

(No Model.)

J. J. SUMNER.

SPINDLE AND BOLSTER FOR SPINNING AND TWISTING MACHINES.

No. 322,654.

Patented July 21, 1885.

Fig. 1 .

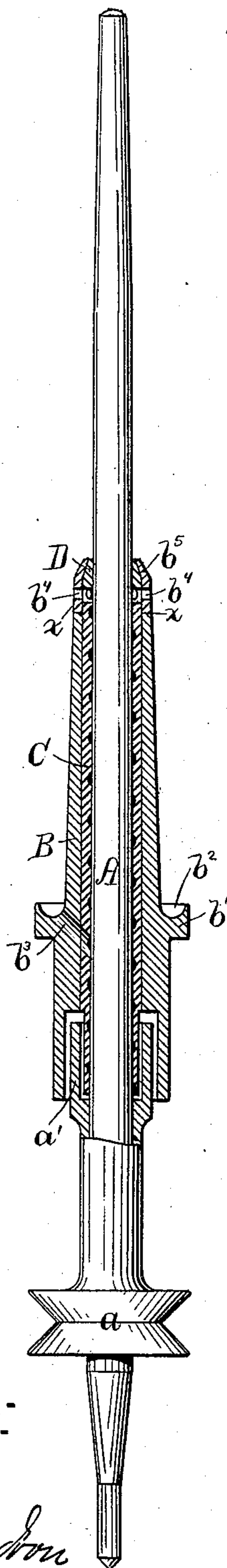
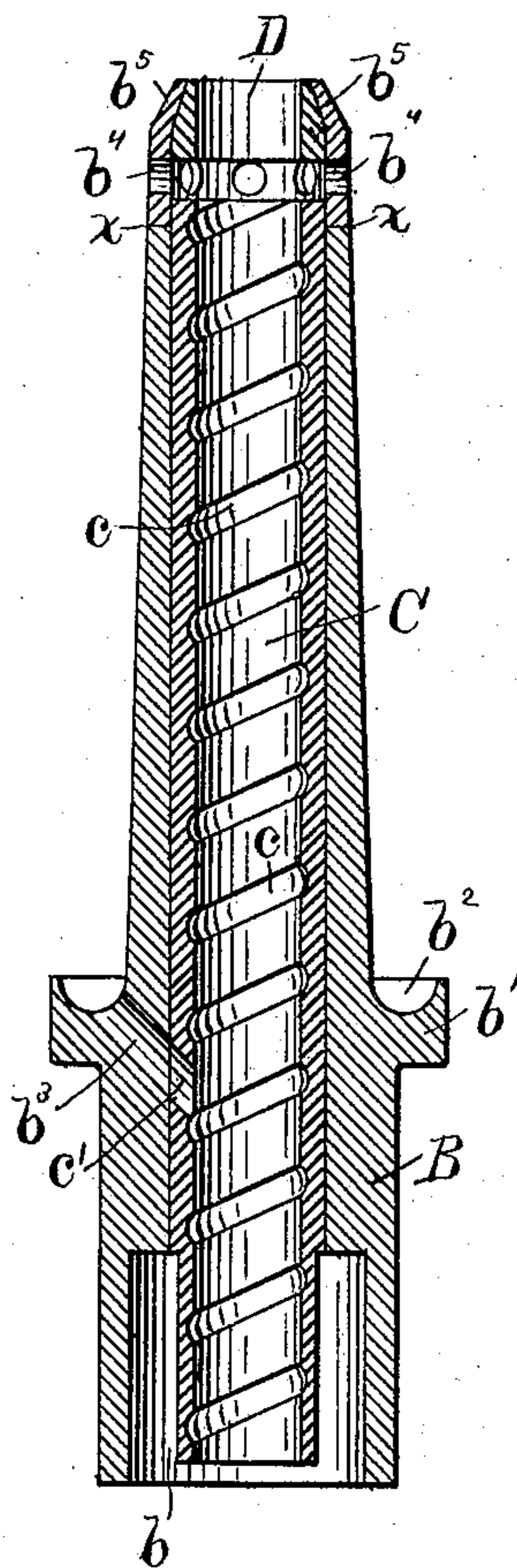


Fig. 2 .



WITNESSES:

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SPINDLE AND BOLSTER FOR SPINNING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 322,654, dated July 21, 1885.

Application filed August 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. SUMNER, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Spindles and Bolsters for Spinning and Twisting Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 The object of my invention is to produce a spindle and bolster in which the lubricant shall maintain a constant circulation, due to the rotation of the spindle, whereby great economy and cleanliness in the use of the
15 lubricant are attained.

To the above purpose my invention consists in the peculiar and novel construction and arrangement of the spindle and bolster, as hereinafter described and claimed.

20 In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

25 Figure 1 is a vertical section of my improvement, the spindle being shown in elevation. Fig. 2 is a similar view of the bolster and the sleeve and ring.

30 In the said drawings, A designates the stem of the spindle, which carries the usual whirl, *a*. Above the whirl is formed an annular socket, *a'*, the rim of which is concentric with the stem of the spindle.

35 B designates the bolster, which is formed at its base with an enlarged internal socket, *b*, upwardly from which extends the bore of the bolster.

40 *b'* designates an annular projection, which is formed upon the outside of the bolster, and in the upper side of which is formed the annular channel *b²*. A duct, *b³*, extends obliquely downward from the bottom of the channel *b²* and opens into the bore of the bolster. At the upper end the bolster is formed with an annular series of holes, *b⁴*, and its upper
45 extremity is turned inwardly, as shown at *b⁵*.

50 C designates a sleeve which fits in the bore of the bolster, and is of such length, when properly set in the bolster, that its upper end lies just below the holes *b⁴*, while its lower end extends downward into the enlarged socket *b* so as to enter the socket *a'* of the spindle A.

The sides of the bore of this sleeve are formed with a worm, *c*, and through one side of the sleeve is formed an oblique duct, *c'*, corresponding with the duct *b³* of the bolster B. 55

D designates a ring, which is set into the upper end of the bolster B, and which closely hugs the stem A, so as to revolve with it. The outer side of this ring is beveled inwardly at its upper portion, as shown, so as to close the
60 joint between the ring and the bolster. The ring lies just above the holes *b⁴*. The ring D is first dropped into the bolster, and then the sleeve C is forced tightly into the bore of the bolster. The stem A is then inserted upward
65 through the bore of the bolster, and is forced well into the ring D. Oil is now run into the channel *b²*, and flows through the ducts *b³* and *c'* into the bore of the sleeve. As the stem revolves the oil will be drawn upward along the
70 worm *c* until it reaches the series of holes *b⁴*, at which point its upward passage will cease, because the joint between the ring D and bolster is a closed joint. As the ring D revolves rapidly within the bolster with the stem
75 A, said ring will cause the oil to flow out through the holes *b⁴*. The oil will then flow down upon the outside of the bolster and into the channel *b²*, thence through the ducts *b³* and *c'* into the worm, upward out of the holes, and
80 thence downward into the channel *b²* again, and so on repeatedly. Thus it will be seen that the spindle is virtually self-oiling, and that it automatically causes a constant circulation of the lubricant, so that the utmost
85 economy in the use of lubricant is attained, while waste and dirt are avoided.

I do not wish to be understood as confining myself exclusively to the precise details of construction above described, because such
90 details are susceptible of various modifications. For instance, the upper end of the bolster may be formed separately from the body thereof, as is indicated by the lines X X in the drawings, and in this event this detachable
95 portion would be forced around the upper end of the sleeve C after the ring D had been placed within said upper portion. Other similar modifications may be made without departing from the spirit of my invention. 100

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

1. The combination, with the spindle proper, of the bolster, the sleeve, and the ring, constructed and arranged substantially as and for the purposes specified.
- 5 2. The combination, with the spindle proper, having the socket a' , of the bolster having the channeled projection b' , duct b^3 , and holes b^4 , the sleeve having the worm c and duct c' , and the ring D, substantially as and for the purposes set forth.

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Witnesses:

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