

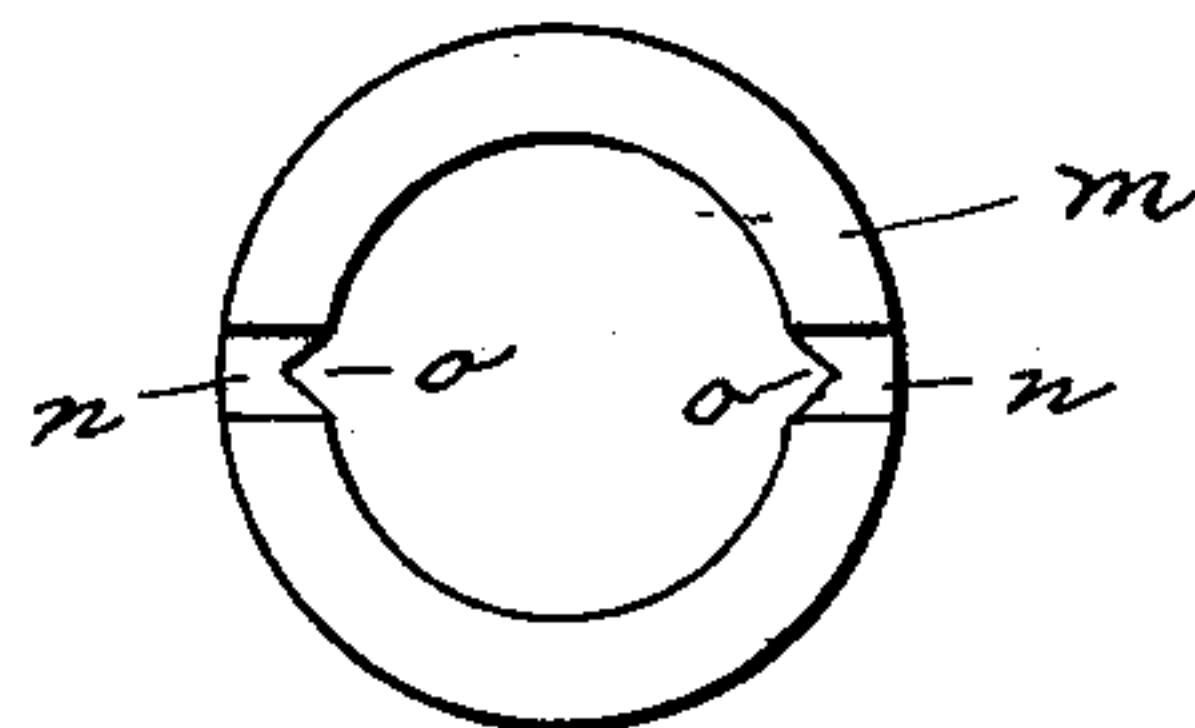
**No. 635,660.**

T. W. COCKER.  
SPINDLE.

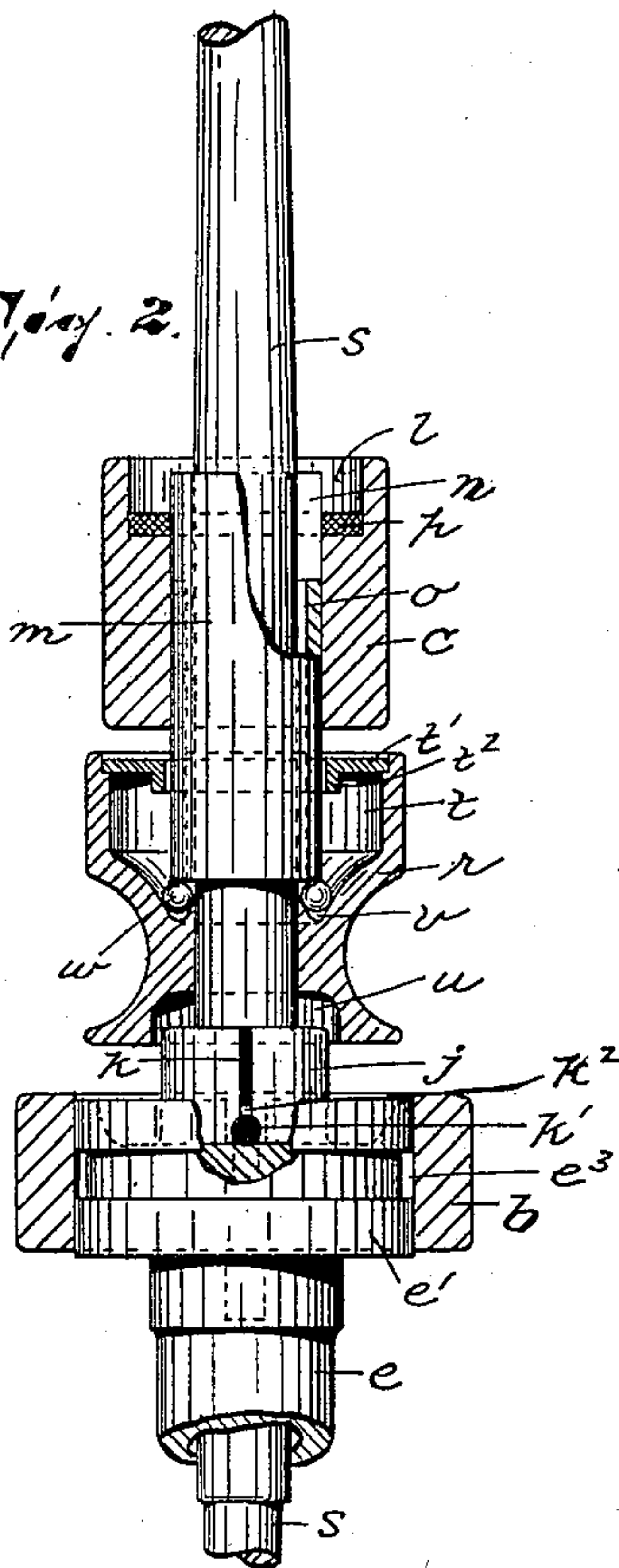
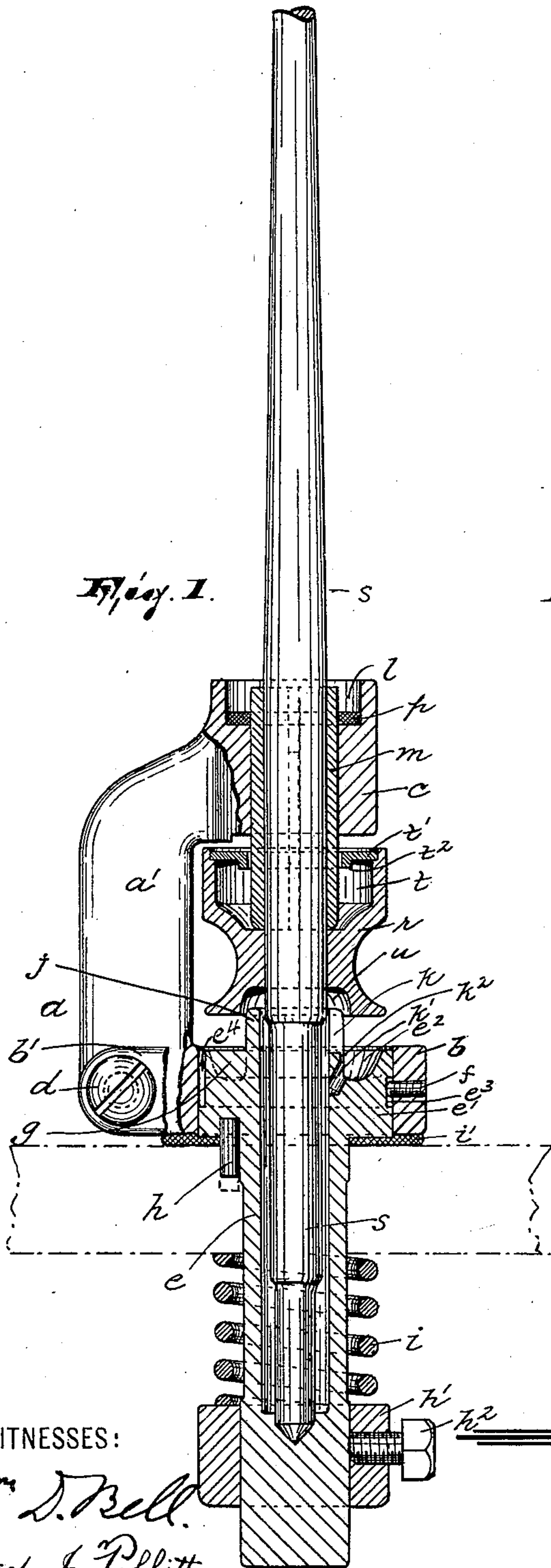
**Patented Oct. 24, 1899.**

(Application filed Feb. 9, 1898.)

(No Model.)



*Fig. 3.*



WITNESSES:

Wm. D. Bell.  
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-INVENTOR-

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# UNITED STATES PATENT OFFICE.

THOMAS W. COCKER, OF PATERSON, NEW JERSEY.

## SPINDLE.

SPECIFICATION forming part of Letters Patent No. 635,660, dated October 24, 1899.

Application filed February 9, 1899. Serial No. 705,014. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS W. COCKER, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Spindles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to letters of reference marked thereon, which form a part of this specification.

This invention relates to spinning mechanism, and it has reference particularly to a novel arrangement of a spindle, its whirl or wharve, and its individual supporting means.

The invention is an improvement upon the device covered by Letters Patent No. 412,004, of October 1, 1889.

The invention consists in the novel construction and arrangement of the several parts, substantially as will be hereinafter fully set forth, and finally embodied in the clauses of the claim.

In the accompanying drawings, wherein corresponding letters of reference indicate like parts in the several views, Figure 1 is a view in side elevation, showing a spindle, its whirl, and its individual supporting means constructed in accordance with the principles of my invention, certain parts being shown in section. Fig. 2 is a view showing in front elevation a spindle, its whirl, and a portion of its supporting means constructed in accordance with a certain modification of my invention, certain parts being also shown in section; and Fig. 3 is a top plan view of a certain thimble, somewhat enlarged, constituting a portion of the spindle-supporting means.

In said drawings, *a* designates a bracket, which consists of an upwardly-extending arm *a'*, an integral strap or band *b* at the lower end of and extending substantially at right angles to said arm, and a sleeve *c*, integrally formed at the upper end of said arm and situated above said strap *b*. *d* designates a screw whereby the free end *b'* of said strap is secured to the arm *a*.

*e* designates a sleeve which is closed at its bottom and which is surrounded near its up-

per end by an integral collar *e'*, having an annular recess *e<sup>2</sup>* in its upper face and a peripheral groove *e<sup>3</sup>*, with which communicates another groove *e<sup>4</sup>*, disposed at right angles thereto and extending to the upper edge of said collar. A set-screw *f*, arranged in the band or strap *b*, is adapted to project into said groove *e<sup>3</sup>*, so as to prevent the separation of the collar and band except when said set-screw is in coincidence with the groove *e<sup>4</sup>*, whereupon the screw *d* being released the two parts may be disassembled. It should be remarked that the recess *e<sup>2</sup>* is not perfectly annular, for the reason that a web *g*, which forms a portion of the arm *a'* and is adapted to strengthen the structure, divides said recess.

The sleeve *e* is adapted to penetrate a suitable aperture formed in the spindle-rail, which is shown in dotted lines in Fig. 1, and for this purpose it is secured against revolution in said rail by a key *h*, and it is firmly held in place by a collar *h'*, which may be adjusted on said sleeve by means of a set-screw *h<sup>2</sup>* and between which and the spindle-rail is disposed a spiral spring *i*.

*i'* designates a non-metallic washer which acts as an insulation against vibration and which is disposed between the collar *e'* and the strap or band *b* and the spindle-rail.

Above the collar *e'* there is an annular upwardly-extending flange *j*, which practically constitutes an extension of the sleeve *e*. Said flange is divided by a saw-cut or deep notch *k* and beneath said saw-cut has an oil-orifice *k'*, said saw-cut and the oil-orifice being connected by an externally-formed short groove *k<sup>2</sup>*.

The sleeve *c*, which forms the bolster, is provided with a recess or cavity *l* in its top portion. Said sleeve incloses a thimble *m*, which is considerably longer than said sleeve and projects up into the cavity. The upper edge of this sleeve has one or more saw-cuts or notches *n*, with which communicate corresponding internal grooves *o*, extending longitudinally of said thimble and as far as its lower end. An annular absorbent body *p* is arranged in said cavity *l*, between its outer wall and the thimble.

*r* designates the whirl or wharve of the spindle *s*, which latter is stepped in the bottom of the sleeve *e* and which has bearings in the thimble *m*, which is inclosed by the



sleeve *c*. Said whirl or wharve *r* is, as usual, fixed firmly upon the spindle, and the thimble *m* is so disposed relatively thereto, with its lower end in approximate contact therewith, that appreciable longitudinal movement of the spindle is obviated. Said whirl or wharve has in its upper portion a cavity *t*, which is adapted for the reception of a lubricant and down into which the lower end of the thimble *m* projects. The cavity *t* is covered by a disk *t'*, having a central opening therein for the reception of the thimble and a downwardly-projecting flange *t''* surrounding said opening. Said flanged disk is adapted to prevent the centrifugal motion of the wharve or whirl from throwing the oil out of its cavity. *u* designates another cavity formed in the bottom of the wharve or whirl and up into which the flange *k* projects.

In the modification shown in Fig. 2 an annular ball-race is formed in the bottom of the cavity *t*, in which is disposed a set of balls *w*, constituting antifriction devices between the thimble and the wharve or whirl.

It should be remarked that the object of constructing the thimble with the saw-cuts and communicating internal and longitudinally-disposed grooves is to render the spindle efficiently self-lubricating in its bearings in the bolster. The function of the absorbent annular body *p* is to take up any of the lubricant which when the device is oiled may not all be fed into the grooves or which may be thrown upwardly by the rapidly-rotating spindle and prevent said lubricant from flying about and spoiling any portion of the work, either upon this particular spindle or upon neighboring spindles.

The lubricating material is introduced into the sleeve *e*, wherein the spindle is stepped through the oil-orifice *k'*. It should be remarked that the function of the saw-cut *k* in

the flange *j* is to catch particles of oil that may work their way up on the spindle, said particles of oil being thence returned to the sleeve through the oil-orifice *k'* by way of the groove *k''*.

It will be seen that the part *r* is adapted to perform the function of an oil-receptacle and also to provide a ball-race for the balls, which are disposed between it and the bottom of the thimble, as well as to serve as a whirl or wharve.

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

1. The combination of a spindle and a sleeve closed at its lower end and constituting a step for said spindle, said sleeve being provided at its upper edge with a saw-cut and, beneath said saw-cut, with an oil-orifice, said saw-cut and the oil-orifice being connected by an external communicating groove, substantially as described.

2. The combination of a spindle, a sleeve closed at its lower end and constituting a step for said spindle, and an integral collar surrounding said sleeve and having a substantially annular recess formed in its upper face and about said sleeve, said sleeve being provided at its upper edge with a saw-cut and, beneath said saw-cut and near the bottom of said recess, with an oil-orifice, said saw-cut and the oil-orifice being connected by an external communicating groove, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of January, 1899.

THOMAS W. COCKER.

Witnesses:

ALFRED GARTNER,  
JOHN W. STEWARD.