A. L. TIPPET.

BUSHING FOR MILL-SPINDLES.

No. 188,986. Patented March 27, 1877.

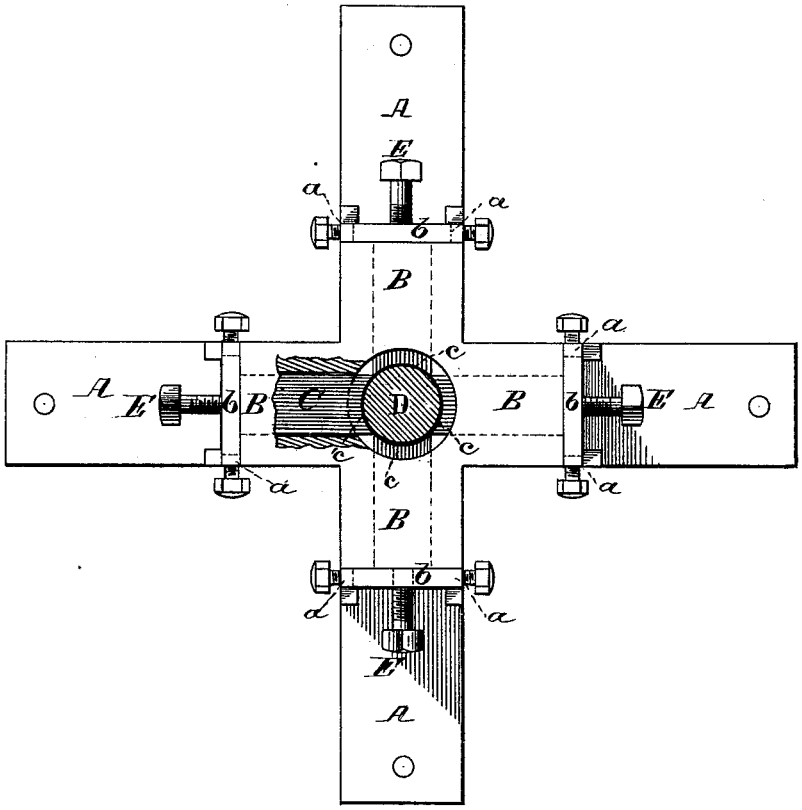

Fig. 1.

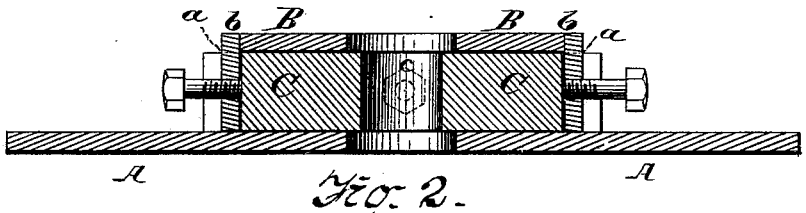

Fig. 2.

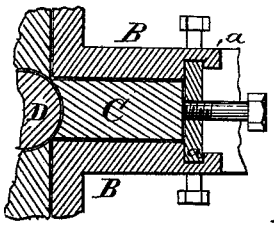

Fig. 3.

Witnesses:

J. Hall Wagner.

H. L. Perrine

Inventor:

A. L. Tippet

By James L. Norris.

Attorney.

UNITED STATES PATENT OFFICE.

ARNER L. TIPPET, OF HAWKINSVILLE, GEORGIA.

IMPROVEMENT IN BUSHINGS FOR MILL-SPINDLES.

Specification forming part of Letters Patent No. **188,986**, dated March 27, 1877; application filed November 29, 1876.

To all whom it may concern:

Be it known that I, ARNER L. TIPPET, of Hawkinsville, in the county of Pulaski and State of Georgia, have invented certain new and useful Improvements in Bushing for Mill-Spindles, of which the following is a specification:

This invention relates to improvements in bushings for mill-spindles, wherein sliding followers are employed, which are adjusted toward or from the mill-spindle by means of set-screws, for the purpose of adjusting the followers upon the mill-spindle in an accurate and perfect manner, and whereby any looseness caused by friction and wear can be readily taken up.

This invention consists of a suitable frame, upon which are arranged four boxes or casings, arranged at right angles to each other, so as to create a central opening, through which the mill-spindle passes. Within each of these boxes or casings is arranged a follower-block, having a semicircular end adapted to fit upon the spindle or shaft, all in such manner that a continuous bearing around the shaft is obtained. The outer ends of the boxes or casings are removable, and each is provided with a set-screw projecting through the said ends, and adapted to adjust the followers toward the mill-spindle, whereby any looseness, caused by friction and wear, can be readily taken up, and the followers, being guided by the boxes and casings, can be adjusted upon the shaft or spindle in an accurate, perfect, and even manner.

In the accompanying drawing, Figure 1 represents a top or plan view of my invention; Fig. 2, a horizontal transverse section; and Fig. 3, a view showing the end of one of the boxes partly removed and the manner in which it is held in place.

The letter A represents a frame, which is rigidly secured in proper position, and upon this frame is arranged four closed boxes or casings, B, attached to the frame, at right angles to each other, in such manner as to create a central circular opening for the passage of the mill-spindle. Each outer end of the boxes or casings B is grooved, as at *a*, and the heads B are constructed to slide into said grooves *a*, the object being to admit of the ready insertion of the followers C, after which the heads can be placed in position and secured by screws or otherwise. The followers are made to fit snugly within the boxes, and their inner ends are concaved, as at *c*, and the whole arrangement is such that the followers form a continuous and even bearing around the mill-spindle D. Each of the removable heads *b* is provided with a set or adjusting screw, E, which passes through the heads, and is adapted to be adjusted to move the followers toward the mill-spindle for the purpose of compensating for any wear of the followers, and to provide a continuous, even, and perfect bearing at all times for the mill-spindle, this function being mainly due to the nice manner in which the followers are guided and supported by the boxes or casings.

Instead of employing four followers and boxes or casings it will, of course, be evident that but two or three can be used with equal advantage.

I am aware that bearing-blocks for mill-spindles have been arranged within, and guided by, closed boxes radiating from the mill-spindle, said blocks being adjusted by fixed screws and movable nuts on the inside of the boxes; and I am also aware that bearing-blocks for mill-spindles have been made adjustable by moving set-screws from the exterior; but, so far as I know, there has never been a mill-spindle bearing in which the adjusting-screws have been arranged in removable heads of the radiating independent boxes, such blocks being arranged within, concealed, and guided evenly by the boxes, whereby I am able to simply slide out the ends carrying the set-screws, when the blocks can be slipped out, and whereby I am able to adjust the blocks from the exterior of the boxes.

What I claim, and desire to secure by Letters Patent, is—

The heads *b*, provided with the adjustable screws E, passing through the heads, the latter secured in the grooves *a* of the radially-closed boxes containing the movable followers C, so as to slide vertically for removing the heads with their screws, as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

ARNER L. TIPPET.

Witnesses:

JNO. H. PATT,

C. T. LATHROP.