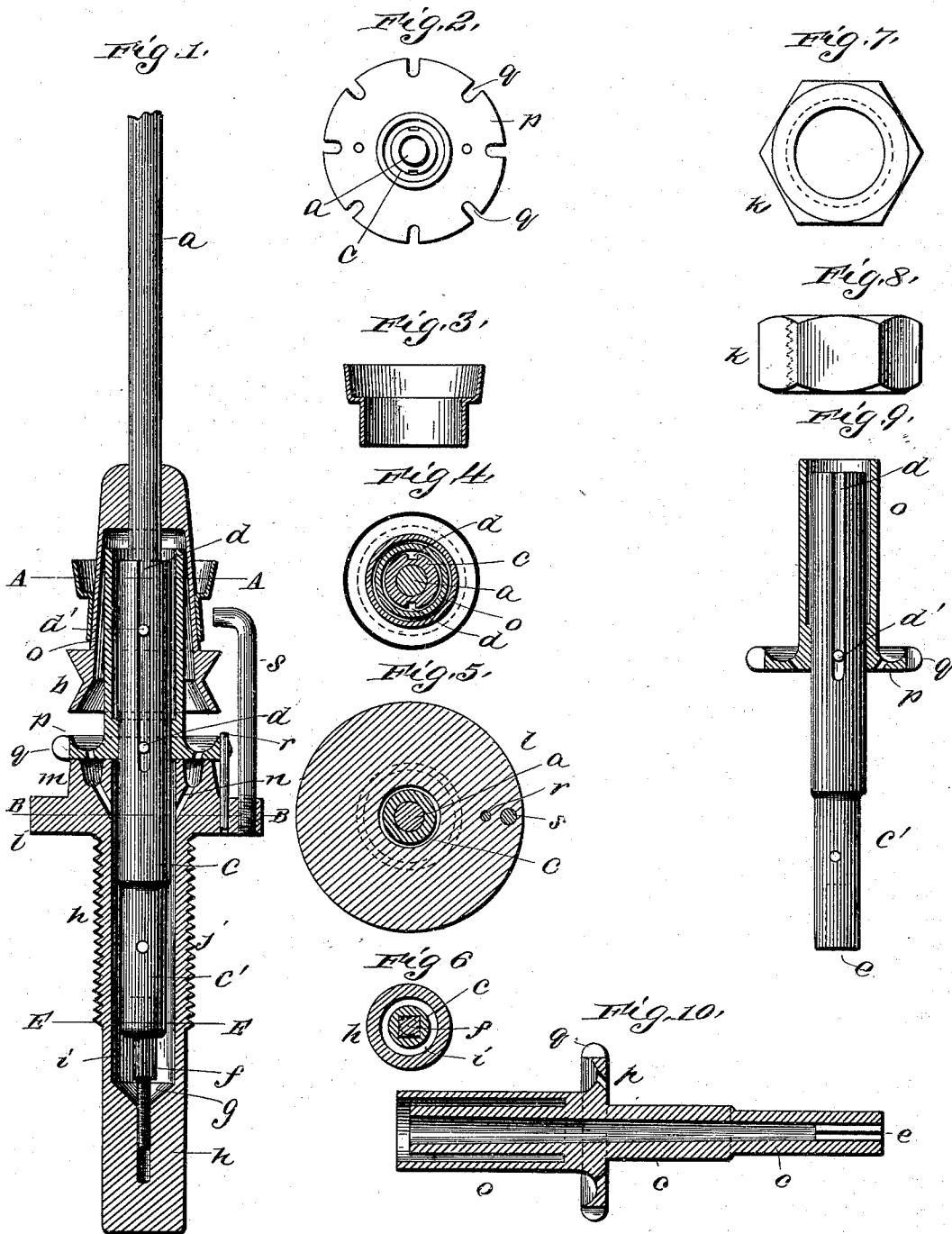


(No Model.)

W. A. CHANDLER.
BEARING FOR SPINDLES.

No. 505,786.

Patented Sept. 26, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

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BEARING FOR SPINDLES.

SPECIFICATION forming part of Letters Patent No. 505,786, dated September 26, 1893.

Application filed February 14, 1893. Serial No. 462,335. (No model.)

To all whom it may concern:

Be it known that I, WALTER A. CHANDLER, of the city of Lowell, in the county of Middlesex, in the State of Massachusetts, have invented a certain new and useful Improvement in Bearings for 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 is a view of my invention, partly in elevation and partly in central vertical section. Fig. 2 is a top plan of the flange of the bolster-support. Fig. 3 is a diametrical section of the cup. Fig. 4 is a sectional view on line A A of Fig. 1. Fig. 5 is a sectional view on line B B of Fig. 1. Fig. 6 is a sectional view on line E E of Fig. 1. Figs. 7 and 8 are respectively a plan view and side elevation of the nut, by which the bolster casing is secured to the spindle rail. Fig. 9 is a side elevation of the bolster with the bolster-support attached thereto, the latter being shown in central vertical section. Fig. 10 shows a modified form, in which the bolster and flanged portion are shown in one piece, said figure being in central longitudinal section.

My invention relates to that kind of spindle, which is mounted on an adjustable step within the bolster casing; and is a device, whereby the spindle can be vertically adjusted, while running at full speed.

It consists in the combination with a spindle, of a bolster, having an angular opening at its bottom and provided with a support, the latter having a circular flange with radial slots in its periphery, and a bolster casing having a screw-threaded step, adjustably mounted therein, which step is engageable with said angular opening in the end of the bolster, and the bolster casing also having an enlarged head, on which the flange of the bolster-support rests, and a flange, from which extends a locking pin to engage any preferred slot of the flange of the bolster-support, as hereinafter particularly specified.

In the drawings, *a* represents the spindle and *b* its whirl.

The bolster *c* has the usual central bore, through which the spindle *a* passes. Near its bottom the bolster has its surface cut away,

so as to be of smaller diameter than its upper portion, as shown at *c'*. On its exterior it has longitudinal grooves *d*, extending from its top edge about half its length, and openings *d'* are made from said grooves into the central bore. At its bottom it has the square (or angular) opening *e*, indicated by dotted lines in Fig. 9 and in section in Fig. 6. An adjustable step, having the square (or angular) head *f* and the screw threaded stem *g*, is mounted in a screw-threaded bore in the casing *h*, at the bottom of the oil chamber *i*. The casing *h* has the usual screw-threads *j*, upon which the nut *k* fits to secure said casing to the spindle rail. The casing *h* also has the flange *l* and the head *m*. The oil ducts are shown at *n*. A bolster-support, consisting of a sleeve *o* and a circular flange or disk *p*, is attached at its base to the bolster *c*. The sleeve *o* extends up into the whirl shell, to a slight distance above the top of the bolster. (See Figs. 1 and 9.) The periphery of the flange or disk *p* has radial slots or notches *q*. A locking pin *r* extends up from the flange *l* of the bolster casing *h* and is engageable with any of said slots or notches *q* of the flange *p*, as may be desired. The bent pin *s*, screwed into the casing flange *l*, extends over the whirl *b*, as usual.

The object of my invention is to provide a spindle with means, whereby it may be vertically adjustable, while running at full speed and without any interference with its work, either in the quantity or quality thereof. To accomplish this vertical adjustment, I make the bolster *c* vertically movable by its support *o p*. Seizing the flange *p* by the hand, I raise it until it is clear of its engagement with the locking pin *r* and this movement also raises the bolster *c* within the casing *h*. The head *f* of the step, engaged by the opening *e* of the bolster *c*, is sufficiently long and sufficiently inserted in the opening *e* of the bolster, that the bolster slides up along said head *f*, but does not separate therefrom. When the flange *p* is raised high enough to be clear of the locking pin *r*, said flange is turned as much as is desired, such turning being communicated to the bolster and said bolster thereby turning the step *f g*, either screwing said step farther into or unscrewing it far-

ther from the screw-threaded bore in the casing *h*. This vertical, spiral movement of the step adjusts it to the desired height, and as the foot of the spindle *a* rests upon the head of said step, its position is thereby determined. When the adjustment has been completed, the flange *p* is lowered and the one of its slots *q*, which is nearest to the locking pin *r*, receives said pin, thus locking it in position. Any oil, which works up the inside of the bolster *c*, is saved by the slight extension of the sleeve *o* above the bolster, and it runs down the grooves *d*, through the holes *d'*, to the inside again.

15 In this device, it will be perceived, I furnish an oil chamber of much greater capacity than usual, as I dispense with all shoulders on the inner surface of the casing, for the bolster rests wholly by the flange *p* upon the top of the head *m* of said casing. Hence, the casing is more cheaply constructed than when made in the usual form.

In Fig. 10, I show a modified form of the bolster and flanged portion, made of one piece of metal.

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

1. The combination of the bolster casing *h* having the oil chamber *i*, the flange *l* and the head *m*, the adjustable step having the square head *f* and the screw-threaded stem *g*, mounted in a screw-threaded bore of said casing *h* at the bottom of its oil chamber, the bolster *c* having at its bottom the opening *e*, engaging the head *f* of said step, the bolster-support consisting of the sleeve *o* attached to the bolster and the flange *p*, resting upon the head *m* of the casing *h* and the spindle *a*, resting upon the head *f* of said step, substantially as specified.

2. The combination of the bolster casing *h*, having the oil chamber *i*, the flange *l* and the head *m*, the adjustable step having the square head *f* and the screw-threaded stem *g*, mounted in a screw-threaded bore of said casing *h* at the bottom of its oil chamber, the bolster *c* having at its bottom the opening *e* engag-

ing the head *f* of said step, the bolster-support consisting of the sleeve *o* attached to the bolster and the flange *p* resting upon the head *m* of the casing *h* and having the peripheral slots or notches *q*, the locking pin *r* extending from the flange *l* and engageable with the slots or notches *q* and the spindle *a* resting within said bolster upon the head *f* of said step, substantially as specified.

3. The combination of the bolster casing *h* having the oil chamber *i*, the flange *l* and the head *m*, the adjustable step having the square head *f* and the screw-threaded stem *g*, mounted in a screw-threaded bore of said casing *h* at the bottom of its oil chamber, the bolster *c* having at its bottom the opening *e* engaging the head *f* of said step and also having the oil ducts *d d'*, the bolster-support consisting of the sleeve *o* attached at its base to the bolster and extending upward beyond the top of the bolster and the flange *p* having the peripheral slots or notches *q* and resting on the head *m* of the casing *h*, the locking pin *r* extending from the flange *l* and engageable with the slots or notches *q* and the spindle *a* resting within said bolster upon the head *f* of said step, substantially as described.

4. The combination of a spindle, a bolster bearing having a flanged portion, a supporting tube to furnish a lateral support for the bolster beneath the flange and means for locking the flange and supporting tube to prevent rotation of the bolster, said means consisting of notches and projections engaging each other, substantially as described.

5. The combination of a spindle having a whirl, a bolster having a notched flanged portion at a point below the whirl, a supporting tube furnishing lateral support for the bolster beneath the flange and locking mechanism attached to said supporting tube and engaging the notches on said flange, substantially as described.

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Witnesses:

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