

(No Model.)

J. A. METCALF.
SPINDLE SUPPORT.

No. 304,016.

Patented Aug. 26, 1884.

Fig. 1

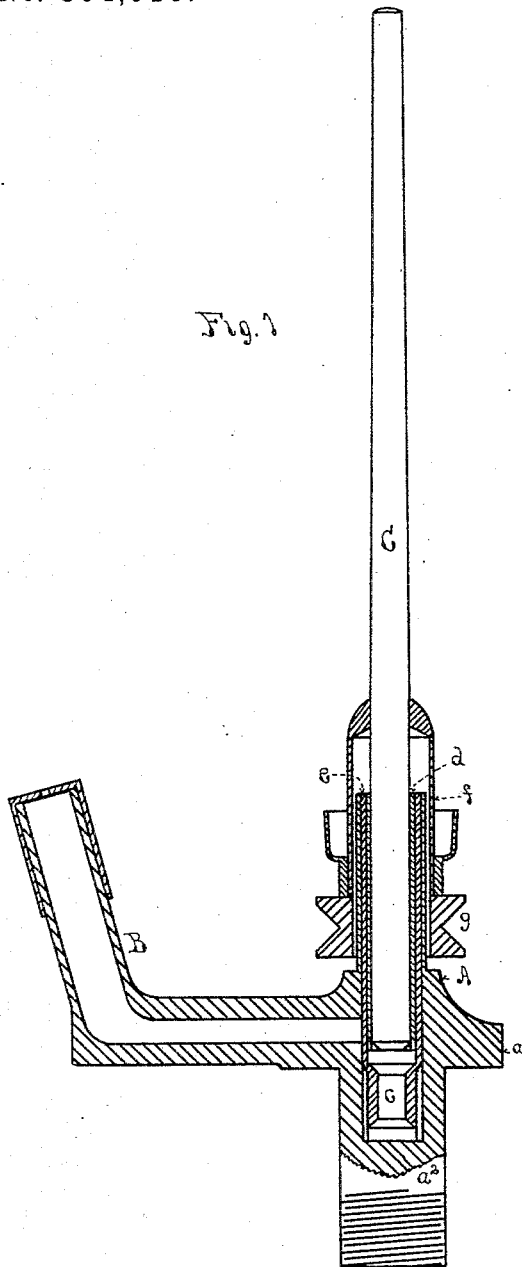
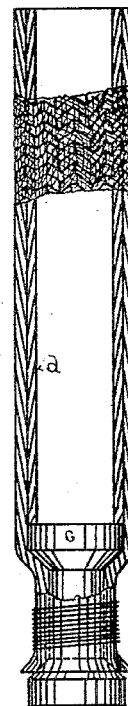


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. METCALF, OF SALEM, MASSACHUSETTS.

SPINDLE-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 304,016, dated August 26, 1884.

Application filed April 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. METCALF, of the city of Salem, county of Essex, and State of Massachusetts, have invented a new and useful Improvement in Spindle-Supports, of which the following is a specification.

My invention relates to that class of supports known in the art as "bolsters and steps," which are given a limited freedom of movement laterally; and its objects are to provide a step which will permit such movement, which will not become "set" or fast in the metal tube which supports the step, and which, while connected to the bolster, will permit of its interior surface and that of the bolster being readily visible. I obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a spindle with its bolster, step, and supporting parts shown in section. Fig. 2 is a detail showing the step, bolster, and elastic packing removed from the supporting-case.

A is the supporting-case, which rests on the rail, and which is provided at its lower end with a widened base, *a*, which rests on the rail when placed in the spinning-frame, and a downward-projecting part, *a'*, which is placed in an opening in the rail of the frame to maintain it in operative position. United to the case is the oiling-tube B, through which oil is supplied to the spindle.

C is the spindle, whose lower end rests on the step *c*, and is supported above and near its lower end by the bolster *d*. The step stands on the metal forming the bottom of the case A. The upper part of the step and bolster are surrounded by the fibrous cot or tube *e*, which prevents the metal of the bolster from coming into contact with the metal of the supporting-case, and gives a necessary freedom of movement laterally to both the bolster and step, in order that the spindle may adjust itself perpendicularly when rotating, or so that the center of gravity may correspond to the axis of rotation. The spindle C is provided with the skirt *f* and whir *g*, in the usual manner well known in the construction of spindles of this class. The cot *e*, as shown in the drawings, is attached to the step by winding a cord around it and drawing it into the groove

formed around the step, so that the step and bolster, when once put together in the cot, will so remain while being placed in the case, or while being removed therefrom.

The step *c*, I construct of glass, which practically prevents its adhering or becoming set to the case upon which it rests, because the materials in contact are not the same, or of an analogous substance and nature, and consequently do not act upon each other, and upon the oil between and in contact with them, to cause them to adhere the one to the other.

Heretofore the step and containing-case have been constructed of metal, but the lubricant must enter the case, and consequently always surrounds the step, and from the movement of the latter and the gravity of the oil it enters between the bottom of the step and the case, where the action of the thin stratum of oil between the surfaces of the lower end of the step and the bottom of the metal case, resting one upon the other, caused them to adhere through the condensing of the oil, and prevented the necessary freedom of movement laterally, which the step should and must have for continued successful operation, and to prevent its being worn by the spindle while spinning, because if the step does not move laterally with the bolster the spindle must either move across the top of the step, and be thereby disturbed in its movements, or standing in one place on the step gyrate and wear the step to such great degree that much greater lateral movement is given to it and the bolster by such disturbance or gyration, and the spinning is interfered with. The fibrous cot containing the bolster and step is also broken and destroyed near the point of juncture of the two by such movement. Thus the oil in the case is constantly rendered less suitable for lubrication by the heat evolved, and the step more firmly glued by the oil in its position. This action of the oil on the cot, step, and bolster exists with metal steps and cases to so great a degree that a large proportion of such steps and cots must be removed and replaced by new ones within a few months of their being placed in use, the oil becoming thick, gummy, and difficult to wash out, and the steps irregularly worn, and the cots broken and disintegrated near the point

of contact of the step and bolster. With my device, using a glass step, no trace of such destructive wear upon the step and cot can be seen, and the oil remains clear in color and free from gumminess for many months, and the step and bolster are always free to move together, so that no impairing action upon the spinning ever takes place. Another advantage of the glass step is that when it, together with the cot and bolster, is withdrawn from the case the interior of the bolster is readily visible, because the observer can look in at the open end while the light is admitted through the step, while with the metal step no such view of the interior can be obtained without separating the parts.

It is obvious that some of the advantages of a glass step may be obtained by using other vitreous substances, and some by interposing a disk of glass between the bottom of the metal step, as heretofore constructed, and the case. Such constructions are no departure from the spirit of my invention.

I am aware of the fact that a glass step has been used in places where no freedom of movement was necessary, and consequent action of the oil possible.

What I claim as new and of my invention is—

1. The combination of the spindle C, its metal oil-holding case A, and the vitreous step *c*, fitting loosely within the case and resting its vitreous surface upon the metallic surface of the latter, substantially as described.

2. The combination of the spindle C, the metal oil-holding case A, the bolster *d*, fibrous cot *e*, and the loosely-fitting step *c*, resting its vitreous surface upon the metallic bottom of the case, substantially as described.

JAMES A. METCALF.

Witnesses:

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