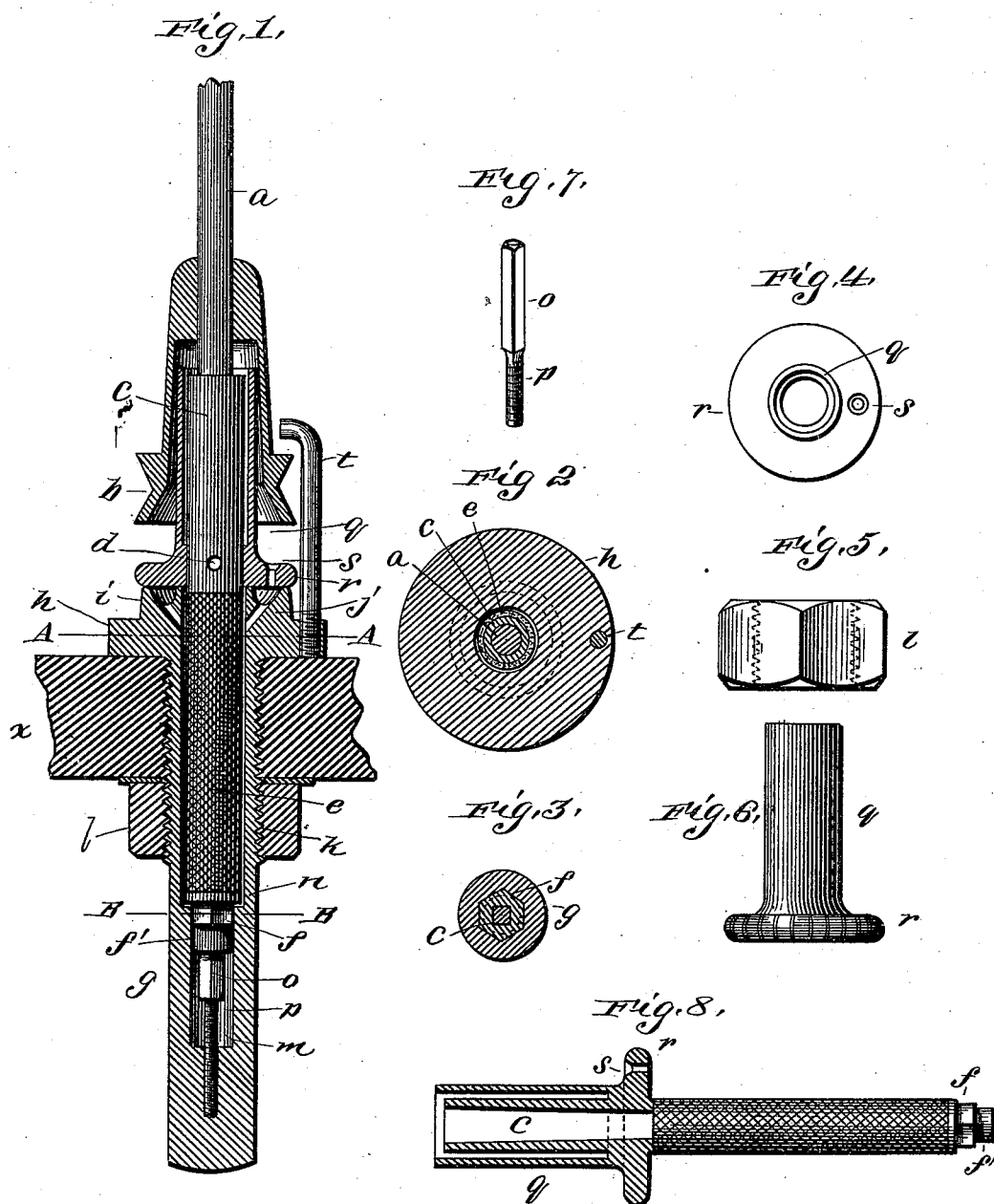


(No Model.)

W. A. CHANDLER.
DEVICE FOR ADJUSTING SPINDLES.

No. 510,404.

Patented Dec. 12, 1893.



Witnesses:
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DEVICE FOR ADJUSTING SPINDLES.

SPECIFICATION forming part of Letters Patent No. 510,404, dated December 12, 1893.

Application filed February 13, 1893. Serial No. 462,213. (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 Devices for Adjusting 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 side elevation and partly in central, vertical section. Fig. 2 is a sectional view on line A A of Fig. 1. Fig. 3 is a sectional view on line B B of Fig. 1. Fig. 4 is a top plan of the flanged bolster-support. Fig. 5 shows the nut by which the casing is bound to the spindle rail. Fig. 6 is a side elevation of the bolster support. Fig. 7 is a perspective view of the adjustable step. Fig. 8 shows a modified form, in which the bolster and flanged portion are made in one piece, said figure being partly in central, longitudinal section and partly in side elevation.

My invention relates to that class of spindles, which are vertically adjustable with reference to their bolsters upon a screw-threaded step within the casing, upon the top of which step the foot of the spindle rests.

It consists of the combination, with a spindle, of an adjustable step, having a square head and a screw-threaded stem, the latter being engageable with a central screw-threaded bore at the bottom of the oil chamber within the casing, a bolster-support, having a flange, a bolster, having a central bore, and provided at its lower end with a locking portion, hexagonal in cross section, with plane faces to lie in contact with similarly disposed plane faces in the bore of the casing, and also having at its lower end a square opening, adapted to receive the head of said adjustable step and to turn the step, as hereinafter particularly specified.

In the drawings, the spindle is shown at *a*. It is of any usual shape and size and has tapering sides. The whirl *b* is driven thereon, as usual. The bolster *c* is cylindrical upon its outer surface and has a tapering bore. The oil duct is seen at *d*. The exterior surface is cut away sufficiently to receive the

fibrous sleeve *e*, which is to be saturated with oil. The bolster *c* has, near its lower end, a locking portion *f*, integral therewith, with plane exterior faces, angularly (preferably hexagonally) disposed, and said bolster terminates with a cylindrical part *f'*. The bore of the bolster *c* is made square in cross section, at its lower end, as seen in Fig. 3. The casing *g* has the flange *h* and the enlarged head *i*, in which are the oil ducts *j*. Said casing has the usual external screw-threads *k*, with which the nut *l* is engageable to fasten the casing to the spindle-rail *x*. The casing has a tubular bore to receive the bolster *c*, and, concentric with said bore, but of a smaller diameter, is an oil chamber *m*, thus leaving an interior shoulder *n*. The bore of the casing *g*, just beneath the shoulder *n*, is made with plane faces, angularly disposed, to correspond to and be engageable with the exterior, angularly disposed, plane faces of the locking portion *f* of the bolster *c*. The step has a square head *o* and a screw-threaded stem *p*, the latter being engageable with a screw-threaded bore in the casing *g* at the bottom of the chamber *m*. The head *o* is of a size to enter the square opening at the bottom of the bolster *c*. A bolster-support *q* has a flange *r* and oil duct *s*. Said support is tubular and is tightly engaged with the bolster and the tube extends up within the whirl-shell, as seen in Fig. 1. The flange *r* of the bolster-support rests upon the upper surface of the head *i* of the casing *g*. The bent screw-pin *t* extends from the flange *h*, up over the whirl, for the usual purpose.

Having thus described the parts of my invention, I will now explain its operation and the advantages attending its use. By seizing the flange *r*, the bolster *c* can be raised, until the lock-portion *f* thereof is disengaged from the angular portion of the casing *g*. This movement, however, does not disengage said bolster from the head *o* of the step, as the head (see Fig. 7) is sufficiently long and provided with plane sides, whereby it is engageable with the square opening in the lower portions *f f'* of the bolster. When said locking portion *f* is disengaged, as above stated, the bolster can be turned, by means of the flange *r* of the bolster support *q*, there-

by turning to the same degree the screw-threaded step to raise or lower it as desired. As the foot of the spindle rests upon the top of the head *o* of the step, the spindle is vertically adjusted by said movement to the requisite height. The bolster is then allowed to drop again into position and the engagement of its locking faces *f* in the new position in the socket of the casing, secures it in place.

The bolster-support *q* may be made a part of the bolster and of the same piece of metal, if necessary, as is shown in Fig. 8.

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

1. The combination with the spindle, of the bolster, having at its lower end an angular central opening and exterior plane locking faces, the casing adapted to contain said bolster and provided with a central bore, a portion of which has plane locking faces, the screw-threaded step mounted within said casing, adapted to support the spindle and having its upper end angular and engageable with the lower end of the bolster, and the bolster-support attached to said bolster and resting upon the upper end of said casing, substantially as described.

2. The combination of the spindle *a*, the bolster *c*, having the plane locking faces *f* and an angular aperture at its bottom, the casing *g* having a central bore with corre-

sponding plane locking faces therein, the adjustable screw-threaded step *o p*, mounted in said casing *g* and having its head operatively engageable with said aperture at the bottom of said bolster, and the bolster-support *q* attached to the bolster *c* and having the flange *r*, all combined and operating substantially as and for the purpose specified.

3. The combination of a spindle rail, spindle bearings, a spindle having means for vertical adjustment as to said rail and means for changing the vertical adjustment accessible above said rail, while the spindle is running, substantially as described.

4. The combination of a spindle, a bolster casing, a step-bearing having an angular head and mounted by a screw-threaded connection within the bore of the bolster casing at the lower end thereof and vertically adjustable therein by said screw-threaded connection, a bolster having a tapering interior and engageable by an angular opening at the bottom thereof with said step-bearing and means for effecting the said adjustment consisting of projections from said bolster adapted to be operated to effect such adjustment while the spindle is running, substantially as specified.

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Witnesses:

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