

*Patented May 23, 1871.*

A diagram showing a circular cross-section of a lens. It consists of three concentric circles. The innermost circle is labeled 'b'. The middle circle is labeled 'a'. The outermost circle is labeled 'A'. The region between circles 'a' and 'A' is filled with diagonal hatching lines.

R. H. Edd

# UNITED STATES PATENT OFFICE.

OLIVER PEARL, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN SPINDLE-STEPS AND COVERS FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. **115,233**, dated May 23, 1871.

*To all persons to whom these presents may come:*

Be it known that I, OLIVER PEARL, of Lawrence, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Spindle-Steps of Spinning Frames or Machines; and I 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 vertical section, and Fig. 2 a horizontal section, of one of the steps containing my invention.

In spindle-steps of ordinary construction the part for supporting the foot of the spindle is at the bottom of a cavity containing the oil or lubricating fluid, in consequence of which all the worn-off metal and other settlements of the oil become deposited on such bearing part, and thereby contribute to the friction and wear of the rubbing-surfaces at the foot of the spindle.

In carrying out my invention I arrange around and below the bearing in which the foot of the spindle is to rest and revolve a cavity to receive the settlements, the spindle-foot bearing being at the top of a conical or tapering pedestal of metal, screwed or otherwise fixed in the bottom part of the oil-reservoir. I also arrange above the said bearing a lateral or cylindrical bearing, which not only serves as a cap to the reservoir, but as a support for the spindle, the hole through the said lateral bearing being of a diameter equal to or a little greater than that part of the spindle received by it. Over the whole a cover is placed so as to rest on a shoulder.

In the drawing the body of the step is shown at A as provided with a cylindrical cavity, *a*, to hold oil. Within this cavity, and so as to extend above its bottom, as shown, is the conical pedestal B, provided at its upper end with a concave conical socket, *b*, to receive the foot of the spindle, shaped to fit to such socket.

At a short distance above the pedestal is

the lateral bearing C, which may be of brass or composition metal, and is a cylindrical plug fitted into the upper part of the oil-reservoir, and arranged at a short distance below its top, in order that the space above the said part C may constitute a cup to receive the oil and conduct it through the spindle-hole *c* into the reservoir.

From the above it will be seen that while the spindle may be in revolution, its foot and the surface on which it may rest will be covered by oil, and that any metal abraded or worn from the rubbing-surfaces, or any dirt or foreign matters in the oil liable to settle thereon, will fall into the space *d*, surrounding the pedestal, and below its upper end.

The shoulder for support of the cup D is shown at *e e*.

I make no claim to a spindle-step having a pointed screw or support for the spindle-screws up through its bottom and into the oil-reservoir, thereby leaving a hole entirely through the bottom through which oil may leak, such being as shown in the English Patent No. 915 for 1853.

The bottom of my step is imperforated, or has no hole through it, and the pedestal B is socketed on its top to receive the spindle and hold oil, and is screwed into or raised on the said bottom, thus making a much better step.

I claim—

The spindle-step provided with the socketed projection B, the oil-reservoir *a*, annular space *d*, the perforated lateral bearing C, and the oil-receiving cup or space over the latter, and also having the cover or cap D applied, as described, to the body of the step, all being constructed and arranged substantially as set forth and represented.

OLIVER PEARL.

Witnesses:

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