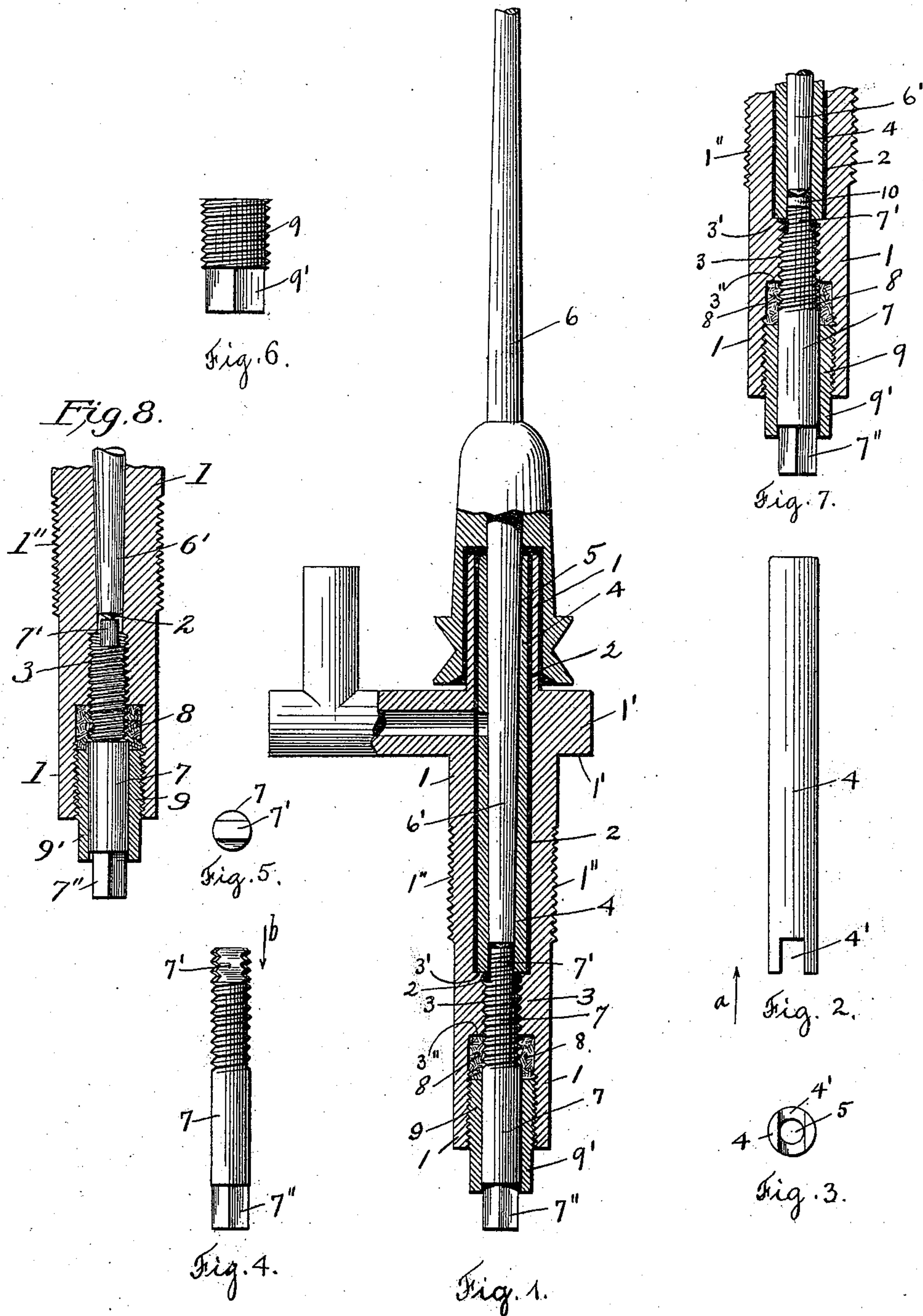


(No Model.)

E. J. CARROLL  
SPINDLE BEARING.

No. 528,362.

Patented Oct. 30, 1894.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## SPINDLE-BEARING.

**SPECIFICATION** forming part of Letters Patent No. 528,362, dated October 30, 1894.

Application filed February 21, 1894. Serial No. 501,005. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR J. CARROLL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spindle-Bearings; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to spindle bearings, and particularly to that class of spindle bearings in which a bolster, tapered internally, is mounted in the supporting case, to receive the tapering pintle of the spindle, which may be adjusted vertically, relatively to the bolster, to compensate for any wear of the bolster by the revolution of the spindle, and to overcome any binding of the spindle within the bolster, by an adjustable step, screwed into the lower end of the supporting case, said step being operated from the outside of said case, without removing the spindle. Heretofore in this class of spindle bearings, it has been customary to have a positive engagement between the step, and the bolster, by a screw thread on said step engaging a screw threaded hole in the lower end of the bolster, so that any vertical adjustment or movement of the step, will move the bolster vertically or longitudinally.

The object of my invention is to improve upon the construction of the spindle bearing above described, and to provide a spindle bearing in which there is no positive engagement between the bolster and the step, and in which the vertical adjustment or movement of the step will move the spindle vertically within the bolster, without moving the bolster vertically, and in which the step acts to prevent the rotation of the bolster, with the spindle.

My invention consists in certain novel features of construction of a spindle bearing of the class above referred to, as will be hereinafter fully described and the nature thereof indicated by the claims.

Referring to the drawings:—Figure 1 is a sectional elevation of a spindle bearing and

spindle, embodying my improvements. Fig. 2 is a side view of the bolster removed. Fig. 3 is a view of the lower end of the bolster, looking in the direction of arrow *a*, Fig. 2. Fig. 4 is a side view of the adjusting screw removed. Fig. 5 is an end view, looking in the direction of arrow *b*, Fig. 4. Fig. 6 is a side view of the packing compressing nut, removed. Fig. 7 shows a modified construction of the spindle bearing, in which the spindle step is made separate from the adjusting screw, and supported upon the inner end of said screw; and Fig. 8 shows another modified construction of the spindle bearing, in which the bolster is dispensed with.

In the accompanying drawings 1 is the supporting case, provided with the ordinary flange 1', to rest on the top of the spindle rail, and the external screw thread 1'', for the reception of the nut not shown, which secures the supporting case to the rail. A central opening 2 extends vertically throughout the length of the supporting case 1, and near the lower part of said opening, at the lower end of said case, is an internal projecting portion 3, the central opening of which is screw threaded. The upper part of the internal projecting portion 3 forms a shoulder 3' for the lower end of the bolster 4, to rest on. Said bolster is loosely mounted within the supporting case 1, and is supported and has a bearing on said shoulder 3', and is adapted to rotate within the supporting case, but not to be moved vertically or longitudinally therein.

The bolster 4 has a central opening 5 extending throughout its length, which opening is made tapering toward the bottom, and in said opening the lower end or pintle 6' of the spindle 6, provided with a corresponding taper, is supported and turns.

Screwed into the screw threaded opening in the inwardly projecting portion 3 of the case 1, is an adjusting screw 7. The inner end of said screw is in this instance flattened on two sides, to form a flattened end 7', which extends loosely into the notched portion 4' in the lower end of the bolster 4; so that there is no positive engagement between the bolster and the adjusting screw, and any vertical movement of said adjusting screw does not



cause the bolster to move vertically. The inner end 7', in this instance, forms the step for the lower or step end of the spindle 6, which rests on said inner end of the adjusting screw 7, as shown in Fig. 1. The outer end of the adjusting screw 7 is provided with a squared end 7'', which may be engaged by a wrench to turn said screw in or out, to adjust the spindle 6.

10 In order to prevent the oil, which extends around the bolster, and also around the spindle, from escaping around the adjusting screw 7, and through the lower open end of the supporting case 1, I provide packing 8, 15 which extends within the central opening 2, in the lower end of said case, around the adjusting screw 7; and said packing 8 is compressed against the lower part of the internal projecting portion 3, which forms a shoulder 20 3'', and against the adjusting screw 7, by a nut 9, which loosely encircles said screw, and is provided with an external screw thread engaging an internal screw thread in the lower end of the supporting case 1, and is 25 screwed into the lower end of said case, to compress said packing, and make it oil tight, by a wrench, applied to the lower squared end 9' of said nut 9. It will be seen that, by means of the packing 8, surrounding the ad- 30 justing screw 7, and compressed within the supporting case 1, by the nut 9, the escape of oil around said screw, and through the lower open end of said supporting case is prevented.

35 By turning the adjusting screw 7 in one direction or in the other, the spindle 6 is adjusted vertically in its bolster without moving the bolster vertically.

40 The inner end 7' of the adjusting screw 7, extending into the lower notched end 4' of the bolster 4, furnishes a step for the lower end of the spindle 6, and also holds said bolster, to prevent it from turning, except when the adjusting screw is turned.

45 In Fig. 7 I have shown a modified construction of the spindle bearing, in which the spindle step 10 is made separate from the adjusting screw 7, and is supported upon the inner end of said screw. Said step 10 may be made 50 of hardened steel.

The advantages of my improved construction of spindle bearings will be readily appreciated by those skilled in the art.

55 I provide a spindle bearing in which, in case of any wear of the bolster, or of the step of the spindle, the spindle may be adjusted vertically, from the outside of the supporting case, without any vertical adjustment of the bolster, by an adjusting screw extending 60 within the lower end of said case, which adjusting screw is supported, oil tight, in the lower end of said case.

65 It will be understood that the details of construction of some of the parts of my improvements may be varied if desired.

I prefer to combine with the supporting case a bolster, for the spindle to rotate in, but

if preferred the bolster may be dispensed with and the spindle rotate in the supporting case, as is shown in Fig. 8, in which the upper end 70 7' of the adjusting screw 7, is of reduced diameter, to fit loosely within the lower end of the central opening 2, in the supporting case 1.

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

1. The combination with a supporting case, and a spindle adjustable vertically therein, and said case provided with a central opening 80 throughout its length, with an internal projecting portion near the lower end thereof, having a central screw threaded opening, of a vertically adjustable screw, screwed into said screw threaded opening, and forming an 85 adjustable step for the spindle, and a packing surrounding said screw within the supporting case, and bearing against said internal projecting portion, and against said screw, and a packing compressing nut screwed into 90 the lower end of said case, substantially as shown and described.

2. The combination with a supporting case open throughout its length, and provided with an internal projecting portion having a cen- 95 tral screw threaded opening therein, and a bolster, loosely mounted in said case with its lower end resting upon the shoulder formed by the upper part of said internal projecting portion, of a vertically adjustable screw, form- 100 ing a step for the spindle, which is vertically adjustable without any vertical adjustment of the bolster, said screw being screwed into the screw threaded opening in the central opening in said case, with its lower end ex- 105 tending below the end of said case, and a packing surrounding said screw within the case, and bearing against a shoulder within said case, and against said screw, and a packing compressing nut screwed into the lower 110 end of said case, substantially as shown and described.

3. The combination with the supporting case, provided with a central opening through- 115 out its length with an internal projecting portion or shoulder near the lower end thereof, having a central screw threaded opening, and a bolster loosely supported in said case and bearing at its lower end on the shoulder formed by said internal projecting portion, of 120 a vertically adjustable screw, forming a step for the spindle, which is vertically adjustable, without any vertical adjustment of the bolster, said screw being screwed into said screw threaded opening, with its upper end engag- 125 ing the lower end of the bolster, to prevent it from turning except when said screw is turned, and a packing contained within the supporting case, and bearing against the internal shoulder therein, and against the ad- 130 justing screw, and a nut for compressing said packing, loosely encircling said adjusting screw, and screwed into the lower end of said case, substantially as shown and described.



4. The combination with a supporting case, provided with a central opening throughout its length, and having an internal projecting portion near the lower end thereof, with a  
5 central screw threaded opening therein, and a bolster loosely supported in said case, with its lower end resting upon the internal projecting portion, and adapted to rotate in said case, but not to be moved vertically therein  
10 in the vertical adjustment of the spindle, of a vertically adjustable screw, forming a step for the spindle, and screwed into said screw threaded opening, with its upper end extend-  
ing loosely into a notched portion in the lower end of the bolster, for the purpose stated, and  
15 a packing contained within the supporting case, and bearing against the internal projecting portion therein, and against the adjusting screw, and a nut for compressing said packing, loosely encircling said adjusting  
20 screw, and screwed into the lower end of said case, substantially as shown and described.

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