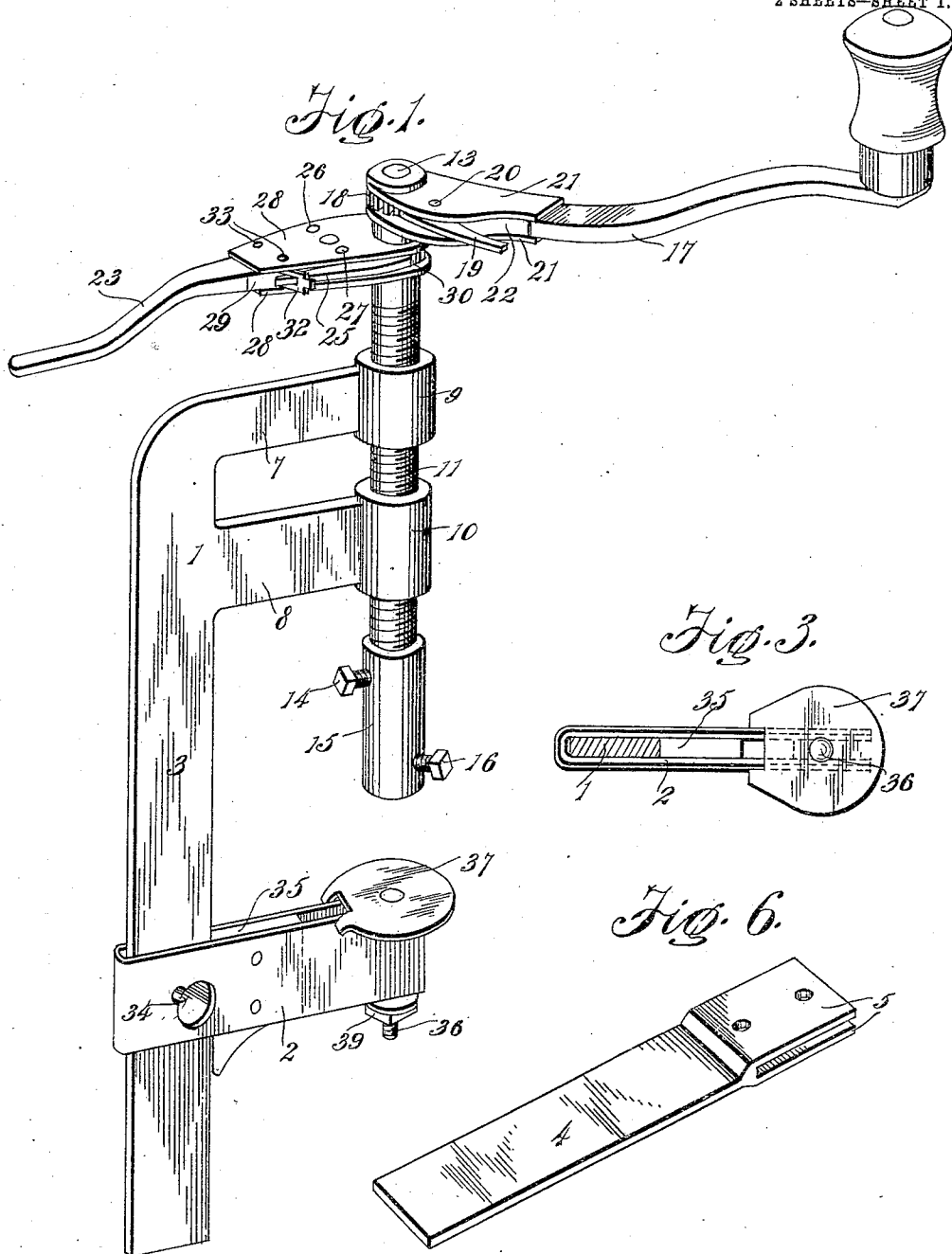


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PORTABLE DRILL.
APPLICATION FILED AUG. 27, 1908.

931,746.

Patented Aug. 24, 1909.
2 SHEETS—SHEET 1.



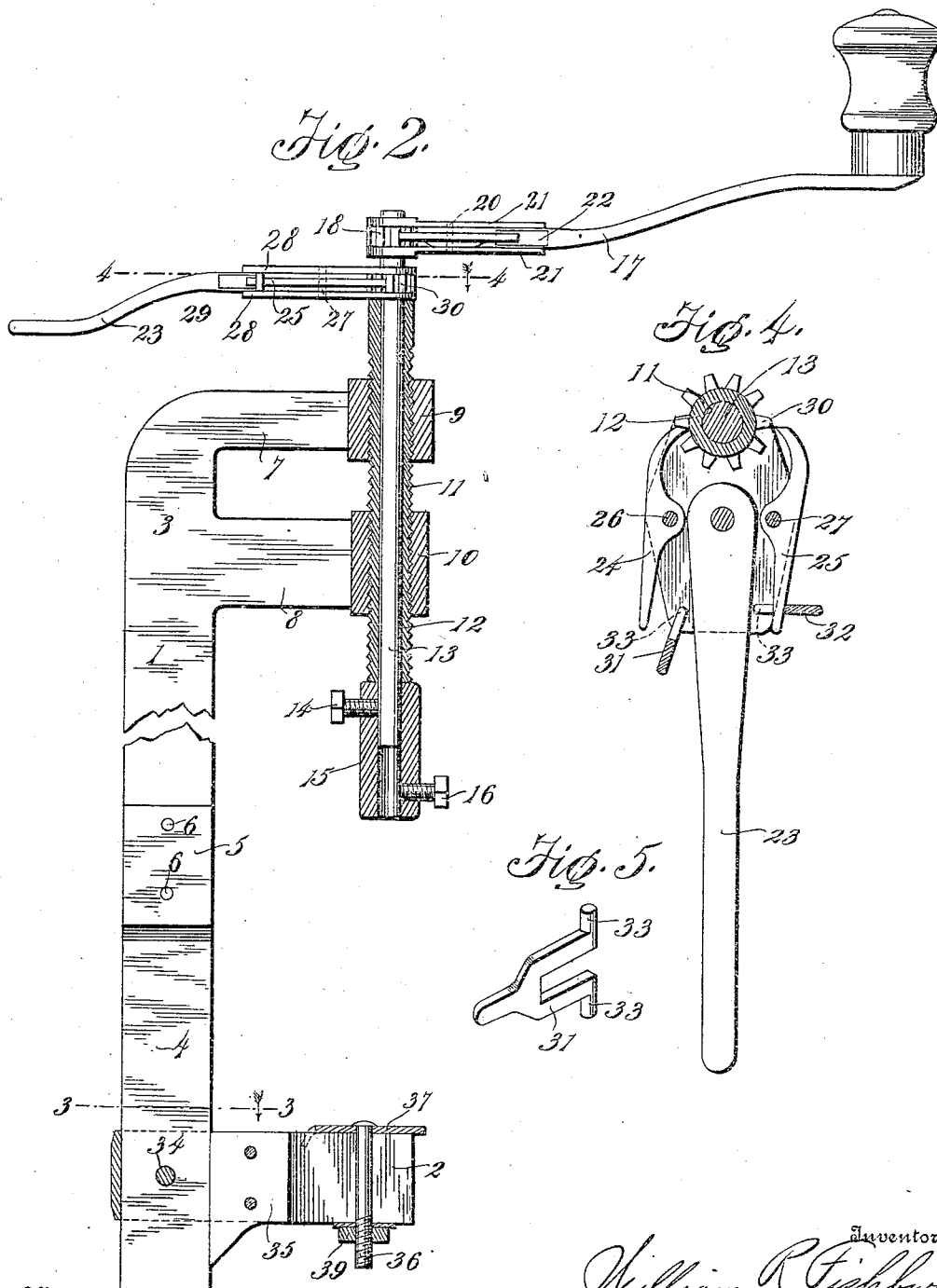
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UNITED STATES PATENT OFFICE.

WILLIAM R. FISHBURN, OF BIRKVILLE, KANSAS, ASSIGNOR OF ONE-HALF TO RICHARD L. DIBBLE,
OF BIRKVILLE, KANSAS.

PORTABLE DRILL.

931,746.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed August 27, 1908. Serial No. 450,574.

To all whom it may concern:

Be it known that I, WILLIAM R. FISHBURN, a citizen of the United States, residing at Birkville, in the county of Norton and State of Kansas, have invented certain new and useful Improvements in Portable Drills, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in portable hand drills and consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed.

The object of the invention is to provide a simple double action ratchet hand drill which will be simple and inexpensive in construction and strong, durable and convenient in operation.

The above and other objects of the invention are attained in its preferred embodiment illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the improved drill; Fig. 2 is a vertical longitudinal section; Figs. 3 and 4 are transverse sectional views taken, respectively, on the planes indicated by the lines 3—3 and 4—4 in Fig. 2; Fig. 5 is a detail view of one of the pivoted catches; and Fig. 6 is a detail view of the removable section of the body bar.

The invention comprises a body 1 at one end of which is provided the drill supporting and operating means and at the opposite end of which is an adjustable work support 2. Said body 1 is in the form of a straight bar and, if desired, it may be made of two or more sections so that it can be extended in length to accommodate the character of the work to be operated upon. As illustrated, it is composed of a main section 3 and a removable section 4, which latter has its inner end enlarged and slotted transversely to form arms 5 to receive one end of the section 3 between them and which are removably secured on said section by transverse bolts or similar fastenings 6.

At the opposite end of the main section 3 of the body are spaced right angularly projecting arms 7, 8, the former of which carries a cylindrical guide sleeve 9 and the latter of which carries a nut 10 which is disposed in longitudinal alinement with said sleeve. Said nut receives a feed screw 11,

the outer end of which latter extends through 55 and is supported and guided by the sleeve 9. Said screw 11 is tubular and rotatably mounted in its bore 12 is a spindle 13. Upon the inner end of the latter is fixed, by means of a set screw 14, a tubular drill holder or socket 15 which is also provided with a set screw 16 for retaining the drill within it. 60

A crank handle 17 is connected to the outer end of the spindle 13 by a pawl and ratchet device which consists of a ratchet 65 wheel 18 fixed to said outer end of the spindle and a pawl 19 which is pivoted intermediate its ends at 20 between spaced plates 21 secured to the inner end of the crank handle and having bearing openings to rotatably receive the spindle. A spring 22 actuates the pawl 19 so that its inner end normally engages the ratchet wheel 18, which latter is disposed between the spaced bearing plates 21. The opposite end of said pawl 75 projects beyond the edges of said plates and forms a finger piece. This construction permits the crank handle to turn independent of the spindle in one direction and causes said spindle to be locked to it and to turn with it when rotated in the other direction. 80

The feed screw 11 is adapted to be intermittently operated by a hand lever 23 which is connected by a double pawl and ratchet device to the outer end of said screw. This 85 double pawl and ratchet device consists of two pawls 24, 25 pivoted intermediate their ends at 26, 27 on opposite sides of the lever and between spaced plates 28 fixed to the inner end of the latter and having openings 90 to rotatably receive the outer end of the feed screw. The inner ends of the pawls are actuated by springs 29 into engagement with the opposite sides of a ratchet wheel 30 fixed to the feed screw between the plates 28. The 95 outer or projecting ends of the pawls 24, 25 form finger pieces and they are adapted to be engaged by pivoted catches 31, 32 which serve to hold the pawls retracted. Said catches 31, 32 are U-shaped and have at their 100 closed ends finger pieces and at the ends of their spaced outwardly projecting arms pivot studs 33 which are arranged for rotation in bearing openings formed in the plates 28. By constructing the catches 105 in this manner, it will be seen that when the finger ends of the pawls are depressed said catches may be swung over said finger ends

to hold the pawls retracted. Either one or the other of the pawls is held retracted according to the direction in which it is desired to turn the feed screw when the lever 23 is oscillated. When one pawl is in an operative position and the lever is oscillated the screw will be fed inwardly to move the drill toward the work and when said pawl is held retracted and the other one is released and allowed to assume an operative position the feed screw will be moved outwardly when said lever is oscillated.

The work support 2 may be adjustably mounted on either of the sections 3 or 4 of the body and it is constructed of a metal strap bent upon itself into U-form to receive and slide upon said body. A set screw 34 provided in the threaded opening in one of its sides is adapted to impinge against the body and retain it in an adjusted position. The spaced ends of said strap are spaced apart by a block 35 which is riveted between them at some distance from their outer extremities so as to permit the latter to receive the fastening bolt 36 of a work supporting plate 37. The latter is in the form of a disk provided with one side bent and recessed, as shown at 38, to receive and slide upon one edge of the supporting arm 2. The bolt 36 has its head set in the plate 37 and its body portion is slidable between the spaced ends of the strap which forms the arm 2. A washer and a nut 39 are provided upon the threaded extremity of said bolt for the pur-

pose of clamping the plate 37 in an adjusted position.

From the foregoing it will be seen that the invention provides an exceedingly simple portable hand drill which may be produced at a small cost and will be strong and durable in use and exceedingly convenient in operation.

Having thus described the invention what is claimed is:

The combination of a body bar, a drilling mechanism at one end thereof, a work support longitudinally adjustable on said body bar and comprising a U-shaped strap extending around the body bar, a spacing block secured between the arms of said U-shaped strap and engaged with one edge of the body bar, whereby the holder will be retained on the body bar for sliding movement, a work supporting plate arranged upon the edges of the spaced arms of the U-shaped strap and having a bent portion notched to receive said arms, whereby the plate will be guided in its sliding movement on the latter and an adjusting nut carried by the plate and extending between the spaced arms of the U-shaped strap for clamping the plate in an adjusted position.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM R. FISHBURN.

Witnesses:

R. L. DIBBLE,

WILL KORNOFF.