

(No Model.)

T. WATSON.

COMBINED BOLSTER AND STEP FOR SPINDLES.

No. 279,680.

Patented June 19, 1883.

Fig. 1.

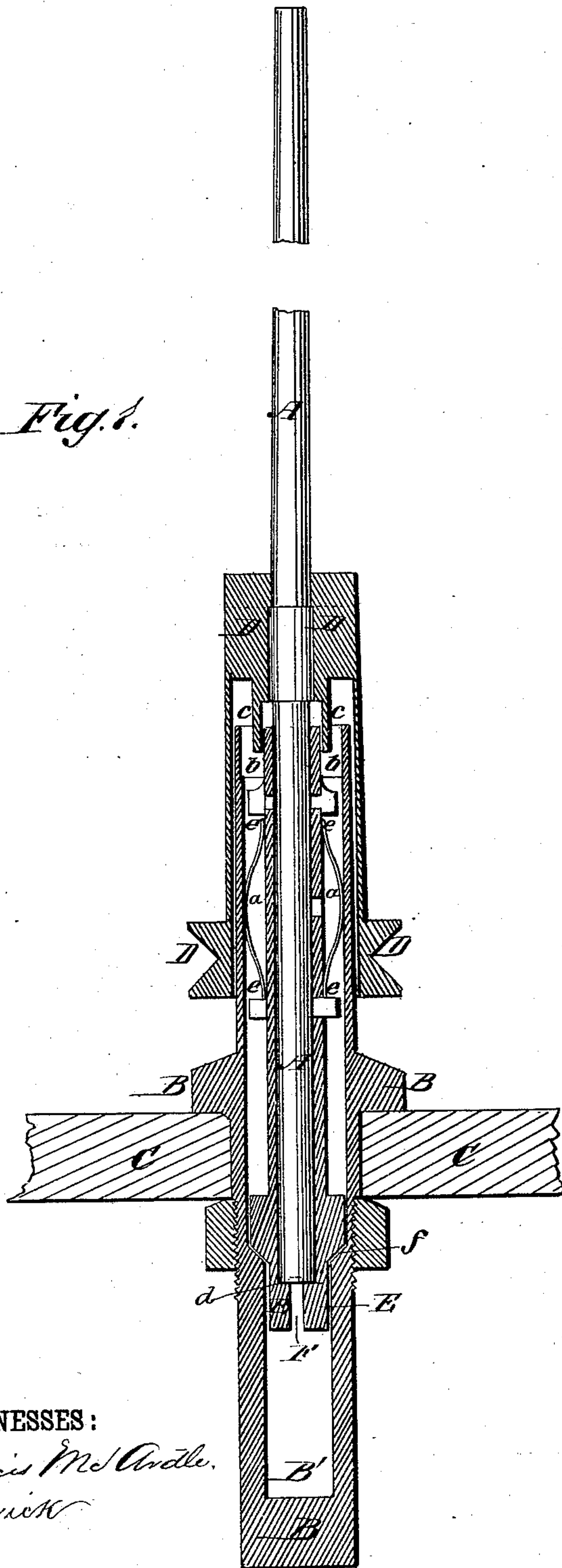
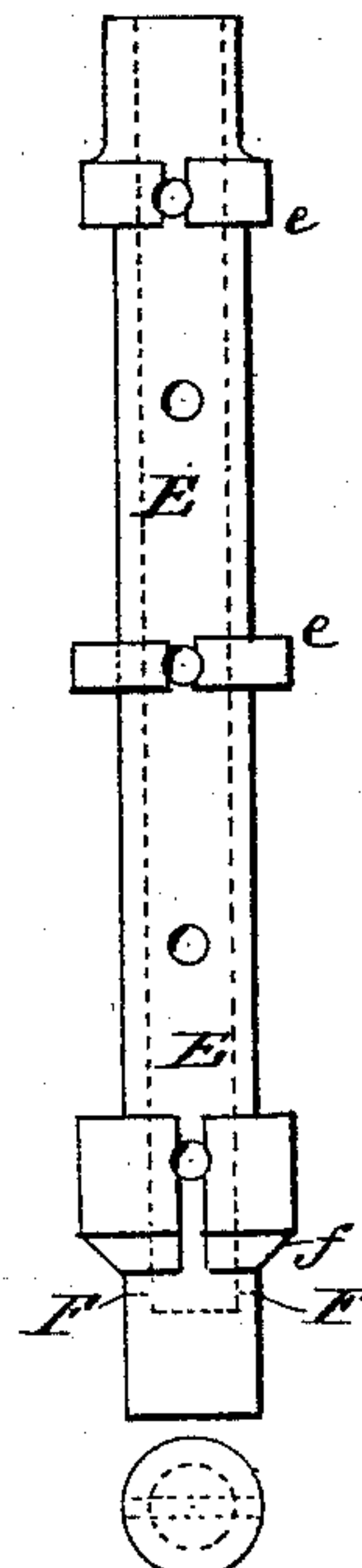


Fig. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

THOMAS WATSON, OF PAISLEY, COUNTY OF RENFREW, ASSIGNOR TO JAMES
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COMBINED BOLSTER AND STEP FOR SPINDLES.

SPECIFICATION forming part of Letters Patent No. 279,680, dated June 19, 1883.

Application filed May 26, 1882. (No model.) Patented in England March 6, 1882, No. 1,066.

To all whom it may concern:

Be it known that I, THOMAS WATSON, of Paisley, in the county of Renfrew, Scotland, have invented a new and Improved Combined
5 Bolster and Step for Spindles, of which the following is a specification.

My invention relates to the common Rabeth spindle; and it has for its object to provide means whereby a spindle having its whole
10 bearing, including the step, in one piece, called a "bolster," may be thoroughly lubricated, and for permitting the dirt and grit to escape from such a bolster.

To this end my invention consists in the construction and combination of parts hereinafter
15 fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section of my invention, showing part of a spindle in elevation; and Fig. 2 is an elevation of the bolster.

A represents the spindle, provided with the usual whirl, D.

B is the bolster-support, secured as usual in the rail C.

25 E is the bolster which is the subject of this invention, and which is also partially shown, in connection with my spring for governing the action of the same, in my application for a patent, Serial No. 60,161, now pending in the United
30 States Patent Office. This bolster E is reduced in size along the upper portion of its body, between the shoulders or collars *e*, to admit the springs *a*. It is also reduced to about the same diameter at the lower end to form the
35 shoulder *f*, to rest on a corresponding shoulder in the support B. The bolster is a little loose in the support to permit lateral movement to the spindle, the same being cushioned and centrally guided by the spring *a*. The
40 bolster is not bored through its length, a portion being left at the lower end as a step, *d*, for the spindle. By this means I bring the whole bearing of the spindle within one piece, which is a great advantage in avoiding friction. In spindles which are journaled mid-
45 way in a yielding bolster having a bearing against the sides or on a shoulder of the support and stepped in the support, which is a different piece from the bolster, any yielding

of the upper end of the bolster throws it out 50
of line with the step in the support, causing friction on the spindle. This my combined bolster and step avoids. The sides of my bolster are perforated with holes to admit oil to the interior, and the collars or shoulders *e e* 55
and *f* are slotted down to the reduced size of the body, to permit vertical passage of oil in the support, which serves as an oil-reservoir. The lower end of the bolster is slotted at F in a longitudinal plane crossing through its 60
diameter to a depth sufficient to completely cut through and across the inner bottom of the spindle-step and a little higher in its side walls. The object of this complete diametrical cut through the step is to form, practically, 65
radial edges therein, to serve as scrapers to clean from the lower end of the spindle the sediment of the oil and particles of grit, which would otherwise become embedded in either the spindle or the step, causing friction and 70
wear.

I am aware that small holes have been made in the center of spindle-steps to permit sediment to escape; but such holes are of very little use on account of the great speed at which 75
the spindle revolves, throwing the oil and its contents to the circumference by centrifugal force. In practice it is found that oil will draw in at such a hole while the spindle is revolving, and if there is no other outlet the 80
oil will quickly work to the top of the bearing and fly away over the edge.

I am also aware that spindle-steps have been perforated with small round holes leading to the edge of the base of the spindle or step. 85
As a means of discharging mere sediment, this is a better device than the central hole, for it is properly located to discharge the centrifugal delivery of the spindle; but for the purpose of my invention neither the aforesaid 90
central hole, nor the later-mentioned edge holes, can produce the desired effect—that is, of scraping off any particle of grit from the end of the spindle and discharging it to settle to the bottom of the oil-chamber B'. There is 95
not sufficient pressure of the sides of the spindle against its support to embed grit in the progress of the descent to the bottom, but the

weight of the spindle very quickly produces wear when the grit arrives at the step. My invention instantly removes all such impediments.

5 What I claim, and wish to secure by Letters Patent, is—

The combined bolster and step E, provided with the vertically-slotted shoulder *f* and col-

lars *e*, and the slot F, completely crossing the lower end of the bolster through the step, as 10 and for the purpose specified.

THOMAS WATSON.

Witnesses:

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