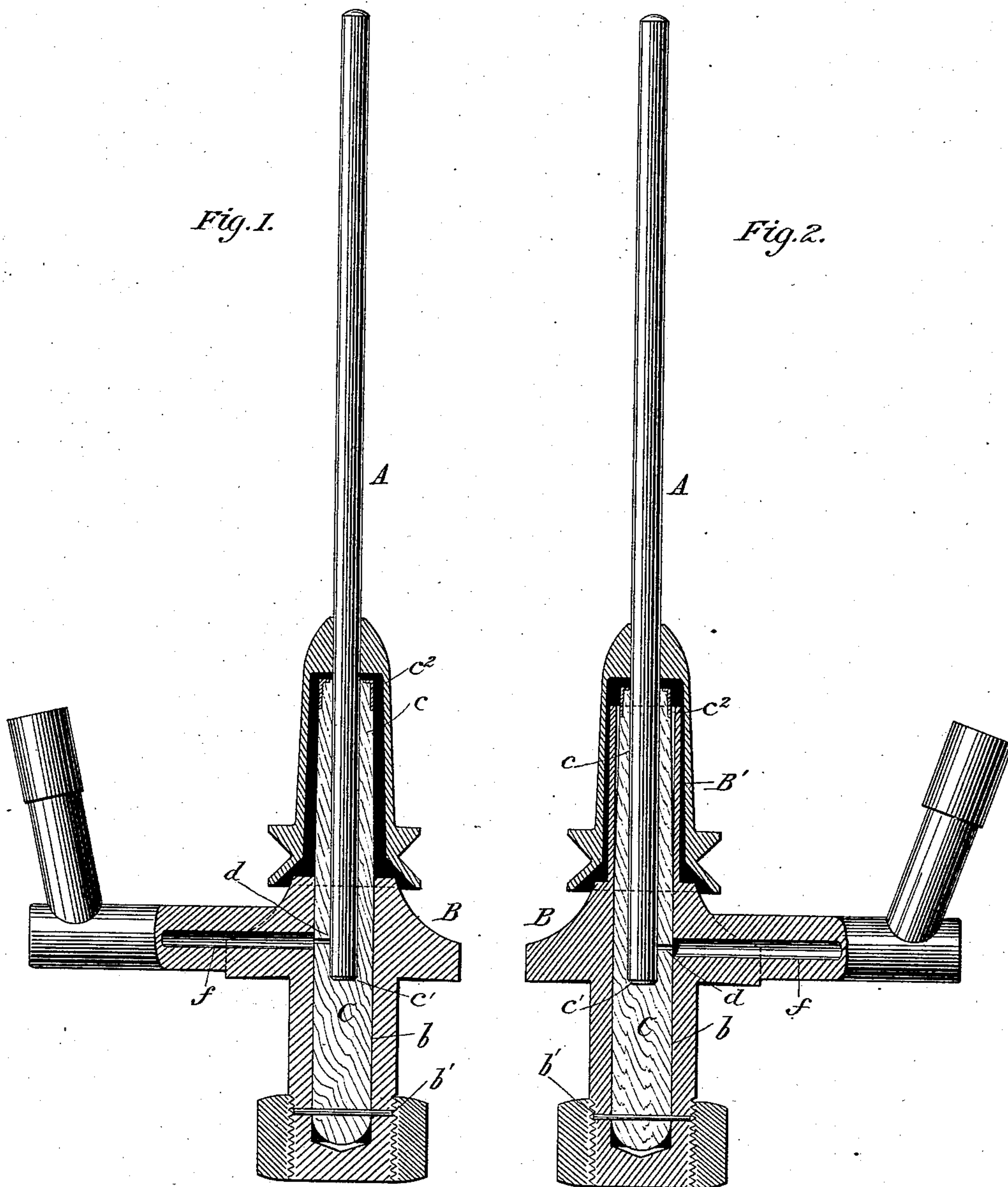


(No Model.)

J. W. WATTLES.
SUPPORT FOR SPINNING SPINDLES.

No. 365,417.

Patented June 28, 1887.



WITNESSES:

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JOSEPH WARREN WATTLES, OF CANTON, MASSACHUSETTS.

SUPPORT FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 365,417, dated June 28, 1887.

Application filed April 27, 1886. Serial No. 200,279. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WARREN WATTLES, of Canton, in the county of Norfolk and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Supports for Spinning-Spindles, of which the following, taken in connection with the accompanying drawings, is a specification.

Spindle supports or bearings of the class to which my invention relates have heretofore been constructed with the bolster, or the portion in which the spindle revolves, arranged loosely within a bolster-holder, both with and without a yielding packing interposed between the two, so as to be capable of movement laterally to accommodate itself to the gyrations of the spindle when carrying an unbalanced load, and these bolsters have in some instances been provided with a step for the spindle, forming, when so constructed, a combined bolster and step, and in others they have been constructed independently thereof. In all forms of bearings of this class, however, as heretofore constructed, not only have the bolster-holders been formed of metal, but also the bolsters, and when a step has been formed integrally therewith the step has been formed of metal as well, so that in operation the bolster or the step, or both, has or have had metal contact at some point through the holder with the rail. As a result of this, the vibrations and jar in the spindle engendered by its revolution when carrying an unbalanced load have been communicated through metal contacts to the rail, which, being rigid and unyielding, has not taken them up, but has, on the other hand, resisted them, causing thereby their augmentation in the spindle, and in consequence has occasioned much noise and loss of power. Attempts have hitherto been made to remedy these defects: first, by interposing an elastic cushion beneath the step, and, second, by employing a wooden supporting-post or dead-spindle, upon the top of which was supported the step of a sleeve-whirl spindle, the sleeve of which latter extended down and around the said post and took lateral bearing against the outer surface thereof or against the inner surface of a short metal sleeve carried thereby adjacent to its lower end. The first of these last-mentioned constructions, while relieving in a

great measure the objectionable noise caused by the rotation of the spindle, has not obviated the metal contact between the bolster and its holder, and hence has not neutralized the vibration and jar incident thereto and to the rotation of the spindle, and the other, while advantageous when employed with the particular form of spindle used in connection therewith, is not adapted to that form of spindle in which the step extends below the whirl, and which requires in its operation not only a step, but a bolster as well.

The object of my invention is to obviate the defects above pointed out and to produce a spindle-bearing which, while adapted to that form of spindle which requires a bolster and step, shall be simple and inexpensive in construction, shall be efficient in operation, and which shall not be liable to get out of order.

To this end my invention consists in the several combinations of parts, as hereinafter more particularly described, and their extent is defined in the subjoined claims.

Referring to the drawings, Figure 1 is a view of a sleeve-whirl spindle and the bearings therefor constructed in accordance with my invention, some of the parts being shown in section; and Fig. 2 is a similar view of a modification of the same, in which a projecting sleeve for the combined bolster and step is employed.

In all these figures, A represents the spindle, and B the bolster-holder, both of which are or may be of any suitable or known construction, the forms selected by me for the exemplification of my invention, however, being substantially those illustrated in Letters Patent No. 227,129, and require no detail description herein.

C is a stud or post projecting upwardly from the interior of the bolster-holder B, in the socket or chamber *b* of which latter it is rigidly secured by a pin, *b'*, and is formed at its upper end, by being bored axially therein, with a bolster, *c*, and step *c'*, in and upon which the spindle A rotates and is supported. This stud or post, which combines within itself both a bolster and step, is made of wood, rock-maple, dog-wood, or beach being preferred, and is constructed with the portion which enters the socket or chamber of the bolster-holder of

such form as to snugly fit therein, while the portion projecting above such socket or chamber is gradually tapered toward the upper end, which latter is surrounded by a metal ring, c^2 , to prevent splitting.

The object of making the upper portion of the combined bolster and step tapering is to render it as flexible and yielding as is possible.

I employ wood in the construction of the combined bolster and step, for the reason that experience has demonstrated that spindle-bearings when made of such material, not only offer the minimum amount of frictional resistance to the rotation of the spindle and adapt themselves more readily to the varying conditions of the latter when carrying an unbalanced load, but, being more yielding and of a softer nature than the surfaces with which they contact, take up the jar engendered by the rotation of the spindle and obviate the jumping of the latter and the disagreeable noise which is experienced when metal is employed.

The form of the interior surfaces of the bolster c and step c' will of course be modified to suit them to the particular form of spindle employed, and in order to prevent the swelling of the parts when in operation from the effects of moisture, and with a view to a more perfect bearing-surface for the spindle, the combined bolster and step, after having been properly formed, is soaked in oil until completely saturated therewith. The oil thus taken up will in most instances be sufficient for the purpose of lubrication for some months; but to the end that lubricants may be applied whenever desired, I provide the oil-ducts d , which are in communication with the usual reservoir or chamber, f .

In Fig. 1 I have shown the combined bolster and step as extending for some distance above the bolster-holder, and this is the construction preferred; but, if desired, a supporting-tube extending up and around the same to prevent breakage or too great lateral move-

ment thereof, as shown at B' in Fig. 2, may be employed.

By the construction above set forth it will be seen that I have produced a bolster and step which is not only simple and inexpensive in construction and effective in operation, but which obviates the metal contacts between such bearings and rail, and thereby removes the various objections incident thereto.

I am aware that a combined bolster and step made from metal and combined with a bolster-holder is not new, as the same is shown in Letters Patent No. 205,718; also, that wooden bearings for spindles have heretofore been used, as illustrated, for instance, in Letters Patent No. 309,903, and I therefore lay no claim to such devices, broadly; but,

Having described my invention and the means employed by me for carrying it into effect, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the sleeve whirl spindle A and bolster-holder B , provided with the oil-reservoir f , of the combined bolster and step formed of wood and rigidly secured in said holder, and the pin b' , said combined bolster and step being provided with an oil-duct, d , which communicates with the oil-reservoir, substantially as described.

2. The combination, with the sleeve-whirl spindle A and bolster-holder B , of the wooden combined bolster and step c , constructed with its upper portion of tapering form, and having its lower end rigidly secured in the said bolster-holder, substantially as described.

3. The combination, with the combined bolster and step c , formed of wood, having the tapering upper portion, as shown, of the metal ring c^2 , applied to the upper end thereof, substantially as described.

JOSEPH WARREN WATTLES.

Witnesses:

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