G. RICHARDSON.

Spindle-Bolsters.

No. 137,239. Patented March 25, 1873.

Fig. 2.

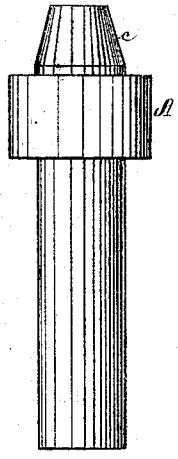


Fig. 1.

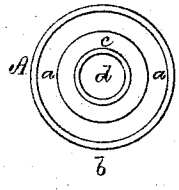
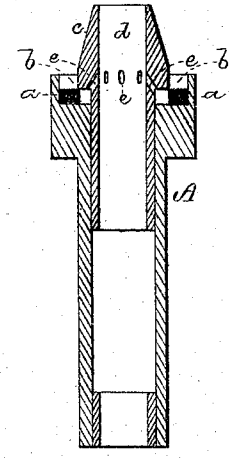


Fig. 3.



Witnesses.

S. W. Piper.

L. N. Möller.

George Richardson.

by his attorney.

R. H. Eddy

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

GEORGE RICHARDSON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN SPINDLE-BOLSTERS.

Specification forming part of Letters Patent No. **137,239**, dated March 25, 1873.

To all whom it may concern:

Be it known that I, GEORGE RICHARDSON, of Lowell, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in the Bearings or Bolsters of Spinning-Machine Spindles; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical section, of a spindle-bolster containing my invention.

The improvement is designed to overcome or prevent difficulties and inconveniences incident to bolsters when made as represented in the United States Patents Nos. 34,221 and 90,958.

The last-mentioned patent of the two was for an invention made by me, and was designed to prevent the waste of oil through the passages or educts leading from the "isolated absorbent" or the chamber containing it, such waste being due to the positions of the said educts, they being horizontal and on a level with the absorbent or felt, or the oil-chamber containing the latter.

With the bolster described in my said patent No. 90,958 the lubrication of the spindle is wholly by means of the inclined ring or cone of felt which touches the spindle. As a consequence it becomes liable to be worn by the spindle, and produces more or less friction thereon, tending to retard it. It is also objectionable in other respects.

In carrying out my improvement I arrange the felt or absorbent *a* (see Figs. 1 and 3) horizontally in an annular oil chamber or trough, *b*, in the bolster A, from and above which I extend the extension part *c*, in manner as shown, Fig. 3, the part *c* being a tubular extension or bearing for support of the spindle, and for it to run in; and from the trough *b* I extend upward within the tubular extension *c*, and into its bore *d*, above the top of the trough *b*, one or a series of fine capillary educts or passages, *e e*, all being arranged substantially as shown in Fig. 3.

The oil poured into the trough *b* and absorbed by the felt ring therein will, by capillary attraction, be drawn therefrom through the inclined passage or passages *e* to the bore of the extension or bearing of the spindle.

From this it will be seen that with my improvement gravity operates to prevent undue waste of the oil, and also that all the advantages of the absorbent ring and horizontal trough are secured without the disadvantage of the waste effected by gravity.

While, therefore, I herein make no claim to a bolster constructed as shown in either of the aforesaid patents—

What I claim as my present invention is as follows, viz:

1. An upright shaft or spindle bearing or bolster, having the annular trough *b*, the tubular extension *c*, and one or more capillary educts, *e*, all arranged substantially as described and represented.

2. The felt or absorbent ring *a*, the annular trough *b*, the tubular extension *c*, and one or more inclined capillary educts, *e*, combined and arranged substantially in manner, and to operate with a shaft or spindle, as explained.

GEO. RICHARDSON.

Witnesses:

R. H. EDDY,

J. R. SNOW.