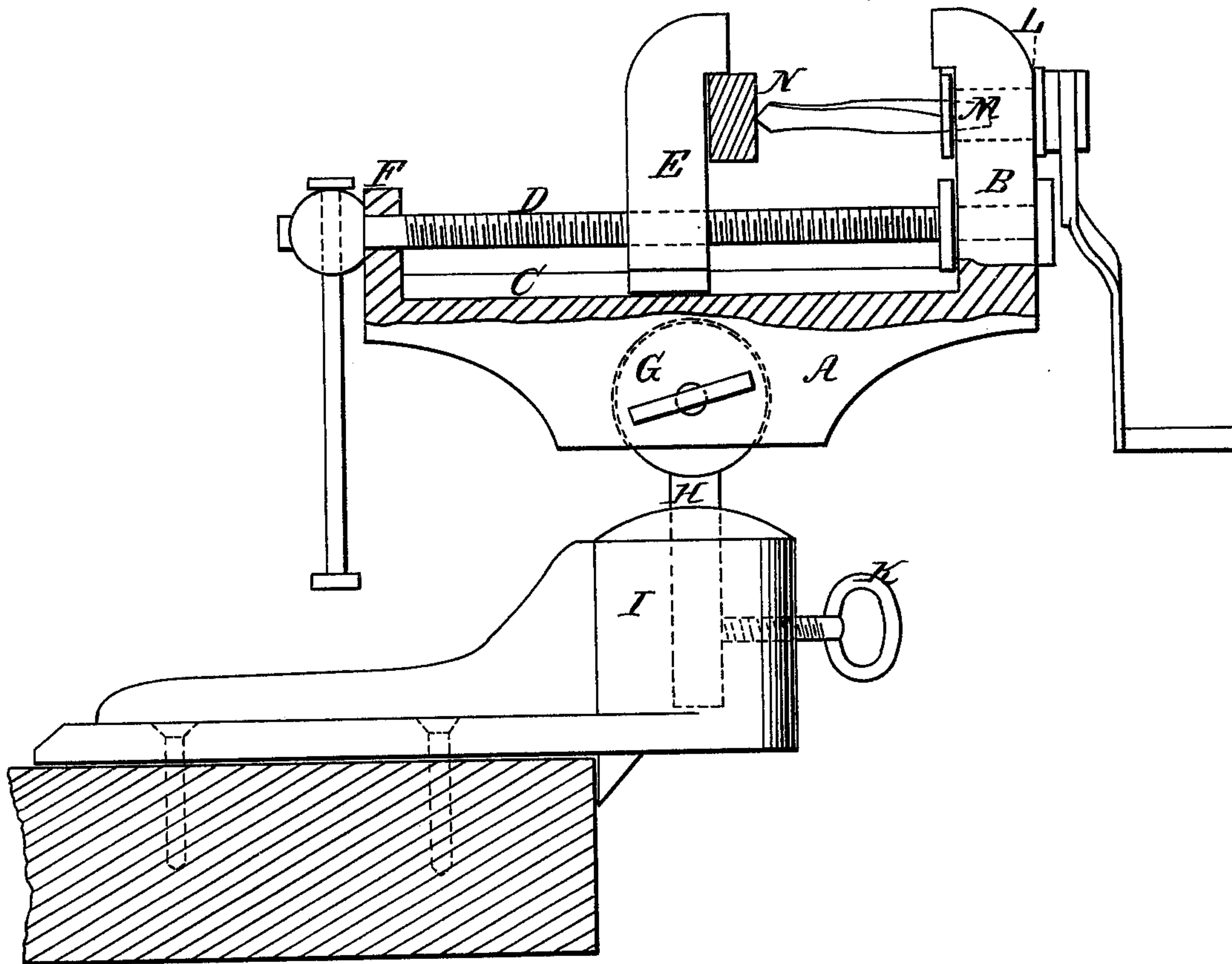


O. Dean.

Combined Vise and Drill.

N^o 91,309.

Patented Jun. 15, 1869.



Witnesses;

*Winchman
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Inventor;

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United States Patent Office.

OTIS DEAN, OF RICHMOND, VIRGINIA.

Letters Patent No. 91,309, dated June 15, 1869.

IMPROVED VISE AND DRILL COMBINED.

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, OTIS DEAN, of Richmond, in the county of Henrico, and State of Virginia, have invented a new and useful Improvement in Vises; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The object of this invention is to provide certain improvements in bench-vises, calculated to facilitate adjusting them to any required position, and also to adapt the jaws and feeding-screw to be employed as a part of a drilling-press.

The invention consists in a ball-and-socket connection of the jaw-supports, with a vertical spindle rising up from the permanent stand, for the adjustment of the said jaws.

Also, in the application to one of the jaws, of a drill-mandrel, in a manner to utilize one of the jaws for a drill-support, and the other for a support for the article to be drilled, while the screw is employed as a feeding-screw, whereby, by the addition, to an ordinary vise, of one single, simple, and inexpensive device, it is made to serve very effectually the purpose of a drill.

The drawing represents an elevation of my improved vise, partly sectioned.

A represents the base of the fixed jaw, B, and it is provided with a dovetailed groove, C, in the top, wherein the movable jaw E is fitted to slide back and forth by the feeding-screw D, which is supported at one end in the fixed jaw, and at the other in the bracket.

The said support A is connected by a ball-and-socket joint, as shown at G, to a spindle, H, made adjustable vertically, in the fixed bracket I, which is

provided with a set-screw, K, to hold it at any required point.

L represents a drill-mandrel, fitted preferably to the fixed-jaw, so as to rotate therein, suitably confined by collars, to prevent end-motion, and parallel with the feeding-screw.

It is provided with a socket, for holding a drill, as shown in dotted lines at M, in the end facing the movable jaw, and the other end is arranged for the application of a crank or other operating-device.

Care is taken that the end facing the movable jaw shall not project quite as far as the face of the jaw, so as to interfere with articles clamped in the vise.

It is preferable, also, to arrange the screw-lever in the end of the screw opposite to that where the drill-crank is, so that they will not interfere.

The articles to be drilled are supported against the movable jaw, as represented in red at N, and fed up against the drill by the screw D.

When the drills and crank are removed from the drill-mandrel, the vise may be used as readily for all the required purposes of a vise as if the drill-mandrel were not attached.

Having thus described my invention,

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

1. The jaw-support A, connected to the fixed bracket I, by means of the adjustable vertical spindle H, and ball-and-socket joint, substantially as specified.

2. The arrangement, in either the fixed or movable jaw of a vise, of a drill-mandrel, substantially as specified.

OTIS DEAN.

Witnesses:

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