

No. 666,252.

Patented Jan. 15, 1901.

E. H. RYON.

SPINDLE SUPPORT FOR SPINNING MACHINES.

(Application filed Oct. 5, 1898.)

(No Model.)

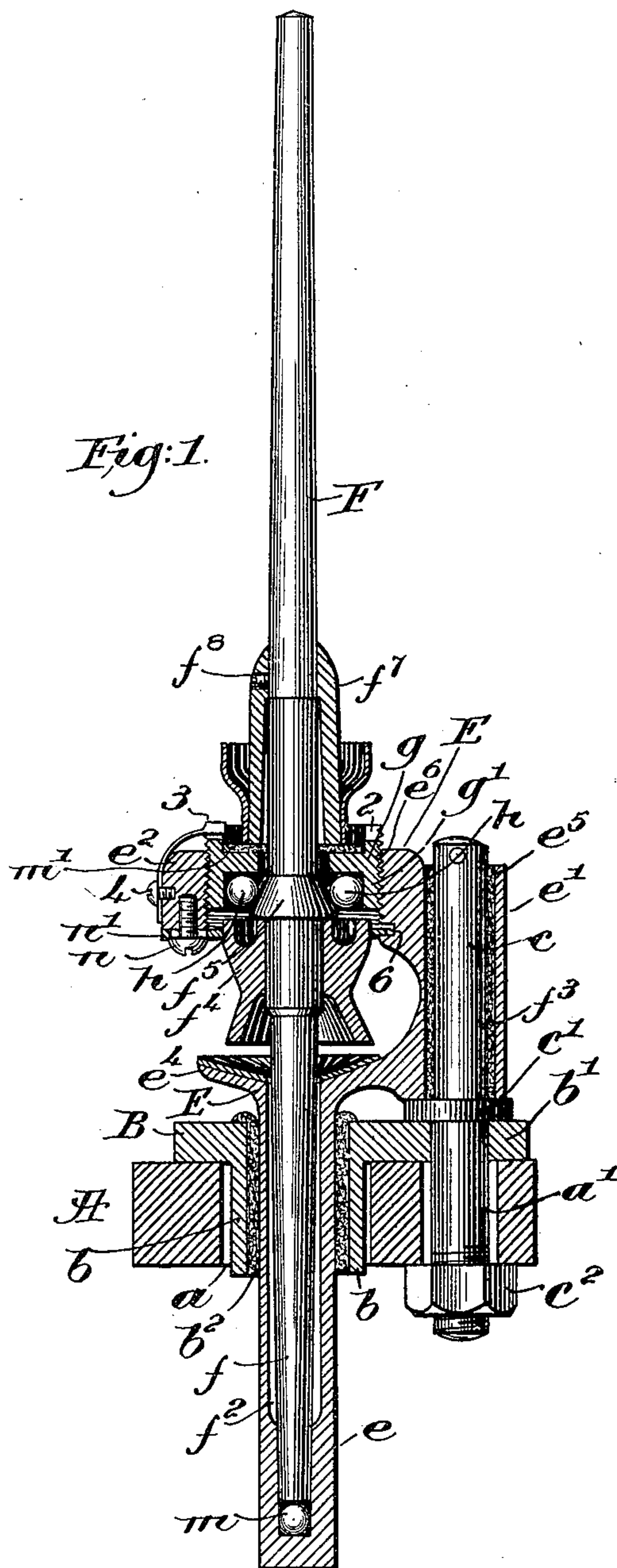
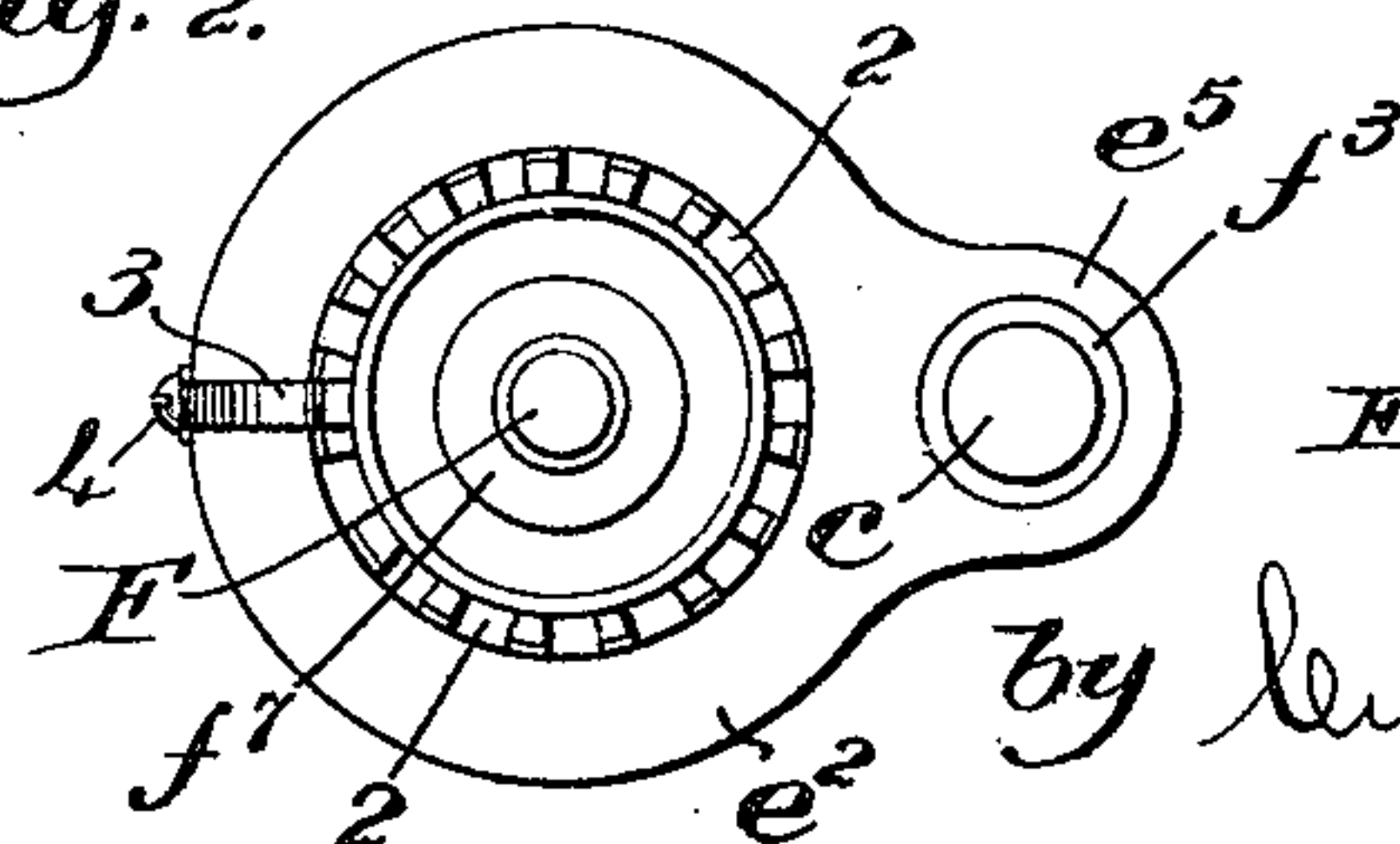


Fig. 2.



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UNITED STATES PATENT OFFICE.

EPPA H. RYON, OF WALTHAM, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO ALFRED M. GOODALE, OF SAME PLACE.

SPINDLE-SUPPORT FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 666,252, dated January 15, 1901.

Application filed October 5, 1898. Serial No. 692,680. (No model.)

To all whom it may concern:

Be it known that I, EPPA H. RYON, of Waltham, county of Middlesex, State of Massachusetts, have invented an Improvement in Spindle-Supports for Spinning-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention relates to the production of an improved spindle-support, the object of the invention being to obviate undue gyration of the spindle when run at high speed.

Under one head of my invention the bolster having the bearings for the spindle has two yielding points of connection with the spindle-rail, whereby the said bolster when it yields to the band-pull on the spindle will move laterally without any tendency to tip. 15 The bolster is mounted to turn about a vertical stud or post carried by the rail, said stud resting in a vertical passage made in a lateral extension of the bolster parallel to the usual chamber in which the pintle of the spindle stands and turns, and said stud is surrounded by a yielding packing or cushion. The upper part of the lateral extension of the bolster receives and sustains a bearing-ring, preferably mounted adjustably therein, said ring constituting a raceway on which may turn a series of balls constituting a rolling lateral bearing, said balls also coöperating with a conical surface on the spindle at a point, as herein shown, above the point of junction of the 25 whirl with the spindle. The whirl or a portion movable therewith is surrounded loosely with a movable lint or dust shield, which precludes the passage of lint or dirt to contact with the said balls.

40 Figure 1 shows in elevation a spindle in a bolster embodying my invention, said bolster, its case, and rail being in section; and Fig. 2 is a top or plan view of the spindle and its support.

45 The spindle-rail A has two holes a and a' . The hole a receives loosely the shank b of the plate B, resting on said rail and having a hole b' , which surrounds loosely the bolster support or pivot c , having a collar c' to bear on the top of said plate B, the lower end of said 50 support fitting loosely the hole a' of the rail

and having applied to its lower end a suitable clamping-nut c^2 , by which said support is fixed in the rail at one side of the hole a , through which is extended the shank e of the bolster 55 E, said shank being shown as surrounded by an elastic packing b^2 , it being interposed between said shank and the shank of the plate B.

The bolster is shown as of peculiar construction—i. e., it presents a shank e , bored for the reception of the pintle f of the spindle F, and a lateral extension e' , supporting an overhanging ring-shaped arm e^2 . The upper end of the shank e has a flared cup e^4 , extended sufficiently to enable the nose of an oil-can to 60 be applied when it is desired to introduce oil in the chamber f^2 . The lateral extension e' is bored at e^5 to fit loosely over the support or vertical stud c , a yielding packing f^3 being preferably applied to said support and interposed between it and the interior of the bore 65 e^5 , so that the bolster may yield, as required, to a limited extent under the pull of the usual driving-band in the groove of the whirl f^4 , attached to the spindle, the packing b^2 surrounding the shank e yielding at the same 70 time, the movement of the bolster being about its support or stud c .

The overhanging part e^2 of the bolster is of ring shape and threaded internally, as at e^6 , 80 to receive the bearing g , shown as externally threaded and screwed into the threads of the bearing-ring. This ring has inner faces which constitute a raceway for the balls h , which constitute a rolling lateral bearing for the 85 spindle at a point, as herein shown, just above the whirl, said spindle having at that point a conical projection f^5 , on which said balls rest and turn.

The lower extremity of the spindle rests on 90 a ball or rolling bearing m , and by adjusting the ring-bearing in the overhanging part e^2 of the bolster the proper fit or contact of the balls h with the ring and projection may be had. The upper end of the ring g is notched, 95 as shown at 2, and one or the other of said notches is engaged by one end of a locking finger or spring 3, held in place by a suitable screw 4, said finger holding the said ring in any position in which it may be put by adjustment. The upper end of the ring g is 100 chambered and receives a piece of packing

m' , which may have oil applied to it, said oil being given up slowly, as required, to just keep the balls wet.

The spindle F has applied to it in a detachable manner, as by a set-screw f^8 , a bobbin-holding base f^7 , the lower end of said base substantially meeting the said packing and keeping it down in place.

To the under side of the overhanging parts 10 e^2 of the bolster I have connected loosely by a screw n a dust or lint shield n' , it entering at one edge a groove 6 in the said arm. This shield embraces loosely the whirl f^4 , and as the band-pull on the whirl causes the spindle 15 to be moved slightly laterally the said shield slides on said screw and acts always to keep dust or lint from getting into the ring and coming onto the balls.

During any lateral movement of the spindle 20 due to the band-pull or to any uneven loading of the spindle the same in its movements is kept in its true vertical position, and the bolster may also move slightly, as required, about the vertical support or stud c to enable 25 the spindle to be rotated at high speed without undue gyration.

I am not aware prior to this invention that the bolster has ever been permitted to turn about a vertical stud located at one side the 30 spindle-receiving opening of the bolster or that such a bolster has ever been adapted to move under the restraining influence of elastic packing.

Having described my invention, what I 35 claim, and desire to secure by Letters Patent, is—

1. A spindle-rail having a vertical stud, a bolster mounted loosely on said stud, a spin-

dle adapted to rotate in said bolster, and an adjustable plate surrounding the shank of 40 said bolster loosely and having an ear engaging said stud, substantially as described.

2. A spindle-rail having a vertical stud surrounded by a packing, and a bolster mounted 45 on said stud and embracing said packing, and a spindle in said bolster, a plate bored to receive a packing, a packing in said plate surrounding the shank of said bolster, substantially as described.

3. A bolster having a shank provided with 50 a cup, a lateral extension provided with a bore parallel to the spindle-opening in said bolster, an overhanging arm containing a ring-bearing to constitute a ball-race; combined with a spindle located inside said bearing, balls interposed between said spindle and 55 bearing, and a stud rising from the spindle-rail and entering said bore, substantially as described.

4. A bolster having an overhanging arm 60 provided to constitute a space in which may run a whirl, a ring-bearing detachably secured in said overhanging arm, the spindle and its whirl, and a conical projection located thereon below said ring-bearing, and a bobbin-base 65 holder located above said ring-bearing, combined with a series of balls interposed between said projection and the interior of said ring-bearing, substantially as described.

In testimony whereof I have signed my 70 name to this specification in the presence of two subscribing witnesses.

EPPA H. RYON.

Witnesses:

GEO. W. GREGORY,
EDITH M. STODDARD.