

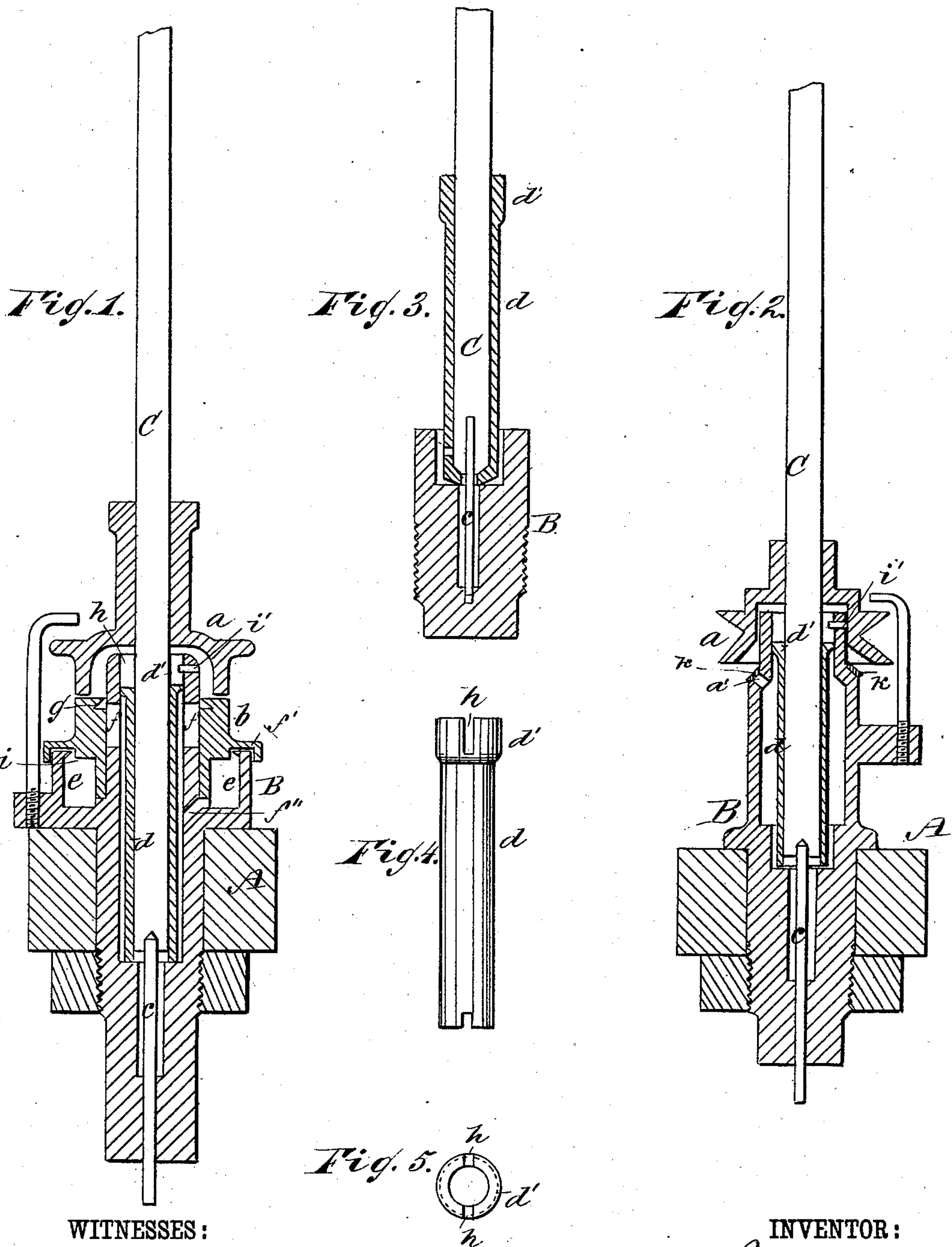
(No Model.)

J. E. TYNAN.

BOBBIN SPINDLE AND SUPPORT THEREFOR.

No. 279,674.

Patented June 19, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH E. TYNAN, OF PATERSON, NEW JERSEY.

BOBBIN-SPINDLE AND SUPPORT THEREFOR.

SPECIFICATION forming part of Letters Patent No. 279,674, dated June 19, 1883.

Application filed December 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. TYNAN, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Bobbin-Spindles and Supports Therefor, of which the following is a full, clear, and exact description.

The object of my invention is to neutralize vibration of the spindles in spinning-machinery, arising from irregularities in the weight and size of the bobbins, and also to provide for thoroughly lubricating the bearing of the spindle.

The invention consists in a spindle supported upon a spring-wire and arranged to rock on a center at its mid-length, and having its supports provided with oil-passages, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of a spindle of my improved construction. Fig. 2 is a similar view of the spindle as arranged without a loose pulley. Fig. 3 shows a modification of the step. Fig. 4 is a side view, and Fig. 5 an end view, of the bushing detached.

A is the supporting-rail; B, the bolster, rigidly fixed to the rail; and C is the spindle, carrying fast pulley *a* and loose pulley *b*. The bolster B is made of tubular form to receive the spindle, and the spindle rests at its lower end on a pointed spring wire or pin, *c*, that is fixed in the bolster, the latter being cut away around the upper end of the wire or spring to allow side movement. Around the spindle and fitting closely thereto is a sleeve or bushing, *d*, which is smaller than the recess in the bolster, to accommodate the side movement of the spindle; but the sleeve is swelled at *d'* on its upper end, to fit snugly in the bolster. The swell *d'* is the center on which the spindle rocks under centrifugal force caused by irregularities in the running of the bobbin. The bolster B is made above the rail with an annular flange, which forms an oil-cup, *e*, and the loose pulley *b* is flanged at *f'* to cover the cup, so as to exclude dust. On the pulley and within the cup is an annular shoulder, *i*, that acts to arrest any upward flow of oil and throw the oil outward to the side of the cup, which has its upper edge

turned inward. The pulley *b* rests on a shoulder formed on the bolster, and through the shoulder is a passage, *f''*, that allows oil to pass down to the spindle-step. The bolster is slotted at *f*, within the loose pulley, to prevent the oil from working up and over the pulley, and the pulley is grooved at *g*, to prevent overflow of any oil that may work up. The bushing *d* is also slotted at *h*, at its upper end, to arrest and cause the return of the oil that works up between the bushing and the spindle. In the lower end of the bushing are slots that allow the oil to enter to the spindle. A pin, *i'*, entering one slot, *h*, from the bolster prevents rotation of the bushing. By this construction the spindle is held firmly, oil may pass to all the bearings, and vibration of the spindle prevented from being communicated to the rail. When there is no loose pulley, oil-cup *e* is omitted, and the bolster is curved inward at its upper end against the bushing *d*, as shown in Fig. 2, and an aperture, *a'*, normally covered by a sliding ring, *k*, allows oil to be poured in. In Fig. 3 the spindle, instead of being loosely stepped on the spring-wire, has the spring attached in a mortise in the spindle and the spring loosely stepped in the bolster, and in that case the bushing *d* is closed beneath the spindle and stepped in the bolster, so as to take the weight.

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

1. The combination, with a bolster and its spindle, of a spring-wire secured in the bolster and forming a step for the spindle, substantially as herein shown and described.

2. The combination, with the bolster B and spindle C, of the spring-wire *c*, secured in the bolster and forming a step for the spindle, and the bushing *d*, provided with the hub *d'*, substantially as herein shown and described.

3. The combination, with the bolster B, provided with the oil-cup *e*, the slots *f* and the passage *f''*, spindle C, and spring-wire *c*, of the pulley *b*, provided with the flange *f'* and the groove *g*, and the bushing *d*, having its ends slotted and provided with the hub *d'*, substantially as herein shown and described.

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Witnesses:

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