L. T. HOUGHTON.

SPOOL HEAD.

APPLICATION FILED JULY 6, 1905.

919,355. Patented Apr. 27, 1909.

2 SHEETS—SHEET 1.

Fig. 1

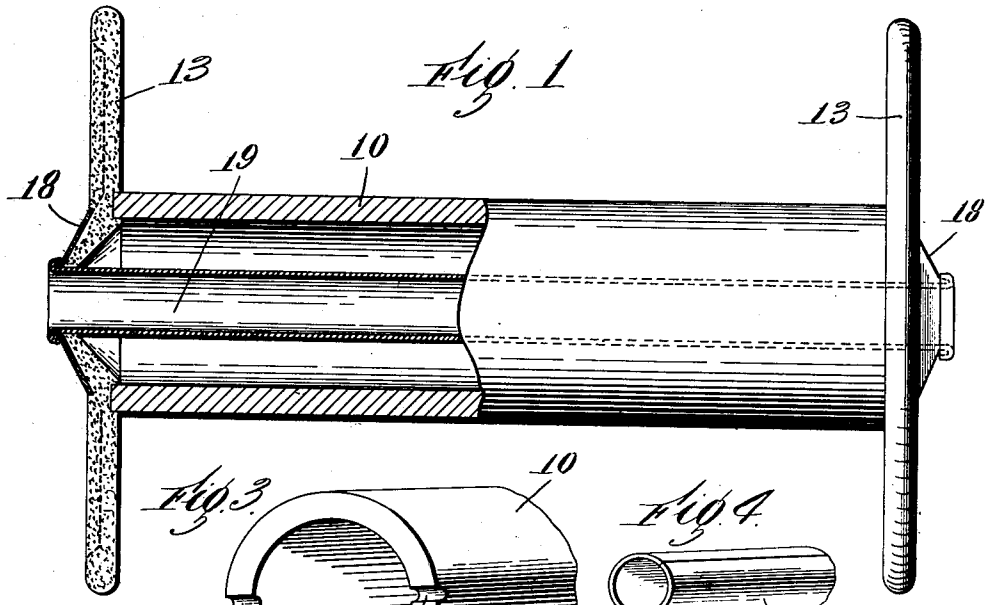


Fig. 3

Fig. 4

Fig. 2.

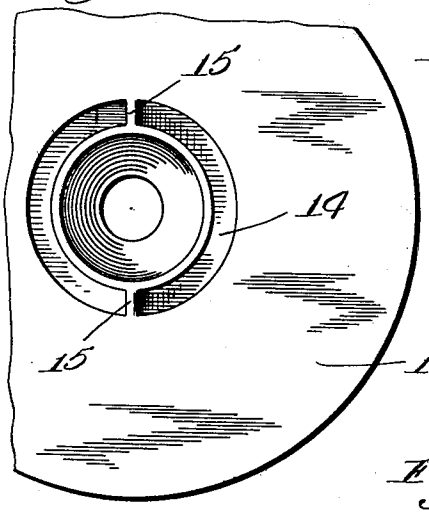


Fig. 5.

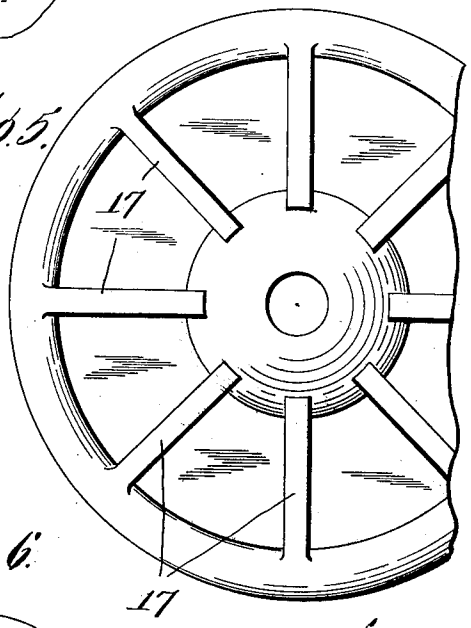
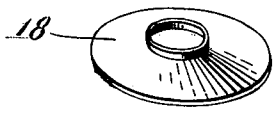


Fig. 6.



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2 SHEETS—SHEET 2.

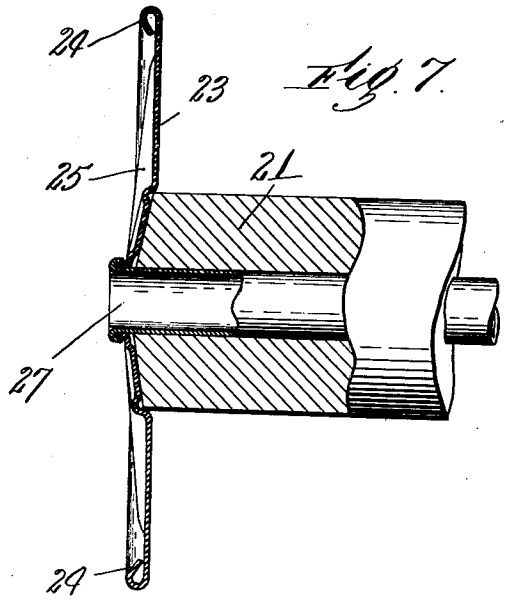


Fig. 7.

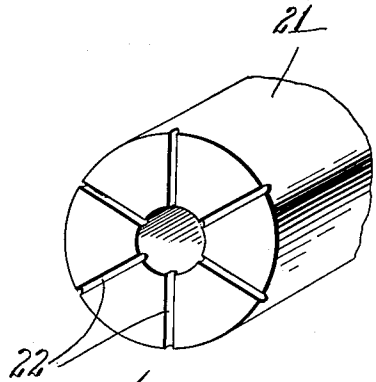


Fig. 8.

Fig. 9.

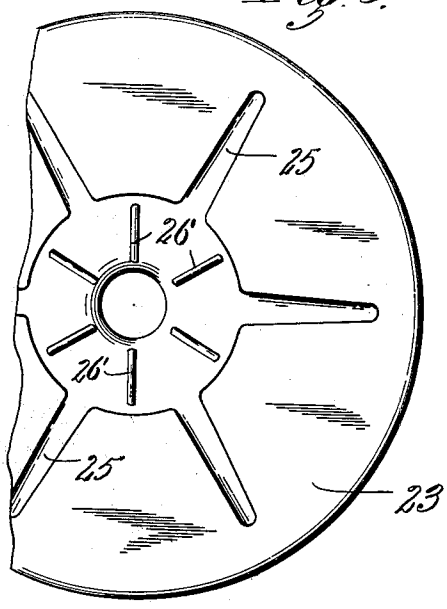
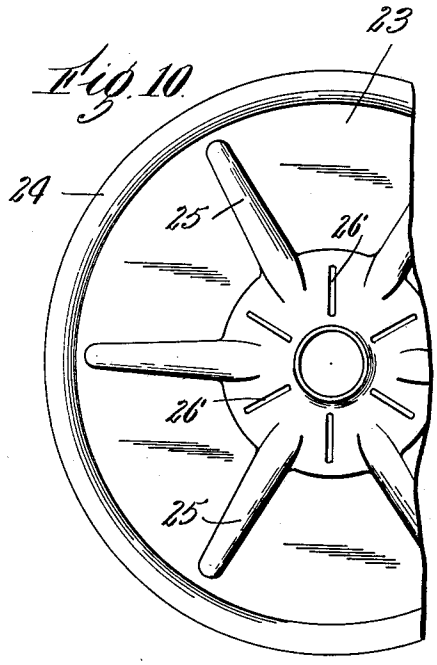


Fig. 10.



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UNITED STATES PATENT OFFICE.

LEWIS T. HOUGHTON, OF WORCESTER, MASSACHUSETTS.

SPOOL-HEAD.

No. 919,355. Specification of Letters Patent. Patented April 27, 1909.

Application filed July 6, 1905. Serial No. 268,485.

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 Spool-Head, of which the following is a specification.

This invention relates to that class of spools which are employed in spooling frames or for similar purposes.

The especial object of this invention is to provide a light, strong and nearly indestructible spool which can be manufactured and sold at a cost of little if any in excess of the spools ordinarily used.

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 two sheets of drawings, Figure 1 is a side view partly broken away of a spool constructed according to this invention. Fig. 2 is a fragmentary view of the inside of one of the spool-heads. Fig. 3 is a perspective view of one end of the body of the spool. Fig. 4 is a fragmentary perspective view of the tubular center rivet. Fig. 5 is a fragmentary view of the outside of one of the spool heads. Fig. 6 is a perspective view of one of the center washers over which the end of the center tube is riveted. Fig. 7 is a fragmentary view partly in section illustrating a modified construction. Fig. 8 is a fragmentary end view of the spool-body shown in Fig. 7. Fig. 9 is a fragmentary view of the inside of one of the spool heads illustrated in Fig. 7, and Fig. 10 is a fragmentary view of the outside of one of the spool heads illustrated in Fig. 7.

In order to withstand the rough usage to which spools are subjected in cotton mills it is essential that the spools be strong, light, and at the same time they must be of comparatively inexpensive construction. In the use of spools of this class the spools are liable to be damaged either by the bending or breaking of the spool head, or by the shearing off of the fastening at the center of the spool head.

In the spools now ordinarily employed the spool-heads are fastened simply by being butted against the end of the body of the spool, and in such constructions all concussions or blows upon the spool-heads are transmitted directly to the fastening which holds the spool-head from being pulled off the end of the spool.

The weakening of the fastening of the spool heads by repeated concussions due to the dropping of the spools or from other causes frequently causes the spool-heads to become loose and shackly. I have found that this can be overcome by providing the spool heads with sockets for receiving the projecting ends of the spool body, and in order to do this without weakening the spool-head, I have found it desirable to provide the spool-head with radial ribs or corrugations which extend closer to the center of the spool-head than the circumference of the spool body, and which may extend out as near the perimeter of the spool head as required. These ribs or corrugations serve to strengthen the spool head where it would otherwise be weakened by the formation of the recess or socket for receiving the end of the spool-body.

Referring to the accompanying drawings for a detail description of two forms of spools embodying this invention, as shown in Fig. 1, 10 designates the tubular body of the spool. The spool-body 10 may be of wood, fiber, cardboard, or any other material of sufficient strength and lightness to be used. At its ends the body portion of the spool is provided with radial notches 11 and 12 for holding the spool heads from turning. The spool heads 13 each consists of a disk which is preferably pressed out of paper, leather-board, or similar light and inexpensive material. Each of the spool heads is provided on its inner face with an annular recess 14, with diametrically opposed projections or ribs 15 which fit into the sockets or notches 11 and 12 of the body of the spool.

In order to strengthen each of the spool-heads 13 the spool-head when pressed out of paper or similar material is provided with a pressed out center part, and with radial ribs 17 which preferably extend to the outside bead or flange 16 of the spool head. These radial ribs serve to strengthen the spool head where it would be otherwise weakened by the formation of the recess on its inner face which receives the spool-head.

The means which I employ for holding the spool heads in place so that they cannot be pulled off the end of the spool body comprise a hollow central tube or rivet 19 and conical end washers 18.

The ends of the tube 19 are turned back and riveted to engage the center washers so as to form a rigid construction in which the setting of the ends of the spool-body in recesses in the spool-heads will overcome the tendency of the spool-heads to work loose by reason of shearing strains upon the center fastening.

In some cases instead of using a tubular spool body and instead of using spool-heads of paper or similar material, I may use a solid wooden spool-body and may use sheet metal disks for the spool-heads. A construction of this character is illustrated in the second sheet of drawings.

The spool illustrated in the second sheet of drawings comprises a wooden spool center 21 having projecting conical ends with radial notches or recesses 22. The spool head 23 consists of a sheet metal disk having a strengthening bead 24 around its outside edge, and a central bent out socket for receiving the end of the spool-head. The center of the sheet metal disk is reinforced and strengthened by ribs or corrugations 25 which will stiffen and strengthen that part of the disk which otherwise would be weakened by the formation of the bent out socket for the spool-heads. Each spool-head is held from turning by means of inwardly extending radial corrugations or projections 26 which engage the corresponding notches 22 in the ends of the spool-body. The parts are fastened together by a central tube or hollow rivet 27 which is riveted back directly onto the sheet-metal spool-heads without the intervention of an end collar. In this construction as in that previously described, it will be seen that I have provided a spool in which the center fastenings which hold the spool-heads from being pulled off the ends of the spool will not be weakened by the shearing strains due to blows on the spool-heads, and at the same time the center of the spool-head which would otherwise be weakened by the formation of its socket will be reinforced and stiffened by the radial ribs.

I am aware that changes may be made in the shape and proportions of spools without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the particular spool which 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 spool comprising a cylindrical spool body, spool heads at the ends thereof, each having an annular recess fitting the end of the spool body, and a radial projection in the recess engaging the end of the spool body to keep the parts from turning, the heads bulging outwardly at the center thereof, and a rivet passing through the spool and engaging the bulged portions of the two heads to fasten the same in place on the spool body.

2. As an article of manufacture, a spool comprising a tubular body and pressed out spool-heads each having an annular recess for receiving the end of the body, said recess and body having a radial projection and socket fitting each other to keep the parts from turning, and means for fastening the parts together comprising end washers and a rivet passing through the spool body and having its ends headed back into the end washers.

3. As an article of manufacture, a spool comprising a tubular body and pressed out spool heads, each having an annular recess for receiving the end of the spool body, said parts being held from turning by a projection on one of said parts engaging a corresponding socket in the other, each of said spool heads having a marginal bead and radial ribs strengthening the center part of the spool head in which the recess is formed, and means for fastening the parts together comprising end washers, and a tubular rivet having its ends headed back onto the end of the washers.

4. As an article of manufacture, a spool comprising a tubular body and pressed out non-metallic spool heads each having an annular recess for receiving the end of the body, said recess and body having a radial projection and socket fitting each other and extending across and interrupting the recess to keep the parts from turning, and means for fastening the heads together.

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.