(No Model.)

J. E. PHILLIPS.

SPOOL FOR TEXTILE MACHINERY.

No. 449,914. Patented Apr. 7, 1891.

FIG. 1.

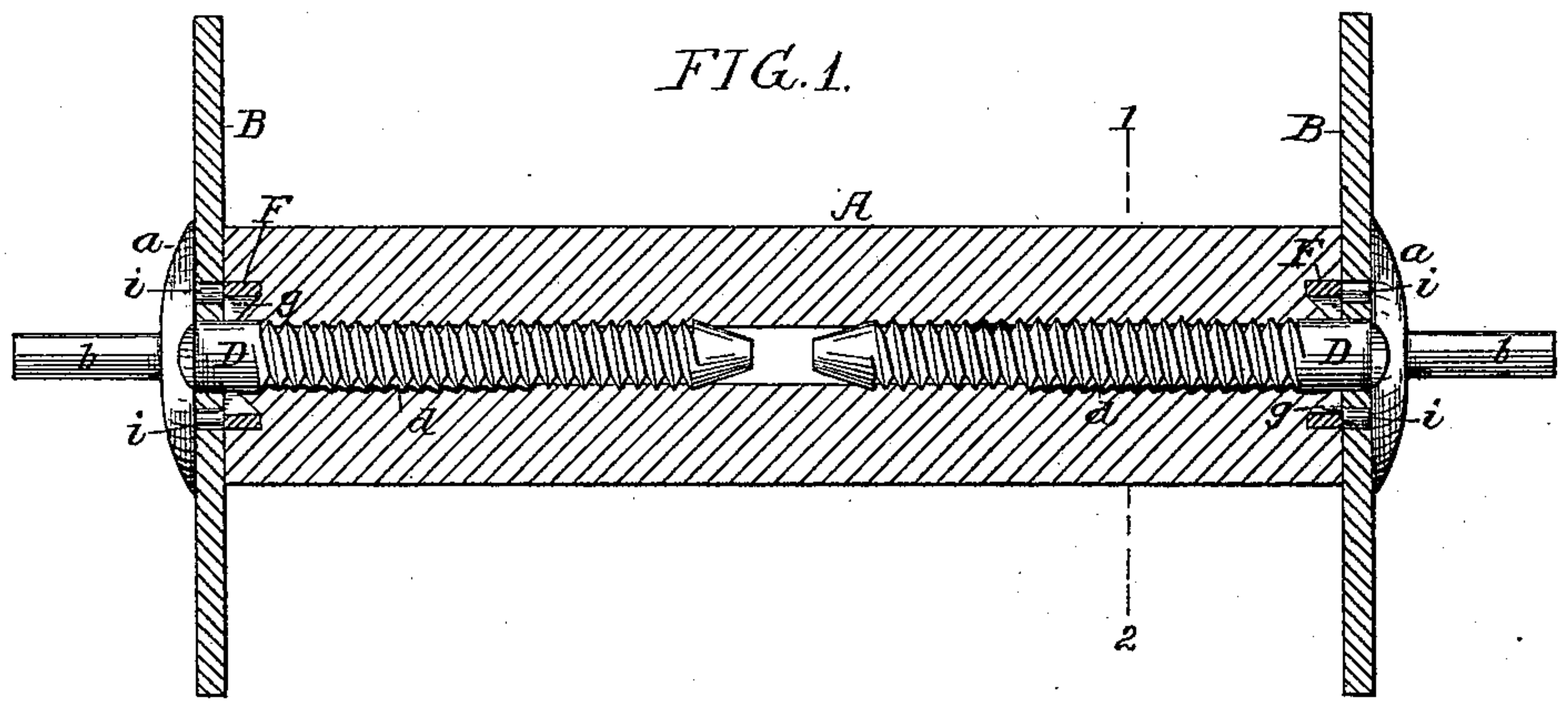


FIG. 5.

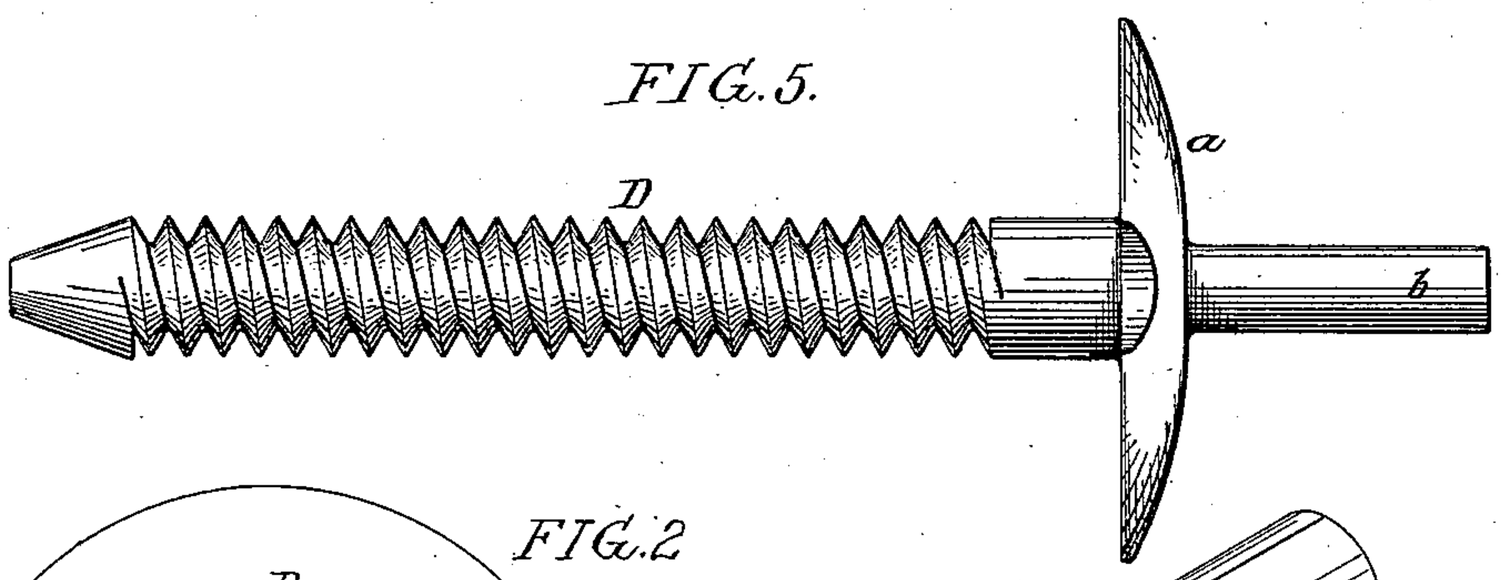


FIG. 2.

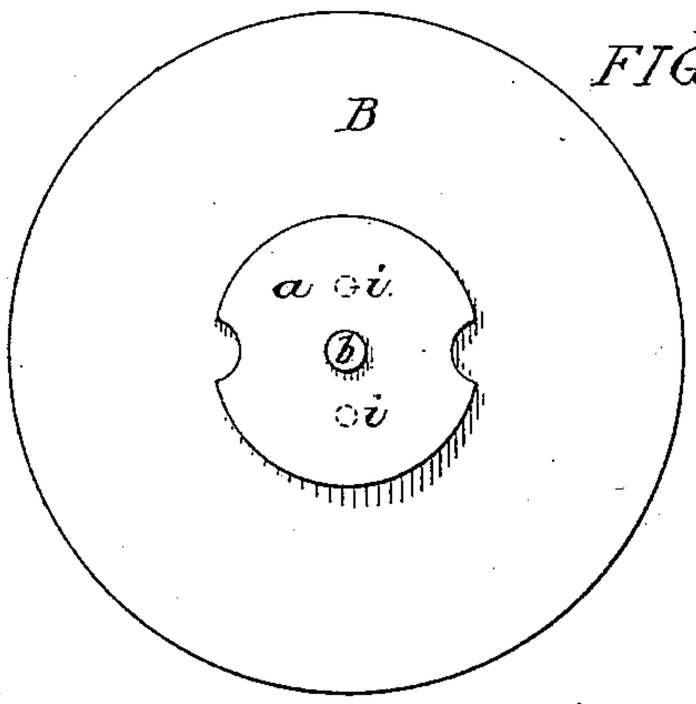


FIG. 6.

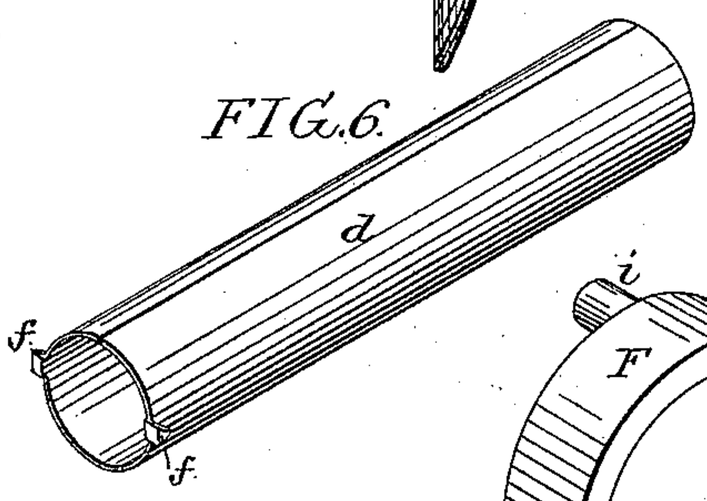


FIG. 7.

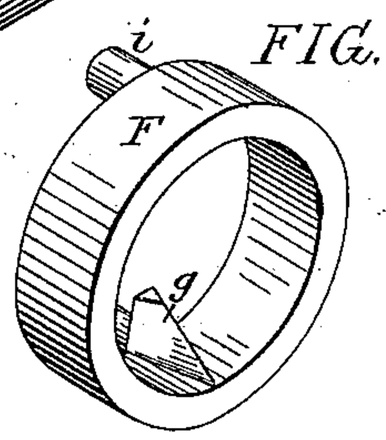


FIG. 3.

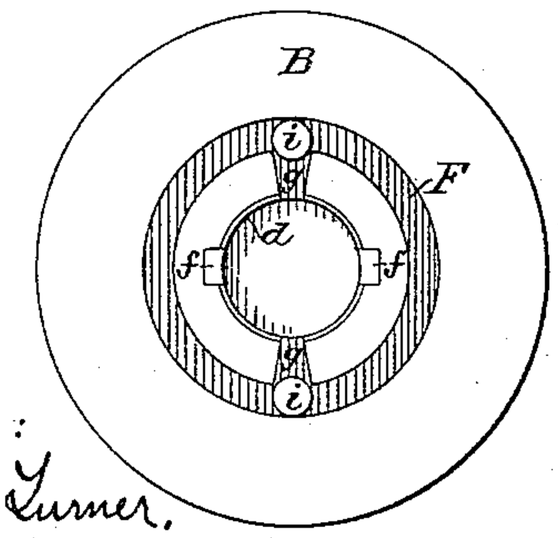
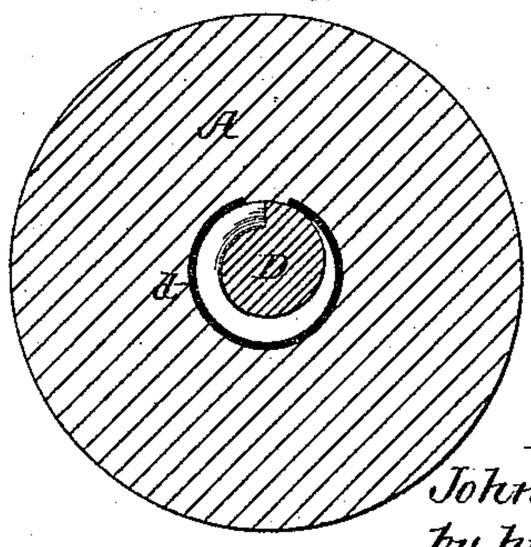


FIG. 4.



Witnesses:
Hamilton D. Turner.
Jno. Paul

Inventor:
John E. Phillips
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

JOHN E. PHILLIPS, OF PHILADELPHIA, PENNSYLVANIA.

SPOOL FOR TEXTILE MACHINERY.

SPECIFICATION forming part of Letters Patent No. 449,914, dated April 7, 1891.

Application filed September 6, 1889. Serial No. 323,139. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PHILLIPS, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Spools for Textile Machinery, of which the following is a specification.

My invention consists of certain improvements in the construction of spools such as are used in connection with carding-machines, spinning mules or jacks, and like textile machinery, and especially to spools which have projecting trunnions or journals at the ends, the objects of my invention being to simplify and cheapen the construction of spools of this character, to provide for the ready removal of the screw-shanks whereby the heads are held in place, and to prevent splitting of the stick or body of the spool at the ends when strain is exerted upon the spool or upon the heads of the same. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section, partly in elevation, of a spool constructed in accordance with my invention. Fig. 2 is an end view of the same. Fig. 3 is an end view with the head of the spool removed. Fig. 4 is an enlarged transverse section on the line 1 2, Fig. 1; and Figs. 5, 6, and 7 are detached views of parts of the spool.

A represents the cylindrical body or stick of the spool, and B B the opposite heads of the same, which are composed of metal, vulcanized fiber, or like material, each head being longitudinally confined to the body by means of the flange *a* of the screw-stem D, which is adapted to a threaded opening in the stick or body of the spool, and has at the outer end, beyond the flange *a*, a projecting journal or trunnion *b*, whereby the spindle may be mounted in suitable bearings in the machine in connection with which it is to be used.

The screw-stem D, with its flange and projecting trunnion, constitutes, as shown in Fig. 5, an integral structure, which can be cast of malleable iron or steel, so that the construction of this portion of the spool is materially cheapened and simplified as compared with a spool in which the flange *a* is separate from the screw-stem, and is adapted to a threaded portion of the same adjacent to the trunnion—a construction which has heretofore been employed.

While the stem D may be screwed directly into the wooden body or stick A of the spool, such construction is objectionable, because of the difficulty which has been experienced in unscrewing the stem from the body of the spool when it is desired to remove or replace the head of the same, the firm hold taken by the wood upon the thread of the screw causing the stripping of the wood, and thus preventing the screw-stem from taking a proper hold when it is again inserted. I therefore, after boring out the body or stick of the spool, insert therein a split tube *d* of sheet metal, such as shown in Fig. 6, which tube may, in the first instance, be prevented from turning by means of spurs or barbs *f*, formed thereon and engaging with the end of the spool-body, as shown in Fig. 3. When this tube has been inserted, the stem D is screwed into the same, the effect of this movement being to slightly expand the tube and form in the same a screw-thread corresponding with that of the stem, the tube finally forming a threaded segment of substantially the character shown in Fig. 4. This tube forms practically a metallic nut for a portion of the screw-stem D and permits the ready removal of said stem when it is desired to remove or replace either of the heads of the spool.

To strengthen each end of the stick or body of the spool, a metal ring F is let into an annular groove in each end of the spool, this ring having internally-projecting lugs *g*, which bear upon the stem D beyond the threaded portion of the same and close to the head B, so that any strain upon the head or stem is transmitted to the inserted metal ring, thus preventing the splitting of the stick or body of the spool, which might otherwise result.

The internally-projecting lugs *g* are wedge-shaped, as shown in Fig. 7, so that the ring can be driven into the grooved end of the spool-stick without necessitating any mortising of the same.

Projecting longitudinally outward from the ring F are lugs *i*, which enter recesses or

openings in the head of the spool and serve to prevent the turning of the same independently of the stick or body.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the stick or body of the spool and its opposite heads with the screw-stems having head-retaining flanges and with sheet-metal linings for the bore of the spool, into which the head-retaining stems are screwed, substantially as specified.

2. The combination of the stick or body of the spool having recessed ends and opposite heads, the screw-stems with their head-retaining flanges, and the rings adapted to the recesses in the ends of the stick or body of the spool and having internally-projecting lugs bearing upon the stems aforesaid, substantially as specified.

3. The combination of the stick or body of the spool having grooved ends and opposite heads, the screw-stems and their head-retaining flanges, and the strengthening-rings adapted to the grooves in the ends of the stick or body of the spool and having inwardly-projecting lugs for bearing upon the stems aforesaid, said lugs being wedge-shaped, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN E. PHILLIPS.

Witnesses:
WILLIAM D. CONNER,
HARRY SMITH.