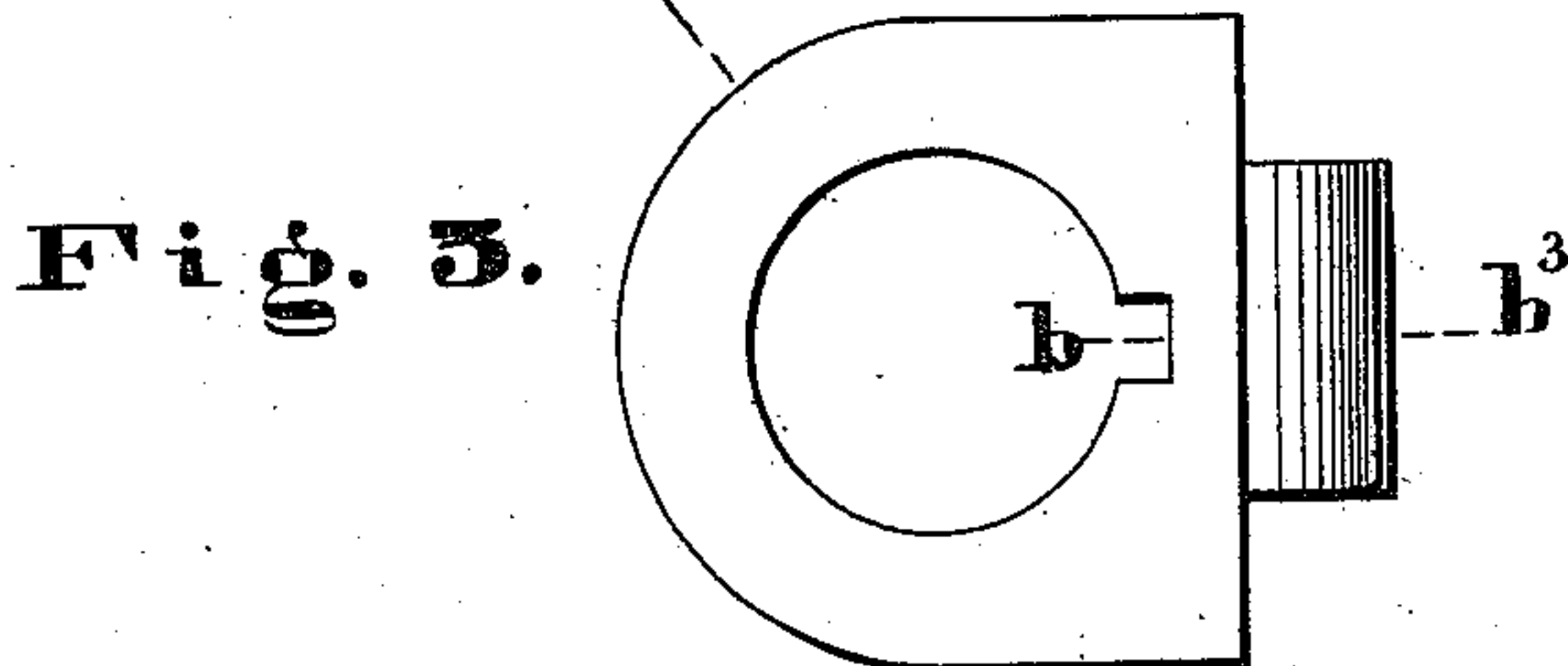
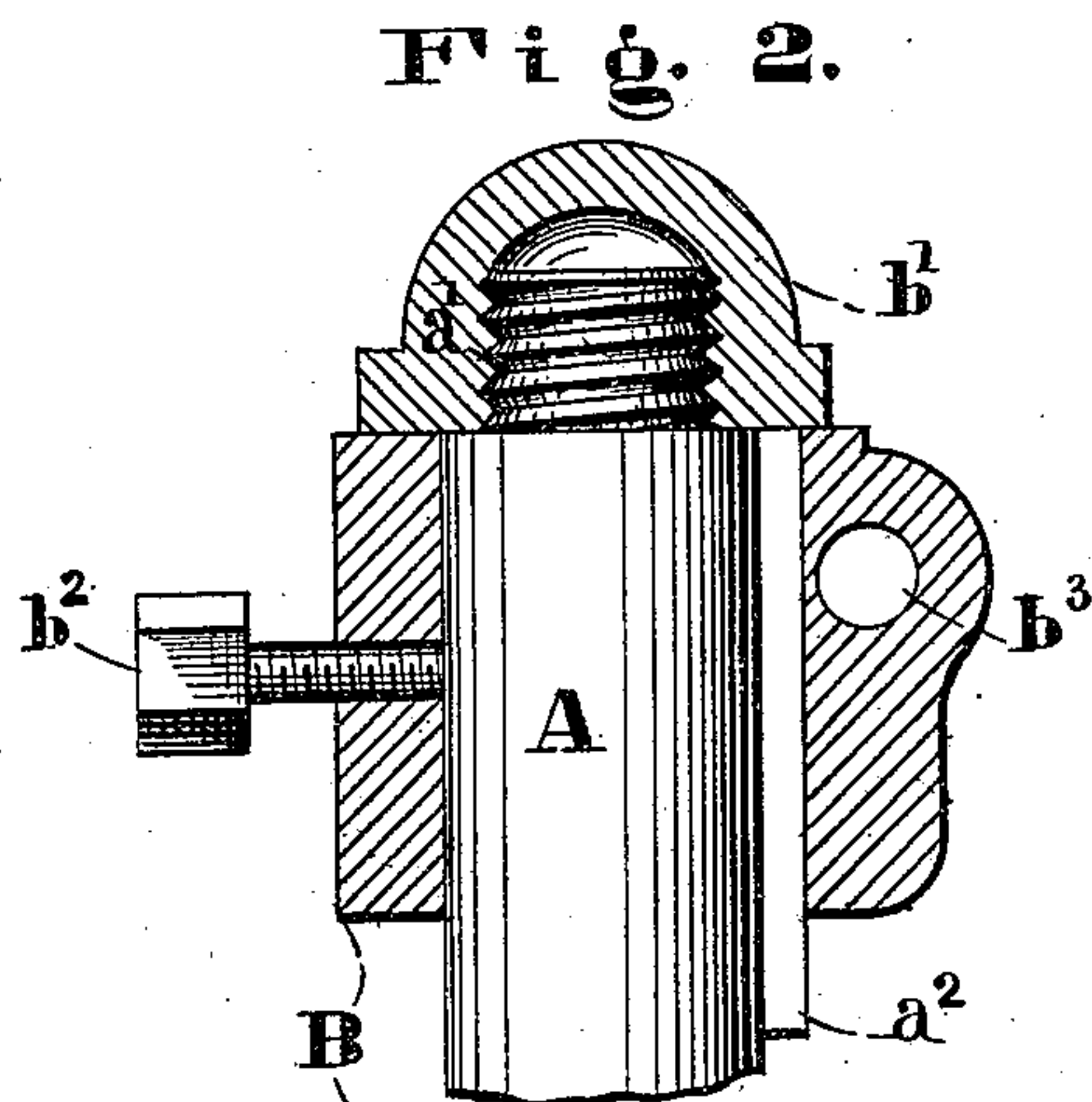
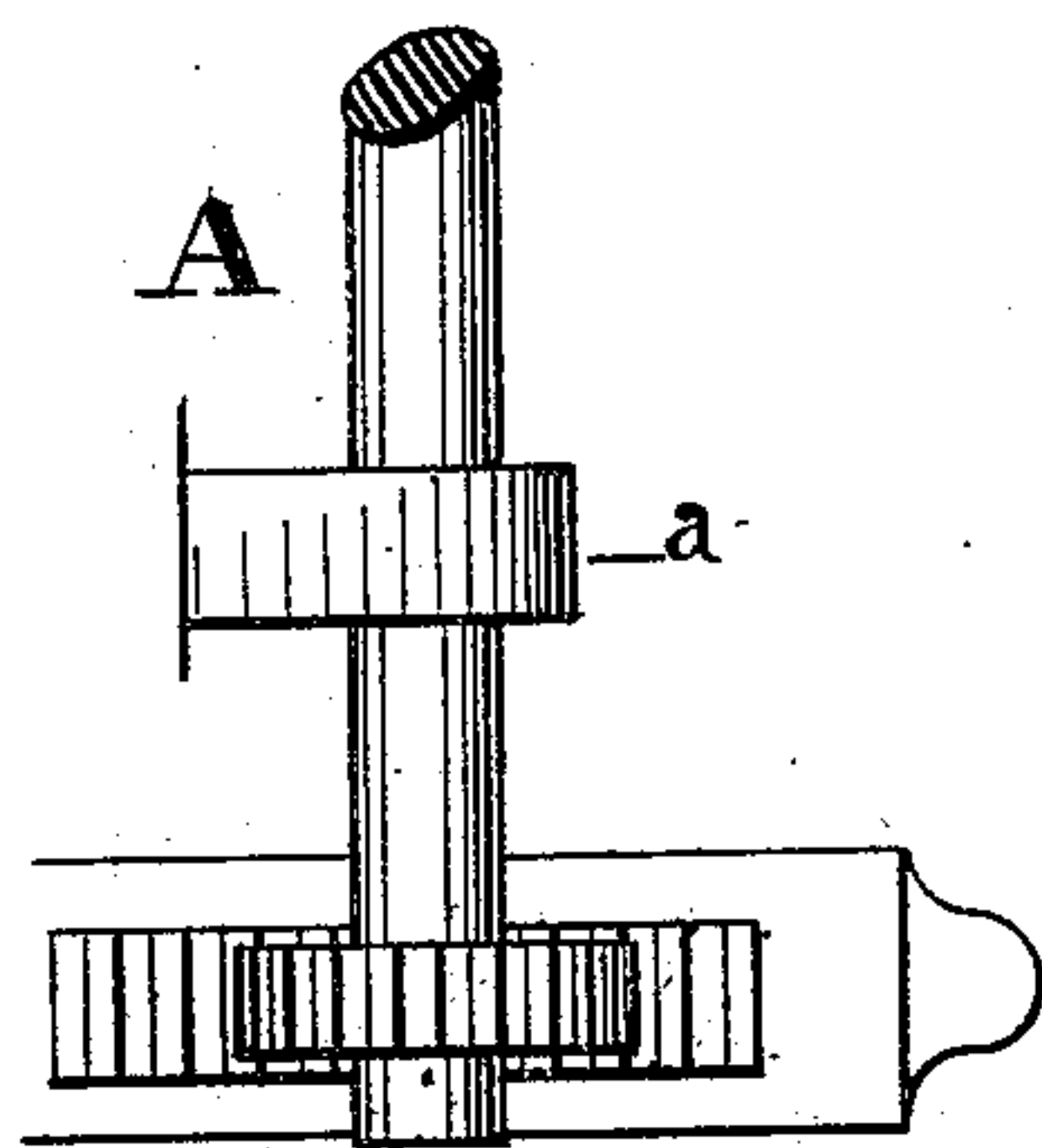
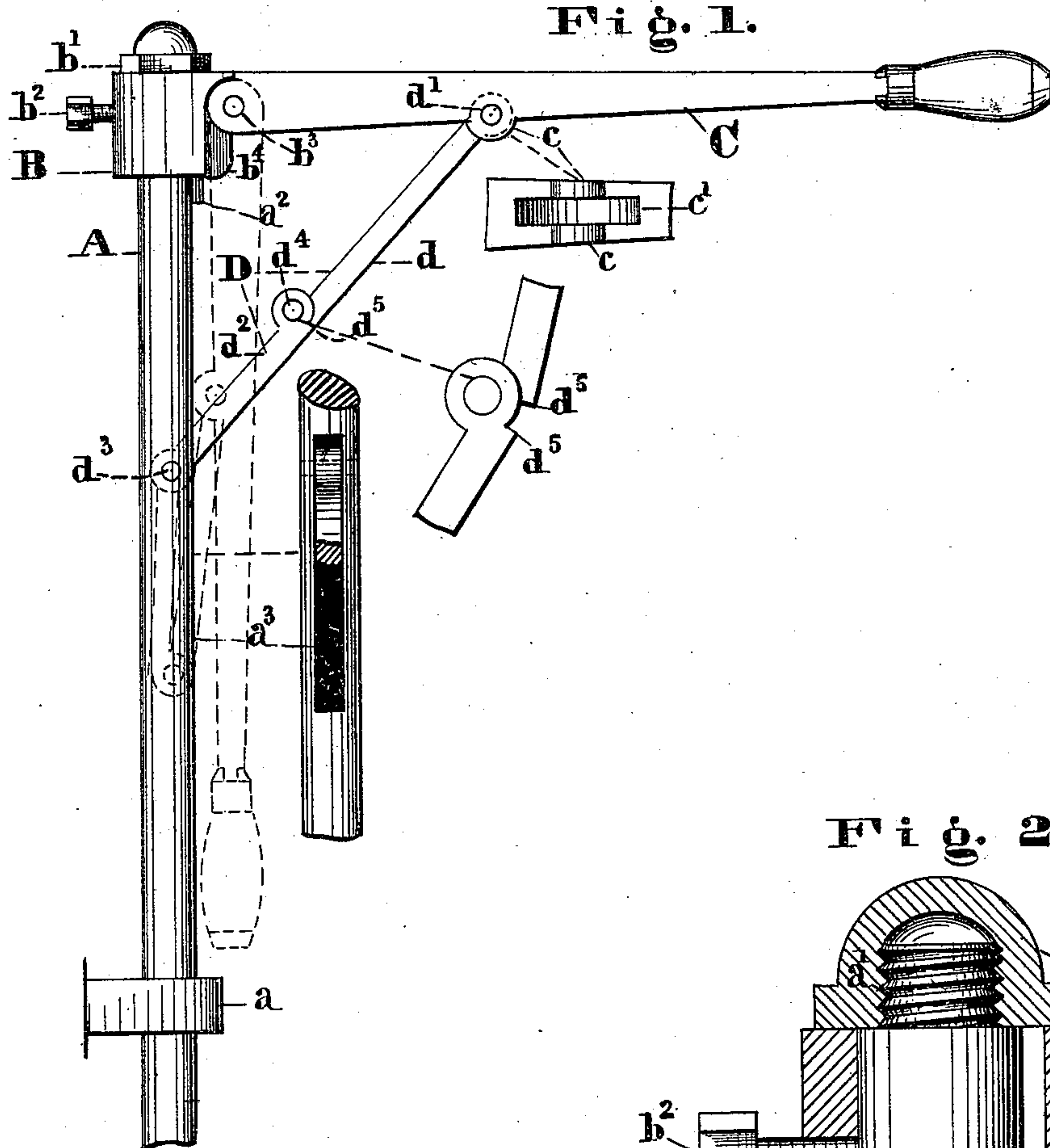


(No Model.)

J. GATES.
Steering Lever.

No. 229,880.

Patented July 13, 1880.



WITNESSES:
Cornelius Cox
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ATTYS.

UNITED STATES PATENT OFFICE.

JOHN GATES, OF PORTLAND, OREGON.

STEERING-LEVER.

SPECIFICATION forming part of Letters Patent No. 229,880, dated July 13, 1886.

Application filed March 8, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN GATES, of Portland, county of Multnomah, and State of Oregon, have invented a new and Improved Steering-Lever; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This lever is especially designed for use in connection with my steam or hydraulic steering apparatus, being situated in the pilot-house near the wheel, so that the pilot can make use of either without changing his position; and it consists, mainly, in the combination, with a hinged lever, of a folding brace-bar, as will be fully described hereinafter.

In the drawings, Figure 1 represents a side elevation of the invention, and Figs. 2 and 3 detail views of the adjustable joint of the hinged lever.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A, Figs. 1 and 2, represents an upright shaft, supported by proper bearings, $a a$, which controls, by a pinion on its lower end, or by other proper means, the valve of the steering apparatus.

a' , Fig. 2, represents a thread formed on the upper end of the shaft A, and a^2 a longitudinal feather fixed on its front side just below the thread, as shown.

a^3 , Fig. 1, is a longitudinal depression formed in the upper part of the shaft A, for a purpose hereinafter explained.

B is a sleeve fitting over the upper end of the shaft A, and provided internally with the longitudinal groove b , Fig. 3, into which extends the feather a^2 .

b' is a nut, by which the sleeve may be adjusted longitudinally on the shaft A; and b^2 , a rear set-screw, by which it may be fixed in any desired position on the same.

b^3 is a hinged joint connecting the handle with the front of the sleeve, the latter being cut away, if necessary, as shown in b^4 , Fig. 1, to allow the former to be depressed.

C, Fig. 1, is the handle, provided on its under surface at a proper point with the lateral lugs $c c$, having between them the longitudinal depressions c' .

D, Fig. 1, is the folding brace or toggle, the

upper leg, d , of which is pivoted between the lugs $c c$ at d' , and the lower leg, d^2 , pivoted at d^3 in the upper part of the depression a^3 of the shaft A, both legs being united by the toggle joint or knuckle d^4 , which is situated on the inner side of the central line of the toggle when open or in a straight line. $d^5 d^5$ are shoulders on the outer edges of the meeting ends of the legs of the toggle.

The depression a^3 is made long and deep enough to contain the lower leg of the toggle when the handle C is depressed, so that the latter may lie closely against the shaft A. The depression c' between the lugs $c c$ also aids in this purpose by giving room for the head or upper end of the leg d .

The manner of using the device is as follows: The pilot, desiring to steer by the handle C, which is down while the wheel is being used, lifts it with one hand and with the other presses the knuckle d^4 past the central line of the toggle, when the latter becomes a rigid stay between the handle and shaft by the opposition of the shoulders d^5 . To close the handle it is necessary to lift on it slightly with one hand, while the other bends the knuckles d^4 , after which it can be depressed in the usual manner.

The position of the sleeve B on the shaft A may, when necessary, be changed or adjusted by means of the nut b' and set-screw b^2 .

The leg d^2 of the toggle should be pivoted low enough on the shaft A to give room for the hand when bending the toggle.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of shaft A, hinged lever B C, and folding brace-bar D, substantially as shown and described.

2. In combination with shaft A, folding brace-bar D, and lever C, the adjustable sleeve B, substantially as shown and described.

3. In combination with the shaft A, folding brace-bar D, and lever C, the sleeve B, adjusting-nut b' , and set-screw b^2 , substantially as shown and described, for the purpose specified.

This specification signed and witnessed this 20th day of February, 1880.

JOHN GATES.

Witnesses:

SETH L. POPE,

D. W. WAKEFIELD.