

(No Model.)

G. E. TAFT & H. F. WOODMANCY.

BEARING FOR SPINNING FRAME SPINDLES.

No. 284,775.

Patented Sept. 11, 1883.

Fig. 1

A

Fig. 2.

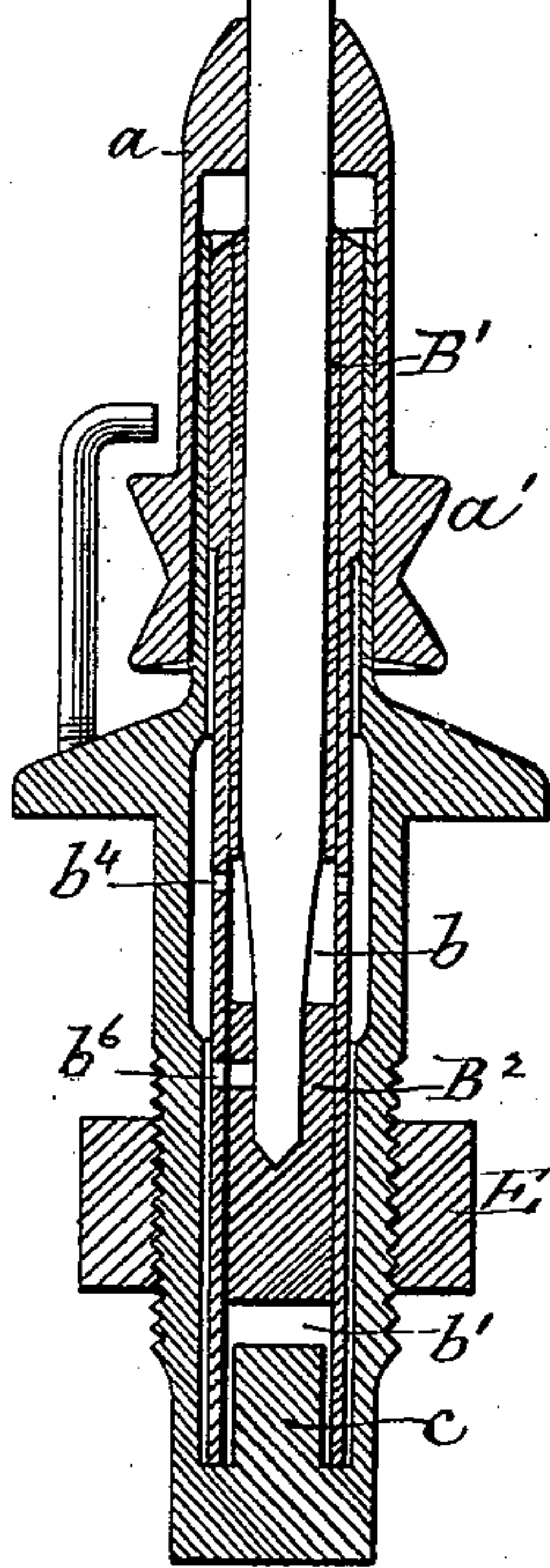
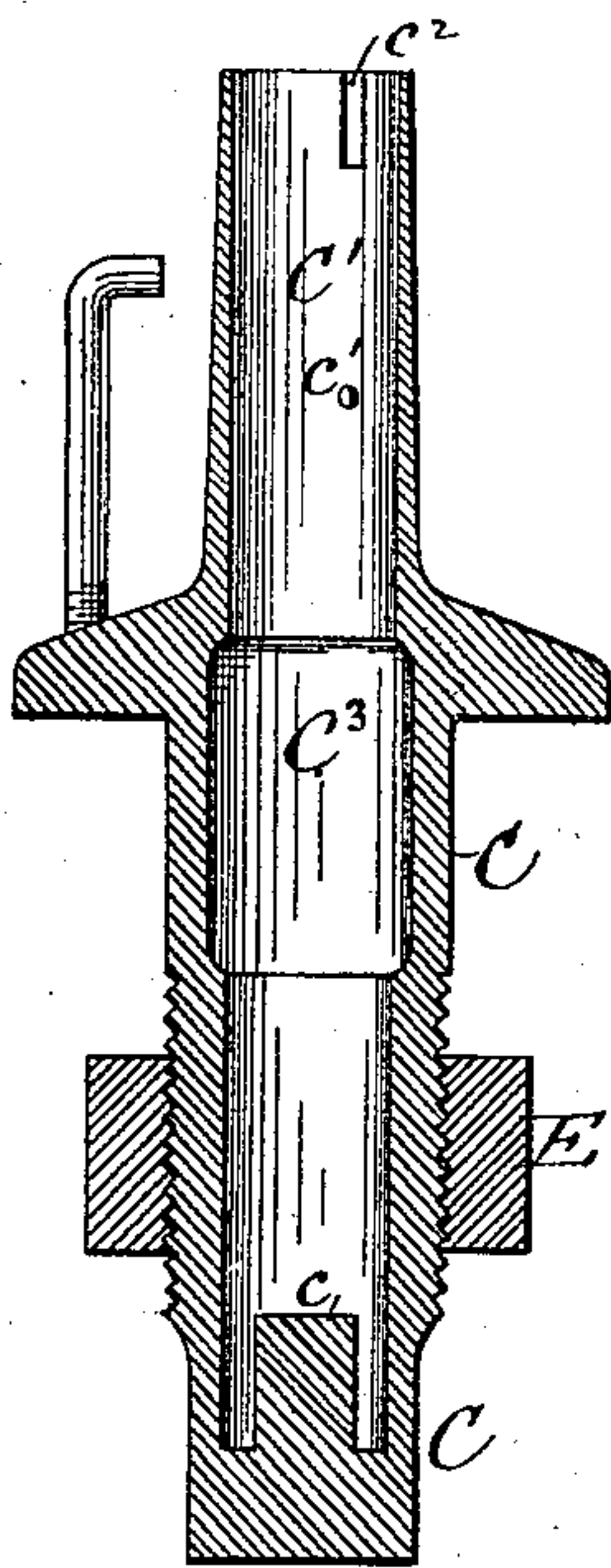
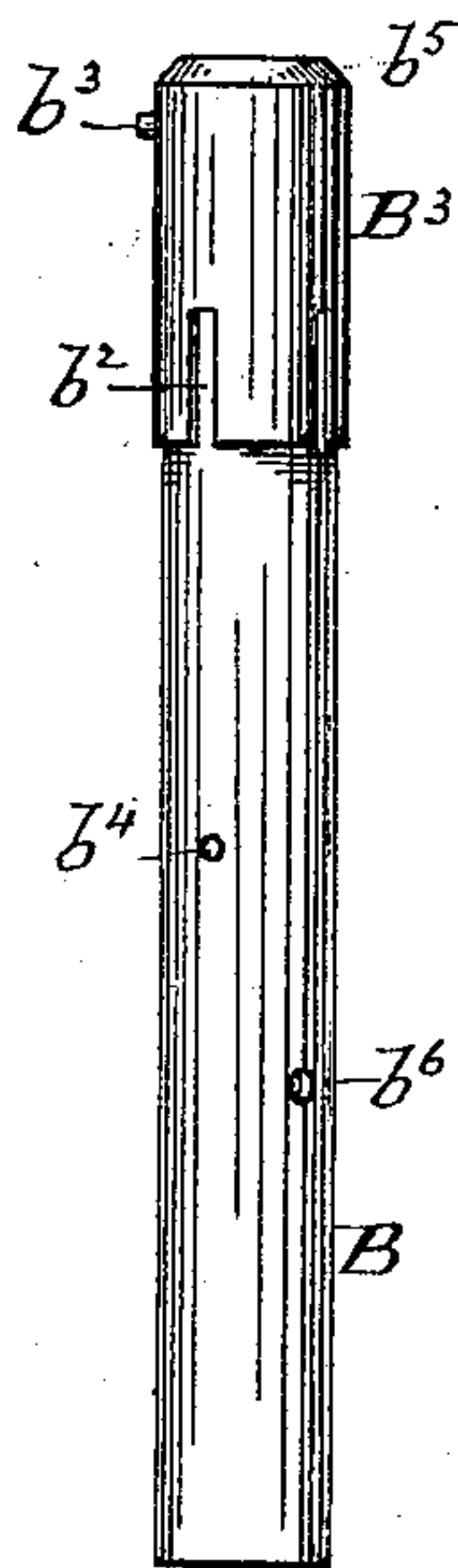


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

GUSTAVUS E. TAFT AND HENRY F. WOODMANCY, OF WHITINSVILLE, MASS.

BEARING FOR SPINNING-FRAME SPINDLES.

SPECIFICATION forming part of Letters Patent No. 284,775, dated September 11, 1883.

Application filed January 10, 1883. (No model.)

To all whom it may concern:

Be it known that we, GUSTAVUS E. TAFT and HENRY F. WOODMANCY, citizens of the United States, residing at Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Bearings for Spinning-Frame Spindles, of which the following is a specification.

Our invention relates to bearings for spinning-frame spindles; and the objects of our improvement are to provide a simple and effective bearing for spindles, whereby fibrous or springy packing to retain the spindle in proper position is dispensed with, and the noise ordinarily produced by revolving spindles is also prevented. We attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section, showing a spindle, its combined bolster and step, and bolster-case constructed according to our invention, the spindle being in elevation. Fig. 2 is a vertical section through the bolster-case. Fig. 3 is a side view of the combined bolster and step.

Heretofore many attempts have been made to prevent the jarring, wobbling, or uneasy motion of running spindles, caused by any inequality of bobbin or yarn load on the spindle, and thus reduce the wear of the bearings, the most common method being by means of elastic packing or springs placed around the bolster; but their properties seldom last for any length of time. By our construction the means to give elasticity and freedom of adjustment to the bolster and step are not subjected to any wear or deterioration.

In the accompanying drawings, A represents the spindle, to which is secured, as usual, the sleeve or cap *a*, carrying the whirl *a'*, by which motion is transmitted to the spindle. The spindle is supported sidewise by the bolster *B'* and endwise by the step *B²*. These parts *B'* and *B²* are preferably made of bronze, and are driven tightly into the tube B, producing with the latter a substantially rigid combined bolster and step, having a chamber, *b*, between the lower end of the bolster and the top of the step for the reception of oil, mainly, to lubricate the interior of the bolster. There is also a chamber, *b'*, in the lower end of the tube B, under the step *B²*, to receive a short cylindri-

cal stem or pin, *c*, projecting upward from the bottom of the bolster-case C, and also retain some air to act as a cushion between the top of said stem *c* and the bottom of the step, to prevent any vertical thumping of the lower end of the tube B against the bottom of the case C. The upper end, *B³*, of the tube B has a larger periphery than the balance of the tube, and is intended to have an easy fit within the upper portion, *C'*, of the bolster-case, so that the lower end of the combined bolster and step and tube B can be capable of a certain amount of oscillation within the bottom of the case C, and for this purpose the upper portion, *B³*, of the tube B may be very slightly tapering, with the larger part adjoining the upper tip.

To prevent the combined bolster and step B from revolving within the case, a small check-pin, *c'*, may be made to project in the interior of the upper portion of the bolster-case to enter one of a series of grooves, *b²*, in the upper portion of *B³* of the bolster-tube; or this arrangement may preferably be reversed and the check-pin *b³* be made to project from the upper end of the portion *B³* to enter a shallow vertical groove, *C²*, within the interior of the upper portion, *C'*, of the bolster-case, and this groove *C²* may even be in the form of a bayonet-holding groove. The interior of the bolster-case is chambered about the middle of its length, at *C³*, to hold a few months' supply of oil, that finds its way through the holes *b⁴* under the bolster, and, by the centrifugal impulse given thereto by the spindle, penetrates between the bolster and spindle and lubricates the latter thoroughly. The upper end of the bolster is conical at *b⁵* to return within the case C any overflowing oil, the upper end of said case being a little higher than the extreme top *b⁵* of the bolster.

The tube B, as well as the interior step, *B²*, is perforated at *b⁶*, to admit oil from the case C in close proximity to the point of the spindle. The internal diameter of the lower end of tube B being only a little larger than the upward-projecting stem *c* in the bottom of the bolster-case, the oil contained within the latter becomes compressed under the oscillation of the spindle, first in one direction, then in another, between the side of the stem *c* and the interior of the tube B, and also between the exterior of said tube and the inside of the bol-

ster-case, producing a double liquid cushion-
ing for the lower end of the combined bolster
and step against the lower end walls of the
bolster-case, permitting the spindle to be suf-
5 ficiently deflected, so as to run true and uni-
formly, even under inequality of bobbin or
yarn load. A ring of cork or leather may be
placed in the bottom of the cavity surround-
ing the central stem, *c*, as a cushion for the end
10 of the tube B to rest upon.

The bolster-case C is secured to the spin-
ning-framerail by a nut, E, put on the threaded
part thereof. It is cast in one piece, so that
oil cannot leak out at the bottom, and when
15 covered by the whirl no dust can get in at the
top.

Having now fully described our invention,
what we claim, and desire to secure by Letters
Patent, is—

A combined bolster and step having its up- 20
per end of larger diameter than its lower end,
and provided with a chamber within said lower
end, in combination with a bolster-case pro-
vided with an internal stem projecting upward
from its bottom, and entering the chamber in 25
the bottom of the combined bolster and step,
substantially as and for the purpose described.

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