F. J. PHILBROOK & G. A. HERSEY.

METALLIC SPOOL.

APPLICATION FILED SEPT. 26, 1910.

985,702. Patented Feb. 28, 1911.

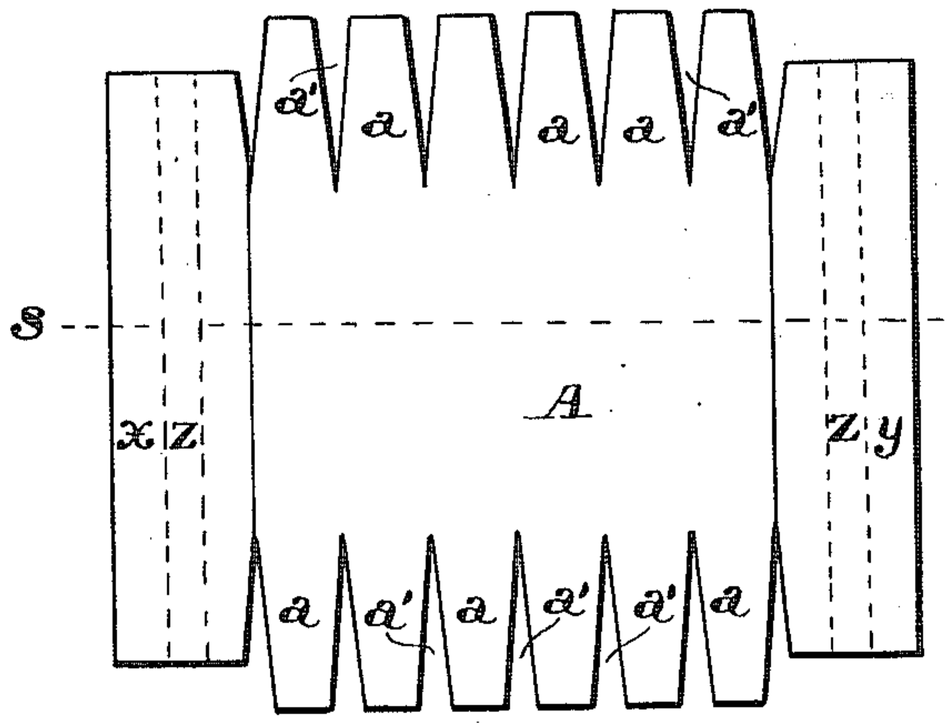


Fig. 1.

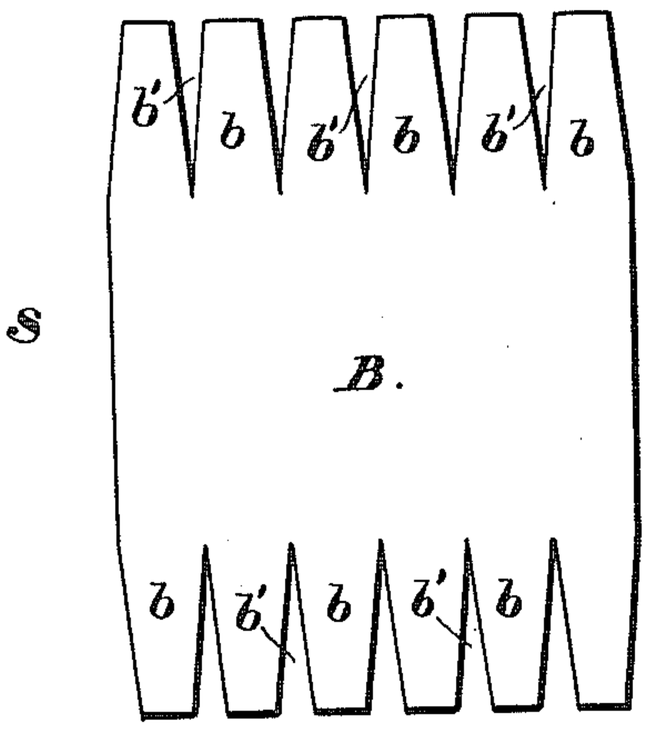


Fig. 2.

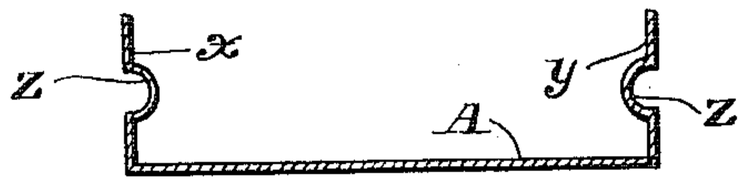


Fig. 3.

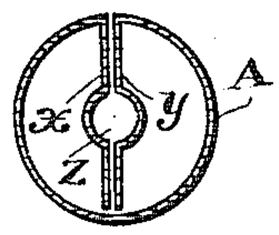


Fig. 4.

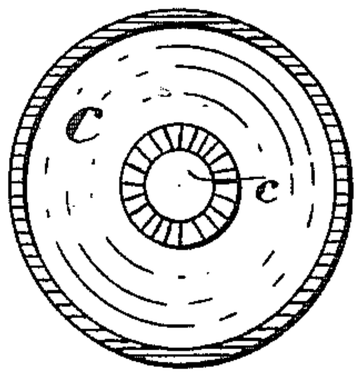


Fig. 5.

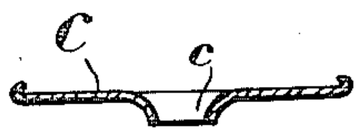
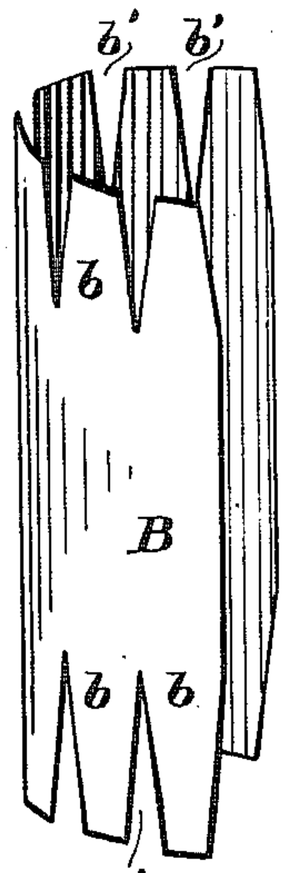


Fig. 6.



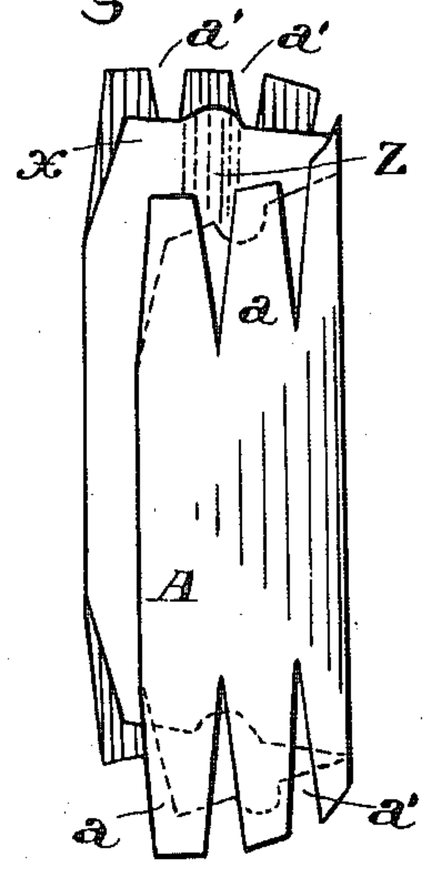


Fig. 7.

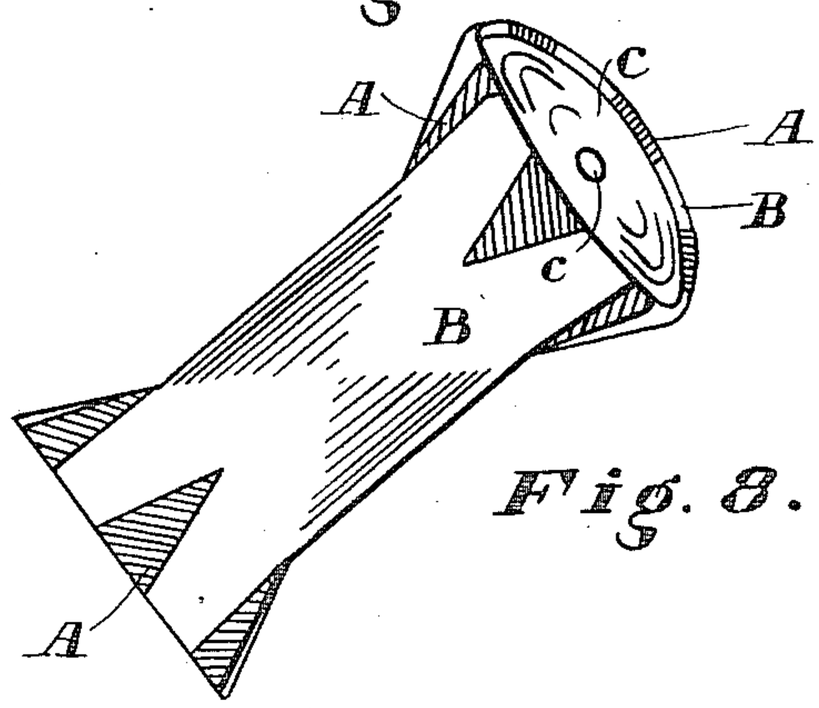


Fig. 8.

Witnesses.
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UNITED STATES PATENT OFFICE.

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METALLIC SPOOL.

985,702. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed September 26, 1910. Serial No. 583,796.

To all whom it may concern:

Be it known that we, FRANCIS J. PHILBROOK and GUY A. HERSEY, citizens of the United States, residing, respectively, at Brewer, in the county of Penobscot and State of Maine, and at Bangor, in the county and State aforesaid, have invented certain new and useful Improvements in Metallic Spools, of which the following is a specification.

Our invention consists of an improved metallic spool and is fully illustrated in the accompanying drawing in which—

Figure 1 is an elevation of a form of inner shell before it is pressed into cylindrical shape, having a spring clamp formed integral. Fig. 2 is an elevation of a form of outer shell before it is pressed into cylindrical shape. Fig. 3 is a section of a form of inner shell on line *s*, *s*, showing spring clamp parts turned up. Fig. 4 is an elevation of the inner shell when pressed into shape. Fig. 5 is a plan of one of the caps. Fig. 6 is a cross-section of one of the caps. Fig. 7 is an elevation of the outer and inner shells bent into semi-cylindrical shape and ready to be joined. Fig. 8 is a perspective view of finished spool.

Similar letters refer to corresponding parts throughout the figures.

The object of our invention is to provide a metallic spool which shall be light, strong, durable and cheap both in material and cost of manufacture, and shall be especially adapted for use upon factory sewing machines. To this end we employ thin sheet metal, preferably steel, and we construct our spool in the following manner: The inner shell A, shown in elevation in Fig. 1, is struck from a blank, a plurality of gores being cut from the top and bottom edges as shown leaving the tapering tongues *a* and wedge-shaped spaces *a'* while lateral extensions *x*, *y* integral with the shell and having longitudinal semi-cylindrical grooves *z* may be retained to form a spring-clamp for attaching the spool to a live spindle as hereinafter described, or the parts *x* and *y* may be omitted and any convenient or usual means of connection with the spindle may be employed. The outer shell B shown in Fig. 2 is symmetrical with the inner shell (without the extensions *x* and *y*) and has the tongues *b* and wedge-shaped spaces *b'*, and is wider by an amount sufficient to permit its edges to meet when the inner shell is bent to cylindrical form and inclosed by the outer shell similarly bent. We also provide a circular cap C for each end of the spool, as shown in Fig. F, having a central bore *c* preferably with inwardly tapering walls for the reception of a spindle.

In assembling the parts the shells are bent substantially to semi-cylindrical form as shown in Fig. 7. The edges of the inner shell are then inserted within those of the outer, and the two shells are pressed together in a cylindrical form until the edges of the inner shell meet, as also those of the outer shell, it being understood that the outer shell is so fitted upon the inner as that the central longitudinal axes of the tongues *a* and *b* shall coincide with those of the wedge-shaped spaces *b'* and *a'*. The two shells being in this position are then subjected at each end to the action of a die-press and the tongues swaged out into flares until the tongues of each shell enter and fit the wedge-shaped spaces of the other on the lines designed for the rims of the heads of the spool and on those lines form an even surface. The caps C are then inserted at each end and the edges of the tongues which then form a continuous circle, are turned over and crimped in by a beading die-press as shown in Fig. 8, whereby all the parts are rigidly held together and in position. The spool is then complete, formed of four pieces of sheet metal—without rivets or solder and ready for use—and if desired may be clothed with paper, pulp or other suitable covering to preserve the thread from rust.

If the extensions *x* and *y* shown in Fig. 1 are to be employed they are first bent inward at such an angle as that when the shell is bent to cylindrical form they will assume the position shown in Fig. 4, and, by means of their two semi-cylindrical, longitudinal grooves, form a sleeve for surrounding and embracing the live spindle and clamping the spool thereto. But such a sleeve may be formed separately if desired in which case the shell would be formed without the extensions *x y*.

Having thus described our invention we claim and desire to secure by Letters Patent—

1. A sheet metal spool consisting of the combination of an inner and an outer cylindrical shell, the top and bottom of each

shell being formed with alternate tapering tongues and wedge-shaped spaces, said tongues being swaged outwardly and fitting into said spaces on the lines designed for the rims of the heads of the spool; and two centrally bored circular caps fitted into the flare of said tongues and rigidly secured thereto.

2. A sheet metal spool consisting of the combination of an inner and an outer cylindrical shell, said inner shell having laterally extending wings bent inwardly and having longitudinal semi-cylindrical grooves, the top and bottom of each shell being formed with alternate tapering tongues and wedge-shaped spaces, said tongues being swaged outwardly and fitting into said spaces on the lines designed for the rims of the heads of the spool; and two centrally bored circular caps fitted into the flare of said tongues and rigidly secured thereto.

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