

W. Cleveland,

Bit Brace.

No. 112,419.

Patented Mar. 7. 1871.

fig. 1.

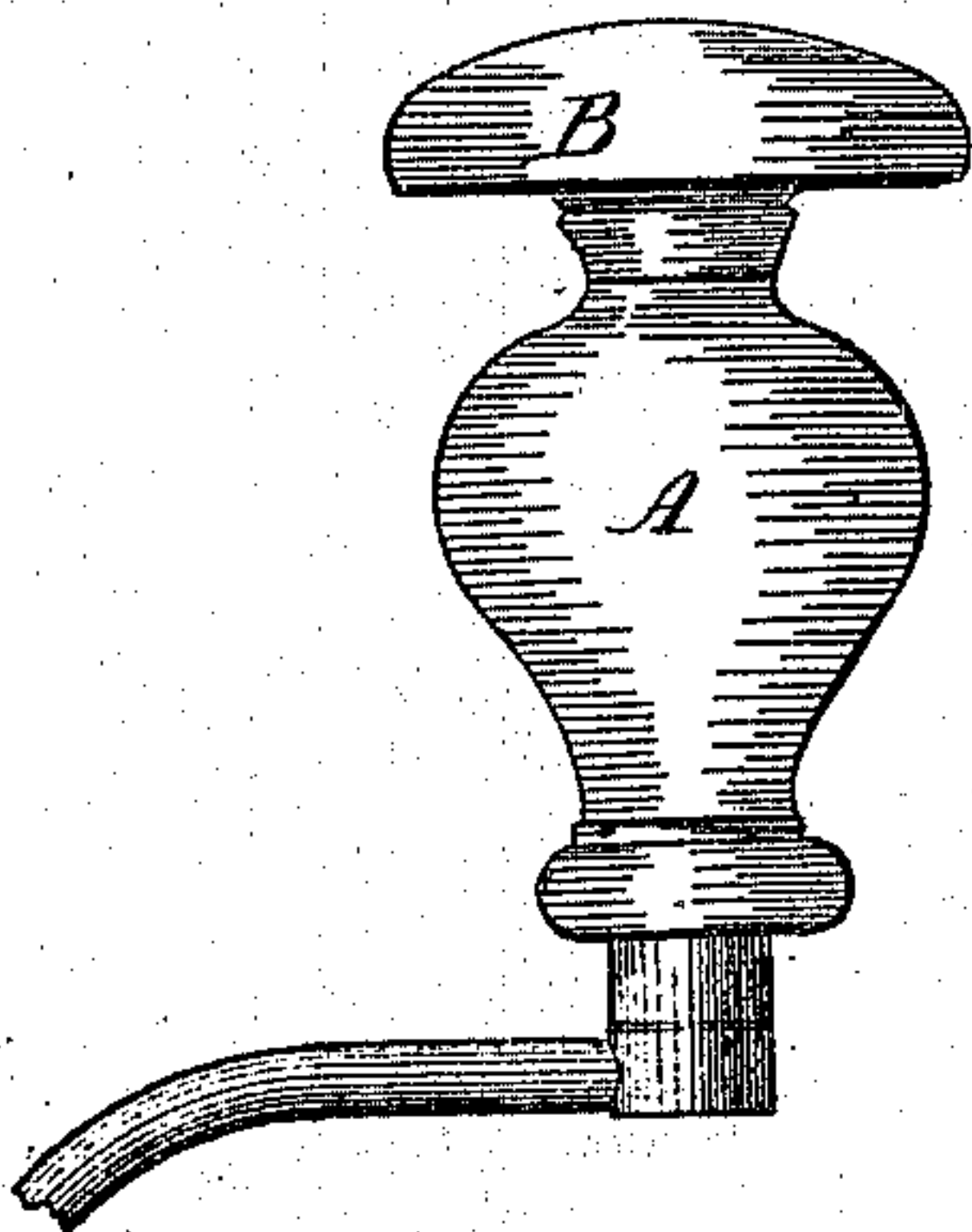


fig. 2.

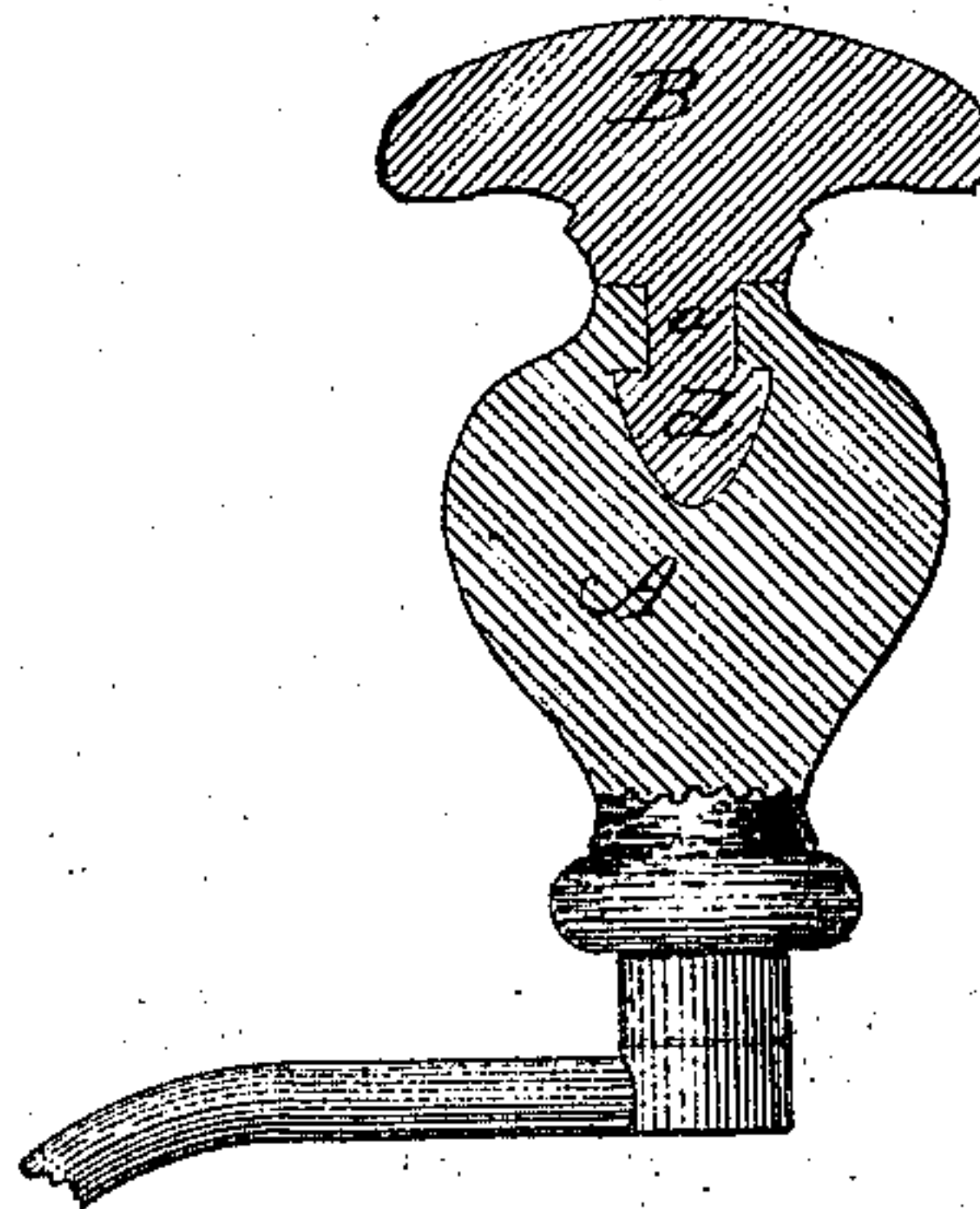
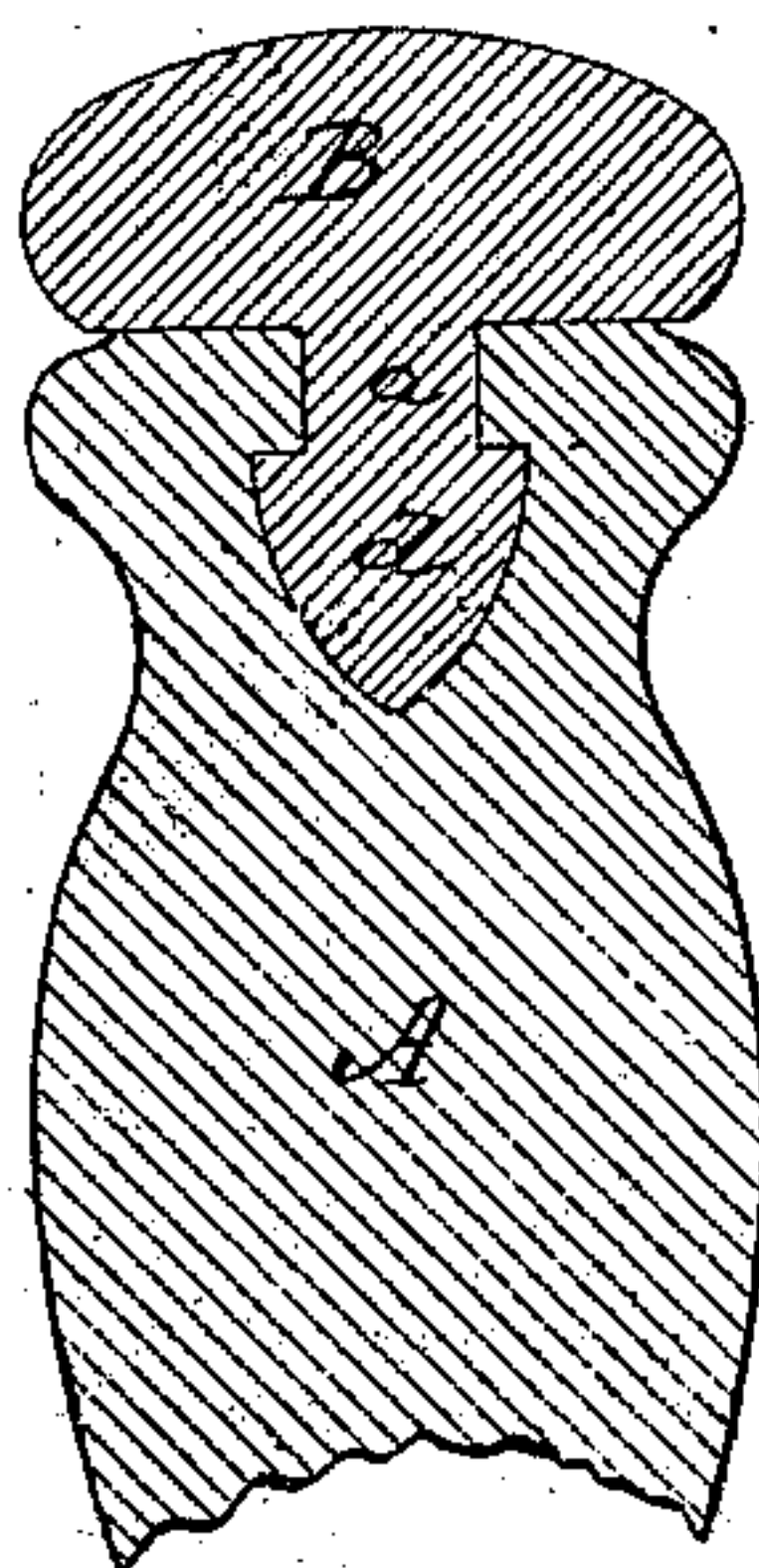


fig. 3.



Witnessed  
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By his Attorney  
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# United States Patent Office.

WILLIAM CLEVELAND, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JAMES SWAN, OF SEYMOUR, CONNECTICUT.

Letters Patent No. 112,419, dated March 7, 1871.

## IMPROVEMENT IN BIT-BRACES.

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, WILLIAM CLEVELAND, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new Improvement in Bit-Brace; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1, a side view;

Figure 2, a vertical central section; and in

Figure 3, the invention as applied to other instruments.

This invention relates to an improvement in the head of bit-braces, but is applicable to the handles or heads of other tools, in which it is desirable to construct the head so as to permit the body to turn while the head remains stationary, the object being to form the head, pivot, and body all of wood, and without the use of metal rivets, as heretofore used in these articles; and the invention consists in forming a headed stud upon one part, and a chambered recess, corresponding to the form of the stud, in the other part; then steaming the chambered portion until in a state to be driven over the headed stud, and when driven over, the wood will shrink and close around the stud, securing the parts together, yet allowing their free action independent of each other.

A is the body and B the head of a bit-brace. On the head I form a stud *a*, with an enlargement *d* upon the end of the stud at a little distance from the head, as seen in fig. 2, and in the body I form a chambered recess corresponding to the stud *a* and its enlargement *d*, as seen in fig. 2. I then steam the body until it is in a state to be driven over the enlargement of the stud, and force the body onto the stud until the enlargement passes into the chamber, as denoted in fig. 2; then the body, in drying, shrinks around the stud so as to secure the two parts together, and yet allow the body to turn freely on the stud as a bearing.

In this construction the usual central metallic device is avoided, a much cheaper article produced, and better, in that it cannot by any possibility get out of order.

The same invention may be applied to other handles, as for awls, screw-drivers, &c., and in identically the same manner as denoted in fig. 3.

I claim as my invention—

The head B and body A, united by the stud *a d*, set into a corresponding recess in the body A, and so as to turn freely therein, substantially as and for the purpose herein set forth.

WILLIAM CLEVELAND.

Witnesses:

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ELIZA H. WILBUR.