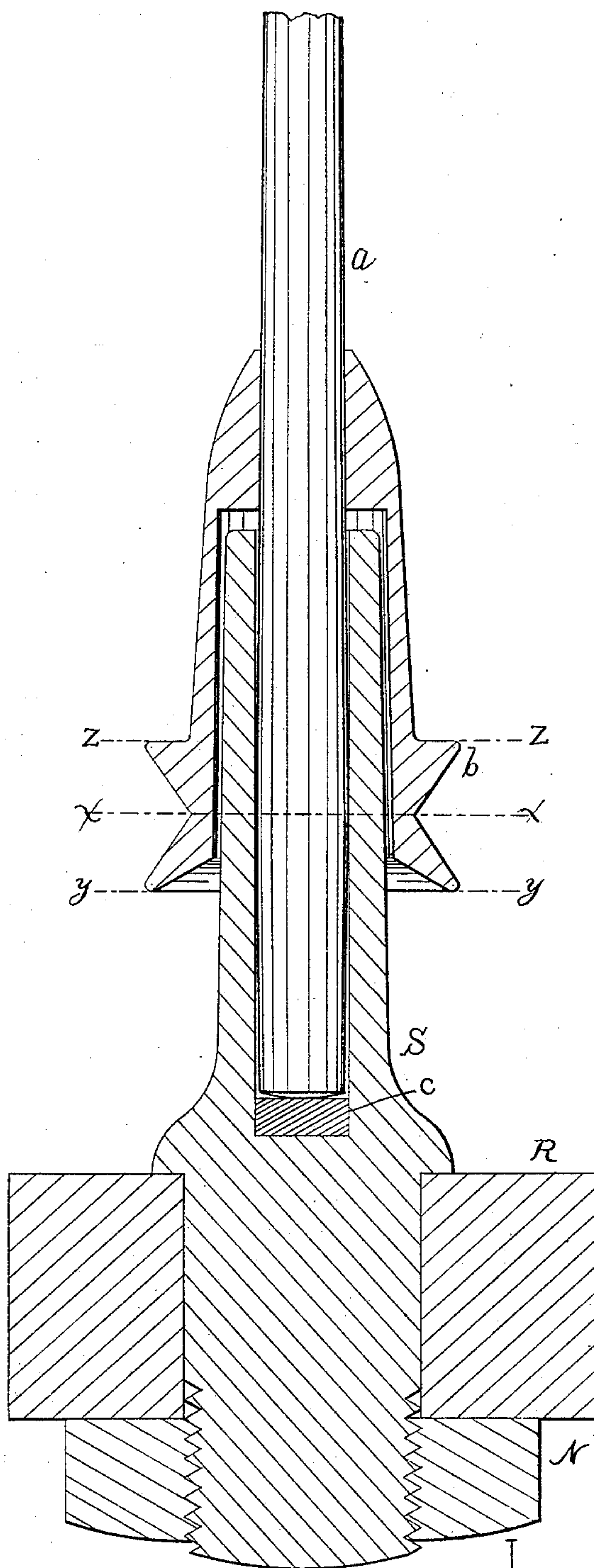


(No Model.)

W. F. DRAPER.
SPINDLE AND BEARING.

No. 328,201.

Patented Oct. 13, 1885.



Witnesses.

B. J. Hayes
John E. Brinkert

Inventor.

William F. Draper
by Crosby & Gregory attys.

UNITED STATES PATENT OFFICE.

WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS.

SPINDLE AND BEARING.

SPECIFICATION forming part of Letters Patent No. 328,201, dated October 13, 1885.

Application filed February 16, 1885. Serial No. 156,067. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. DRAPER, of Hopedale, county of Worcester, and State of Massachusetts, have invented an Improvement in Spindles and Bearings, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

In that class of spindles denominated as "top spindles," or those in which the foot or pintle of the spindle is permitted to wander or move laterally to a certain extent in every direction to enable the spindle to find its true center of rotation according to the load upon it, it has been customary, so far as I am aware, with all sleeve-whirl spindles to employ a loose bolster between the pintle of the spindle and the hollow standard or support extended into the chamber of the sleeve-whirl to provide a lateral bearing for the spindle above the line of the band-pull.

In this my invention I do away with the usual loose bolster and give to the pintle of the spindle a double conical shape, the greatest diameter of the pintle being in the line of the band-pull.

The drawing, which is in vertical section, with the exception of the spindle, which is in elevation, represents a sleeve-whirl spindle and its supporting devices constructed in accordance with my invention.

The rail R has secured to it by the nut N a support or standard, S, bored to contain oil and to receive within it, in the oil, the pintle of the spindle *a*, having an attached sleeve-whirl, *b*, the support or standard entering the sleeve-whirl and extending therein above the line *xx*, the line of the band-pull.

The pintle of the spindle within the case from the line *xx*—the line of the band-pull—is tapered in both directions, or up and down, leaving the pintle of greatest diameter in the line of the band-pull, the said point of greatest diameter located in the line of the band-pull on the whirl acting as a fulcrum over which the spindle may rock as the blade and

foot of the spindle move, while the latter moves on the step *c* in seeking its true center of rotation.

The pintle of my improved spindle resembles two frustra of cones of slight taper joined base to base, the latter being in the line of the band-pull. I do not claim a double conical bolster, as I am aware that that is not new. I have dispensed altogether with the bolster and with the usual fibrous picking material.

The space or chamber on the standard S may be supplied with oil in any usual manner, or as bolster-supports are supplied with oil.

In the drawing the spindle from the line *xx* upward, and downward to the points where the pintle is of least diameter, shows a true taper; but it is obvious that the invention herein contained would be the same were the pintle of the spindle slightly convex between the lines *xx*, *yy*, and *zz* instead of straight. In the drawing the part of the pintle of greatest diameter, and which serves as a fulcrum or point about which the pintle may rock as a lever of the first order, is very narrow and is in the line *xx*; but I do not desire to limit my invention to the exact distance or length of this largest diameter of the pintle, as the same may extend somewhat from the line *xx* within the width of the whirl.

I claim—

A rigid tubular standard or support closed at its bottom to contain oil, combined with a sleeve-whirl spindle having a pintle, the largest diameter of which is in the line of the band-pull, the pintle being of smaller diameter above and below the line of the band-pull, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. F. DRAPER.

Witnesses:

FRANK J. DUTCHER,
WM. J. WOODS.