

H. J. HUBBARD.

BOBBIN.

No. 169,546.

Patented Nov. 2. 1875.

Fig. 2.

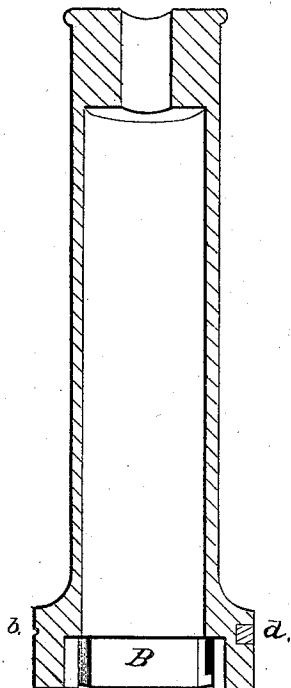
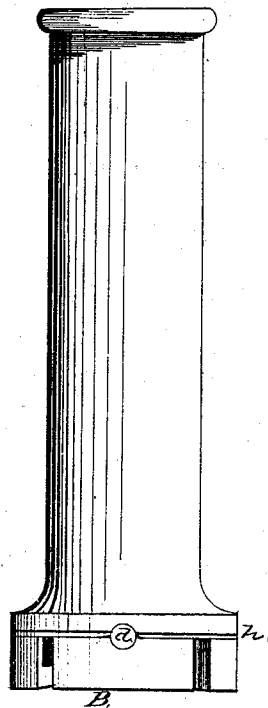


Fig. 1.



Witnesses:

Phelps Johnson
T. H. Adams

Inventor:

Horace J. Hubbard
by his atty R. F. H. Co

UNITED STATES PATENT OFFICE

HORACE J. HUBBARD, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO B. F. McLEAN, OF SAME PLACE.

IMPROVEMENT IN BOBBINS.

Specification forming part of Letters Patent No. **169,546**, dated November 2, 1875; application filed April 30, 1875.

To all whom it may concern:

Be it known that I, HORACE J. HUBBARD, of Chicopee, State of Massachusetts, have invented an Improvement in Bobbins, of which the following is a specification:

The object of my invention is the construction of a bobbin that shall have its head re-enforced lightly and strongly, while at the same time the outside of the head of the bobbin is left smooth and without projection or inequality consequent upon the employment of said re-enforce.

This I accomplish by forming a groove, *b*, to surround the head B of the bobbin at the end of the notches therein, and at a point in the groove, sinking in the head a hole, *d*, several times the depth of the groove *b*. Around this groove *b* is then drawn a strong wire, *h*, the ends of which are, by pliers or by other means, twisted together over the hole *d*, to unite them, and at the same draw the wire tightly around the head B. When this is done the twist so formed is turned into the hole *d*, and the latter is filled with solder or other composition, that unites with the wire, and, in

filling the hole, firmly secures the re-enforce to the bobbin.

Though I have found, by practice, that a simple bore forming the hole is sufficient for the purpose, the bottom of it may be made larger than the top, to render it impossible for the soldered ends of the wire to escape therefrom.

I am aware that soft-metal bands have been run in grooves around the heads of bobbin, and that bands have been shrunk on, and do not wish to be understood as broadly claiming a re-enforce for bobbin-heads; but

What I do claim is—

The bobbin having its head re-enforced by means of the wire *h*, which is fitted in the groove *b*, and has its ends twisted together and sunk into the hole *d*, and held therein by means of solder or other similar material, as described.

HORACE J. HUBBARD.

Witnesses:

R. F. HYDE,
F. E. CARPENTER.