B. JAMES.

JACK SPOOL.

No. 103,193. Patented May 17, 1870.

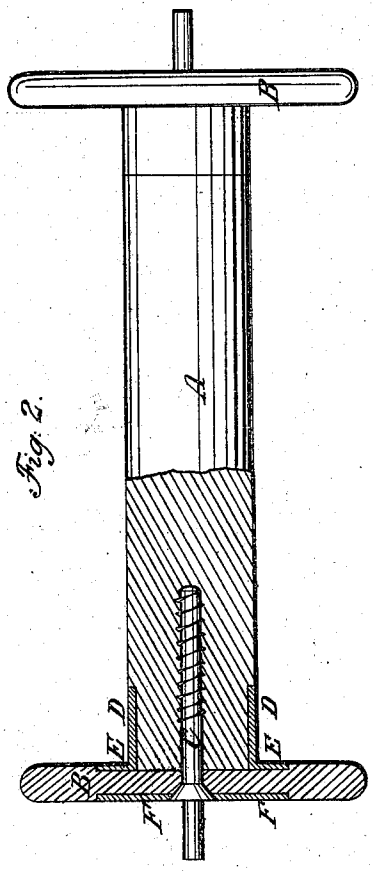

Fig. 2.

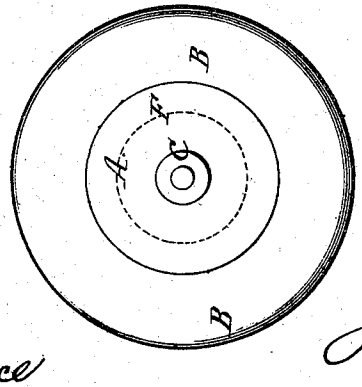

Fig. 1.

Witnesses.

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B. JAMES, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 103,193, *dated May* 17, 1870.

IMPROVEMENT IN JACK-SPOOLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, B. JAMES, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and improved Spool; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

My invention relates to an improved method of uniting the head with the body of a jack-spool, as hereinafter described.

Heretofore it has been usual to secure the head to the body of the spool through the intermediary of a metallic cap covering the end of the body, and screwed upon or into the same.

To this cap the head has been secured by a screw gudgeon, which enters and is held in the cap alone, so that the head can have no direct contact with the body.

This mode of uniting the parts is defective in many respects. The metallic cap being upon the exterior of the spool, is affected by the heat by which the spool is usually surrounded when in use, and will expand when heated and contract when cold, and will thus be caused to work loose in process of time, and the wood body shrinks, also, to such an extent that the cap and head frequently become separated from it, wasting the yarn and roping on the spool, and causing it to snarl and become worthless, and the spool itself, after it has been tightened up a few times, becomes worn, and is soon cast aside as worthless.

The above objections especially apply to one style of spool in which the metallic cap is screwed upon the exterior of the wood body. But they also attend the use of spools in which the body and head are united by an intermediate metallic cap having a central screw-plug, which is screwed into the end of the body; and, moreover, as this plug is necessarily large in diameter, it weakens the spool body, and soon becomes loose by the shrinking of the wood, and the necessary strain in handling soon tears the wood thread out, thus causing the separation of the cap and head from the body.

To remedy these and other difficulties I do away with an interposed cap, and unite the head directly with the body by a screw passing through the head and into the body, employing, in lieu of the metallic cap, an angle hoop or flanged ferrule, which, although not fastened either to the head or body, fits upon the end of the spool, and serves to brace the head and strengthen the joint between it and the body.

I also prefer to make the screw-gudgeon or journal which unites the head and body with the screw shank larger in diameter than the journal or gudgeon, in order to obtain as large a screw as needed to hold the parts securely without being compelled to increase the size of the gudgeon or journal portion.

A flange on the screw, at the point where it is united with the gudgeon or journal, forms the shoulder which bears against the head and holds it to the body.

In order to avoid all danger arising from the shrinking of the soft wood of which the body of the spool is formed, I can insert in the body, as has heretofore been done, a nut of hard wood, into which the screw will enter.

The angle-hoop or flanged ferrule is entirely open at the end, so that the head and body of the spool are in direct contact, and there is no interposed layer of metal between the two to loosen them by its contraction or expansion consequent upon the varying temperatures of the room in which the spool is used.

The screw, under the arrangement devised by me, can, without weakening the body of the spool, enter it to any desired extent, taking a firm and secure hold, so as to prevent all liability of the loosening and separation of the head from the spool.

To enable those skilled in the art to understand and use my invention, I will now proceed to describe the manner in which the same is carried into effect by reference to the accompanying drawings, in which—

Figure 1 is a view of one of the head or end-plates of the spool, and

Figure 2 is a side elevation of the spool, partly in section.

A represents the body or central and cylindrical portion of the spool, which may be of any of the usual lengths and sizes required for jack-spools.

B B are the two heads or end-plates, directly applied to the body A without the interposition of the usual metallic caps, and directly secured to the same by means of the central screw-shafts C, which pass through the heads into the body of the spool to any desired distance, so as to hold the parts securely together.

I also employ the angle hoops or flanged ferrules D, which fit upon the body A, but do not cover its ends, and are provided with flanges E which fit in recesses formed for them in the inner faces of the heads B, as shown in the drawings, and serve to brace the heads and to strengthen the joints between them and the body.

Washer-plates or disks F are applied to the outer faces of the heads, and are either sunk below or placed above or flush with such faces, as preferred.

I construct the screw portion of the shaft C of longer diameter than the projecting journal or gud-

geon, a flange between the two portions serving as a shoulder by which the screw is enabled to draw the head up tightly against the body.

As before stated, by the above-described mode of securing the heads to the spools they are greatly strengthened and stiffened, so that they are not liable to be broken or to become detached, while at the same time the central portion of the spool is not weakened in the least degree, the importance and advantage of which results are apparent without further explanation.

What I claim as my invention, and desire to secure by Letters Patent, is—

The jack-spool herein described, consisting of the body A, heads B, disks or washers F, and flanged ferrules let into the heads and body, and the whole secured together by the screws C having the gudgeons and conical flanges, and all constructed as set forth.

The above specification of my invention signed by me this 12th day of September, 1866.

B. JAMES.

Witnesses:

WM. F. MCNAMARA,

ALBERT W. BROWN.