May 6, 1924. 1,493,160

R. S. PIERCE

BITSTOCK

Filed Sept. 7, 1922

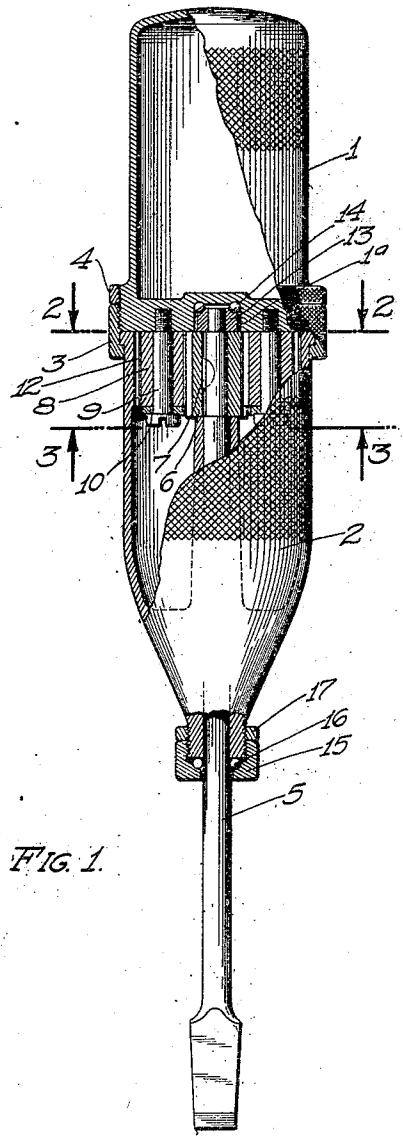


FIG. 1.

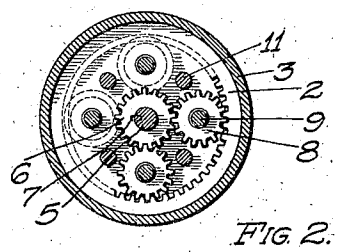


FIG. 2.

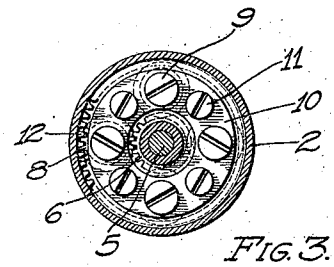


FIG. 3.

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Patented May 6, 1924. 1,493,160

UNITED STATES PATENT OFFICE.

RICHARD S. PIERCE, OF SAN DIEGO, CALIFORNIA.

BITSTOCK.

Application filed September 7, 1922. Serial No. 586,729.

To all whom it may concern:

Be it known that I, RICHARD S. PIERCE, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented certain new and useful Improvements in Bitstocks, of which the following is a specification.

My invention relates to bit stocks more particularly to bit stocks in which different speeds may be attained and the objects of my invention are: first, to provide a bit stock of this class in which the bit will rotate at a greater rate of speed than the stock itself or the handle portion of said stock when properly operated and thus expedite the work on which it is used; second, to provide a bit stock of this class in which the bit will rotate at different speeds dependent on the relative movements of the upper and lower handle members; third, to provide a mechanism of this class which can be readily applied to various types of bit stocks; fourth, to provide a novelly constructed bit stock of this class and fifth, to provide a bit stock of this class which is very simple and economical of construction, durable, efficient, practical, compact and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a longitudinal sectional view of my bit stock with certain parts and portions shown in elevation to facilitate the illustration; Fig. 2 is a transverse sectional view thereof taken through 2—2 of Fig. 1 and Fig. 3 is another transverse sectional view thereof taken through 3—3 of Fig. 1.

Like characters of reference refer to similar parts and portions throughout the several views of the drawings.

The upper handle member 1, lower handle member 2, nut 3, lock nut 4, bit member 5, gear 6, key 7, intermediate gears 8, screws 9, plate 10, screws 11, internal gear 12, cone 13, balls 14, nut 15, balls 16 and the lock nut 17 constitute the principal parts and portions of my bit stock structure.

The handle or grip portion of my bit stock consists of an upper handle member 1 and a lower handle member 2, both preferably hollow on the inside to reduce the weight and preferably knurled on the exterior surface to facilitate the handling of the tool. Said members 1 and 2 are revolubly secured to each other by a nut 3 which engages an annular shoulder on one of the handle members and external threads on the other handle member. The nut 3 is retained in position on the externally threaded handle member by the lock nut 4 engaging the nut 3. The bit member 5 is revolubly mounted in the lower handle member 2 and is provided near its inner end with a spur gear 6 which is secured to said bit member 5 by the key 7. The spur gear 6 meshes with a plurality of intermediate gears 8, which are revolubly mounted on the shoulder screws 9 secured in the wall of the inner face of the handle member 1. An annular plate 10 is interposed between the intermediate gears 8 and the head of their respective shoulder screws to reinforce and position said intermediate gears and other gears relatively to each other. Other screws 11 are provided intermediate the several gears 8 to further position and secure the annular plate 10 to the handle member 1. The intermediate gears 8 also mesh with an internal gear 12 which is preferably integrally secured on the inside of the upper portion of the handle member 2. A ball bearing cone 13 is provided at the inner end of the shank of the bit member 5 and extends into a recess 1^a of the upper handle member 1. Balls 14 are provided in the recess of the member 1 and interposed between the wall thereof and the cone 13 to take up the end thrust exerted on the bit member 5. A ball bearing is provided at the lower end of the handle member 2 and consists of the balls 16, positioned against the normally lower shoulder of the lower handle member 2 and the shank of the bit member 5 and the nut 15 engaging the external threads at the lower portion of the lower handle member 2. The nut 15 is held in a fixed position on the member 2 by the lock nut 17 engaging the same.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular, con-

struction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

It is obvious from the accompanying drawings and the foregoing description that, by holding the member 2 stationary and rotating the member 1 in a certain direction the intermediate gears 8 will rotate in the opposite direction about their respective axes although revolving with the member 1 and therefore rotating the gear 6 together with the bit member 5 in the same direction as the handle member 1, however, at a greater rate of speed. It is also obvious that by revolving the member 1 and allowing the member 2 to revolve but controlled relatively that varying speeds of the bit may be atained.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A bit stock, including a handle member, a casing member rotatably mounted on and relatively to said handle member, an adjustable positioning and securing means in connection with the abutting ends of said handle and casing members for rotatably supporting the same relatively to each other, a bit member revolubly mounted in said casing member and extending through the same, an internal gear inclosed by and secured to said casing member, an intermediate gear revolubly mounted at one end of said handle member adapted to mesh with said internal gear and a central gear positioned in said casing adapted to mesh with said intermediate gear.

2. A bit stock, including two handle members positioned end to end and rotatable relatively to each other, adjustable positioning and securing means rotatably and detachably securing said handle members to each other, a bit member revolubly mounted in one of said handle members and extending through said member with its inner end bearing against the other of said handle members, an internal gear secured to one of said handle members, an intermediate gear revolubly mounted on the other of said handle members and a central gear mounted near the inner end of said bit stock adapted to mesh with said intermediate gears and drive said bit member .

In testimony whereof, I have hereunto set my hand at San Diego. California, this 1st day of September, 1922.

RICHARD S. PIERCE.