

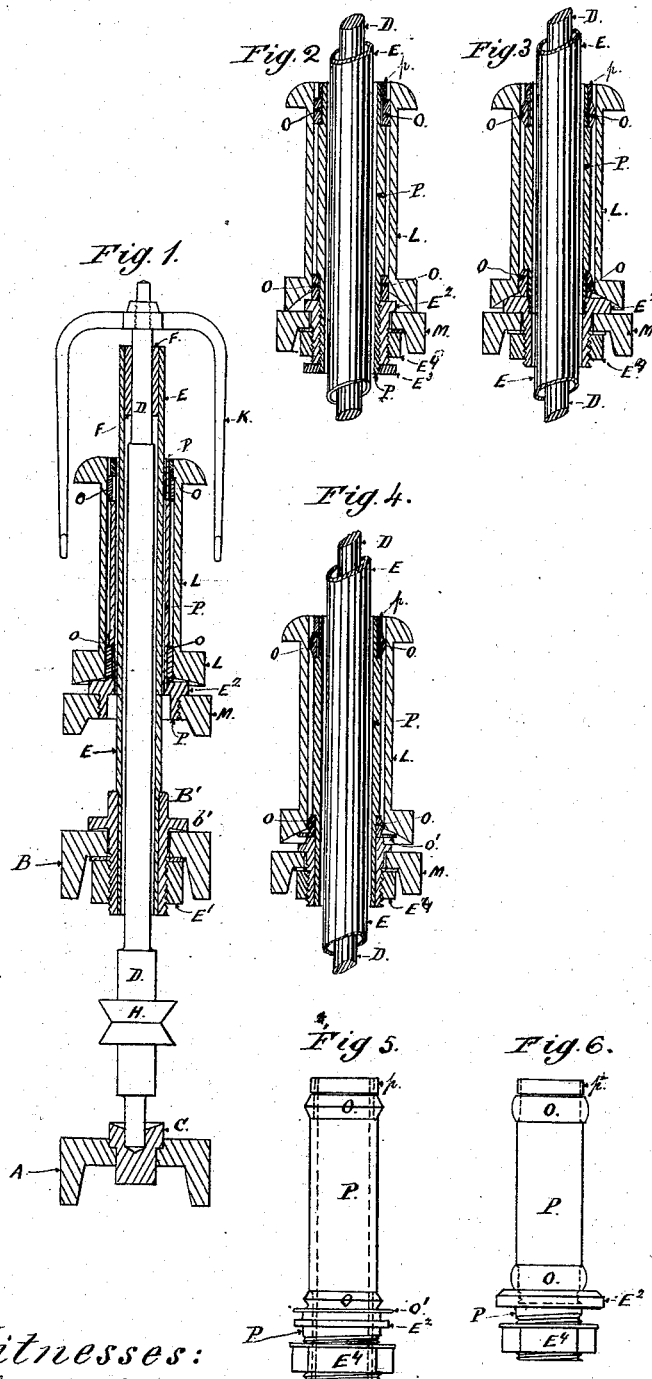
(No Model.)

E. HIRD.

SPINNING AND DOUBLING MACHINE.

No. 261,711.

Patented July 25, 1882.



Witnesses:
Thos. G. Houston
C. Sedgwick

Inventor
E. Hird
By Munroe & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

ENOCH HIRD, OF BOLTON, COUNTY OF LANCASTER, ENGLAND.

SPINNING AND DOUBLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,711, dated July 25, 1882.

Application filed November 5, 1881. (No model.) Patented in England August 9, 1880, No. 3,243; in Germany February 18, 1881, No. 16,604; in France February 28, 1881, No. 141,405, and in Belgium March 2, 1881, No. 53,981.

To all whom it may concern:

Be it known that I, ENOCH HIRD, of Bolton, in the county of Lancaster, England, have invented an Improvement in Spinning and Doubling Machines, of which the following is a specification.

The invention will first be described in connection with the drawings, and then pointed out in the claim.

Figures 1, 2, 3, 4 of the drawings are vertical sections, showing the relative construction and arrangement of the parts. Figs. 5, 6 are side elevations of the same.

In the drawings, A represents the step-rail, B the bolster-rail, M the traverse-rail, K a flier, and D the spindle, all of which may be of the ordinary or suitable construction.

E is an elongated bolster, secured to the bolster-rail by means of a sleeve, B', having a flange, b', and nut E', as shown in Fig. 1.

Attached to the traverse-rail M by a flanged and threaded sleeve, E², and a nut, E⁴, is a bobbin-tube, P, surrounding the bolster E, provided with a packing, F, at its upper end, the bobbin-tube P supporting and carrying the bobbin, and provided near its top and bottom with the loose collars o o, which are secured in place in grooves in the bobbin-tube by means of the sleeve E² and washer p, re-

spectively, the said washer being shrunk on said tube.

In Figs. 1, 2, 3, and 6 the collars on the bobbin-tube are shown so constructed as to engage only the inner surface of the bobbin, which is supported either on the flanged sleeve E² or traverse-rail M, whereas in Figs. 4 and 5 the lower of said collars is provided with a flange, o', for supporting said bobbin, this last construction being preferred when fragile yarns are to be spun, as the draft on the same is thereby reduced to a minimum. In Fig. 2 the bobbin-tube P extends below the traverse-rail M, and is provided with a nut, E³, at its lower end.

What I claim as new and of my invention is—

The combination, with the bolster-rail B, traverse-rail M, elongated bolster E, and spindle D, of the bobbin-stand having the nut E³ at the lower end, the loose collars o o, the washer p, shrunk on the top of stand, the sleeve having nut E', and flanged sleeve E², as and for the purpose specified.

ENOCH HIRD.

Witnesses:

SAMUEL SYKES,
EDMUND CHADWICK.