

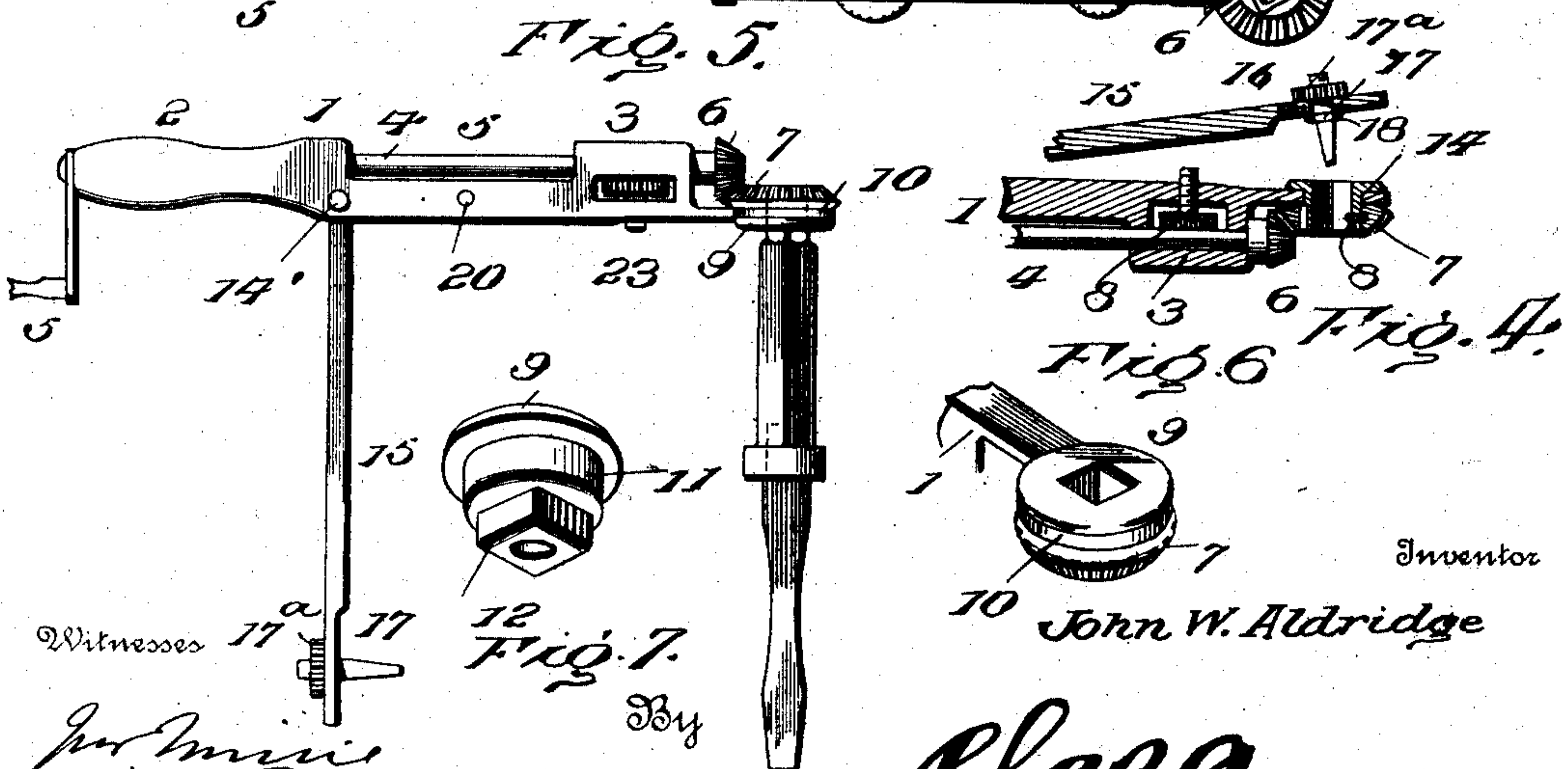
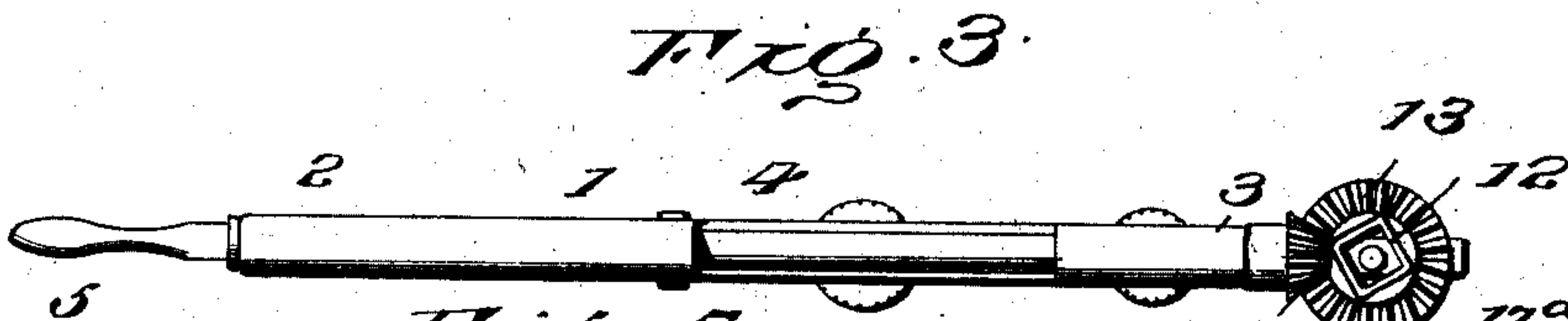
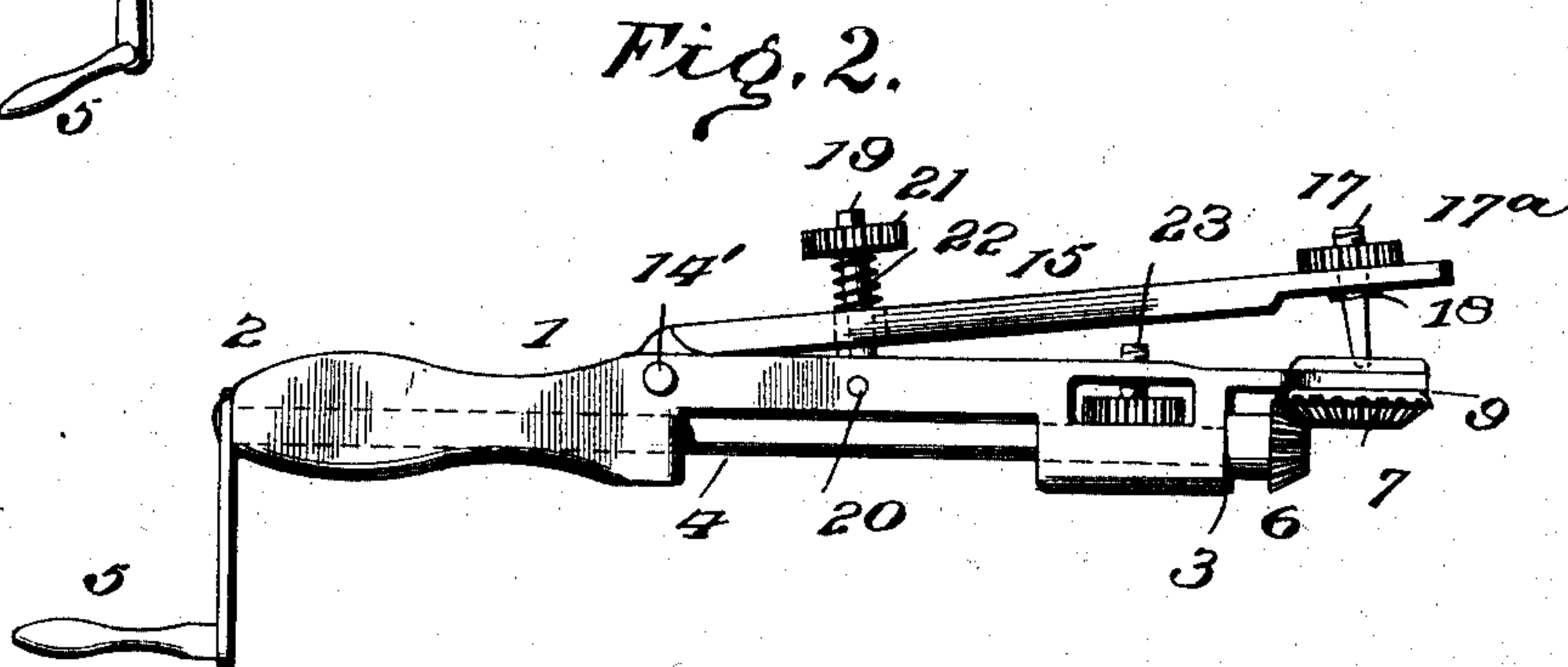
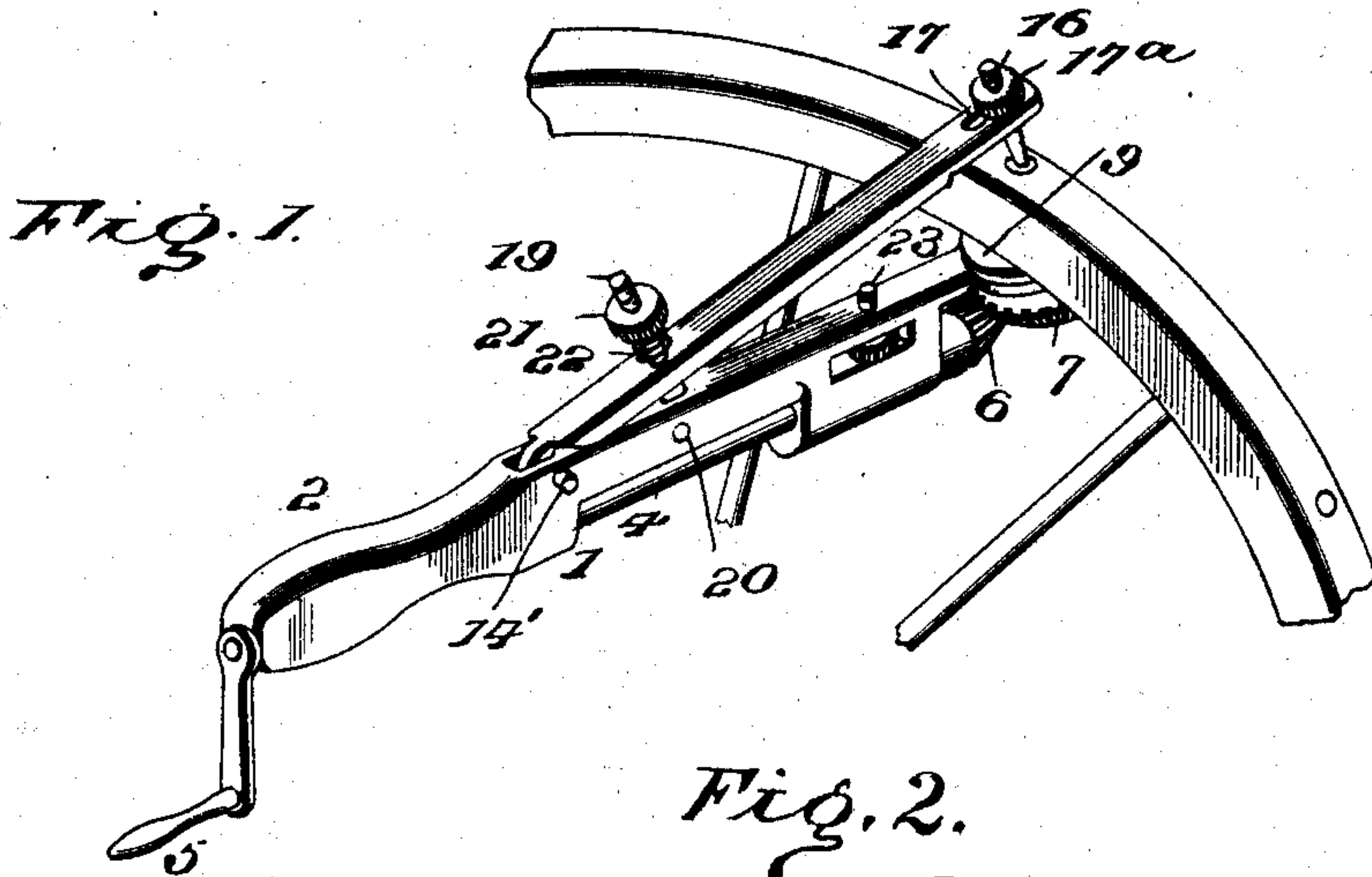
No. 706,629

Patented Aug. 12, 1902.

J. W. ALDRIDGE.
MACHINE WRENCH.

(Application filed Mar. 26, 1902.)

(No Model.)



Witnesses

For Minors
For Robt.

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UNITED STATES PATENT OFFICE.

JOHN W. ALDRIDGE, OF KINCAID, KANSAS.

MACHINE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 706,629, dated August 12, 1902.

Application filed March 26, 1902. Serial No. 100,141. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. ALDRIDGE, a citizen of the United States, residing at Kincaid, in the county of Anderson and State of Kansas, have invented certain new and useful Improvements in Machine-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel holder and operating device for holding and driving small tools, such as wrench-heads, screw-driver bits, drills, and the like; and its object is to provide a simple, durable, efficient, and convenient device of this character by means of which nuts may be readily applied to and removed from bolts and the bolt held from turning when required and motion imparted to various kinds of rotary tools.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the manner in which the device is used for applying or removing a nut from a bolt and holding the bolt from rotating. Fig. 2 is a side elevation of the device. Fig. 3 is a bottom plan view. Fig. 4 is a cross-section through the wrench-head, eye, and cooperating parts. Fig. 5 is a view illustrating the manner in which the device is employed in using a long screw-driver in driving inconveniently-arranged screws. Fig. 6 is a detail view of the wrench-head. Fig. 7 is a detail perspective view of the same detached.

Referring now more particularly to the drawings, the numeral 1 represents the body or frame of the tool holder and driver, which is shaped at one end to form a handle 2 and at its opposite end to form a bearing 3. The handle and bearing extend beyond one side of the intermediate connecting portion of the body, and said handle forms a bearing for one end of an operating-shaft 4, which extends longitudinally of the body and is journaled at its opposite end in the said bearing 3. This shaft projects at one end beyond the

outer end of the handle to receive a crank-handle 5, whereby it may be turned, and is also extended at its opposite end beyond the bearing 3 to receive a bevel-pinion 6.

The pinion 6 meshes with a bevel-gear 7, secured by a set-screw 8 to a wrench head or socket 9, mounted to rotate in a bearing-eye 10, disposed upon the outer end of the body 1 at right angles to the bearing 3. As shown, this wrench-head has a socket or opening of proper form to receive and engage a nut which is to be turned on or off a bolt and is provided with a journal 11, of reduced diameter, projecting from the outer or near face thereof and terminating in a rectangular end portion 12, which fits within a correspondingly-shaped socket or opening 13, formed in the gear 7, whereby the said wrench-head and gear are connected to turn in unison. The set-screw 8 connects the wrench-head 9, so as to prevent outward movement of one relative to the other, or, in other words, to hold the head and gear against separation. The wrench-head and gear are thus constructed to form an annular groove 14 between them for the reception of the bearing-eye 10. By rotating the shaft 4 the wrench-head may be driven in one direction or the other to turn a nut on or off a bolt.

Pivotally connected at its inner end, as indicated at 14', to the body at or near the inner end of the handle 2 and on the opposite side of the body from the shaft 4 is an adjustable arm or bar 15, which is provided at its free end with a longitudinal slot 16. In this slot is slidably fitted a bolt-holding bit 17, whose shank is threaded to receive a nut 17^a, bearing against the outer side of the arm 15 and formed with a shoulder 18 to abut against the inner side of said arm, whereby when the nut 17^a is tightened up the bit is held in fixed position. The shank of the bit is also flattened to hold it from rotation in the slot 16. The point of the bit extends normally into the socket of the wrench-head and is adjustable outward with the arm to engage the head of a bolt, as hereinafter described.

The arm 15 is apertured adjacent to its inner end for the passage of a bolt 19, pivoted at 20 to the body 1 and carrying an adjusting-nut 21, between which and the outer side of the arm is interposed a coil-spring 22, which

surrounds said bolt. By means of this bolt and nut the arm 15 may be permitted to swing outward from the body 1 to space the bit 17 a desired distance from the wrench-head and said arm adjusted to cause the bit to bind 5 firmly against the head of a bolt. The purpose of the spring 22 is to institute a proper binding action on the arm under the pressure of the nut 21 and to check the outward movement of the arm when the nut is slacked. The 10 arm is limited in its inward movement and prevented from binding on the wrench-head by a set-screw 23.

In employing the device for turning a nut 15 off or on a bolt the arm 15 is swung outward or dropped down to allow the wrench-head 9 to be engaged with the nut, when by rotating said head in one direction or the other through the medium of the shaft 4 and gears the nut 20 may be easily and quickly screwed upon the bolt or detached therefrom. If the nut is loose and turns therewith, the bolt may be held fixed by adjusting the bit 17 so as to bind against the head thereof, whereupon the nut 25 may be unscrewed with facility. The head of the bolt may be previously nicked by the use of a chisel to enable the point of the bit to more firmly engage the same when required. Fig. 1 shows the mode of applying the device 30 for turning nuts on and off the tire-bolts of vehicle-wheels. The device may also be used for driving screw-driver bits, drills, and other tools to which rotary motion is imparted. The bit used need only to be formed with a rectangular shank to fit the socket in the wrench-head and will be driven by rotating the head 35 in the manner previously described. If the arm 15 should be in the way, it may be swung out to a position at right angles to the body 1 upon removing the nut 21, and when in this position it may be used as a leg to support the device while a drill, screw-driver bit, or other tool is being operated, as shown in Fig. 6. This 40 position of the leg enables a long tool to be easily used for driving screws or drilling holes in work not otherwise conveniently accessible. In operating the device the device is held in one hand by the handle 2, while the other hand is used to turn the crank-handle 5.

50 From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood, and it will be seen that an exceed-

ingly useful and efficient construction of tool 55 holder and driver is provided.

Changes in the form, proportion, and minor details of construction may be resorted to within the scope of the invention without departing from the spirit thereof. 60

Having thus described the invention, what is claimed as new is—

1. In a wrench of the character described, a frame, bearings located at opposite ends of the frame and in line therewith, one of said 65 bearings forming a handle, an operating-shaft journaled in the handle, a socket disposed at the end of the frame opposite the handle portion thereof, and a crank-handle adapted to be driven by the said operating-shaft at the 70 outer end of the frame-handle by which the operating-shaft is turned, substantially as set forth.

2. In a device of the character described, in combination, a frame, bearings at opposite 75 ends of the frame in line therewith and adapted to receive an operating-shaft journaled therein, one of said bearings forming a handle, a socket journaled with its axis about at a right angle with the axis of the operating- 80 shaft and adapted to be rotated in the manner described, an arm pivoted intermediate the handle and socket ends of the frame and about parallel with the latter and adapted to carry a tool, and spring means for holding 85 the said arm in an ascertained relation to the frame, substantially as described.

3. In a device of the character described, a frame, a handle located at one end of same and adapted in conjunction with a bearing 90 at the opposite end of the frame to receive an operating-shaft rotatably journaled therein, an arm pivoted intermediate the ends of the frame about parallel therewith and adapted to carry a tool longitudinally slidable there- 95 in, the latter extending normally into the socket at the end of the frame, adjustable spring means for holding said arm in an ascertained relation to the frame and a set-screw adapted to limit the movement of the 100 arm, substantially as set forth.

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

JOHN W. ALDRIDGE. [L. S.]

Witnesses:

J. O. SMITH,

C. E. WILSON.