(No Model.)

J. A. SUTCLIFFE.

SHEET METAL BOBBIN.

No. 602,183. Patented Apr. 12, 1898.

Fig. 4.

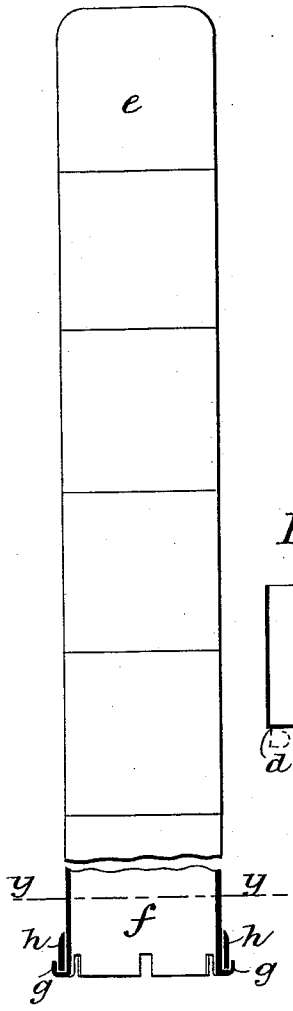


Fig. 2.

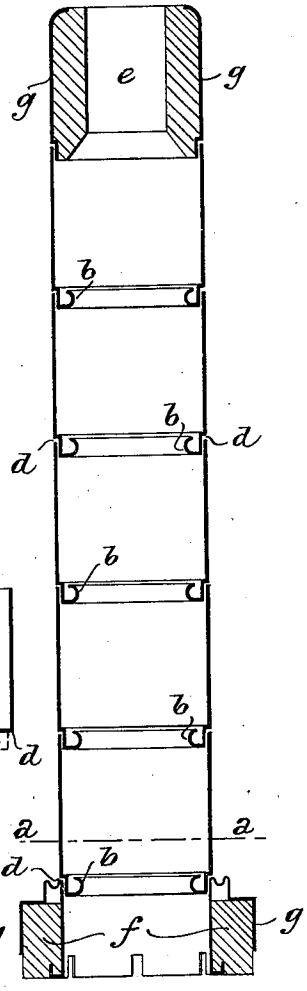


Fig. 1.

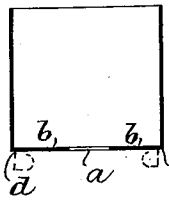


Fig. 5.

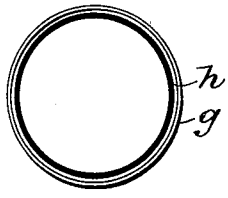
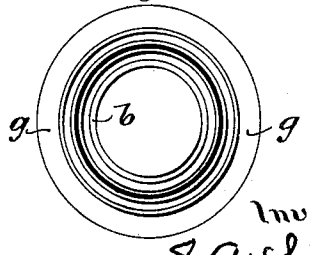


Fig. 3.



Witnesses.
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Josephine C. Peck.

Inventor.
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per Hubert E. Peck
atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES ANDERTON SUTCLIFFE, OF BLACKBURN, ENGLAND, ASSIGNOR TO HIMSELF, AND GEORGE PALEY, OF PRESTON, ENGLAND.

SHEET-METAL BOBBIN.

SPECIFICATION forming part of Letters Patent No. 602,183, dated April 12, 1898.

Application filed February 25, 1898. Serial No. 671,656. (No model.)

To all whom it may concern:

Be it known that I, JAMES ANDERTON SUTCLIFFE, a subject of the Queen of Great Britain and Ireland, residing at Blackburn, in the county of Lancaster, England, have invented Improvements in Sheet-Metal Bobbins Used in Machinery for Preparing Cotton and other Fibrous Substances, of which the following is a specification.

This invention relates to the construction of sheet-metal bobbins used in machinery for preparing cotton and other fibrous substances, and has for its main object the strengthening of the body part of such bobbins—that is to say, to render them less compressible or less susceptible to injury through knocks or rough usage.

In carrying out my invention the body part of the bobbin is formed by inserting a series of thimbles resembling flat-bottomed pans, which may conveniently be produced by the process known as "stamping," one over the other. Each thimble near its closed end is slightly reduced in diameter, leaving a shoulder against which the edge of the open end of the adjoining thimble when slipped or pressed onto the reduced part rests, and the several thimbles at their juncture with each other are fastened together by soldering. The bottom of each thimble has punched through it a central hole large enough for the spindle to pass through, thus leaving the interior of the body part of the bobbin with a series of inwardly-projecting flanges resembling and answering the same purpose as the strengthening-rings frequently used in the flues of horizontal steam-boilers. The top and bottom of the bobbin are preferably of wood sheathed with sheet metal fitting within or onto their adjoining thimbles and being soldered thereto.

In the accompanying drawings, Figure 1 is a sectional view of one of the flat-bottomed pans or cups having a central hole *a*. Fig. 2 is a cross-sectional view of my improved sheet-metal bobbin as it is preferred to make it after practical experiment. Instead of making each thimble or pan with an inwardly-flat projecting flange I prefer to turn the flange inwardly, as shown at the said Fig. 2 of the drawings. Fig. 3 is a sectional plan view of the bottom part of the bobbin shown at Fig. 2, the section being taken on the line *a a* of that figure. Fig. 4 shows, partly in elevation and partly in vertical section, a modified construction of bobbin. Fig. 5 is a horizontal section thereof on the line *y y* of Fig. 4.

At Fig. 1 the flange *b* is shown in solid black lines in the form which obtains when it is originally stamped.

a is a central hole punched through subsequently. In practice I curl over the flange *b*, as indicated diagrammatically by broken lines at Fig. 1 and by solid lines at Fig. 2, and afterward reduce the diameter under pressure at the lower end of the thimble or pan, so as to leave a shoulder *d*.

e is the wooden top, and *f* the wooden bottom, of the bobbin, in each case sheathed with sheet metal *g*.

Instead of attaching the several thimbles together by means of soldering I may fasten them together by the process known to sheet-metal workers as "spinning" or "closing."

The strengthening of the improved bobbin is increased not only by the inner flanges or rings *b*, but by forming the several thimbles by the process of stamping, (which thereby greatly hardens the metal,) whereby considerable extra strength as well as a true cylindrical form is imparted to them.

Instead of employing wood for the bottom of the bobbin, sheathed with sheet metal *g*, I may employ a steel ring *h*, as shown at Figs. 4 and 5.

What I claim is—

1. A bobbin comprising a number of sheet-metal thimbles or pans having their adjacent ends secured one within the other and each having an internal strengthening flange or ring, substantially as described.

2. A sheet-metal bobbin comprising a number of thimbles or pans having their adjacent ends secured one within the other and each formed with an internal inwardly-extending strengthening-flange bent to a more or less tubular shape, substantially as described.

3. A bobbin comprising a number of stamped sheet-metal thimbles or pans each having one of its ends reduced in diameter and provided at that end with an inwardly-projecting flange bent to a tubular shape, the

reduced end of one thimble or pan being secured in the unreduced end of the next adjacent thimble or pan, substantially as described.

4. The improved bobbin comprising a number of stamped sheet-metal thimbles or pans each having one of its ends reduced in diameter and provided at that end with an inwardly-projecting flange bent to a tubular shape, the reduced end of one thimble or pan being secured in the unreduced end of the next adjacent thimble or pan and a wooden top and a wooden bottom each carried by a sheet-metal sheath secured to the end of the adjacent thimble or pan, substantially as described.

Signed at Preston, in the county of Lancaster, England, this 15th day of February, 1898.

JAMES ANDERTON SUTCLIFFE.

Witnesses:
EDWARD BARTER,
YATES WILLIAM BOOTH.