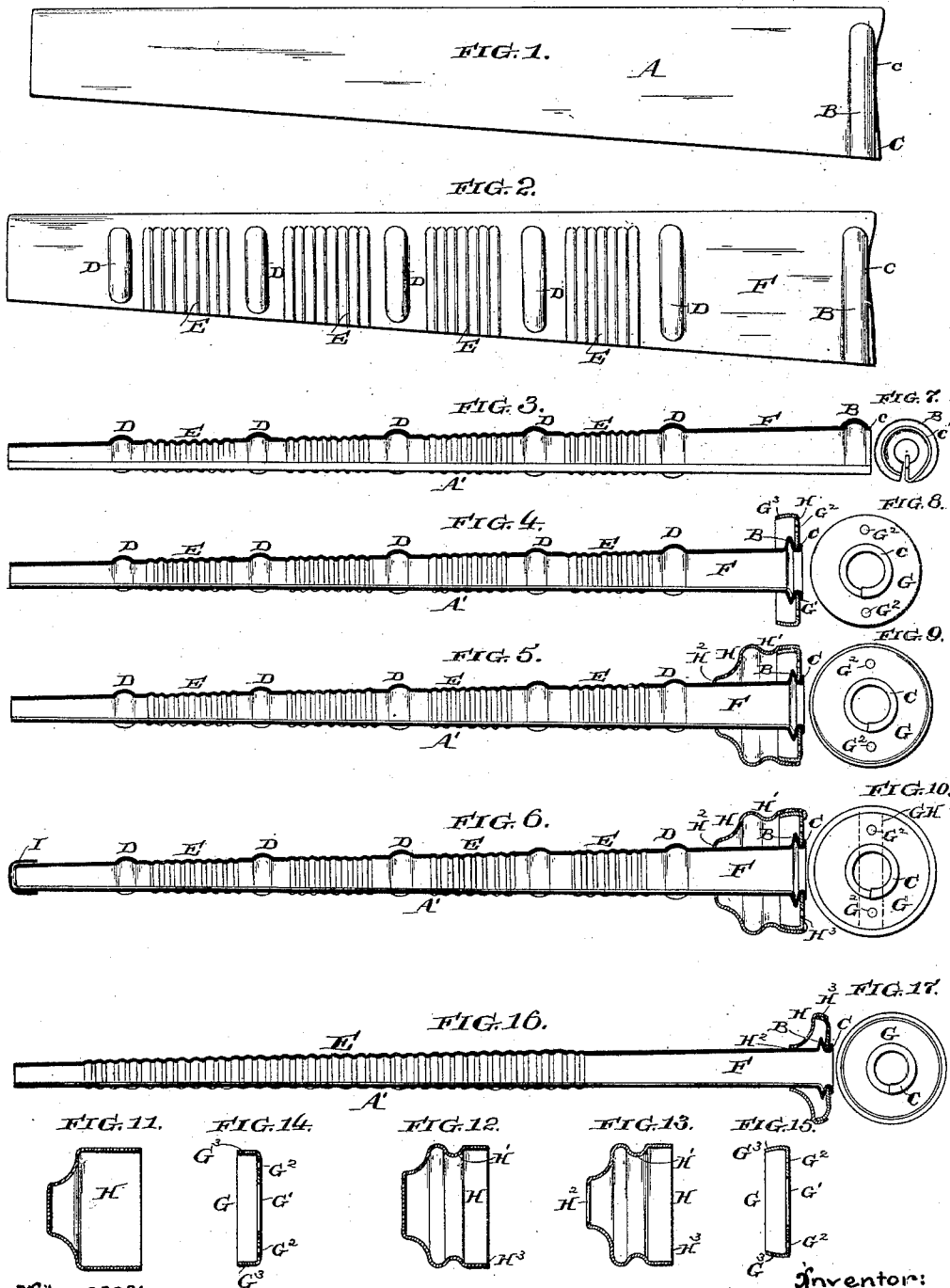


(Model.)

H. KRANTZ.
SHEET METAL BOBBIN.

No. 468,567.

Patented Feb. 9, 1892.



Witnesses:

Henry Denny
Jesse Heller

Inventor:

Hubert Krantz
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UNITED STATES PATENT OFFICE.

HUBERT KRANTZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND SCHAUM & UHLINGER, OF SAME PLACE.

SHEET-METAL BOBBIN.

SPECIFICATION forming part of Letters Patent No. 468,567, dated February 9, 1892.

Application filed May 18, 1891. Serial No. 393,078. (Model.)

To all whom it may concern:

Be it known that I, HUBERT KRANTZ, a subject of the Emperor of Germany, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improved Sheet-Metal Bobbin, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to the construction of a bobbin of sheet metal, and has for its object to provide a bobbin which will be light, strong, of uniform size and weight, of large carrying capacity, and free from liability to split, warp, become crooked or rough, and which also will not be affected by changes of atmosphere or exposure to the action of steam, water, oils, or acids.

My invention will be best understood as described in connection with the drawings, in which it and the process of making it are fully illustrated, and in which—

Figure 1 is a view of the blank as first prepared; Fig. 2, a view of the blank after the second operation is performed upon it; Fig. 3, a view of the blank bent into a tubular form, Fig. 7 being an end view of the tube; Fig. 4, a view of the tubular spindle with end plate of the head secured to it, Fig. 8 being an end view; Fig. 5, a view of the spindle, showing both parts of the head in place, Fig. 9 being an end view of the same; Fig. 6, a view of the spindle, showing a cap fastened over its end, Fig. 10 being an end view of the same, and showing also a modification of the device for engaging the bobbin to the spindle which carries it. Figs. 11, 12, and 13 illustrate different stages in the process of forming one part of the head; Figs. 14 and 15, different stages in the formation of the other part of the head. Fig. 16 is a modification of the bobbin, and Fig. 17 an end view of the said modification.

The blank is first cut out, as shown in Fig. 1, the part A being left flat and a broad corrugation B being formed at the larger end, with a light valve C projecting beyond it. The blank is next subjected to a stamping operation, which throws up a series of light corrugations E E, &c., which serve to stiffen

and roughen the spindle, and also, preferably, a series of deeper corrugations or lugs D D, &c., are formed at the same time, these serving to increase the hold of the bobbin-spindle upon the yarn or thread wound upon it. The blank is next bent into tubular form around a mandrel, as shown in Fig. 3. The outer plate G of the bobbin-head, which has been struck up, as shown in Figs. 14 and 15, having a central perforation G' and an annular flange G³, and, preferably, also holes, as G² G², in its face, is then thrust over the flange C and the end of the spindle marked A' upset, so as to clamp the plate G between the upwardly-turned flange C and flange formed by flattening the corrugation B, as shown in Fig. 4. The other part of the bobbin-head is now to be placed in position. This consists of what I may call a "thimble" H, which is first struck up, as shown in Fig. 11, then preferably bent to form in it an annular corrugation H', and then pierced at its end to form in it a circular opening H². This thimble is slipped over the bobbin-spindle until its edge H³ extends over the flange G³ of the end plate G. It is then clamped down upon the plate G and its edge H² forced in so that it will fit tightly against the portion F of the bobbin-spindle. I prefer also to secure at the small end of the bobbin-spindle a cap I, which may or may not close the opening in the tubular spindle and the purpose of which is to make a perfectly-smooth edge for the yarn to run over and to strengthen the spindle. Preferably after having assembled all the members of the spindle together, as above described, I tin it as a whole, thus making it perfectly smooth on its surface and soldering all joints together by the tin.

The bobbin may be secured to the spindle by simply pressing it firmly upon the same or may be arranged to grasp the spindle at its head, as by means of holes G², engaging with pins at the base of the spindle, or by means of a transverse slot, as indicated by dotted lines at G H' in Fig. 10. The holes G² should be formed in the head-plate G before it is secured to the bobbin-spindle, so as to permit the tinning-liquid to enter the inside of the hollow head and to run out therefrom.

As the body or spindle of the bobbin is but

very little larger than the spindle to which it is secured, it is obvious that a much larger quantity of yarn can be wound on it than upon a wooden spindle, the material of which must be of considerable thickness.

The strength, durability, and lightness of the device as constructed are of course obvious, and it will be seen that almost any desired conformation and size can be made without departure from my invention.

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

1. A sheet-metal bobbin having a hollow sheet-metal spindle A' and a head composed of a plate G, clamped to the end of the spindle, and a cap H, secured to the rim of plate G and to the shank of the spindle.

2. A sheet-metal bobbin having a hollow sheet-metal spindle A' and a head composed of a plate G, clamped to the end of the spindle, and a cap H, having an annular groove H' and secured to the rim of plate G and to the shank of the spindle.

3. A sheet-metal bobbin having a hollow sheet-metal spindle A', strengthened and roughened by annular corrugations, and a head composed of a plate G, clamped to the end of the spindle, and a cap H, secured to the rim of plate G and to the shank of the spindle.

4. A sheet-metal bobbin having a hollow sheet-metal spindle A', a cap I on its smaller end, and a head composed of a plate G, clamped to the large end of the spindle, and a cap H, secured to the rim of plate G and to the shank of the spindle.

5. A sheet-metal bobbin having a hollow sheet-metal spindle A' and a head composed of a plate G, clamped to the end of the spindle, and a cap H, secured to the rim of plate G and to the shank of the spindle, said bobbin being tinned after all its parts are assembled and clamped together.

HUBERT KRANTZ.

Witnesses:

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