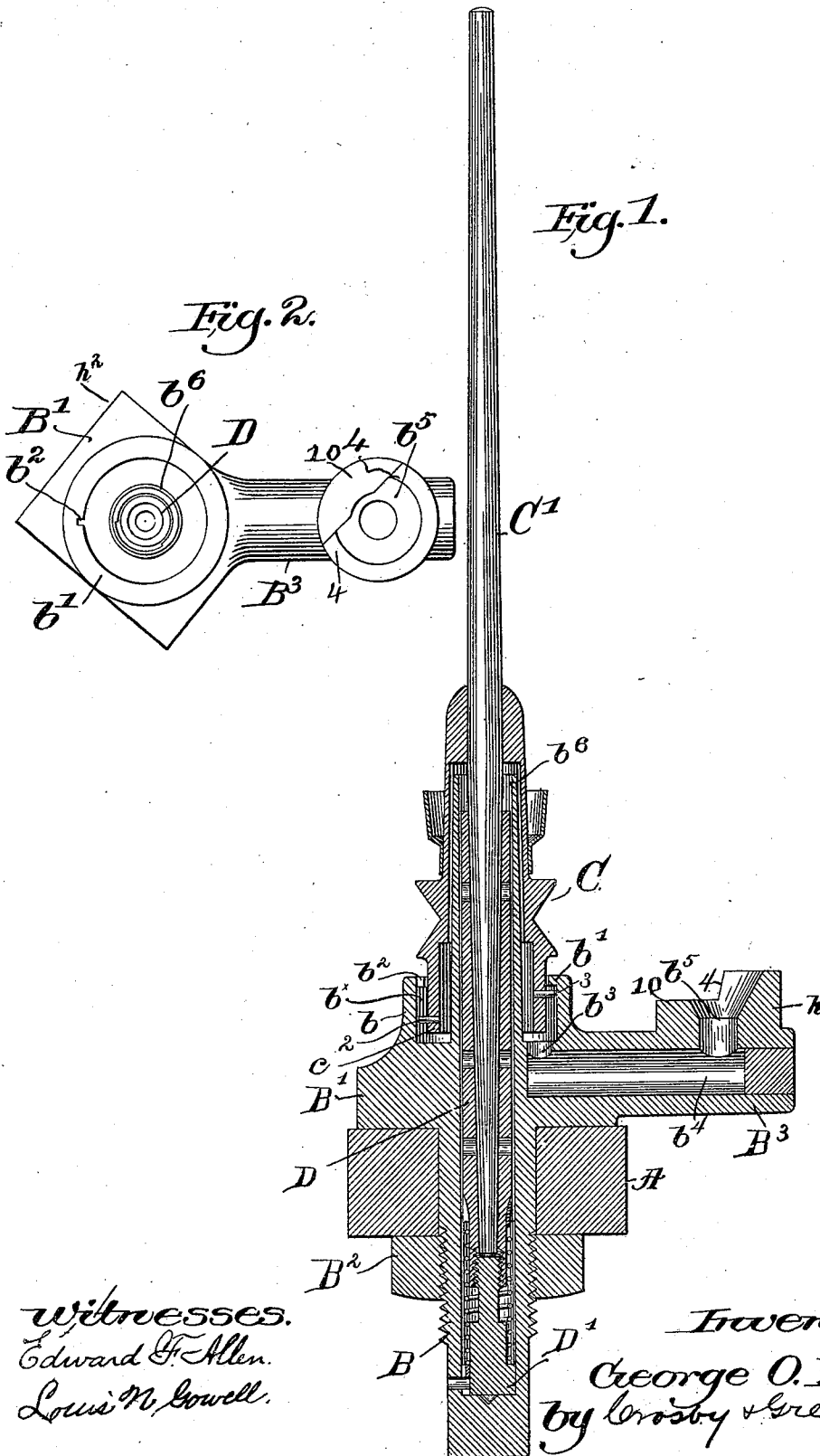


(No Model.)

G. O. DRAPER.
SPINDLE.

No. 510,848.

Patented Dec. 12, 1893.



Witnesses.
Edward F. Allen.
Louis N. Lowell.

Inventor.
George O. Draper.
by Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

GEORGE O. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO GEO.
DRAPER & SONS, OF SAME PLACE.

SPINDLE.

SPECIFICATION forming part of Letters Patent No. 510,848, dated December 12, 1893.

Application filed May 9, 1893. Serial No. 473,504. (No model.)

To all whom it may concern:

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

This invention has for its object to provide novel means whereby the pintle of a sleeve whirl spindle may be retained in its bearings in such manner as not to be removed during the operation of doffing.

The upper ends of the walls of the curb with which the supporting-case is provided has an intumed lip which is notched for the passage through it, one after the other, of two pins attached to the whirl extension, said pins being located somewhat distant from each other, preferably about one hundred and eighty degrees. The pins, when the foot of the spindle is being inserted in the bearings, will enter, one after the other, the notch in the curb, the spindle being partially rotated after the passage of the first pin through the notch. These two pins constitute a safe locking means to keep the spindle from being lifted from its bearings while doffing, the employment of the two pins obviating the possibility of lifting the spindle accidentally from its bearings, as would be the case if only one pin was used and the said pin should happen to be opposite the slot of the curb when the attendant was doffing the bobbin from the spindle.

Figure 1, in vertical section shows a spindle bearing embodying my invention; and Fig. 2, a detail of the upper part of the supporting case.

The rail A receives within it the shank B of my improved supporting case B' which is held in position in the usual manner by a nut B²; the bolster or lateral bearing D, and the step D' are and may be of any usual construction. I have provided the supporting case with a curb b having at its upper end a lip b' notched, as at b³, for the passage of the pins or projections 2, 3, one after the other, through said slot and below said lip into said chamber, as represented in Fig. 1. The pins 2, 3 are shown as projecting from an exten-

sion c of the sleeve whirl C of the spindle C', they being separated a sufficient distance so that both pins cannot at the same time be in line with the notch b³, and consequently it will be obvious that the spindle cannot be lifted from its bearings by the operator by simply the upward pull put on the spindle in doffing the bobbin, but by pulling upwardly on the spindle when the pin 3 is opposite slot b³ and then partially rotating the spindle until the pin 2 comes under said slot. A further slight lift of the spindle will enable it to be removed from its bearings, the pin 2 then passing out through the slot b³.

Any oil elevated by the spindle during its rotation and discharged over the top of the bolster sustaining portion b⁶ of the supporting case will run down outside the portion b⁶ and inside the whirl and will follow along the whirl extension and be discharged into the chamber inside the curb b, which chamber is in communication with the oil space b⁴ in the extension of arm B³ of the supporting case. The extension B³ is provided with an upright portion h which is provided with a funnel-shaped hole b⁵ leading into the oil space b⁴, a portion of said upright being cut away to leave a shelf 10 with shoulders 4 at each side, the space so formed aiding materially in the ready introduction of the nozzle of an oil can. In practice the edge h² of the supporting-case B' will stand laterally to the front edge of the bolster rail, and the arm B³ extends, it will be seen, from one corner of the said support.

It is of course important that the level of the oil in the arm B³ be no higher than the top of the circular chamber b^x within the curb b, and preferably the level of the oil in said chamber will be a little below the end of the whirl extension, so that the whirl extension will not stand normally in oil.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

A bolster provided with a curb having a notched lip or flange b' combined with a spindle provided with a whirl having an extension c from its lower end, said extension carrying two pins set one somewhat distant from the

other circumferentially and one in a different horizontal plane from the other, said pins co-operating with the notch in the said curb to form a locking device to prevent the lifting
5 of the spindle during doffing, substantially as described.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

GEORGE O. DRAPER.

Witnesses:

EMMA J. BENNETT,
M. J. SHERIDAN.