

(No Model.)

G. H. ALLEN.  
SPINDLE BEARING.

No. 348,651.

Patented Sept. 7, 1886.

Fig:6.



Fig:7.

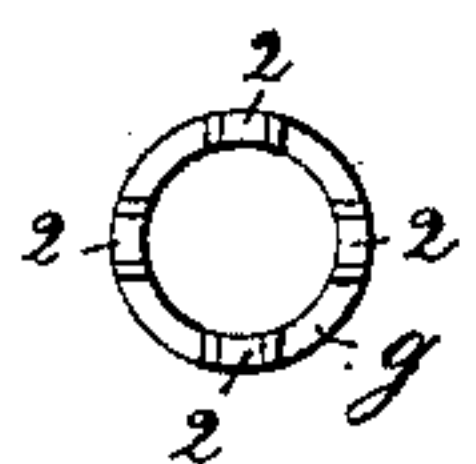


Fig:2.

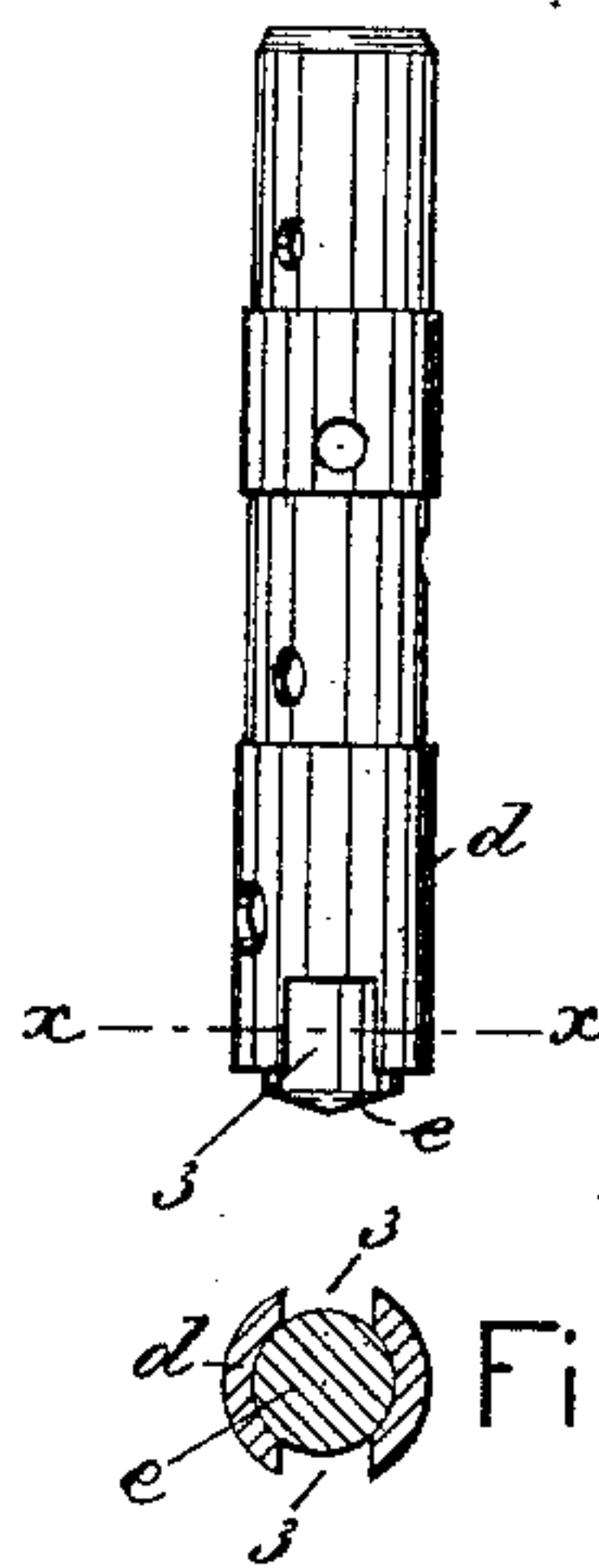
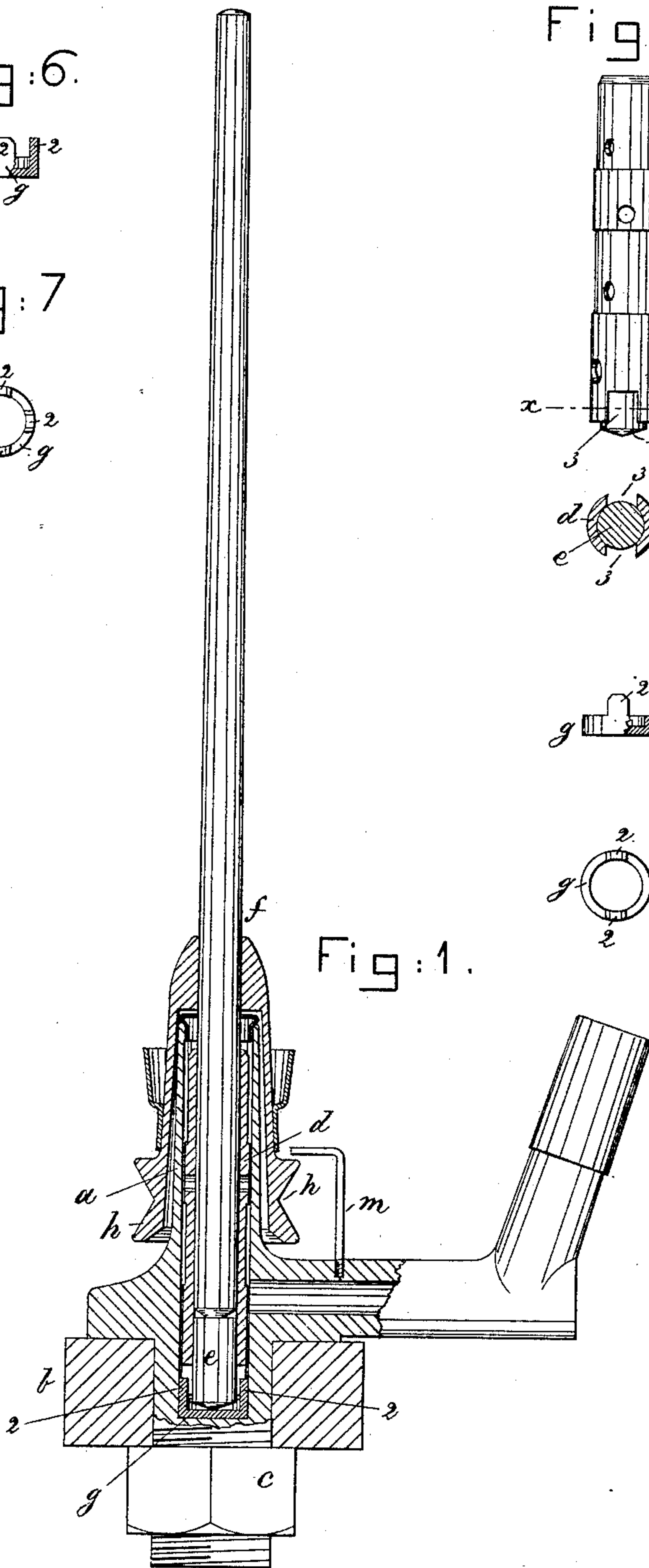


Fig:3.

Fig:4.

Fig:5.

Fig:1.



Witnesses

Fred A. Powell.

John F. C. Brunker.

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by Crosby & Gregory Attys.

# UNITED STATES PATENT OFFICE.

GEORGE H. ALLEN, OF AYER, ASSIGNOR TO GEORGE DRAPER & SONS, OF  
HOPEDALE, MASSACHUSETTS.

## SPINDLE-BEARING.

SPECIFICATION forming part of Letters Patent No. 348,651, dated September 7, 1886.

Application filed August 22, 1882. Serial No. 69,993. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. ALLEN, of Ayer, county of Middlesex, and State of Massachusetts, have invented an Improvement in Spindle-Bearings, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to bearings for that class of spindles for spinning cotton, known as "self-centering spindles," and has for its object to restrain the rotation of the bolster-bearing, and is an improvement upon the invention contained in my Patent No. 262,268, to which reference may be had. In my said patent I employed a pin or stud held in place by the side walls of the supporting-tube, and the said pin or stud was extended loosely into a hole in the bolster-tube and also into the step. The said stud or pin restrained the bolster-tube from rotation with the spindle, but permitted it to move laterally toward the inner wall of the supporting-tube in substantially any direction radially. With the said pin and stud so held and applied to the supporting-tube and bolster, as described in the said patent, considerable trouble is experienced when removing the bolster-tube, as is occasionally necessary.

The object of this my present invention is to provide a simple, cheap, and efficient device which may be easily applied to the supporting-tube to engage and hold the bolster-tube from rotation, yet permit the said bolster-tube to move freely therein as the spindle moves to find its true center of rotation.

My invention consists, essentially, in a supporting-tube and a bolster-tube holding-plate provided with one or more pins or prongs combined with a bolster-tube notched at its lower end and placed loosely in the said supporting-tube, the prongs of the holding-plate engaging the notches of the said bolster-tube and restraining it from rotation therein, as will be hereinafter described, and claimed at the end of this specification.

Figure 1 represents in partial vertical section a sufficient portion of a sleeve-whirl spindle, supporting-tube, and step with my improved bolster-tube holding-plate added to enable my invention to be understood. Fig.

2 is a side elevation of the bolster-tube and step removed; Fig. 3, a section of Fig. 2 on the dotted line *x*. Fig. 4 shows one of my improved bolster-tube holding-plates in broken side elevation; Fig. 5, a top view thereof; Figs. 6 and 7, like views of a modification thereof, having a greater number of holding-studs.

The supporting-tube *a*, fixed to the rail *b* by the nut *c*, receives within it loosely the bolster-tube *d*, which is somewhat smaller in diameter externally than the internal diameter of the opening in the supporting-tube, so that the said bolster-tube is free to move radially or laterally in the said supporting-tube and in the oil with which it is filled in any direction as the spindle moves laterally to find its true center of rotation, the bolster-tube when in central position not touching the vertical inner walls of the supporting-tube by cushioning itself on the oil in the latter. The step *e*, upon which the lower end of the spindle *f* rests, it having, as herein shown, a sleeve-whirl, *h*, is shown as driven or fitted snugly into the lower end of the bolster-tube, with its conical lower end just below the lower end of the bolster-tube. The lower end of the bolster-tube will be provided with one or more notches, 3, two notches being shown in Figs. 1 to 3, which will receive one or more prongs, 2, rising from a holding plate or disk, *g*, driven or forced into the opening or oil-well formed in the supporting-tube, the said disk or plate being restrained from rotation in the said supporting-tube.

The prong 2, entering a notch, 3, is both narrower and thinner than the said notch, so that the said bolster-tube is free to move laterally in any direction for a certain limited yet sufficient distance in the said supporting-tube to enable the bolster-tube and spindle in it to move for a proper distance for the spindle to find its true center of rotation.

It is obvious that the holding disk or plate may have one or more prongs and yet operate in substantially the same manner. In Figs. 6 and 7 I have shown a disk with four prongs, 2. The spindle will be kept down properly when doffing the bobbins by means of a turn-hook, *m*.

The holding-disks may be formed by swag-



ing in a press, and will be forced firmly in its proper place in the supporting-tube.

I claim—

5 The supporting-tube, and bolster-tube holding-plate located therein, provided with one or more prongs combined with the bolster-tube, placed loosely in the said supporting-tube and notched to engage the said prongs, to operate substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. ALLEN.

Witnesses:

G. W. GREGORY,  
BERNICE J. NOYES.