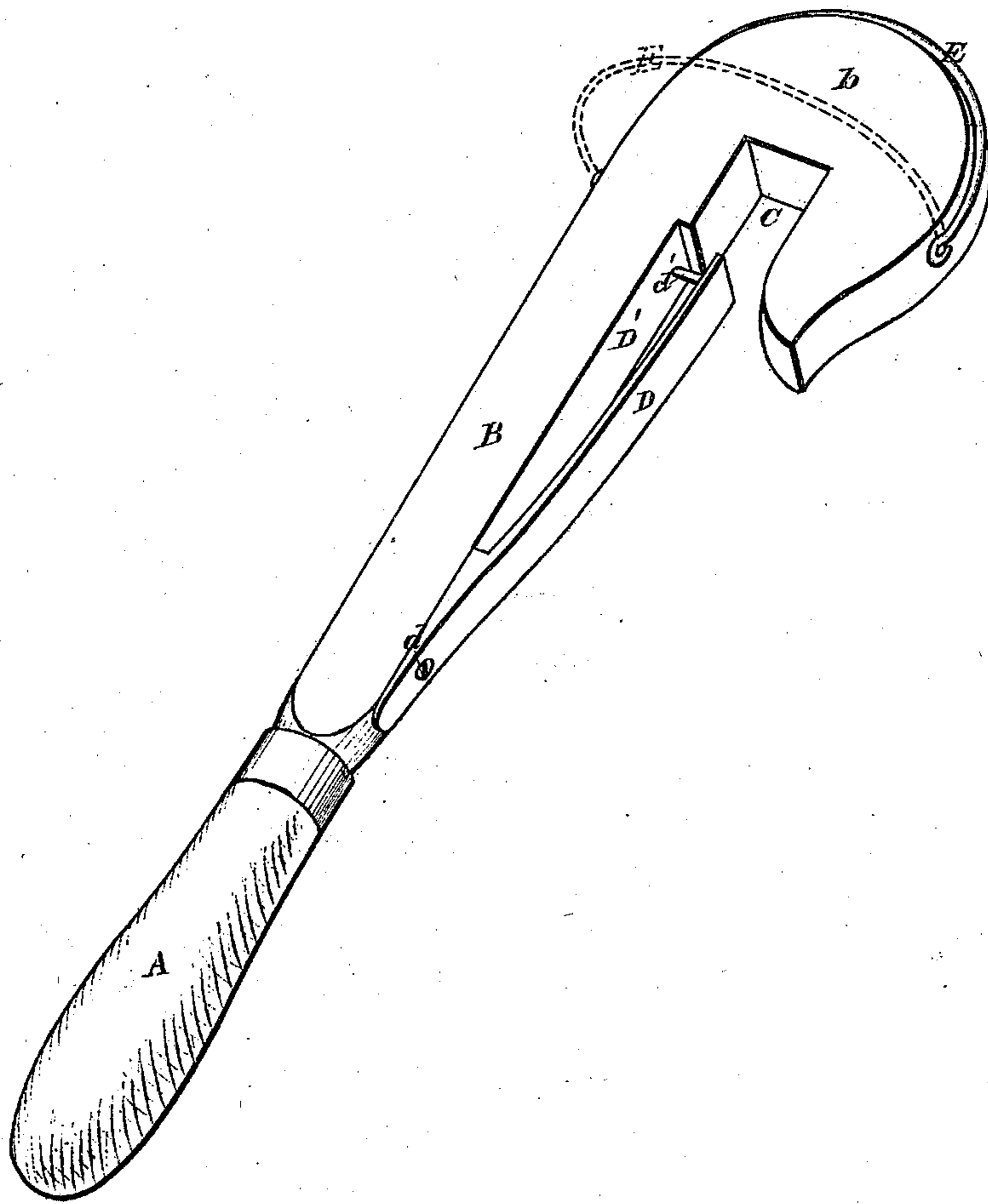


R. Nicholson,

Wrench.

No. 97,430.

Patented Nov. 30. 1869.



Witnesses.

*John A. Peyton.
Baltis DeLong.*

Inventor.

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United States Patent Office.

ROBERT NICHOLSON, OF PLEASANTVILLE, PENNSYLVANIA.

Letters Patent No. 97,430, dated November 30, 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, ROBERT NICHOLSON, of Pleasantville, in the county of Venango, and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, and which is a perspective view of the wrench.

My invention relates to open wrenches, having attachments to keep them in position while operating; and

My improvement consists in combining with a wrench, stops or detents, to prevent it from slipping out of place, either vertically or horizontally, and at the same time allow the wrench readily to be applied to or removed from the article to be operated upon.

In the accompanying figure—

A handle, A, is shown as attached to a wrench-bar, B, constructed of malleable, cast, or other metal.

The end of this bar is formed into a hook-shaped head, *b*, in which there is a recess, C, either rectangular or hexagonal, to conform to the shape of the rod or bolt upon which it is designed to operate.

At the mouth of the recess, a detent-spring, D, is placed, which is attached to the bar B at *d*, and, when pressed down, may be made to fit into a corresponding recess, D', in the bar B, which will make it flush with the side of the bar B, and thus offer no obstruction to the removal of the wrench, but, when sprung out, will hold the wrench in place.

A straw or band, E, encircles the head *b*, and is pivoted at its opposite sides, and may be conveniently placed in this position, when not desired for use; but, when operating, the band may be vibrated on its piv-

ots, and placed in a plane at right angles to the length of the wrench, and, when in this position, forms a stop, against which the rod or bolt may rest while operated upon, and thus prevent the wrench from falling below the head of the bolt.

The wrench is operated in the following manner:

The band E is first placed at right angles to the bar B. The thumb is then pressed upon the spring D, which enters the recess formed for it, and the head of the bolt may be inserted in the recess C, formed in the head of the wrench. The spring may then be released, and it will come opposite the entrance of the recess C, and prevent the wrench from falling out of position horizontally, while the band E keeps it in position vertically.

A guide-pin, *d'*, playing in a hole in the wrench-bar, prevents the spring from being deflected laterally.

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

1. The combination, with the open wrench, of the detent-spring, operating as set forth.
2. The combination, with the wrench, of the detent-spring, its guide-pin, and recess, all constructed to operate as set forth.
3. The combination of the wrench with the pivoted supporting-band, as set forth.
4. The combination of the wrench, the pivoted supporting-band, and the detent-spring, substantially as set forth.

In testimony whereof, I have hereunto subscribed my name.

ROBERT NICHOLSON.

Witnesses:

J. J. HOLDEN,
FRED. BATES.