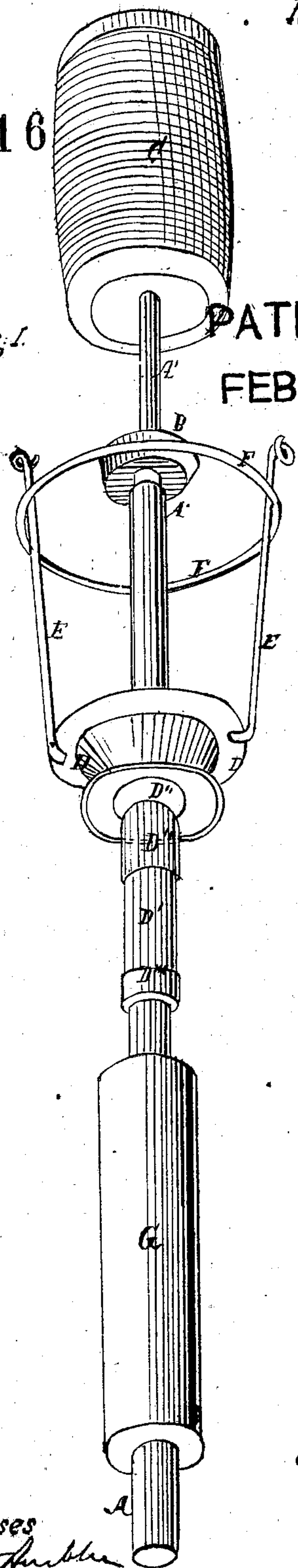


O. Pearl.

Imp<sup>d</sup> Throstle Spinning.

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Fig. 1.



PATENTED

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Fig. 2.

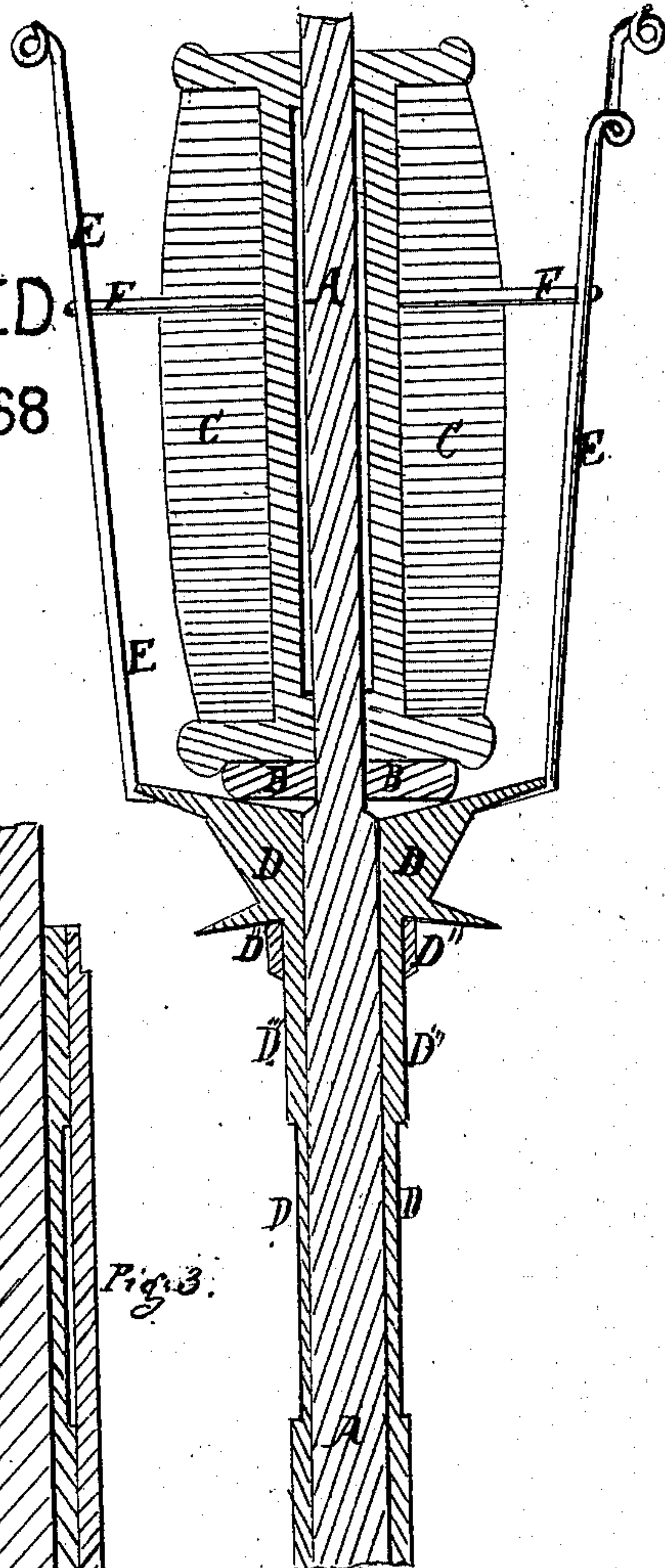
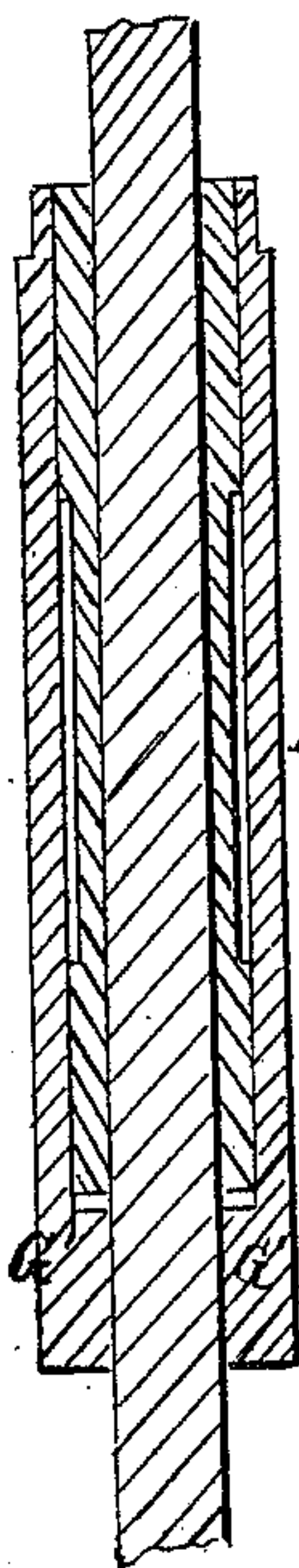


Fig. 3.



Witnesses  
J. R. Hubbs  
Chas. F. Clausen

O. Pearl

Inventor

by  
D. D. Hollway & Co  
his attys

# United States Patent Office.

OLIVER PEARL, OF LAWRENCE, MASSACHUSETTS.

*Letters Patent No. 74,416, dated February 11, 1868.*

## IMPROVEMENT IN SPINNING-THROSTLE.

*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, OLIVER PEARL, of Lawrence, in the county of Essex, and State of Massachusetts, have invented a new and useful Improvement—the Dead-Spindle Throstle-Frames; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, in which—

Figure 1 is a perspective view, showing the several parts as separated.

Figure 2 is a vertical longitudinal section.

Figure 3 is a similar section, showing a different arrangement of the bearings.

The same letters are used to designate the same parts in all the figures.

My improvements consist in constructing a flier for a dead-spindle throstle-frame, so as to balance the weight above and below the whirl, by extending a tubular bearing below the whirl, which is sustained in a tube set in the top rail, with bearings above and below to prevent vibration and irregular wear from friction.

In the annexed drawings, A is the spindle. The barrel is of uniform size. The tip has, at the base, a button, B, on which the bobbin C rests. A cloth washer is placed on this button, to create friction to wind up the yarn on the bobbin as fast as it is spun. D is the whirl, which revolves on the barrel of the spindle, carrying with it the flier-arms E, which I prefer to make flattened, so as to present their edges in the direction of their revolution. Quirls are made on the ends of the arms, through which the yarn passes. As the centrifugal force would cause the arms to expand, when the fliers were revolving at a high speed, they are surrounded by a ring, F, which maintains them in position, and enables my improved fliers to be run at a speed much higher than can be attained with the ordinary open fliers. The whirl is attached to a tube, D<sup>1</sup>, extending below it, and which turns freely on the spindle. A composition collar, D<sup>2</sup>, surrounds this tube immediately below the whirl. A recess is formed in the middle part of the tube D<sup>1</sup>, to lessen the friction. This tube D<sup>1</sup> turns, with the revolution of the whirl, within a tube, G, which is fastened by a set-screw in the top rail; it may rest on the composition bearing D<sup>2</sup>, or a ring may be placed within the tube G, resting upon a shoulder at G<sup>1</sup>, on which the lower end of the tube D<sup>1</sup> will revolve. In any case, however, bearings above and below at D<sup>3</sup> D<sup>3</sup> will be formed sufficient to prevent any vibration of the tubular support of the whirl, while revolving at a high velocity. These bearings may be placed either on the tube D<sup>1</sup>, or they may be made as rings, swelled on the inner face of the tube G above and below, in which case the tube D would be straight. The spindle is attached to the lower rail in the usual manner, rising and falling through the whirl and tubular bearing D<sup>1</sup>.

What I claim as my invention, and desire to secure by Letters Patent, is—

An inverted flier, provided with a ring, a whirl, and an elongated tubular extension, substantially as described, combined with the spindle and the elongated tubular bearing, as shown, and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

OLIVER PEARL.

Witnesses:

R. MASON,

JOHN D. BLOOR.