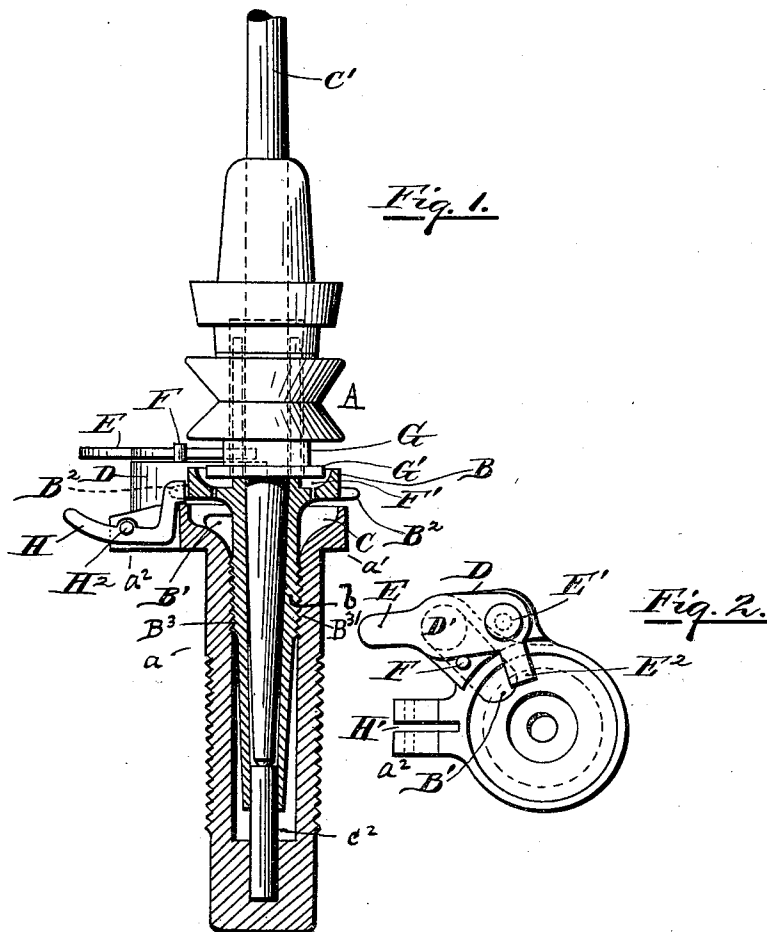


(No Model.)

G. E. CHANDLER.
SPINDLE.

No. 507,994.

Patented Nov. 7, 1893.



Witnesses.

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GEORGE E. CHANDLER, OF FALL RIVER, ASSIGNOR TO GEORGE DRAPER & SONS, OF HOPEDALE, MASSACHUSETTS.

SPINDLE.

SPECIFICATION forming part of Letters Patent No. 507,994, dated November 7, 1893.

Application filed May 17, 1893. Serial No. 474,542. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. CHANDLER, of the city of Fall River, in the county of Bristol, in the State of Massachusetts, have invented a certain new and useful Improvement in Spindles; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

Like letters indicate like parts.

Figure 1 shows in elevation a spindle, having a whirl, and a bolster and bolster-casing, provided with my improvement, said bolster and casing being seen in central, longitudinal section. Fig. 2 is a top plan of the bolster-casing and of my improvement attached thereto. In this view the spindle and bolster are not shown.

My invention relates to that class of spindles, which are provided with means for the vertical adjustment of the bolster in the bolster-casing, while the spindle is running at full speed; and it consists in the combination of certain locking devices, hereinafter particularly described, in combination with a spindle, having a peculiarly shaped whirl, and with a flanged bolster, the latter being mounted in the bolster-casing by screw-threads, as I will now specifically explain and state in my claims.

In the drawings C' is the spindle, *a* is the bolster-casing and *b* the bolster. The bolster and its casing have screw-threads, as shown at B³ and B³¹, whereby the bolster is mounted and supported in the casing and is rotatable therein upon said screw-threads, so as to be vertically adjustable. The spindle C' has a whirl A, which is extended downward and has a circumferential groove G and a flange G', as shown in Fig. 1.

The bolster *b*, as shown by dotted lines in Fig. 1, extends upward within the whirl, and it has the usual tapering bore. It is provided with external screw-threads, as appears at B³. It also has a flange B, which is cupped out on its upper side to form an oil-receiver F' and said flange B has itself a circular flange of larger diameter than its own, on the lower portion thereof, on the periphery of which, at intervals, are radial slots, as seen at B², in Fig. 1.

The bolster-casing *a* has a cylindrical bore,

which is provided with an internal screw-thread, as at B³¹, to engage with the external screw-thread of the bolster *b* above mentioned. It has a head or enlargement *a'*, the upper surface of which is cupped out to form an oil-receiver C. From the head *a'*, at one side, is the projection *a*², which is slotted at H', as seen in Fig. 2. In this slot a bent lever H is pivotally mounted upon the pin H² and its upper end is slightly bent, so as to be engageable with any of the slots B² of the flange of the bolster *b*. D is another projection or shelf, extending from the head *a'*, at one side. At the bottom of the bore of the casing *a*, is a concentric bore of smaller diameter and closed at its bottom, in which bore is contained a round pin C², which serves as a step to support the spindle C'. The pin C² has a sliding or loose fit in the lower end of the bore of the bolster *b*.

Upon the projection D and extending beneath the same is the oil-well D', and this oil-well has an opening or hole B', which conducts the oil from said well to the oil-receiver C of the bolster-casing *a*, as seen in Figs. 1 and 2. A locking lever or retainer E is mounted on the projection D, by the pin E' and has at its inner end a projection E². (See Fig. 2.) A stop pin F in the shelf D limits the movement of the retainer E in one direction. When the retainer E is in the position shown in Fig. 2, it covers the opening of the oil-well D'.

Spindles have heretofore usually been adjusted vertically in position, by the entire removal of the bolster from its casing and by adjusting the step within the bolster. The bolster is then replaced in the casing and the spindle is tested for position. If this adjustment proves unsatisfactory, the bolster must be again removed and this operation repeated, until the proper adjustment has been thus experimentally obtained. By my contrivance, the spindle is adjusted in position, without either the removal of the bolster from the casing, or the stopping of the spindle in its operation.

To adjust the spindle in my device, the outer end of the locking lever H is depressed, which movement disengages the inner end of said lever from the radial slot B² of the flange of

the bolster *b*. The bolster *b* is now free to be turned in either direction and its rotation causes a vertical change in its position within the bolster-casing by reasons of the engagement of the screw-threads B^3 and B^{31} . When the proper adjustment has been made, the lever *H* is engaged with that one of the radial slots, which is nearest and the bolster is thus locked in position.

The retainer *E* has for its function, in addition to its covering the oil-well D' , the prevention of the rise of the spindle from the bolster, and in this respect it serves as a substitute for the usual bent pin, which has its upper end extending over the whirl. In my device, the retainer *E*, when in the position shown in the drawings, has its inner projection E^2 extending into the circumferential groove *G* and said part thus overlies the flange G' of the whirl, to prevent the rising of the spindle, while not interfering with its rotation. The retainer *E*, being pivotally mounted, is easily turned, so as to lie outside the whirl-flange, and the spindle is quickly detachable from its bolster, whenever necessary.

The oil, being put in the oil-well D' , passes through the oil-hole B' to the oil-receiver *C*. Any oil, which works up over the top of the bolster, falls into the oil-receiver F' of the flange *B* of the bolster and flows thence into the oil-receiver *C*, through oil-holes in the bottom of the receiver *F*.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. The combination with a spindle, of a ro-

tatable bolster, provided with a slotted flange and with an external screw-thread, and a bolster-casing having a screw-threaded bore to engage and support said bolster, and also having an enlarged head, and a locking lever, pivotally mounted on said head and engageable with the slotted flange of the bolster, substantially as shown.

2. The combination of the spindle C' , the bolster *b*, screw-threaded at B^3 and having the flange *B*, with slots B^2 therein, the casing *a*, screw-threaded at B^{31} and having the head a' and the locking lever *H*, mounted on the head a' and engageable with the slots B^2 of the bolster, substantially as specified.

3. The combination of the spindle C' , the bolster *b*, screw-threaded at B^3 and having the flange *B*, with slots B^2 , and the oil-receiver F' , and the casing *a*, screw-threaded at B^{31} and having the head a' and the oil-receiver *C* and a locking device mounted on said head a' to engage with the slots B^2 of the flange *B*, substantially as specified.

4. The combination of the spindle C' , the bolster *b*, screw-threaded at B^3 and having the flange *B*, with slots B^2 , and the oil-receiver F' , the casing *a*, screw-threaded at B^{31} and having the head a' and the oil-receiver *C* and the lever *H*, mounted on said head a' and engageable with the slots B^2 of the bolster, substantially as set forth.

GEORGE E. CHANDLER.

Witnesses:

HENRY A. CLARK,
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