

G. RICHARDSON.  
Spindles.

No. 152,008.

Patented June 16, 1874.

Fig. 1.

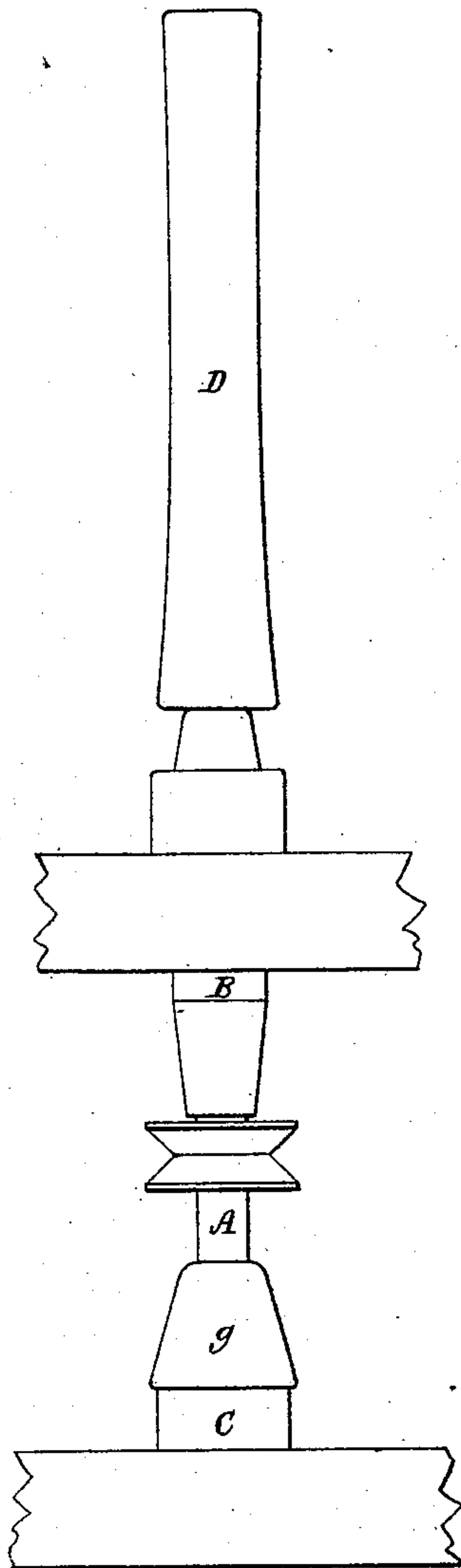


Fig. 2.

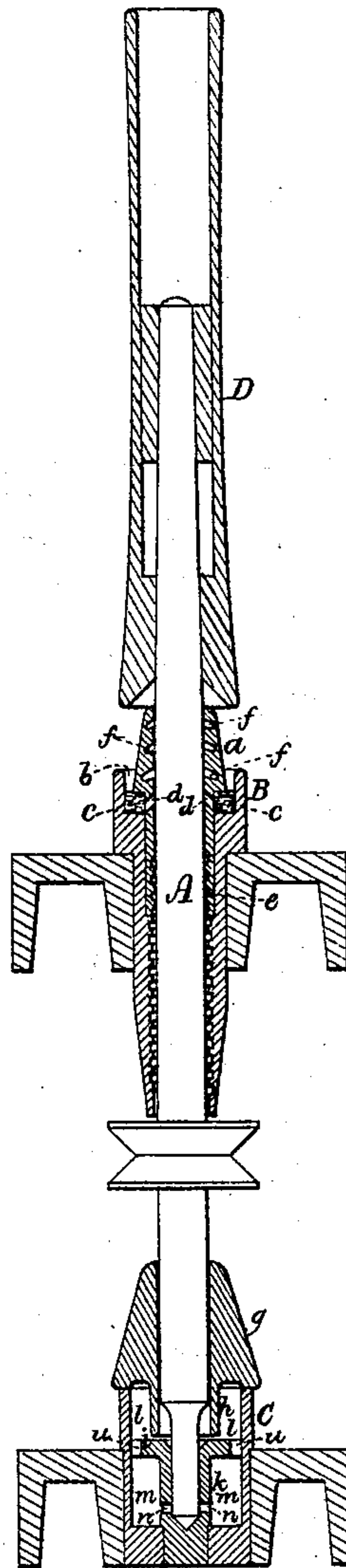


Fig. 3.

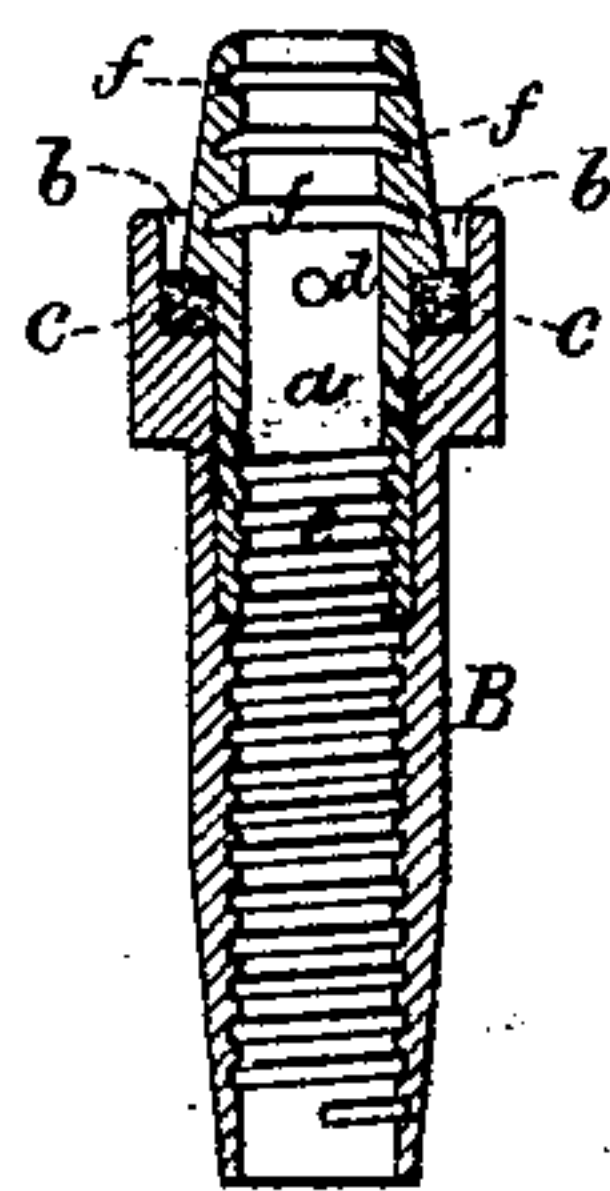
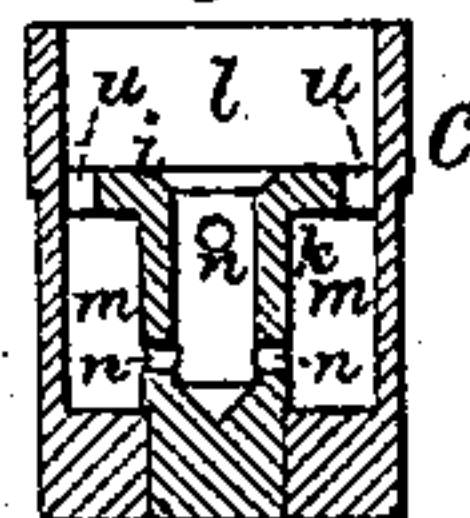


Fig. 4.



Fig. 5.



Witnesses.  
S. N. Piper.  
L. N. Heller

Geo. Richardson  
by his attorney  
R. H. E. Ledy

# UNITED STATES PATENT OFFICE.

GEORGE RICHARDSON, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN SPINDLES.

Specification forming part of Letters Patent No. **152,008**, dated June 16, 1874; application filed April 25, 1874.

### CASE B.

*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 Machinery for Spinning; and 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 Fig. 2 a vertical section, of a spinning-spindle with its bolster and step provided with my invention. Fig. 3 is a vertical section of the bolster. Fig. 4 is a top view, and Fig. 5 a vertical section, of the step as uncovered.

My invention relates to the bearings of the spindle, or what are usually termed the bolster and step; and consists in the bolster, or its composition bushing, provided with one or more oil-intercepting chambers or grooves, arranged in it with reference to the oil-reservoir and its educt, as hereinafter described; also, in a tubular check or guard and a cap-weight, combined together, and arranged with the spindle and step, as hereinafter explained.

In such drawings, A denotes the spindle; B, the bolster; C, the step, and D the bobbin. The bolster is represented as provided with a composition bushing, *a*, of brass or bell-metal, for the spindle to bear in, such being surrounded by and projecting above an oil receiver or trough, *b*, arranged as shown. Within such receiver is an annulus or a packing, *c*, of felt or other suitable absorbent material, which is arranged against one or more holes or oil-ducts, *d*, made laterally in the bushing, from inside to outside of it. In the lower part of the bore of the bushing and bolster is a helical groove, *e*.

In carrying out my invention, in part, I form in the bushing, and above the oil duct or ducts *d* thereof, one or more chambers or grooves, *f f f*, to open into the bore of the bushing. These chambers serve to intercept the oil that usually rises in the bushing above the induct *d* thereof, and prevents such oil from rising out of the top of the bushing, and being caught on the spindle and discharged therefrom by centrifugal force while the spin-

dle may be in rapid revolution. Each of the said chambers is a groove, inclined to the bore of the bolster, or to the spindle, in a manner to retain oil, such inclination being as shown in Fig. 2. Only a portion of oil intercepted by the chamber can escape when the spindle is at rest. As soon as the spindle commences to revolve, the balance of oil or part of it left in the groove or chamber will be extracted or drawn out by and upon the spindle. The step C of the spindle is provided with a gravitating or weighted cap, *g*, and an oil-check, *h*, combined or connected together. The spindle goes down through them concentrically, and is surrounded by the check *h*, which is tubular, and extends nearly or quite down upon a floor or horizontal partition, *i*, that projects from the socket-piece *k*, in which the foot of the spindle rests. The said partition divides the cylindrical interior of the step into two oil-chambers, *l m*, the upper of which receives the check *h*, and is covered by the cap or weight *g*. The chamber *l* is considerably larger in diameter than the check *h*, such check being to prevent oil from being thrown out of the chamber *l* by centrifugal force generated in such oil by the spindle while in revolution. There are one or more holes, *u*, through the floor *i*, to enable the oil to flow from one chamber into the other; and there is also a hole, *n*, leading laterally out of the spindle-socket into the lower chamber *m*. The tubular guard or check *h*, by being connected with the weight or gravitating cap *g*, is movable therewith, and will be raised by it whenever such cap is moved upward on the spindle for the purpose of uncovering the step for oil to be introduced therein. The guard or check is advantageous in other respects. By connecting it with the cap, the latter serves to keep the check concentric with the spindle, and, by being a heavy weight, is not liable to be accidentally raised or thrown up on the spindle, so as to let fibers or waste get into the step. As the check moves with the cap, the latter, when lifted on the spindle, will take the check with it to admit of the upper chamber being thoroughly cleansed of waste. The upper chamber, by being insulated from the lower chamber by



the partition or floor *i*, serves to intercept any waste and prevent it from getting into the lower chamber, which answers to hold the oil and supply it to the spindle-socket.

I do not claim a bolster having one or more grooves extending around within it and around the spindle, and having the bottom of each groove arranged horizontally, so as to allow the oil intercepted by the chamber to entirely escape therefrom through the action of gravity.

I claim—

1. The bolster or its bushing provided with

one or more oil-intercepting chambers or grooves, *f*, arranged in it with reference to the oil-receiver *b* and its educt *d*, and inclined with respect to the bore, all substantially as set forth.

2. The check or guard *h* and the cap-weight *g*, combined with the spindle and step, as specified.

GEORGE RICHARDSON.

Witnesses:

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