

G. Draper,
Spindle, Stept.

No. 88,556.

Patented Apr. 6. 1869.

Fig 1

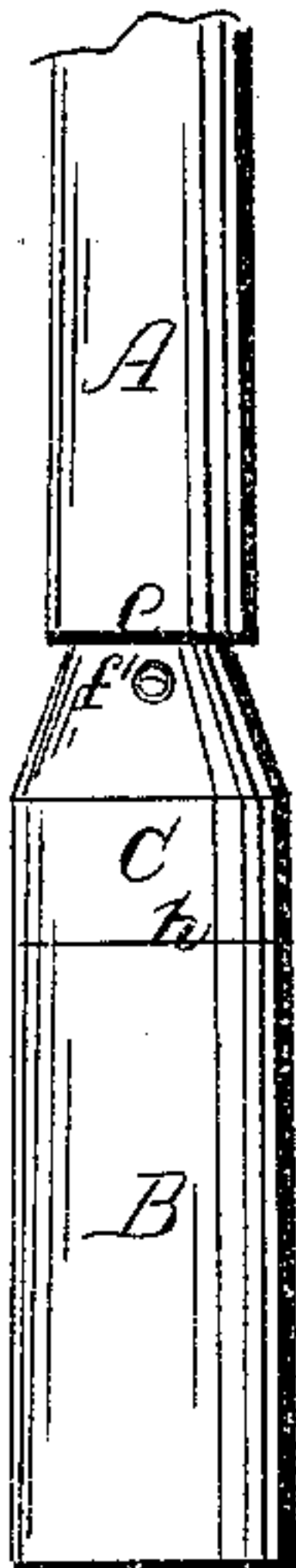
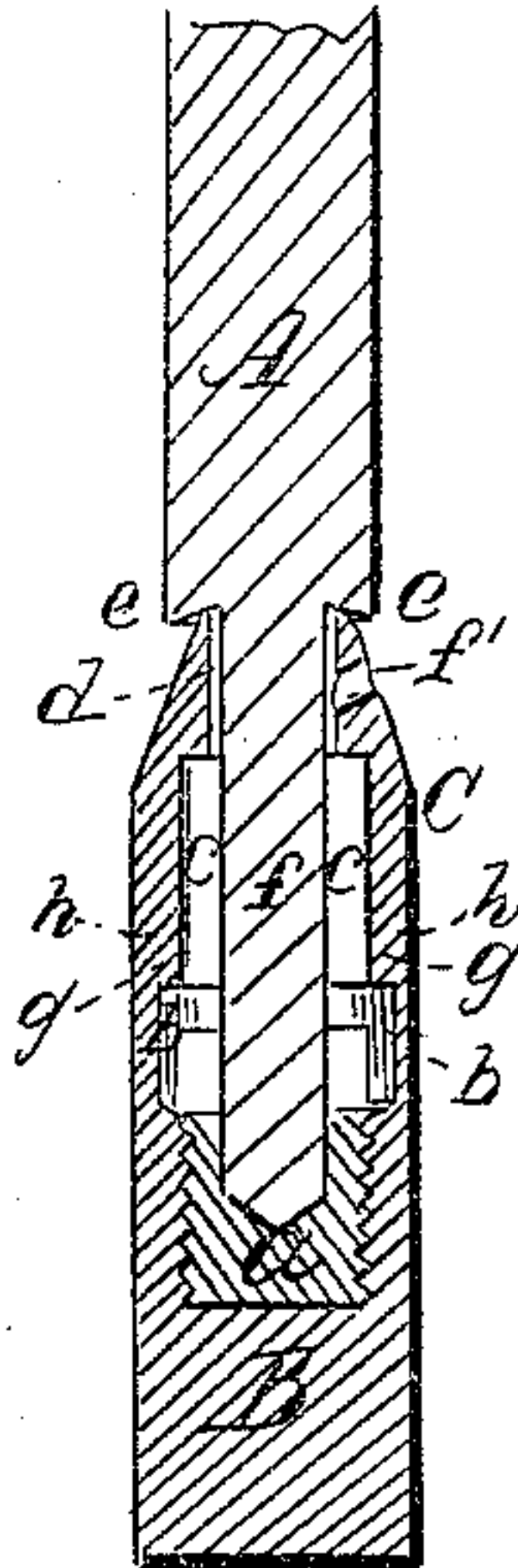


Fig 2



Witnesses

H. P. Hale Jr.

J. R. Snow

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United States Patent Office.

GEORGE DRAPER, OF HOPEDALE, MASSACHUSETTS.

Letters Patent No. 88,556, dated April 6, 1869.

IMPROVEMENT IN SPINDLE-STEP FOR SPINNING-MACHINES.

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 I, GEORGE DRAPER, of Hopedale, in the town of Milford, of the county of Worcester, and State of Massachusetts, have made a new and useful invention, having reference to Spinning-Spindles, their Steps and Caps; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and

Figure 2, a vertical section of a spindle, with its step and the cap thereof, as provided with my invention.

In the carrying out of my invention, as exhibited in such drawings, the spindle is formed with a shoulder, to project over and below the mouth of the cap, which covers the step of the spindle; and the cap is also made so as to rest on and project within the step and cover, or extend down by the joint, or space, when there is any, between the cap and step, in order to act as a cut-off, or guard, to prevent oil from being thrown out of the cap, or step, and through their joint.

The purpose of the shoulder formed on the spindle, so as to project over and below the mouth of the upper end of the cap, is to prevent the lodgment of lint, or fibrous or extraneous matters, between the spindle and the cap, or the mouth of the latter, so as to obstruct the operations of the spindle.

In the said drawings, A denotes the spindle, as made with a long cylindrical pivot, *f*, extended from a shoulder, *e e*, which is concave, so that, when the spindle is in place in the cap, such shoulder shall not only cover the mouth, or opening of the upper end of the cap, but extend below it, in manner as represented in fig. 2.

The step is shown, at B, as constructed with a cylindrical oil-chamber, *b*, open at top, and provided with a composition or brass bearing, *a*, which screws down from the bottom of the chamber *b*, and into the step.

The pivot *f* of the spindle enters and rests on the bearing *a*.

The cap C is supported on the top of the step B, and constructed with a flange, *g*, to extend down into the chamber *b*, and against its periphery, so as to cover the joint *h*, between the cap and the step, or act as a guard, to prevent oil in the chamber *b*, while the spindle may be in rapid revolution, from being driven, by centrifugal force, out of the chamber, and through the joint *h*.

The said cap has also a cylindrical chamber, *c*, which is open at bottom, there being a passage, *d*, leading out of the upper part of such chamber and the cap, such passage *d* having a diameter somewhat greater than that of the pivot *f* of the spindle.

Each of the spindle-step caps, shown and described in the United States Patents, Nos. 44,265, 81,732, and 66,017, extends down outside of its step, and below its top, and in consequence thereof, the oil is liable to be thrown upon the top of the step, and to work down through the joint, between the cap and the step.

My invention differs from such, in having the flange *g* to extend down within the step.

Furthermore, when the passage *d* of the cap has a diameter greater than that of the part of the spindle which extends through it, I cover the top of such passage by a concave shoulder formed on the spindle, and so as to extend down around the upper part of the cap, the same being for the purposes as explained.

One or more oil-holes, *f'*, may be made in the cap, to enable oil to be introduced into the cap, and thence into the chamber *b* of the step.

The step, cap, and spindle, arranged as represented, admit of the ready removal of the spindle and cap from the step, and as the spindle does not touch the cap in any respect, no friction will be generated between the two, while the spindle may be in revolution.

In Patent No. 66,017, the cap is so connected with the spindle as to revolve with it, but in my arrangement the cap is stationary while the spindle may be in revolution.

I make no claim to either of the devices, combinations, or arrangements of parts, as represented in either of the aforementioned patents.

I am aware that the step of a spindle has been made to extend up into a trumpet-mouth, or flange formed on the spindle, the same being in manner as represented in Andrew Harris's application for a patent, filed April 5, 1841, and withdrawn November 8, 1841.

I am also aware that the cap of a spindle-step has been made to rest and fit on the upper edge of, and also has had a flange to extend within the step, and below the joint between the step and the cap, such being as shown in the specification of Richard A. Eddy's application for a patent, rejected April 28, 1851; therefore, I make no claim to such.

My invention has special reference to a spindle and step, as provided with a cap.

The chamber *c* in the cap, made with a diameter greater than that of the spindle-mouth *d* of the cap, and, as a consequence, greater than that of the pivot *f*, should be of such a size as to so insulate the flange *g* from the pivot *f*, as to prevent oil that may rise on the pivot from the bearing *a*, or may be descending on the pivot, from being forced against the flange *g*, and between it and the step. This chamber *c*, with the flange *g* therefrom, is productive of advantage. The extension of the upper end of the cap up into the spindle, also prevents fibrous matters and dirt from getting into the mouth of the cap, and thence into the flange-insulating chamber *c*.

I claim the cap, C, as formed, with the insulating-chamber *c*, and extended up into the conical shoulder *e* of the spindle, and down within the step, (by means of the flange *g*,) the whole being substantially as explained.

GEORGE DRAPER.

Witnesses:

WM. F. DRAPER,
F. J. DUTCHER.