

April 15, 1930.

C. S. MILLER

1,754,692

BIT LIFTER

Filed Oct. 3, 1928

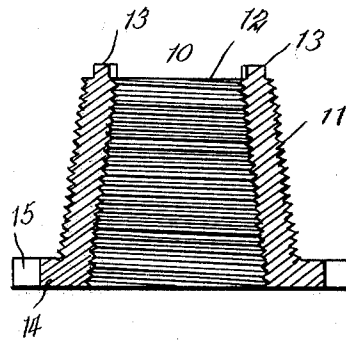
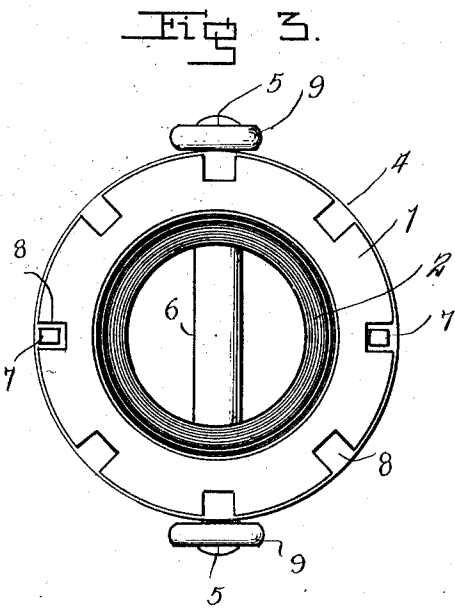
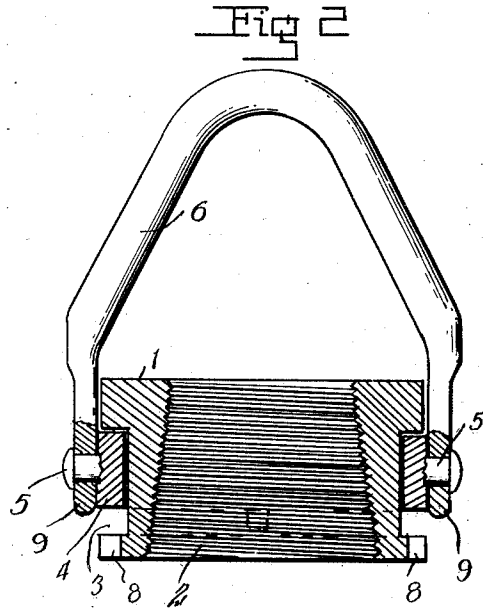
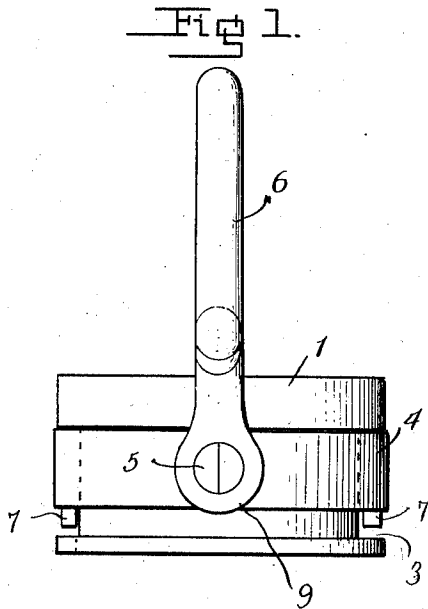


Fig. 4.

Inventor

C. S. Miller

By *Lacey & Lacey*, Attorneys

UNITED STATES PATENT OFFICE

CHARLES S. MILLER, OF BALLINGER, TEXAS

BIT LIFTER

Application filed October 3, 1928. Serial No. 310,132.

This invention is a device for handling deep well bits for tempering and dressing the same and the object is to provide a simple, inexpensive and durable device by the use of which the bit may be easily handled and will be efficiently supported. The invention is illustrated in the accompanying drawing and consists in certain novel features which will be hereinafter first fully described and then more particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a side elevation of a device embodying the invention;

Fig. 2 is a vertical diametrical section;

Fig. 3 is a bottom plan view, and

Fig. 4 is a section of a filler.

In carrying out the invention, there is provided a head 1 which is provided with a threaded bore 2 which tapers upwardly. In the outer circumferential surface of the head is formed an annular groove 3 in which is fitted a yoke 4 having headed studs 5 extending radially therefrom at diametrically opposite points. Swiveled upon the studs 5 is a bail 6 which is adapted to be attached to a chain or cable and suspended from a supporting crane in a manner which will be readily understood by those skilled in the art. At diametrically opposite points of the yoke 4, lugs 7 depend therefrom to engage notches 8 in the bottom of the head 1 whereby the head may be prevented from turning in the yoke or may be caused to turn with the yoke in order to secure the bit therein.

In use, the threaded pin at the upper end of the bit is engaged in the threaded bore 2 of the head and is turned home therein so that it will be secured and firmly held by the head. When the bit is being attached or removed, the yoke is permitted to descend to and rest upon the bottom of the groove 3 with the lugs 7 engaged in notches 8 of the head, whereupon the bail and yoke may be utilized as a wrench to rotate the head upon the pin of the bit and effect attachment or detachment. When a bit is attached and suspended, the weight of the head and attached bit will move the same downwardly, relative to the yoke, so that the top wall of the groove 3

will rest on the upper edge of the yoke with the lugs 7 free of the notches 8, and the head may then swivel freely on the yoke. When the bit is being tempered, it will depend from the head in the vertical plane of the bail 6 so that it will have a proper upright position within the tempering tub and the tempering process may be carried out effectually without requiring the operators to laboriously support the bit. The device is of great advantage in carrying bits or loading them on trucks, etc. The heads of the studs 5 effectually retain the bail in engagement with the studs and the studs may turn easily in the terminal eyes 9 of the bail which encircle the studs, as shown.

The yoke is produced in halves as though split centrally through the studs. The halves are brought together around the head and united by welding, the surfaces being treated to acquire a smooth finish. The bail is heated at its top center, when it is to be assembled with the yoke, its ends spread and then engaged over the studs on the yoke and driven into encircling relation therewith, and the center of the bail then cooled. Heads may then be formed on the studs in any convenient manner, as by upsetting their ends or welding washers or disks thereon, but the heads are not essential as the bail ends, under strain, tend to move inwardly instead of outwardly.

Bits are generally standardized and the pins at the upper ends thereof are approximately uniform in their dimensions so that ordinarily the threaded bore 2 of the head will receive and secure any bit. Occasionally, however, bits are found which are smaller than the standard and in order to secure such bits in the head a filler 10, such as shown in Fig. 4, may be employed. This filler consists of a tapered or conical ring having external threads 11 to engage the threaded bore of the head 1 and internal threads 12 to engage the threads on the pin of the bit, and at the upper end of the filler there may be diametrically opposite lugs 13 which are adapted to be engaged by a spanner or other turning tool in order to turn the filler home in the head. The lower end of the filler is formed with an annular shoulder or flange 14 to extend outward-

ly below the head and having notches 15 therein to register with notches 8 of the head. By inserting a key through registering notches or making the lugs 7 long enough to engage both notches, the filler may be locked to the head to turn therewith for attaching and detaching a bit. The shoulder 14, by contact with the bottom of the head, limits the movement of the filler into the head and thereby prevents excessive wear upon the threads.

It will be readily noted that I have provided an exceedingly simple device whereby the drill bit will be firmly supported and may be easily manipulated without imposing any strain upon the operator.

Having thus described the invention, I claim:

1. A device for the purpose set forth comprising a head having an internally threaded bore and an external annular groove, a yoke fitted within the groove and movable therein around the head, a bail swiveled upon the yoke, and means to lock the yoke to the head for movement therewith.

2. A device for the purpose set forth comprising a head constructed to receive and secure a drill bit and provided in its outer circumference with an annular groove and having openings in the base of said groove, a yoke fitted around the head within said groove and having depending lugs adapted to engage any of the openings in the bottom of the groove, and a bail swiveled upon the yoke.

3. A device for the purpose set forth comprising a head constructed to receive and secure a drill bit, a yoke swiveled upon the head and provided with diametrically opposite studs, and a bail pivotally engaged upon the studs.

4. A device for the purpose set forth comprising a head having an internally threaded bore, a yoke swiveled upon the head, a bail swiveled upon the yoke, and a filler engageable in the bore of the head.

5. A device for the purpose set forth comprising a bit-engaging head, a yoke swiveled about the head, means for locking the yoke to the head and suspending means connected to the yoke.

In testimony whereof I affix my signature.
CHARLES S. MILLER. [L.S.]

55

60

65