

Improvement in Spindle-Steps:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SPINDLE-STEPS.

Specification forming part of Letters Patent No. **114,536**, dated May 9, 1871.

To all whom it may concern:

Be it known that I, GEORGE DRAPER, of Hopedale, of the county of Worcester and State of Massachusetts, have invented a new and useful or Improved Step for the Spindle of a Spinning Frame or Machine; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 a top view, and Fig. 3 a vertical section, of the said step. Fig. 4 is a vertical section of the step as constructed with the spindle-foot bearing arranged in a conic frustum raised on the bottom of the oil-reservoir, the spindle-foot bearing exhibited in Fig. 3 being a cavity wholly below the bottom of the oil-reservoir.

In carrying out my invention I construct the oil-reservoir A of the step with a spindle-foot bearing, *a*, arranged at its bottom, such being a cavity to receive and support the foot *b* of the spindle. In Fig. 4 the said cavity is represented as formed in a projection or conic frustum, C, erected on or extended upward from the bottom *c* of the said oil-reservoir. Furthermore I arrange within the said reservoir a conical or tapering hollow dome, D, to rest on the bottom of the reservoir, extend upward out of and above its top, and fit as closely to the spindle as possible without impeding it in its revolutions. An annular cap or cover, E, going around the dome D a short distance below its top and resting on the upper edge of the oil-reservoir A, serves, with the dome, to cap the said reservoir. There should be one or more passages, *d*, at or underneath the base of the dome to allow oil, after being poured into that part of the reservoir which circumscribes the dome, to flow into that portion of the reservoir which is within the dome and thence into the spindle-foot bearing. By raising the cover E off the reservoir the latter will be open for reception of oil. In this step the spindle-foot and its socket or bearing are, by the dome, completely protected from fibrous or foreign matters, it not being necessary to

lift the spindle out of the dome or the step in order to supply the oil-receiver with a lubricating-fluid. By having the cover E insulated or separated from the spindle by the dome there is no danger of the said cover being caught and revolved by the spindle to the detriment of either, and particularly to that of the spindle, such being a matter constantly liable to occur with various other kinds of spindle-steps in common use. When the spindle-foot bearing is arranged in an elevated conic frustum or projection, as shown in Fig. 4 at C, the space immediately surrounding the frustum becomes a repository for the sediment or deposits of the oil, and particularly such as may be expelled from the spindle-foot bearing. In the spindle-step made as shown in Fig. 3 the settling or extraneous matters of the oil will be liable to be deposited in the spindle-foot bearing or socket, and might, as in various other steps, contribute to the wear of it and the foot of the spindle.

I do not herein claim the combination of the dome, or such and the annular cover, with the oil-reservoir of the bolster of a spindle, such being the subject of or described in an application for a patent recently filed in the Patent Office by myself and George William Knight as joint inventors, my present invention being an improved spindle-step. Therefore

What I claim as my invention is—

1. The spindle-step as having the spindle-foot bearing *a* and the hollow dome D, arranged in the oil-reservoir A and to receive the spindle B and its foot *b*, as set forth.
2. The spindle-step as provided with the spindle-foot bearing *a* and the dome D, arranged in the oil-reservoir A, as set forth, and as having the annular cap or cover E, applied to the oil-reservoir and extended about the dome and below its top, in manner as explained.

GEORGE DRAPER.

Witnesses:

R. H. EDDY,
J. R. SNOW.