

No. 683,167.

Patented Sept. 24, 1901.

L. ADAMS.
REVERSIBLE RATCHET.

(Application filed Mar. 20, 1901.)

(No Model.)

Fig. 1.

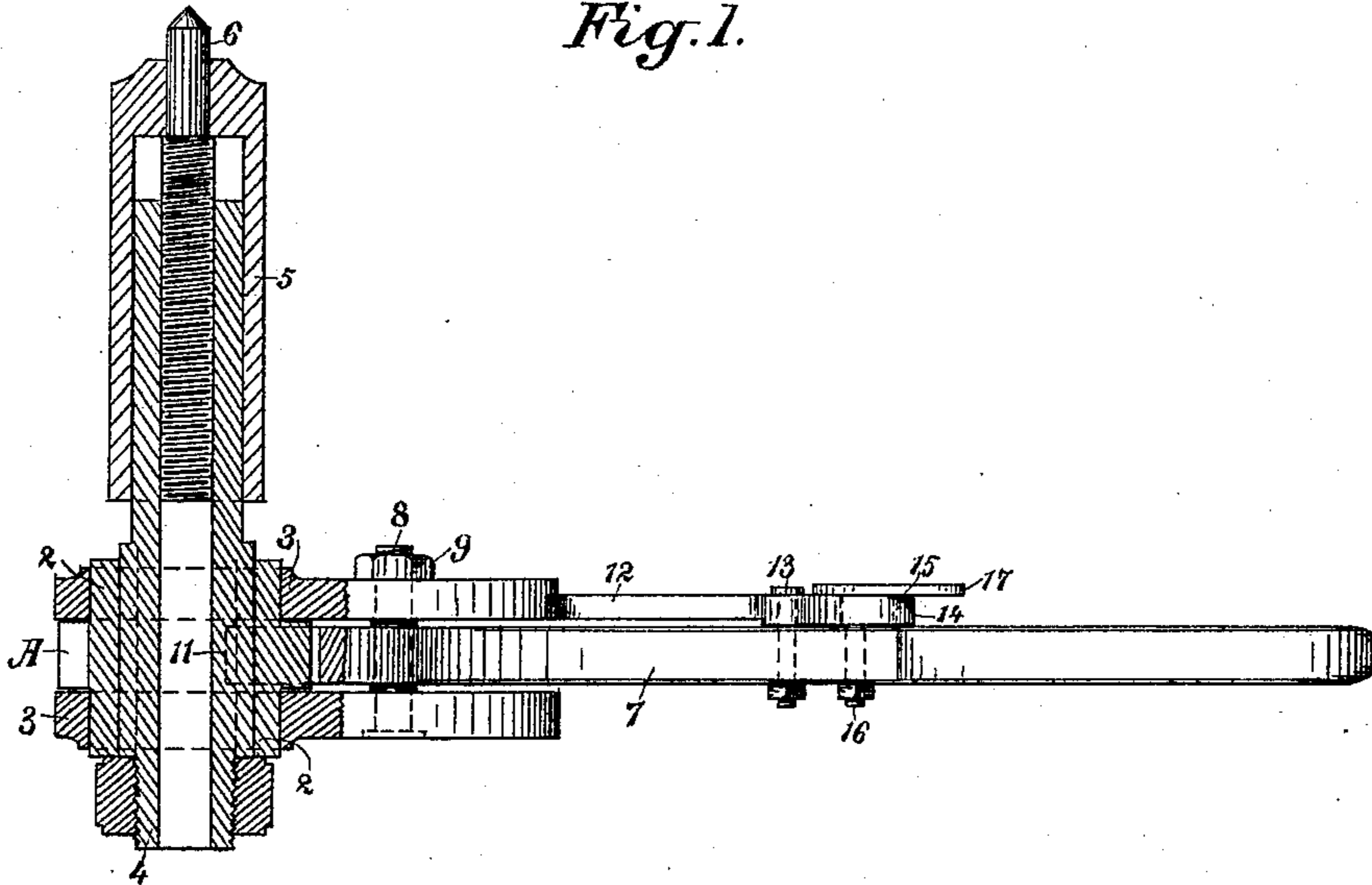
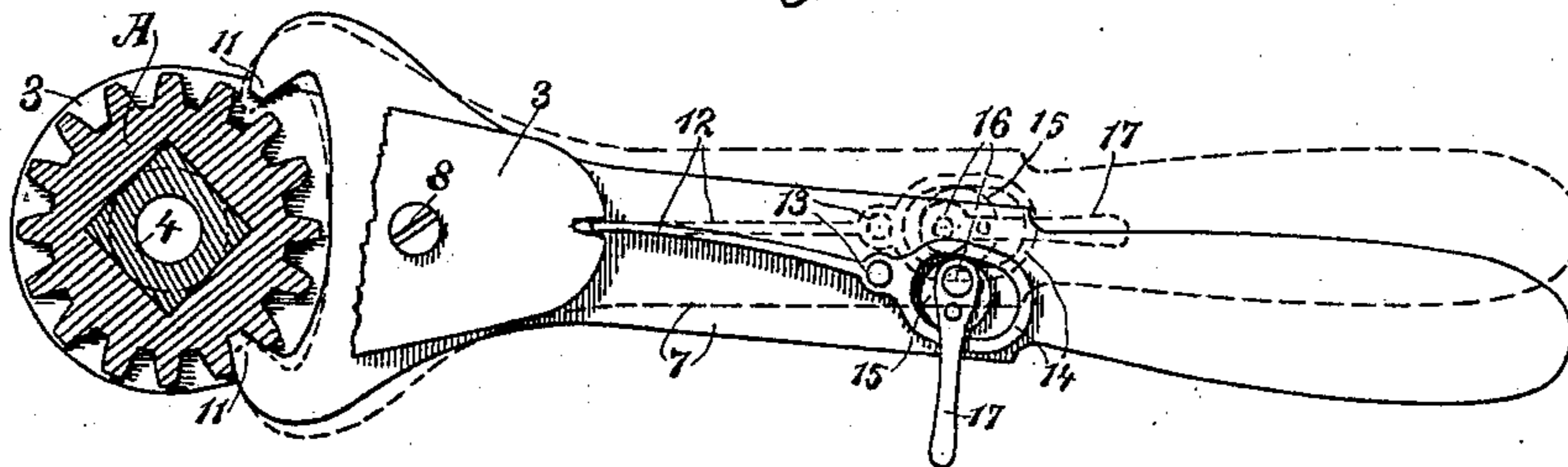


Fig. 2.



Witnesses,
H. F. Aschbeck

Inventor,
Lynchburg Adams
By Dewey Strong & Co.
att.

UNITED STATES PATENT OFFICE.

LYNCHBURG ADAMS, OF SANTA ROSA, CALIFORNIA.

REVERSIBLE RATCHET.

SPECIFICATION forming part of Letters Patent No. 683,167, dated September 24, 1901.

Application filed March 20, 1901. Serial No. 52,071. (No model.)

To all whom it may concern:

Be it known that I, LYNCHBURG ADAMS, a citizen of the United States, residing at Santa Rosa, county of Sonoma, State of California, have invented an Improvement in Reversible Ratchets; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a ratchet which may be used either for operating a drill, wrench, or other device and which is to be rotated by intermittent movements.

It consists of a revoluble ratchet, which is adapted to serve as a wrench or to carry the movable part with plates between which it is journaled, a handle pivoted to said plates and having a double pawl formed integral with it, and a spring-arm and cam or eccentric mounted upon the handle, said eccentric being turnable, so as to throw the handle to one side or the other about its pivot-point, thus causing either of the pawls to engage with the ratchet to turn the latter in either direction.

The invention also comprises details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical section through the ratchet. Fig. 2 is a horizontal view, the ratchet being in section.

The ratchet A is formed in a single piece with the hubs 2, which project upon each side of the ratchet and are made cylindrical in form. The ratchet and hubs may be made of steel or other suitable material, and the ends of the hubs are journaled in plates 3, which fit upon the hubs and inclose the ratchet. The hubs and ratchet have a hole made axially through them and of such shape as to serve as a wrench, or it may serve to carry independent wrenches of various sizes. When employed to operate a drill, the drill-shank 4 is made to fit the socket in the ratchet, and the screw-threaded upper end of the shank fits corresponding threads in the sleeve 5. This sleeve has a center 6 at the upper end, which abuts against a fixed support in line with the drill, and the drill is advanced by the screw as the boring or cut takes place. Other devices, such as a screw-driver or similar tool, may be operated by the ratchet. Between the plates 3, in which the ratchet is

journaled, is pivoted a handle 7. The pivot-pin 8 has shoulders, against which the plates rest to prevent their being closed tightly upon the handle when the latter is in place and the holding-nut 9 has been screwed upon the end of the pivot-pin. The inner end of the handle is broadened and its ends form pawls 11, one of which engages the ratchet on one side and the other upon the opposite side by turning the handle to one side or the other, the pawls being sufficiently separated so that when one is engaged the other is disengaged, or the handle may be set central and the ratchet will be turnable without engaging either of the pawls. In order to turn the handle about its pivot, so that either one or the other of the pawls will engage, and to retain it in such position, I have shown a spring 12, pivoted at 13, and one end engages one of the plates 3, in which the handle is pivoted, either by means of a slot, into which the end enters, or by other suitable means. The end of the spring outside the pivot is enlarged, having a central opening, as shown at 14. Within this central opening fits an eccentric or cam 15, the pin or axis 16 of which passes through a hole in the handle, so that the eccentric lies within the opening at the rear end of the spring. By means of a handle 17 this eccentric may be turned to press against either one side or the other of the opening at the rear of the spring, and this turns the spring about its pivot-pin, causing the opposite end to press against the plate, and thus throw the handle to one side and cause the pawl on that side to engage with the ratchet. Then by moving the handle and the plates to which it is pivoted about the ratchet as a center the pawl will engage when moving in one direction and move freely over the teeth of the ratchet when moving in the opposite direction, thus advancing the ratchet in one direction. To reverse the ratchet, it is only necessary to throw the eccentric by turning its handle, so that the eccentric will press against the opposite side of the opening in the spring end, and this will throw the handle to the opposite side and engage the other pawl with the ratchet. The movements of the handle will then cause the ratchet and the part carried by it to move in the opposite direction. The advantages of the device are firmness of parts,

simplicity of construction, and little or no liability of its getting out of order.

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

5 Patent, is—

1. A ratchet having hubs axial therewith upon opposite sides and formed integral with it, and a central opening to serve as a wrench, plates within which the hubs are journaled, 10 said plates extending to one side, a handle pivoted upon a pin between said plates, having pawls formed upon opposite sides of its inner end and integral therewith, said handle being turnable so that one of said pawls will 15 be disengaged and the other engaged with the ratchet, and a member pivotally secured between its ends to the handle and having one end engaging one of the first-named plates whereby its opposite end may be moved to 20 turn the handle about its pin and to engage one of the pawls with the ratchet.

2. A ratchet having hubs integral therewith and projecting from opposite ends, and having an opening formed therethrough to serve as a 25 wrench or driver, plates having holes made therethrough in which the hubs are journaled and turnable, a shoulder-pin passing through the plates and forming a pivot, a handle fulcrumed upon said pivot having pawls formed 30 upon opposite sides of the inner end and adapted to alternately engage the ratchet

upon opposite sides, a spring pivoted upon the handle having one end engaging one of the plates to which the handle is fulcrumed; and means for pressing the spring to one side 35 or the other whereby the handle is turned upon its pivot, and one of the pawls engaged with the ratchet.

3. A ratchet having cylindrical hubs upon opposite sides and a central driving-opening 40 made axially through it, plates between which the hubs of the ratchet are journaled and turnable, a handle turnable between said plates having pawls formed upon its inner end and adapted to engage opposite sides of 45 the ratchet, a spring pivoted upon the handle having one end formed to engage with one of the plates between which the handle is fulcrumed, an opening formed in the enlarged end upon the opposite side of the fulcrum- 50 pin, an eccentric pivoted and turnable in said opening so as to press upon either one side or the other of the opening and correspondingly turn the handle to engage either one of the pawls with the ratchet. 55

In witness whereof I have hereunto set my hand.

LYNCHBURG ADAMS.

Witnesses:

S. H. NOURSE,
H. F. ASCHECK.