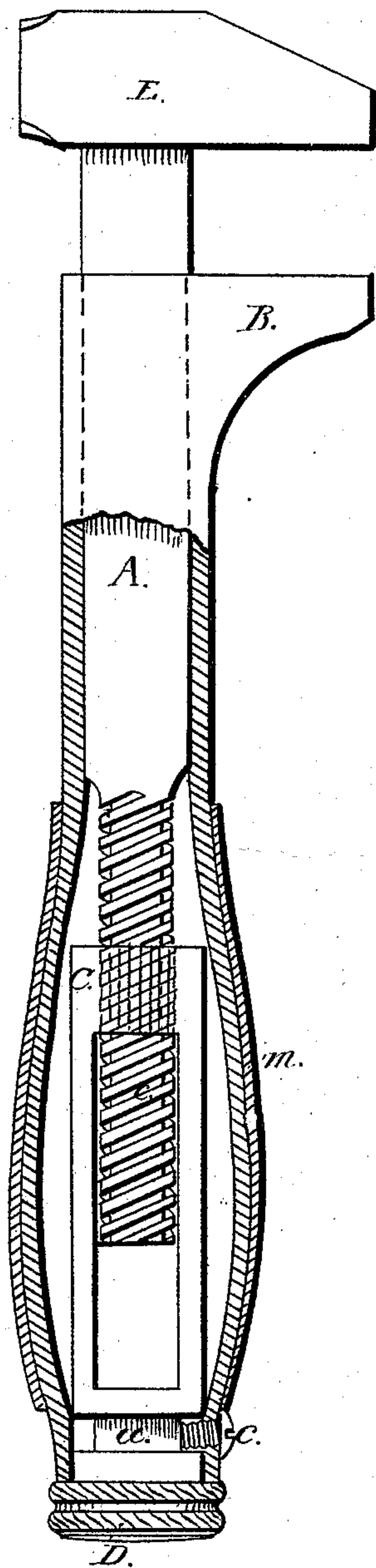


O. V. Flora.

Wrench.

N^o 88,560.

Patented Apr. 6, 1869.



Witnesses:

*Henry Connett Dr.
H. Connett.*

Inventor:

Orlando V. Flora

United States Patent Office.

ORLANDO V. FLORA, OF MADISON, INDIANA, ASSIGNOR TO HIMSELF
AND CHARLES ALLING.

Letters Patent No. 88,560, dated April 6, 1869; antedated March 23, 1869.

IMPROVEMENT IN WRENCH.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ORLANDO V. FLORA, of Madison, in the county of Jefferson, and State of Indiana, have invented new and useful Improvements in Screw-Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to combine strength, simplicity, and cheapness, with rapidity of operation, cleanliness, and durability in a screw-wrench, by means of the peculiar construction and arrangement of parts described, as follows:

The drawing exhibits a side view of the wrench, partly broken away, to show the interior of the handle.

A is the wrench-bar, to which is attached the hammer-jaw E, as shown.

On the lower end of this bar is cut a double or triple-threaded screw, with a steep pitch.

The back jaw B is cast in one piece with the handle, which is hollow.

Through this jaw is an opening for the admission of the bar A, which passes downward into the hollow of the handle.

C is a long-shanked nut, which is tapped at its upper end, to fit the screw on the bar A.

This nut is entered at the circular opening in the but of the hollow handle, and has a rosette, or milled head, D, on its outer end.

Just above this milled head is cut the groove *a*, in the nut C.

The screw *c* passes through and is threaded in a hole in the lower edge of the hollow handle, and engages with the groove *a*, the object being to prevent the nut C from moving up or down in the direction of its length, but, at the same time, to permit its revolving on its axis.

m is a covering for the metallic handle, of rubber, or other elastic substance. This covering is intended, mainly, to keep the hand-operator from slipping, when using the wrench, and will also prevent the sensation of cold experienced from handling metallic substances. It forms, also, a good cushion for the hand.

The wrench is operated by turning the rosette D, either forward or backward, as we may desire the jaws of the wrench to open or close.

By reason of all the working-parts being enclosed in the hollow handle, all dust and grease are excluded, the parts are kept clean, and the wrench lasts much longer, in consequence.

The long-shanked nut, wholly enclosed, except its milled head, in the hollow handle, allows a long movement of the jaw E, and throws all the strain on the enclosing handle, which can be of the utmost length consistent with good proportion.

Another advantage is, that the nut being held firmly at both ends, keeps the wrench-bar rigidly in line with the axis of the handle.

The pitch of the operating-screw being great, but few turns of the rosette D are required to open or close the jaws.

This wrench is made entirely of iron, principally malleable, and, having but three principal parts, strength, simplicity, and cheapness are the consequences.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The bar A, jaw E, jaw B, with its hollow handle, and covering *m*, screw *c*, nut C, and milled head D, constructed and arranged to operate substantially as and for the purpose herein specified.

ORLANDO V. FLORA.

Witnesses:

W. A. SIDDALL,
HENRY CONNETT, Jr.