No. 827,911. PATENTED AUG. 7, 1906.

L. T. HOUGHTON.

JACK SPOOL.

APPLICATION FILED JULY 6, 1905.

Fig. 1.

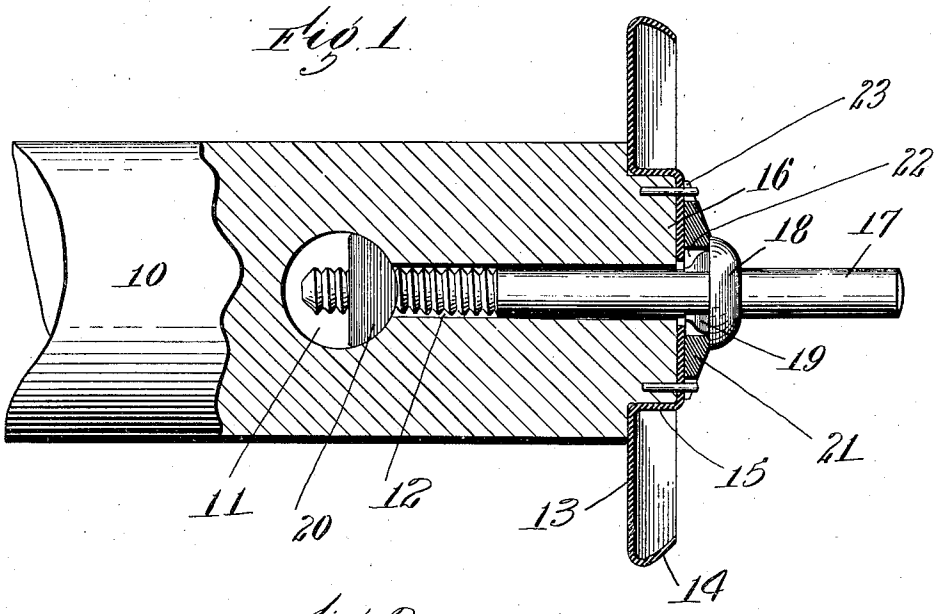


Fig. 2.

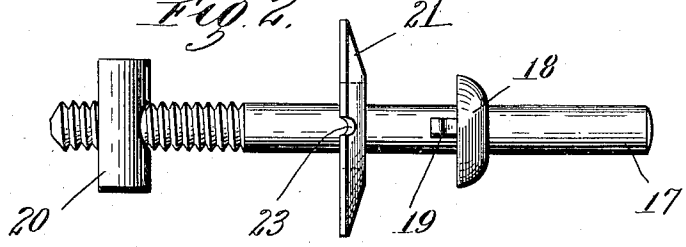


Fig. 3.

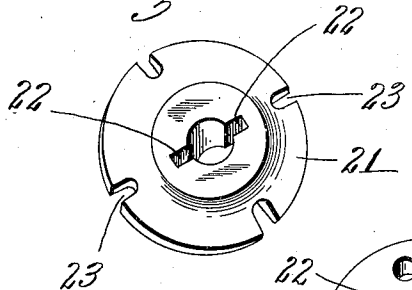


Fig. 4.

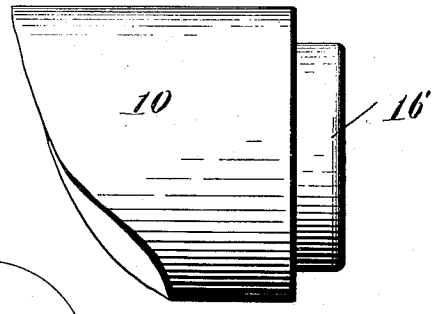
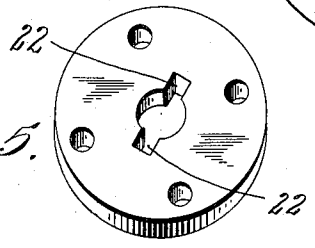


Fig. 5.



Witnesses:
C. F. Mason.
E. M. Allen.

Inventor:
L. T. Houghton.
By Attorneys
Lustwgate & Lustwgate

UNITED STATES PATENT OFFICE.

LEWIS T. HOUGHTON, OF WORCESTER, MASSACHUSETTS.

JACK-SPOOL.

No. 827,911. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed July 6, 1905. Serial No. 268,483.

To all whom it may concern:

Be it known that I, LEWIS T. HOUGHTON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Jack-Spool, of which the following is a specification.

This invention relates especially to the large spools employed in mills, which are referred to as "jack-spools."

The object of this invention is to provide a strong, simple, and efficient spool in which the spool-heads are fastened to the body of the spool in such way as not to become loose and shackly.

To this end this invention consists of the spool as an article of manufacture and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a fragmentary view, partly in section, of sufficient parts of a spool to illustrate the application of this invention thereto. Fig. 2 is a detail view of an end trunnion or stud. Fig. 3 is a detail view of the locking-washer. Fig. 4 is a fragmentary view of one end of the spool-body, and Fig. 5 is a detail view of a modified form of locking-washer.

A jack-spool of the type to which this invention relates consists of a cylinder or body with a spool-head at each end thereof. In this class of spools a variety of fastening devices are used for fastening the spool-heads in place. In this class of spools as ordinarily constructed the spool heads or disks are usually simply butted against the end of a wooden cylinder or body portion. The spools themselves are comparatively large and heavy and when wound with considerable weights of yarn are subjected to rough usage. For example, when a spool of this kind, either when filled or empty, is permitted to fall a concussion will be imparted to the spool head or disk. In the ordinary type of a spool of this kind the blows or concussions upon the spool-heads are transmitted directly to the stud or center spindle of the spool. This causes a direct shearing pressure on the studs or spindles of the spools which causes the spool-heads to become loose and shackly. In a spool constructed according to this invention I provide for strengthening the joints between the body portion of the spool and the spool-heads by providing the body of the spool with a projection at each end, which fits into corresponding sockets, and I have combined the parts as thus put together with a simple and efficient center fastening which cannot become loosened or turned from locked position. By providing the body of the spool with projections which fit into recesses in the spool-heads all blows or concussions on the spool-heads instead of being transmitted directly to the center studs will be transmitted to the larger and less easily injured projecting end of the spool-body.

Referring to the accompanying drawings for a detail description of a spool embodying this invention as shown in Fig. 1, 10 designates the cylindrical wooden body of a spool. The body 10 is provided with a transverse nut-socket 11 and with the longitudinal spindle-hole 12 opening therefrom to the end of the spool.

The sheet-metal spool-head 13 is provided with a peripheral flange or bead 14 and with a punched-out socket or depression 15 for receiving the projecting end 16 of the body. This forms, in effect, a dowel-joint of large diameter between the body portion and spool-head which will render the spool-head absolutely rigid so long as the same is held in place from being pulled off of the end of the spool.

To fasten the spool-head in place against endwise displacement, I may use any of the ordinary gudgeon-bolts. In the drawings I have illustrated a construction in which the gudgeon-bolt 17 is threaded at its inner end into the nut 20, and mounted on the gudgeon-bolt 17 is a washer 21. If desired, the washer 21 may be made with the gudgeon-bolt itself or may be threaded onto or otherwise fastened thereto. In the construction illustrated the gudgeon-bolt 17 is provided with a shoulder 18, having keys or wings 19, which fit in ways 22 of the washer. To prevent the gudgeon-bolt from unscrewing, I preferably, but not necessarily, employ fastening studs or nails, which are driven through sockets 23 of the washer. In some cases instead of using sockets in the form of notches, as shown in Fig. 3, the washer may have holes, as shown in Fig. 5.

In practice I preferably make the locking-washer 21 of substantially the same size as the projecting end of the spool-head, and I have found this to be of advantage in practice, as this reinforces the entire face of the punched-out part of the spool-head, so that

when the sheet-metal spool-head is clamped in place the center part of the spool-head will be clamped or held so that it cannot be bent, while the outer periphery of the spool-head being protected by its flange 14 will also be sufficiently stiff so that the spool-head cannot be easily jammed or bent sidewise.

In assembling a jack-spool constructed according to this invention the center stud is screwed in by using a spanner or special wrench for turning the locking-washer, and when the spool-head is tightly seated the locking-washer is fastened by nails or screws, so that there is no possibility of the parts becoming loose and shackly.

I am aware that changes may be made in the shapes and proportions of parts of a spool-head without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the particular construction I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. As an article of manufacture, a jack-spool comprising a solid body portion having a cylindrically-reduced end surrounded by a square shoulder, a sheet-metal disk-shaped spool-head having a square-shouldered stamped-out socket receiving said reduced end of the body portion to secure the head from sidewise displacement, the head resting on the shoulder, and a gudgeon-bolt for fastening the shoulder against endwise displacement.

2. As an article of manufacture, a jack-spool comprising a body portion having a reduced end surrounded by a square-shouldered disk-shaped spool-head having a square-shouldered stamped-out socket receiving and fitting the reduced end of the body portion, the head resting on said shoulder, and clamping means for the spool-head comprising a gudgeon-bolt, a washer of substantially the same diameter as the stamped-out socket and bearing upon the surface thereof, and means for forcing the washer against the socket and the socket against the shoulder.

3. As an article of manufacture, a jack-spool comprising a body portion, a sheet-metal spool-head having a stamped-out socket receiving the projecting end of the body portion, and means for fastening the spool-head, comprising a center stud, a nut socketed into the body portion of the spool, and a locking-washer keyed onto the stud and held from turning by nails or fastenings driven through the spool-head into the end of the spool-body.

4. As an article of manufacture, a jack-spool comprising a wooden body, sheet-metal spool-heads, each having a socket receiving a projecting end of the body, whereby the spool-head will not be displaced by blows or concussions upon the edge of the spool-head, and means for fastening the spool-head in place so that it cannot be pulled off laterally from the end of the spool-body, comprising a center stud having a shoulder and extending locking wings or splines, a nut seated in the socket in the spool-body, and a locking-washer splined onto the stud and held in place by nails or fastenings driven through the spool-head into the spool-body, said locking-washer being of substantially the same area as the pressed-out socket of the spool-head and serving to clamp and hold the same from being bent.

5. As an article of manufacture, a jack-spool comprising a spool-body, a sheet-metal spool-head having a stamped-out socket receiving a projecting end of the spool-body, means for fastening the spool-head so that it cannot be pulled off the end of the spool, comprising a center stud having a collar and projections or splines, a semicylindrical nut seated in a socket in the spool-body, and a fastening-washer having slots or keyways receiving the projections of the stud and fastened in place by nails or fastenings driven through the spool-head into the end of the spool-body, the center part of the spool-head being held from bending by being clamped between the end of the spool-body and the fastening-washer, and the periphery of the spool-head being provided with a bead.

6. As an article of manufacture, a jack-spool comprising a spool-body, a spool-head, means for fastening the spool-head so that it cannot be pulled off the end of the spool-body, comprising a center stud having a collar and projections or splines, a semicylindrical nut seated in a socket in the spool-body, and a fastening-washer secured in place by said splines between the end of the spool-body and the collar, the center part of the spool-head being held from bending by being clamped between the end of the spool-body and the fastening-washer.

7. As an article of manufacture, a jack-spool comprising a body, heads thereon, and means for fastening the spool-heads in place and securing them against lateral motion from the end of the body, said means comprising a center stud having a shoulder and extending locking wings or splines, a nut seated in a socket in the spool-body, and a locking-washer mounted on the stud and held in place by fastenings extending through the spool-head into the spool-body, said locking-washer being of substantially the same area as the projecting end of the spool-head and serving to clamp and hold the same from being bent.

8. As an article of manufacture, a jack-spool comprising a body portion, a spool-head, the body having means for securing the head against sidewise displacement, a gudgeon secured in the end of the body and

extending through the spool-head, said spool-head having an enlarged opening for receiving the gudgeon and preventing lateral motion of the gudgeon from being transmitted directly to the head, and means for securing the head against endwise displacement with respect to the gudgeon.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LEWIS T. HOUGHTON.

Witnesses:
LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.