handle D sufficiently far away from the wall to give room for the grasp of the hand, which steadies and controls the brace, while the other hand turns the crank. This, however, is only one of the many manners of use of the implement rendered possible and more convenient by the presence of the described improvement.

Another very important advantage arising from the provision of the secondary handle D is found in its use as a support to aid the operator in holding the brace steadily in position, especially while employing bits of the larger sizes, the stock member B being grasped with the hand, at the same time letting the handle D rest against the wrist, such handle having been set at the best or most convenient position or angle for this purpose, or if conditions require it the handle D may be grasped by the hand with the stock member B resting against the wrist. In these manners of use three points of contact are acquired—viz., the bit at work, the stock members B in the hand, and the handle D against the wrist, or the handle in the hand and the stock member against the wrist. Thus a leverage is obtained which entirely prevents the tendency of the member or handle grasped from slipping or rolling in the hand, as would

be the case without the handle, which provides the third leverage point of contact. It therefore becomes evident that the secondary handle D, extending as it does from the radial arm C, is a very important improvement in this class of braces.

I am aware that the radial handle may be attached to the stock member in various ways specifically different than by the means here shown as the preferred device for such purpose, and limitation in this respect is not to be herein made, recognition being given to the fact that it has always been very difficult for the operator to hold a bit of considerable size at a required position and turn it with a crank rotatable about an axis at an angle to the bit when in use; but my invention, as hereinabove described and explained, will obviate that difficulty.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a corner-brace, the combination with the stock comprising hollow members rigidly united and angularly arranged, a tool-holder having a shank rotatable through one hollow member and having a bevel-gear, a crank-shaft rotatable through the other hollow member, having a bevel-gear in mesh with the tool-holder-shank gear and having a crank-handle, and a part encircling the crank-shaft-inclosing stock member and rotatable thereabout, means for confining it in any adjustment to which it may be rotated, and said encircling part having a radial extension provided with a handle, offset from, and parallel with the crank-shaft.

2. In a corner-brace, in combination, the stock comprising relatively vertical, and horizontal, axially-bored, and rigidly-united, members, said horizontal member having a shoulder near its inner end portion which is adjoined to the vertical stock member, the tool-holder having a cylindrical shank extending through the vertical stock member and having bearings for rotation therein, a crank-provided shaft extending through the horizontal stock member, endwise thereon, and having a radial extension provided with a handle offset from, and substantially parallel with, such horizontal stock member, with the provision, as between the aforesaid shoulder and the inner end of the sleeve, of a projecting stud and a circularly-arranged series of sockets, and a spring for forcing said sleeve toward said shoulder.

3. In a corner-brace, in combination, the stock comprising relatively vertical, and horizontal, axially-bored, and rigidly-united, members, said horizontal member having a shoulder near its inner end portion which is adjoined to the vertical stock member, provided with a stud, the tool-holder having a cylindrical shank extending through the vertical stock member and having bearings for rotation

therein, a crank-provided shaft extending through the horizontal stock member, intermeshing bevel-gears affixed on adjacent portions of the crank-shaft and tool-holder shank, a sleeve encircling the horizontal stock member, endwise movable thereon, having an internal shoulder, provided with a radial extension carrying a handle offset from, and substantially parallel with the horizontal stock member, and having at its end toward said stud, provided shoulder with a series of circularly-arranged sockets, and a spiral spring inclosed within the sleeve and in compression between its aforesaid internal shoulder, and an opposite end abutment therefor.

4. The combination with a brace comprising the vertical tool-carrying, and the horizontal stock members, a crank revoluble at the end of the handle member and connections, extending through the stock members, actuated by the crank, rotatably driving the tool-holder, of an extension radial to the handle member, adjustable therearound, with means for its confinement as adjusted, and having a handle member offset from and substantially parallel with the said horizontal member of the angular stock.

5. In a device of the character described, a stock comprising members rigidly connected at an angle to each other, a tool-holder rotatably mounted on one member, a driving-shaft journaled on the other member, means for driving said shaft and means for transmitting motion from the shaft to the tool-holder, a handle-piece carrying a laterally-projecting handle, rotatably mounted on the member on which the driving-shaft is journaled, in order that said handle may be made to assume different positions, and interengaging parts, carried by the handle-piece and said member for locking the handle-piece to the positions to which it may be rotated.

6. In a device of the character described, a stock comprising members rigidly connected at an angle to each other, a tool-holder rotatably mounted on one member, a driving-shaft journaled on the other member, means for driving said shaft and means for transmitting motion from the shaft to the tool-holder, a handle-piece carrying a laterally-projecting handle rotatably mounted on the member on which the driving-shaft is journaled, in order that said handle may be made to assume different positions, interengaging parts carried

by the handle-piece and said member for locking the handle-piece to the positions to which it may be rotated, and means to maintain said interengaging parts in engagement.

7. In a device of the character described, a stock comprising members rigidly connected at an angle to each other, a tool-holder rotatably mounted on one member, a driving-shaft journaled on the other member, means for driving said shaft and means for transmitting motion from the shaft to the tool-holder, a handle-piece carrying a laterally-projecting handle, rotatably mounted on the member on which the driving-shaft is journaled, in order that said handle may be made to assume different positions, interengaging parts carried by the handle-piece and said member for locking the handle-piece to the positions to which it may be rotated, and a spring to maintain said interengaging parts in engagement.

8. In a device of the character described, a stock comprising members rigidly united and arranged at an angle to each other, a tool-holder rotatably mounted on one member, a driving-shaft journaled on the other member, means for driving said shaft and means for transmitting motion from the shaft to the tool-holder, a handle rotatably mounted on the member carrying the driving-shaft, and means for rigidly locking the handle to the stock to maintain said handle in any position to which it may be rotated.

9. In a device of the character described, a stock comprising members rigidly united and arranged at an angle to each other, a tool-holder rotatably mounted on one member, a driving-shaft journaled on the other member, means for driving said shaft and means for transmitting motion from the shaft to the tool-holder, a handle-piece rotatably mounted on the member carrying the driving-shaft and having movement longitudinally of said member, interengaging parts carried by the handle-piece and the stock whereby the handle-piece may be locked against rotation, and a spring to force said handle-piece toward the stock to place said parts in locking relation.

Signed by me at Shelburne Falls, Massachusetts, in presence of two subscribing witnesses.

ALBERT D. GOODELL.

Witnesses:

SIMON SCHMIDT,  
HURLBERT ELDREDGE.