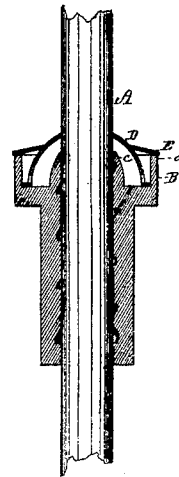
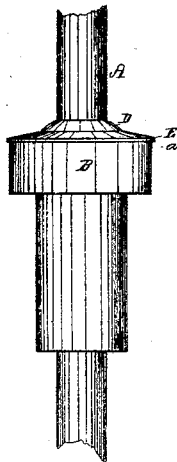
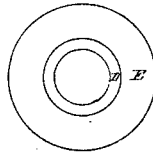


G. W. KNIGHT & G. DRAPER.
Improvement in Spindle-Steps.

No. 114,570.

Patented May 9, 1871.

Fig 1



Witnesses.

S. A. Piper

L. A. Miller

G. W. Knight and G. Draper

by their attorneys.

R. H. Eddy

United States Patent Office.

GEORGE WILLIAM KNIGHT AND GEORGE DRAPER, OF HOPEDALE,
MASSACHUSETTS.

Letters Patent No. 114,570, dated May 9, 1871.

IMPROVEMENT IN SPINDLE-STEPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come:

Be it known that we, GEORGE WILLIAM KNIGHT and GEORGE DRAPER, of Hopedale, of the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in the Bolsters or Bearings of the Spindles of Spinning-Machines; and do hereby declare the same to be described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view,

Figure 2 a side elevation, and

Figure 3 a vertical and transverse section of one of our improved bolsters.

In spindle-bolsters provided with a conic frustum raised within the oil-reservoir and around the spindle-bearing it has been found that when the top of the cone of the oil-chamber or reservoir is below the level of the upper edge of such chamber there is a great liability of waste of oil in consequence of the chamber, while being supplied with oil, being made to receive oil to a depth greater than that of the cone, whereby all that oil which may be above the cone will soon be discharged through the mouth of the cone and run down upon the spindle and be wasted.

In constructing our improved bolster we arrange the upper edge *a* of the oil-reservoir *B* level with the top of the cone *C*, or slightly below the said top.

Furthermore, we arrange within the oil-reservoir and around the cone *C*, and so as to extend above the cone and the top of the reservoir and fit around the spindle *A*, in manner as shown, a hollow cone or dome, *D*, having one or more apertures made through it near its base, or having such base raised a short distance above the bottom of the reservoir, in order that oil, when poured into that part of the reservoir which is situated outside of the hollow dome, may freely flow into that portion of the reservoir which is within such dome.

We also provide the reservoir and dome with an inclined annular cover, *E*, which rests on the top of the reservoir and fits to the cone, all being substantially as represented.

On raising the cover oil may be poured into that portion of the reservoir which is outside of the dome, and when the reservoir may be full no oil can be wasted by extending above the mouth of the cone and being discharged into it when the spindle may be at rest.

Furthermore, the dome prevents the oil from being thrown out of the reservoir by the spindle while in revolution. It covers the cone and bolster-bearing while the cap is raised off the reservoir. Thus the dome also performs the function of protecting the cone and the bearing of the spindle from dirt and extraneous matter liable to gather thereon.

The cone *C*, as in Richards' bolster, will perform its duty of aiding in elevating the oil to the spindle while the latter may be in operation.

If desirable, a hollow frustum of felt or a wick may be arranged in or about the cone *C*, but such is rarely, if ever, necessary.

We make no claim to the spindle-bolster constructed as represented in the United States patent No. 92,647, dated July 13, 1869.

Furthermore, we have to remark that by extending the dome *D* up into or through the cover *F*, in manner as shown, such cover is prevented from being caught and revolved by the spindle, especially while being raised upward for the purpose of enabling oil to be poured into that part of the reservoir which is outside of the dome. Thus by means of the dome we not only protect the part *C* from loose fibrous matters, but preserve the cover *F* from being caught and revolved by the spindle while the latter may be in revolution.

What we claim as of our invention is as follows:

1. The combination and arrangement of the hollow dome *D* with the oil-reservoir *B*, and with the frustum *C* disposed in the latter, as set forth.
2. In the bolster, as composed of the oil-reservoir *B*, and the frustum *C*, and the dome *D* arranged therein, the oil-reservoir and the cone or frustum *C*, as constructed, with their upper edges on a level, or with that of the cone or frustum arranged above that of the reservoir, as described.
3. The dome as arranged within the oil-reservoir of the bolster and around the spindle-bearing, substantially as described.
4. The combination and arrangement of the oil-reservoir *B*, the cone or frustum *C*, the dome *D*, and the cover or cap *E*, all being substantially as described.

GEO. W. KNIGHT.
GEORGE DRAPER.

Witnesses:

EBEN D. BANCROFT,
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