

No. 878,104.

PATENTED FEB. 4, 1908.

S. W. WARDWELL.

COP TUBE.

APPLICATION FILED JULY 27, 1906.

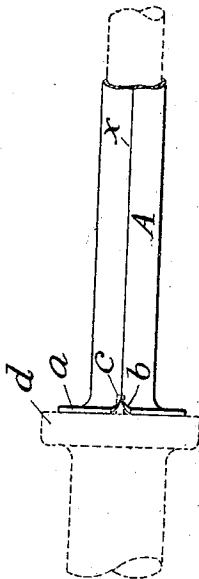


Fig. 2.

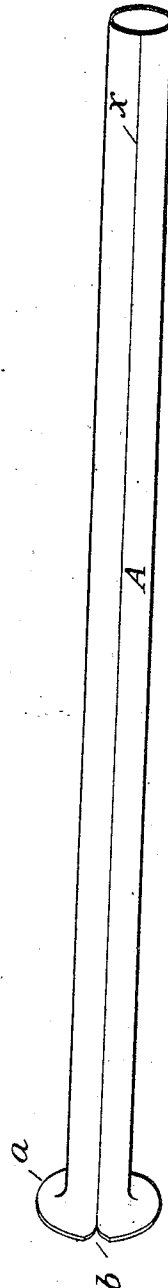


Fig. 1.

WITNESSES

B. C. Rust
J. J. McCarthy

INVENTOR

Simon W. Wardwell
BY

Frederic Freeman Watson

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SIMON W. WARDWELL, OF PROVIDENCE, RHODE ISLAND.

COP-TUBE.

No. 878,104.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed July 27, 1906. Serial No. 328,057.

To all whom it may concern:

Be it known that I, SIMON W. WARDWELL, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Cop-Tubes, of which the following is a specification.

My invention is cop tube or bobbin used for supporting and carrying cops or other masses of textile material, particularly in loom shuttles.

The purpose of my invention is to produce a tube for the purpose indicated, adapted to be positively rather than frictionally driven, susceptible of manufacture at less cost, and capable of carrying or supporting on itself a maximum quantity of material.

Figure 1 is a side view of my tube, showing its characteristic structure; Fig. 2, a view of the same, showing its end formation and particularly the means for driving it positively.

The tube A is preferably made of metal, and is formed from a sheet or strip by cutting a piece of a width to roll or form to the circumference of the tube, and by rolling or forming same to the desired diameter, with a close but unjoined seam *x*. At one end a flange *a* is formed by spinning, forcing or other suitable process, and in this flange is formed a substantially radial indentation or notch *b*, preferably at the seam-*x*, as a continuation and expansion thereof. The notch *b* is adapted to engage a driving device of the machine on which the tube is used, as, for instance, the pin *c* projecting from a collar on the spindle *d*, see Fig. 2.

The tubes are essentially made of and formed from sheet metal in the manner indicated—viz: by rolling or forming rather than by drawing as in the case of seamless tubes. The drawing operation, with some metals, leaves the interior of the tube very rough and uneven. By rolling or forming, the interior of the tube is unaffected, and its internal size can be maintained much more uniform than is usual with drawn tubes of any extended length. This is important, because the essential dimension of cop tubes is the internal diameter, for the tube must fit its holding spindle, in the shuttle or elsewhere, snugly, without play or vibration.

The use of a seamed tube is preferable to the use of a seamless one for further reasons: The spindles which hold the tubes vary slightly in diameter, and a seamed tube can yield either as a whole to accommodate a distinct variation of diameter throughout the spindle, or at individual points to accommodate localized variations, short bends or surface irregularities. Obviously, such distension or contraction of the tube must be of limited extent, so that the yarn or other textile carried on the tube shall not be disturbed.

Tubes of this character are of manifest advantage when used in conjunction with cops or yarn packages such as are described in my pending application, Serial #323137, filed June 23, 1906. The said cops provide for utilizing for yarn space what is now consumed by the bobbin, and especially by the base of the bobbin which is usually large, cumbersome and costly.

Tubes of the character above described have thin walls, no large base, and therefore afford a maximum yarn capacity. Their cost of making is slight and cost of maintenance practically nothing, because they are not subject to splintering, splitting and breaking. Further, they are superior to wooden and fiber tubes because in the latter the bores are apt to be rough and irregular and nearly always eccentric to the barrels, and such tubes are liable to shrinkage of the bores, which renders them practically useless.

While aware that metal bobbins and cop tubes are old, I am not aware of any which embody the distinctive features of mine, which peculiar features impart novelty and merit.

Therefore I desire to claim as my invention:

A cop tube of sheet metal in tubular form, with a close but unjoined seam, having a flange with an indentation, formed by expanding the end of the tube and thereby diverging the edges of the seam.

In testimony whereof I affix my signature in presence of two witnesses.

SIMON W. WARDWELL.

Witnesses:

EDWARD F. PARKS,
JOHN W. DEAN.