

(No Model.)

G. H. ALLEN.
BOBBIN.

No. 289,794.

Patented Dec. 11, 1883.

Fig. 2.



Fig. 1.

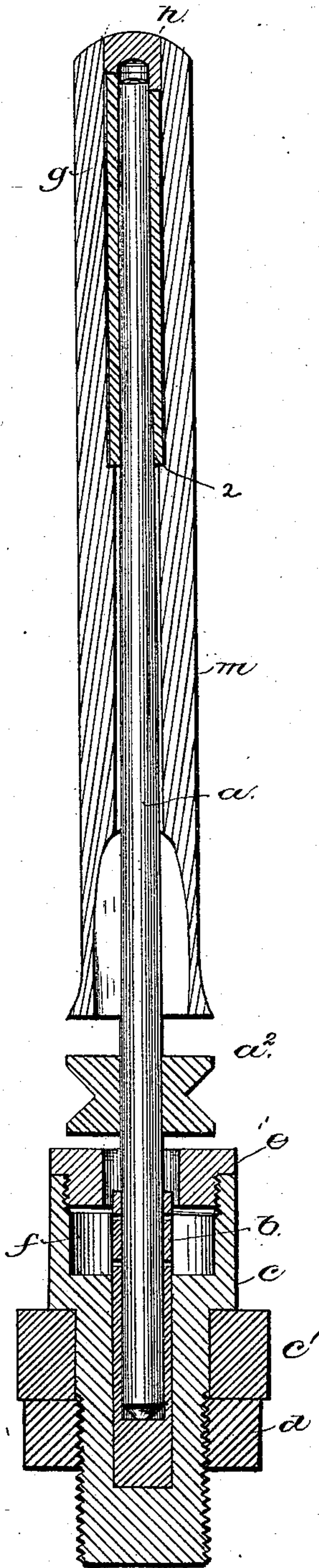


Fig. 3.



Witnesses.

John F. C. Prindle
Fred A. Powell

Inventor:

George H. Allen
by Crosby & Gregory
Attys.

UNITED STATES PATENT OFFICE.

GEORGE H. ALLEN, OF AYER, ASSIGNOR TO GEORGE DRAPER & SONS, OF
HOPEDALE, MASSACHUSETTS.

BOBBIN.

SPECIFICATION forming part of Letters Patent No. 289,794, dated December 11, 1883.

Application filed January 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. ALLEN, of Ayer, county of Middlesex, State of Massachusetts, have invented an Improvement in Bobbins, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention has for its object to provide means whereby an unequally-weighted bobbin may move to find its true center of rotation, to obviate the injurious effects of gyration—an evil well known to those familiar with spinning. In other inventions devised to overcome this evil the lower end of the spindle and the bolster-bearing have been variously constructed so as to enable the spindle to find its true center of rotation with the bobbin and its load; but in all such plans the remedy has been applied remotely from the bobbin, where the evil exists; and so, also, the bushing has been fitted at its top to the top of a bobbin, and the lower end of the bushing has been extended down into a larger space in the bobbin, so that the lower end of the bushing might turn in the bobbin; but in this latter plan the bobbin was not free to move laterally bodily in any direction, but could only rock or tip on the spindle, the bushing being its fulcrum.

In this my invention the bobbin throughout its length is free to move laterally while yet maintaining its vertical position, thus enabling the bobbin to move to find its true center of rotation, and to run substantially in equilibrium.

In this my invention a bobbin is supported by an intermediate sleeve driven by the spindle, there being a space between the sleeve and bobbin to permit the bobbin to move independently of the sleeve to a sufficient degree to center itself to its load. The bobbin and sleeve are loosely connected by a holding device, which, by its engagement with both the bobbin and sleeve, compels the bobbin to move in unison with the sleeve, which latter moves with the spindle by adhesion.

Figure 1 represents in section a holding device, a bobbin and sleeve-supporting tube, bolster-rail, and nut of a spinning-frame, the said parts being shown in connection with a

spindle which is in elevation. Fig. 2 is a detail of the sleeve. Fig. 3 is a detail of the holding device to connect the sleeve and bobbin and insure their rotation in unison.

The spindle *a*, provided with a whirl, *a*², has its lower end placed in a bolster, *b*, fitted into a supporting-tube, *c*, held in the rail *c*¹ by a nut, *d*, the upper end of the supporting-tube being chambered to form an oil well or chamber, which is covered by the cap *e*. The bolster will have suitable holes for the passage of oil from the chamber *f* to the spindle. The bobbin is chambered at its upper end to receive loosely the sleeve *g*, which is herein shown as resting on a shoulder, 2, at the bottom of the said chamber, and as having a projection, 4, to bear against a projection, 3, of the holding device *h*, which is fitted snugly into and held in place in the chamber in the top of the bobbin after the sleeve has been put in place, as shown in Fig. 1. The holder being practically fixed with relation to the bobbin, acts to insure the rotation of the sleeve and bobbin in unison. The body of the sleeve is externally of somewhat smaller diameter than the internal diameter or center bore of the bobbin *m*, so as to leave a small space between the sleeve and bobbin, to permit the latter to move laterally in any direction, independently of the sleeve, as the bobbin finds its true center of rotation. The bobbin does not touch the body of the sleeve, nor does it take a bearing on the spindle, which is shown as supported rigidly in its bearings.

The spindle *a* is shown as having an adhesive fit in the sleeve *g*, so that the spindle carries the sleeve and bobbin and its load.

The sleeve *g* may be of any desired material, but I prefer wood for cheapness. I represent the sleeve as placed in the upper part of the bobbin. It may be placed at the lower end of the bobbin, or centrally, as may be desired; or it may be extended substantially through the entire length of the same. I also represent the holding device as at the top of the sleeve. Its position may be reversed, if desired.

I am by this my invention enabled to apply the remedy for gyration in the very place of its origin; or perhaps, more correctly, I meet the evil with prevention rather than cure,

avoiding the waste of power in the conflict of forces, as represented in the centrifugal force in the bobbin, and the carrying-power in the band, as in other constructions for this purpose, thus affording the advantage of the self-centering or top principle at a trifling expense above the cost of ordinary bobbins, and with an appreciable saving in power.

I do not claim a bushing carried by the spindle and having a bobbin fitted to the top of the bushing, so that the bobbin rocks on or with relation to the top of the bushing. In this my invention the sleeve *g*, which is driven by the spindle, rotates the bobbin in unison with it, but the bobbin surrounding the sleeve is free to move laterally from end to end as it seeks its true center of rotation.

I claim—

1. The intermediate sleeve and the bobbin placed thereon loosely, combined with means to connect the bobbin and sleeve to rotate to-

gether, yet permit the bobbin to move laterally throughout its entire length in any direction with relation to or on the sleeve to find its true center of rotation, substantially as described. 25

2. The chambered bobbin and the sleeve placed within the bobbin, to leave a space between the body of the sleeve and the bobbin, to enable the bobbin to move laterally, as described, entirely independently of the sleeve, combined with a holding device to connect the bobbin and sleeve loosely, as described, to insure the rotation in unison of the sleeve and bobbin, for the purposes set forth. 30

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 35

GEORGE H. ALLEN.

Witnesses:

GEO. W. GREGORY,
B. J. NOYES.