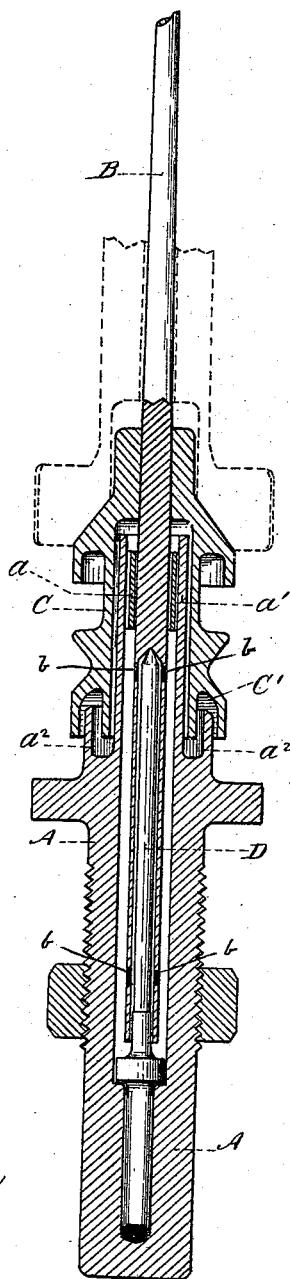


(No Model.)

T. WRIGLEY.
SPINNING SPINDLE.

No. 492,080.

Patented Feb. 21, 1893.



Witnesses.
John R. Snow.
Alfred P. Smith Jr.

Inventor.
Thomas Wrigley
by his attorneys,
Maynard & Beach.

UNITED STATES PATENT OFFICE.

THOMAS WRIGLEY, OF TODMORDEN, ENGLAND.

SPINNING-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 492,080, dated February 21, 1893.

Application filed April 22, 1892. Serial No. 430,187. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WRIGLEY, of Waterside House, Todmorden, in the county of York, England, have invented a new and
5 useful Spinning-Spindle, of which the following is a specification, reference being had to the accompanying drawing, making a part hereof, which is a lengthwise section illustrating my spindle, and in which—

10 A is the supporting tube, B the spindle, C its sleeve whirl and D a post, confined within the supporting tube, and entering a bore in the spindle.

I have shown the upper end of the supporting
15 ing tube with a bushing *a*, which I prefer to force tightly into the upper part of the supporting tube; but which may, if preferred be adapted for a slight lateral motion. Although it is indifferent whether this bushing *a* be
20 tight or loose in the supporting tube, yet the bushing is desirable; for it acts as a guide when the spindle is put into the supporting tube.

I have shown the bushing *a* as driven
25 tightly into the upper part of the supporting tube, but with two grooves lengthwise so that any oil which may be thrown off of that part of the spindle just above the upper end of the bushing, may percolate back into the
30 supporting tube. The lateral or bolster bearing for the spindle is practically the side of the post and the lower end of the tubular part of the spindle and the step bearing is the upper end of the post and the closed end
35 of the tubular part; in practice I have found it preferable on the whole to have the upper end of the post D practically in the plane of the band pull, as shown in the drawing, and to have the hollow part of the spindle B, extend
40 well down, the proportions shown being those preferred. As the spindle will tip or tilt when in rapid revolution, as required by the unbalanced load of the bobbin and the yarn upon it, the lower hollow part of the
45 spindle will not remain concentric with the post D; although the film of oil always between the interior of the tubular part of the

spindle and the exterior of post D serves as a cushion, and prevents grinding and heating
50 which might otherwise ensue from contact of the spindle with the side of post D. In practice I prefer to make vent holes *b* in the hollow part of the spindle B, to allow circulation of oil. The post D may be driven firmly into
55 a cavity made for it in the lower part of the supporting tube, or may have slight play in that cavity, so that it does not revolve with the spindle.

I have shown the supporting tube with a middle sleeve *a'* projecting well up into the
60 sleeve whirl C, as usual; but in addition I provide the supporting tube A with a shorter sleeve *a''*, which extends up into a deep groove C' formed in the lower part of the whirl C. This feature is desirable in all forms of sleeve
65 whirl spindles, for if the space between the sleeves *a'* *a''* be wiped out from time to time no oil can be thrown out by the whirl.

What I claim as my invention is—

1. In combination a spindle tubular at its
70 lower end; a sleeve whirl; a supporting tube whose upper portion extends up into the sleeve of the whirl; and a post whose upper end forms in connection with the inner end of the bore the step or end bearing of the spindle
75 and whose lower portion forms in connection with the mouth of the bore the bolster or side bearing of the spindle; all substantially as set forth.

2. A spindle, a supporting tube with the
80 long middle sleeve *a'*, forming an oil receptacle, and also with a short outer sleeve *a''*, forming a drip cup for oil; in combination with a sleeve whirl surrounding but not revolving upon the middle sleeve *a'* and grooved
85 at its lower end to receive the outer sleeve *a''*, all substantially as set forth.

In testimony whereof I have hereto affixed my signature in presence of two witnesses.

THOMAS WRIGLEY.

Witnesses:

GIBSON COCKEN, Jr.,
JOHN WALTON.