

J. HOWELL & D. BIRDSALL.
SCREW TAP.

No. 41,509.

Patented Feb. 9, 1864.

Fig. 3.

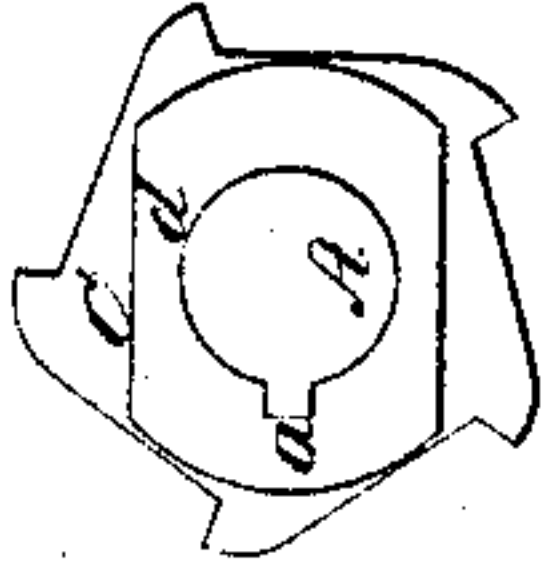


Fig. 1.

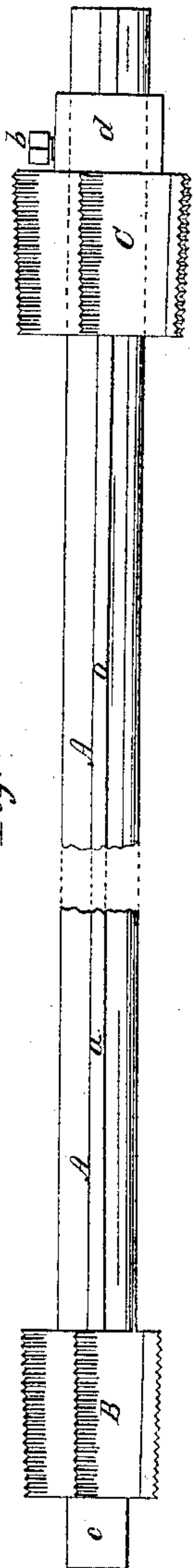
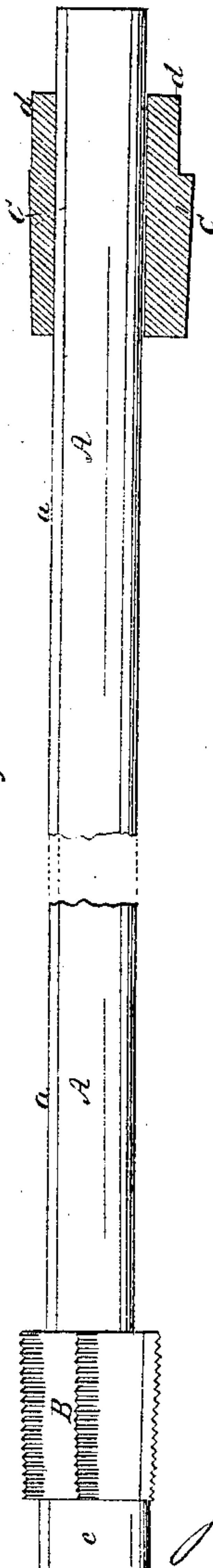


Fig. 2.



Witnesses;

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UNITED STATES PATENT OFFICE.

JAMES HOWELL AND DAVID BIRDSALL, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN SCREW-TAPS.

Specification forming part of Letters Patent No. 41,509, dated February 9, 1864.

To all whom it may concern:

Be it known that we, JAMES HOWELL and DAVID BIRDSALL, both of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Screw-Taps; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal view of a tap constructed according to our invention. Fig. 2 is a similar view with the movable head in section. Fig. 3 is an end view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The object of our invention is to provide for the tapping simultaneously of two opposite holes in the two tube-sheets of a boiler, or in any other two pieces of metal or other material at any distance apart in such manner that the threads in the said holes shall be true to a common axis, so that a pipe or other piece may be screwed simultaneously into both; and to this end it consists in a tap with two heads, one or both of which are made adjustable lengthwise of the shaft of the tap to bring them at the requisite distance apart; also, in an arrangement of portions of the tap, for the reception of two wrenches, in such manner that in the tapping of the two holes simultaneously the shaft may not be subject to torsion.

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

A is the shaft of the tap, of any length, and B C are the heads, which may both be movable on the shaft, though it will generally be only necessary to make one movable. The head B is represented as made in the same piece with the shaft, and therefore fixed; and the other, C, is represented as movable lengthwise of the shaft. The shaft is furnished with a longitudinal feather, *a*, to fit a groove in the head C, for the purpose of preventing it from turning independently of the shaft and head B, and causing both heads to turn together. The head C is fitted with a set-screw, *b*, to secure it to the shaft at any required distance from B, according to the distance apart of the tube-sheets or other pieces to be tapped, the length of the shaft being sufficiently greater than the distance between the outer faces of the said tube-sheets or other pieces to allow one wrench to be placed

on a squared or flattened portion, *c*, of the shaft, outside of the head B, and another wrench to be placed upon a square or flattened portion, *d*, of the head C, outside of the threaded portion thereof, the two squares or flattened portions having their flat surfaces on the same side of the tap. The head C should be so much larger than the fixed head B that the hole in which it will cut a thread will be large enough to allow the fixed head B to pass through freely without cutting.

The operation of the tap is as follows: The movable head C having been adjusted at a proper distance from the fixed head, according to the distance apart of the plates or other pieces to be tapped, so that the two heads will enter their respective holes together, the head B and the shaft are passed through the larger hole, which the head C is to tap, and both taps are entered into their respective holes. A wrench is then applied on the square or flat *c*, and another on the square or flat *d*, the arms of the two wrenches standing in corresponding directions, and the two wrenches are then turned simultaneously in the same direction, the persons operating them taking care to operate together to avoid any torsion of the shaft to which, owing to its length, it would otherwise be liable. The two heads then cut the threads in their respective holes simultaneously, and in so doing each serves as a guide to keep the axis of the other perpendicular to the surfaces of the plates or pieces to be tapped—or, in other words, both cut their threads true to a common axis.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A screw-tap having two heads, one or both of which are adjustable lengthwise of the shaft to bring the two at any required distance apart to tap simultaneously two opposite holes in two tube-sheets or other pieces at any distance apart true to a common axis, substantially as herein specified.

2. Making such a double-headed tap with two squares or flattened portions for the reception of wrenches, one of said portions being upon the shaft and the other upon the more distant movable head, substantially as herein described, to prevent the torsion of the shaft.

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Witnesses:

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