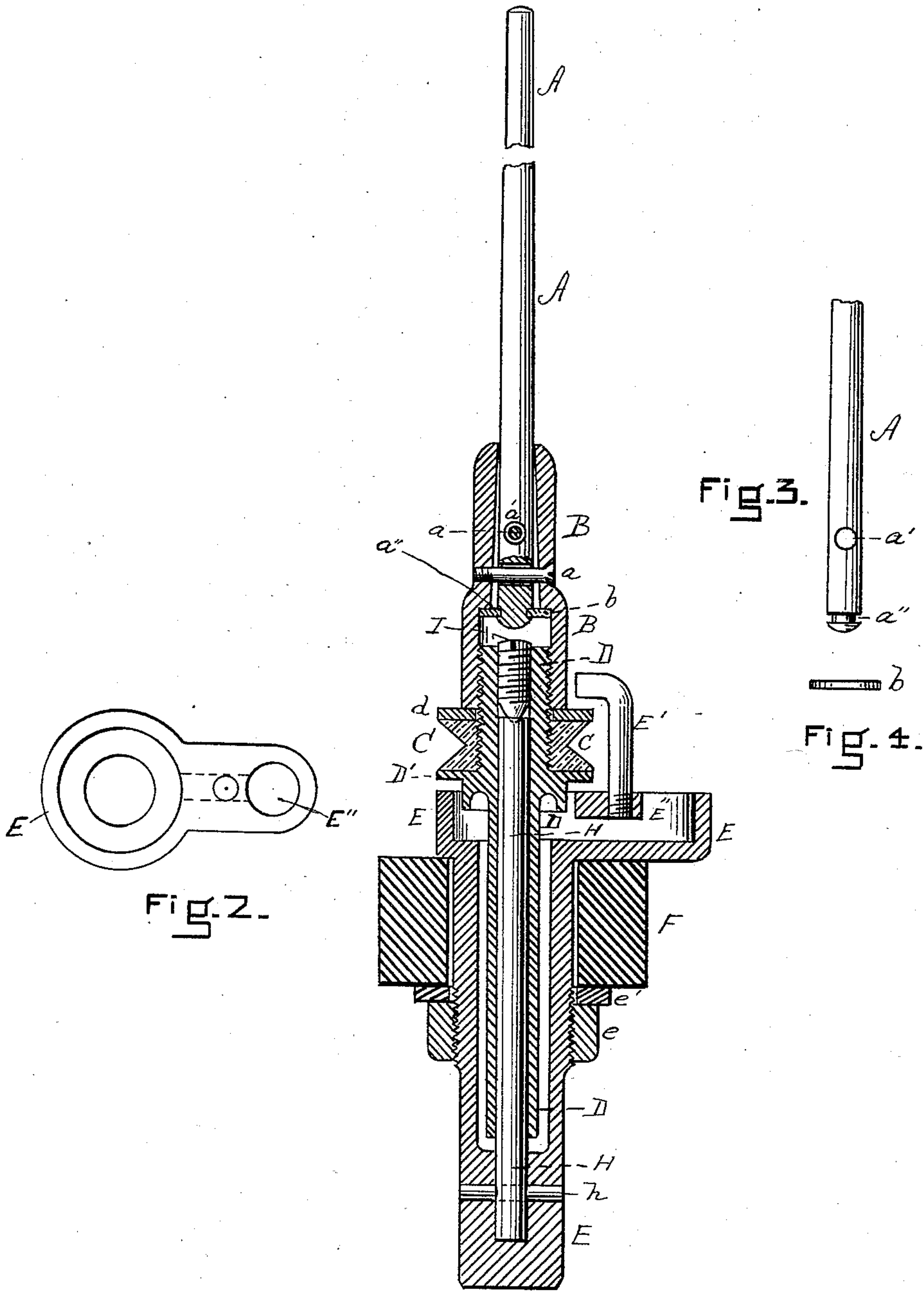


(No Model.)

G. O. WICKERS.
SPINNING SPINDLE.

No. 422,273.

Patented Feb. 25, 1890.



WITNESSES.

J. W. Hartnett.
B. N. Williams

FIG. 1.

INVENTOR

George O. Wickers
By His Atty.
Henry Williams

UNITED STATES PATENT OFFICE.

GEORGE O. WICKERS, OF LAWRENCE, ASSIGNOR OF ONE-HALF TO THE DAVIS
& FURBER MACHINE COMPANY, OF NORTH ANDOVER, MASSACHUSETTS.

SPINNING-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 422,273, dated February 25, 1890.

Application filed September 27, 1889. Serial No. 325,274. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. WICKERS, of Lawrence, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Spinning-Spindles, of which the following is a specification.

In this invention the spindle is divided above the whirl, so that said spindle is flexible above the whirl only, all as below described, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of my device, portions being shown in elevation. Fig. 2 is a plan view of the support. Fig. 3 is an elevation of the lower portion of the spindle. Fig. 4 is a side view of a flexible ring or washer removed from an annular groove in said spindle.

A is the flexible spindle-blade, supported by the spindle-blade holder B. The support given to this spindle-blade is made both flexible and secure by the following means: The bore of the spindle-blade holder is graduated or tapering, being enlarged toward the lower end of the spindle-blade, as shown. The screws *a*, which hold the spindle-blade in place pass through holes *a'* therein whose diameters are greater than the diameters of the screws, and an elastic or flexible washer or ring *b*, preferably of rubber, lies in the annular groove *a''*, near the lower end of the spindle-blade, all as shown.

C is the whirl, constructed of leather or analogous non-metallic substance in order to prevent slipping of the band. This whirl in-

stead of being fastened directly to the spindle as is now common, is screwed onto the sleeve D, which is screwed into the spindle-blade support, said sleeve being provided with a flange D' below the whirl, and with a metallic washer *d* between the whirl and the spindle-blade support.

E is the support, provided with the ordinary stop E' and oil-chamber E''.

F is the rail, and *e e'* are a nut and washer.

H is a stationary or dead spindle or column, secured at its lower end rigidly by a pin *h* or other suitable means in the support E. This column H extends up into the sleeve D, and its upper end has centered on it a step or bolt I, screwed into the upper end of said sleeve. Thus it will be seen that the spindle is divided above the whirl, the upper portion or spindle-blade A rotating with the spindle-blade holder B, whirl C, and sleeve D, while the column H is stationary in the support E.

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

The combination of the spindle-blade A, provided with the enlarged holes *a'* and annular groove *a''* near its lower end, the spindle-blade holder B, provided with a tapering bore and the elastic washer *b*, said spindle-blade terminating at its lower end above the whirl, substantially as set forth.

GEORGE O. WICKERS.

Witnesses:

J. M. HARTNETT,

HENRY W. WILLIAMS.