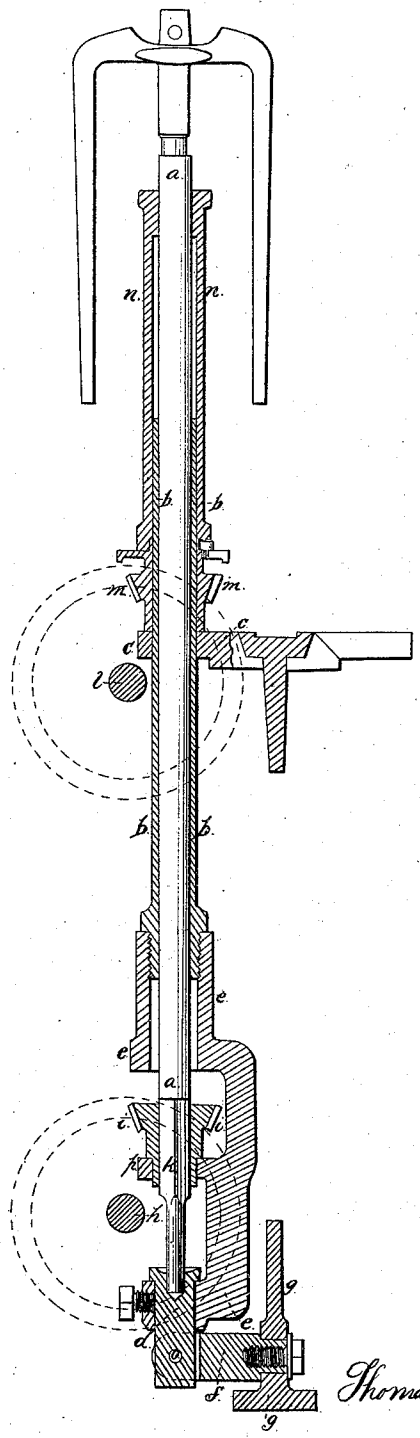
Higgins & Whitworth
Spinning Mach.

No. 853.
31,857.

Patented Mar. 26, 1861.



Witnesses.
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W. J. Cheetham

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UNITED STATES PATENT OFFICE.

J. HIGGINS AND T. S. WHITWORTH, OF SALFORD, ENGLAND.

SPINNING-MACHINE.

Specification of Letters Patent No. 31,857, dated March 26, 1861.

To all whom it may concern:

Be it known that we, JAMES HIGGINS and THOMAS SCHOFIELD WHITWORTH, of Salford, in the county of Lancaster, England, have invented Improvements in Machinery or Apparatus for Preparing Cotton and other Fibrous Substances for Spinning; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference mentioned therein.

Our invention relates to a method of mounting and supporting the spindles of slubbing and roving frames whereby a greater degree of steadiness is secured so as to enable us to run the spindles at a higher speed than is usual.

In the accompanying drawing the spindle is at *a* mounted within a tube *b* which is supported (as regard its vertical position) toward its upper end by the copping rail *c* and at its lower end in a footstep *d*. This step and tube *b* are connected together by a frame *e* one for each spindle and these parts are mounted by means of hinge joints upon studs one of which is shown at *f*. The studs *f* are carried by the lower or spindle rail *g* and are so adapted as to be capable of turning therein. The line shaft for the spindles is shown at *h* and one of the pinions at *i*. These pinions are provided with a squared part for the reception of a similarly shaped portion of the spindle at *k* and by that means therefore they are driven without the intervention of screws, or keys as is usual. A projection *p* from the frame *e* holds the boss of the pinion *i* so that when the spindle is withdrawn the pinion will be retained in its place ready to receive the spindle when returned to its working position. The line shaft for the bobbins is at *l* and one of the bobbin pinions at *m* mounted upon the tube *b* and resting upon the copping rail *c*. The bobbin is shown at *n* resting as usual on its lower end upon the bobbin pinion and bored at its upper end so as to run in contact with the spindle. The other parts of the machine are of the usual construction and motion being communicated thereto, the copping rail will be caused to rise and fall supporting the tube *b* in a vertical position during that movement; but should any tendency to a binding action take place then the tube *b* the spindle *a* and the frame *e* will all turn together outward or inward upon the hinge joint *o* or sidewise upon the stud *f*.

Should it be necessary to clean that part of the spindle *a* which revolves in the tube *b* it may readily be done by drawing it upward it being mounted as before mentioned loosely in the pinion *i* but driven thereby through the intervention of the square *k*. It will be perceived that there is no top bearing for the spindle in our arrangement the same effect being gained by the tube *b* and the spindle may therefore be withdrawn as above described without the removal of any parts which require readjustment and we would here observe that this part of our invention is applicable to other methods of supporting the spindle provided top bearings be not used.

We desire it to be understood that we do not limit ourselves to the precise construction of the parts shown but claim as secured to us—

1. Giving support to a stationary tube or "bolster" through which the spindle passes by a sliding bearing attached to the copping rail.

2. So arranging the spindles and their tubes or bolsters that they may oscillate separately upon joints or other apparatus for the purpose of adjusting themselves to a sliding bearing.

3. Connecting the spindle to the pinion by which it is driven so that it may be withdrawn therefrom without disturbing top bearings or other parts requiring readjustment.

JAMES HIGGINS.
THOMAS SCHOFIELD WHITWORTH.

Witnesses:
WM. TUDOR MABLEY,
W. T. CHEETHAM.