J. D. McAULIS.
Ratchet-Drill.

No. 206,468. Patented July 30, 1878.

fig 1

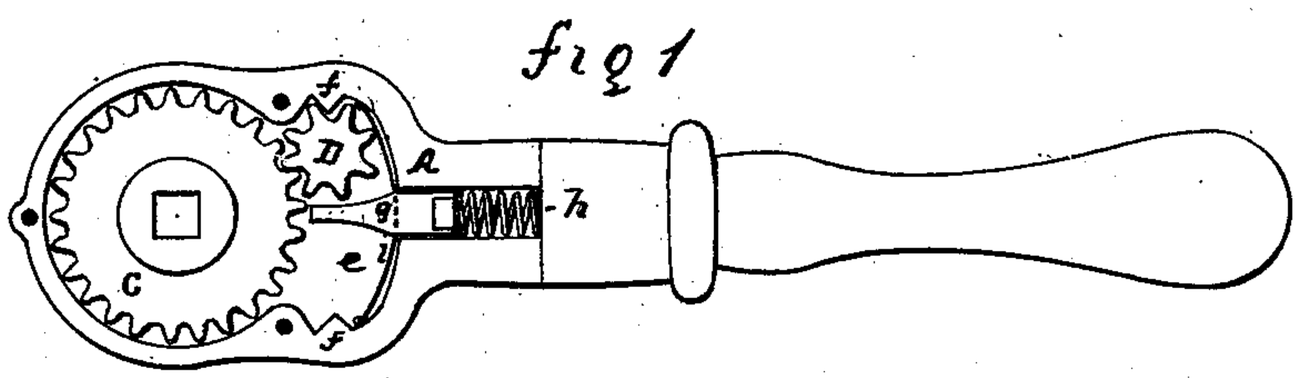
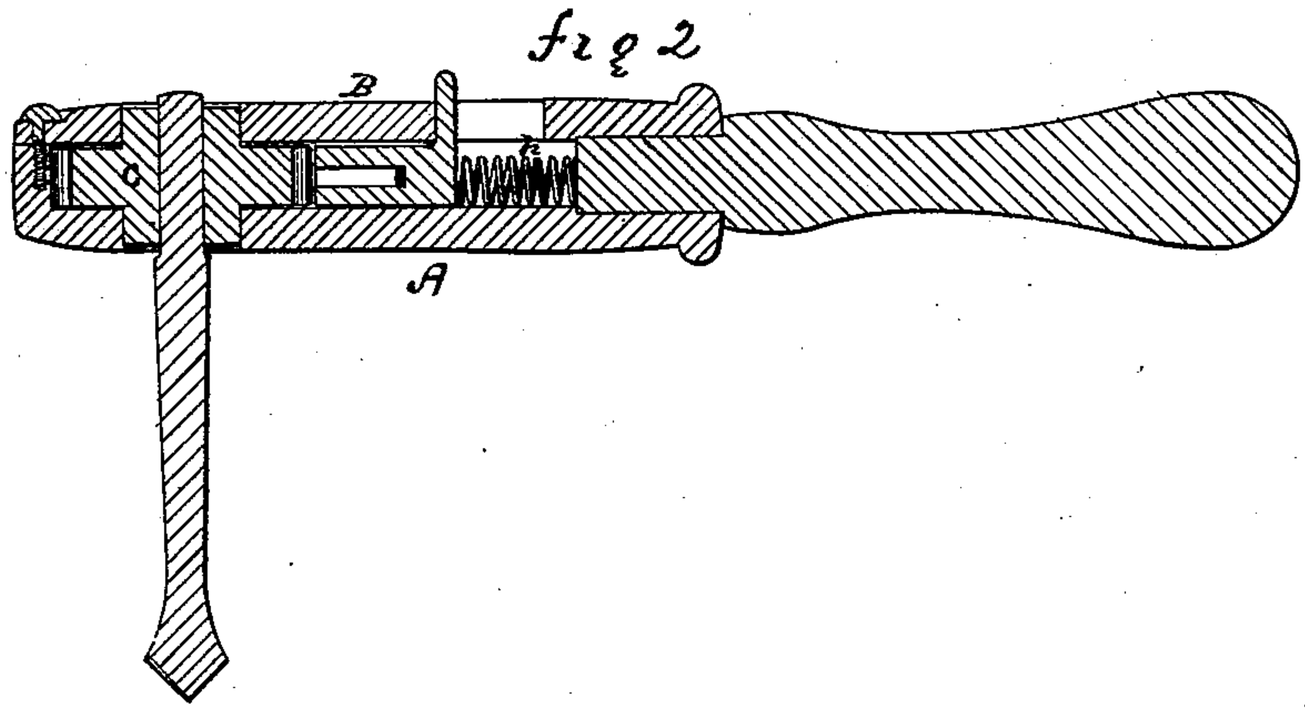


fig 2



Witnesses

J. F. Davis
Wm. Byrnes

Inventor

James D McAulis
By A C Johnston
his atty

UNITED STATES PATENT OFFICE.

JAMES D. McAULIS, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO W. S. KERNOHAN, OF MINERAL RIDGE, OHIO, AND. J. W. FORBES, OF BEAVER FALLS, PENNSYLVANIA.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. **206,468**, dated July 30, 1878; application filed May 22, 1878.

To all whom it may concern:

Be it known that I, JAMES D. McAULIS, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Ratchets; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in ratchets for operating drills; and consists of a case and two wheels, the larger of which is pivoted in bearings in the case and provided with an opening for the reception of the upper end of the drill, the smaller wheel being placed in a chamber divided by a spring-partition piece, which can be withdrawn into the handle portion of the case, so as to remove the smaller wheel from the right to the left of the case, as may be desired. This smaller toothed wheel, which meshes with the larger wheel, also engages with teeth formed upon the sides of the chamber in which it is inclosed, as follows: When the handle is moved in one direction said smaller wheel is disengaged from one of said teeth upon one side of the chamber, by reason of which disengagement the small wheel will rotate freely; but when the handle is moved in the opposite direction the small wheel engages with the said tooth in the chamber, and thereby causes the larger ratchet-wheel to move with the handle. In the former position the small wheel is prevented by a spring-partition, hereinafter more fully described, from being carried by the movement of the intermeshing large wheel to the opposite side of the chamber, where a tooth is also formed, all substantially as hereinafter more specifically described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a top view of my improvement, representing the cap removed. Fig. 2 is a longitudinal section, showing it arranged on a drill.

In the drawings, A is the case, provided with a cap, B, which is secured on the case by means of screws. C represents the large wheel, which is the ratchet-wheel, and is pivoted in the case A and cap B, as shown in Fig. 2, and provided with an opening for the reception of the upper end of the drill. D is the small wheel, and meshes into the larger wheel and plays loosely in the chamber *e*. The side walls of the chamber *e*, at *f*, are provided with recesses corresponding to the form of the teeth of the smaller wheel, so that in giving the ratchet a reciprocating movement the teeth will catch in said recesses and lock the ratchet-wheel C. The chamber *e* is divided into two compartments by a spring-partition piece, *g*, which is placed in a recess made in the handle part of the case and held in position through the medium of springs *h i*, the spring *i* keeping the small wheel D in mesh with the large wheel C.

If the operator desires to change the small wheel to either side of the spring-partition *g*, the partition is drawn back into the handle part of the case A, and the large wheel rotated either by turning the drill or moving the case.

By constructing a ratchet-drill as hereinbefore described the several parts may be duplicated in case of injury to any one of the parts with a trifling cost, and the ratchet can be made with facility and cheapness.

Having thus described my improvement, what I claim, and desire to secure by Letters Patent, is—

1. In a ratchet for operating drills in which the upper end of the drill is secured in a ratchet-wheel, the toothed wheel C and smaller toothed wheel D arranged to intermesh therewith, in combination with the teeth *f* of the casing and partition *g*, substantially as shown and described.

2. In combination with the herein-described toothed wheel C, smaller intermeshing toothed wheel D, and case A, with teeth *f* upon the interior of the chamber which confines the smaller wheel, the partition *g*, with springs *h* and *i*, constructed substantially as and for the purposes herein shown and described.

JAMES D. McAULIS.

Witnesses:
R. G. FORBES,
J. B. DODDS.