

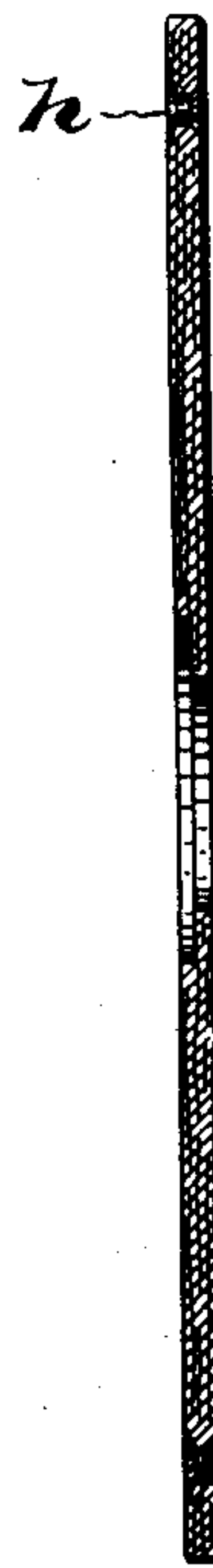
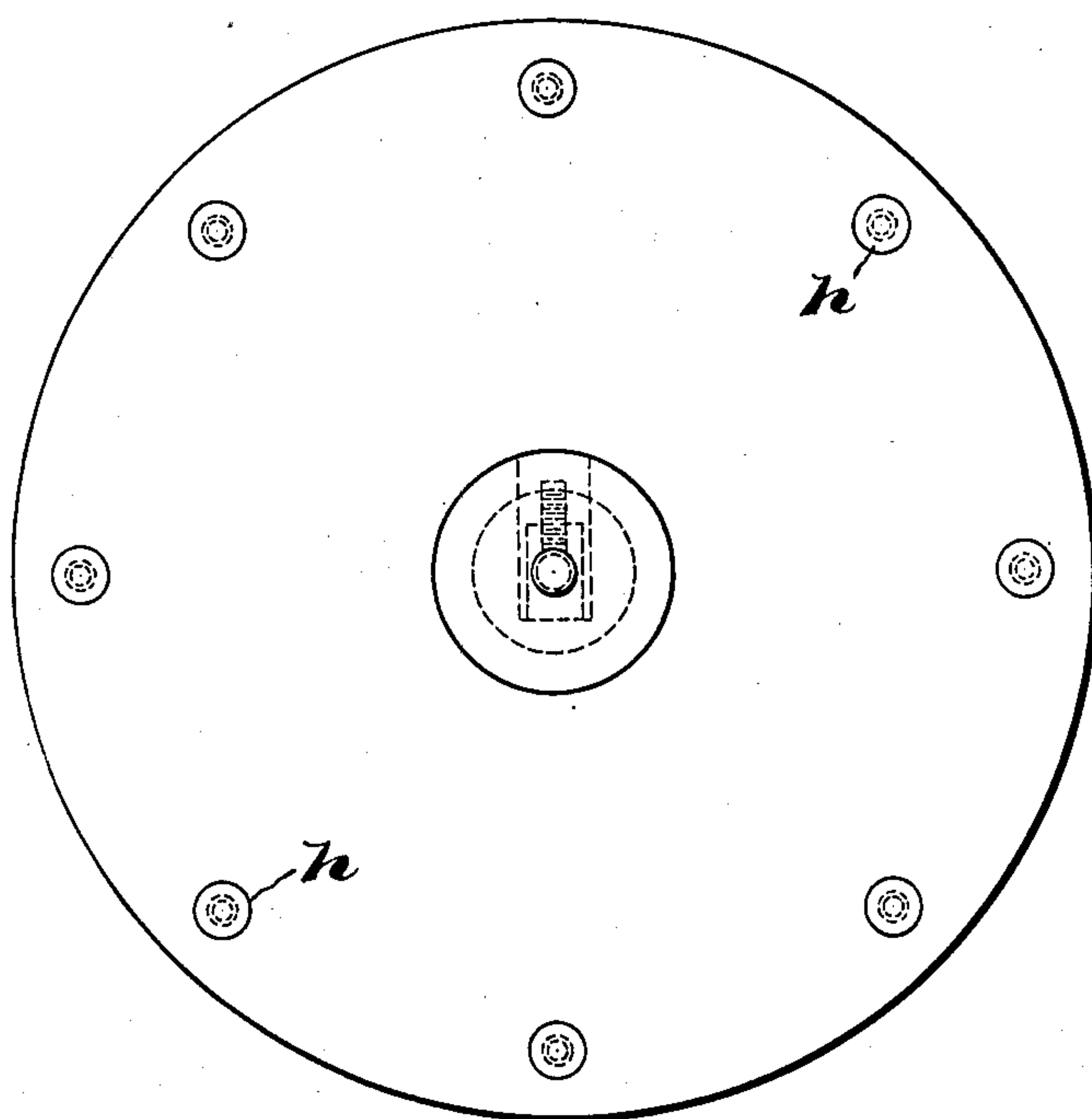
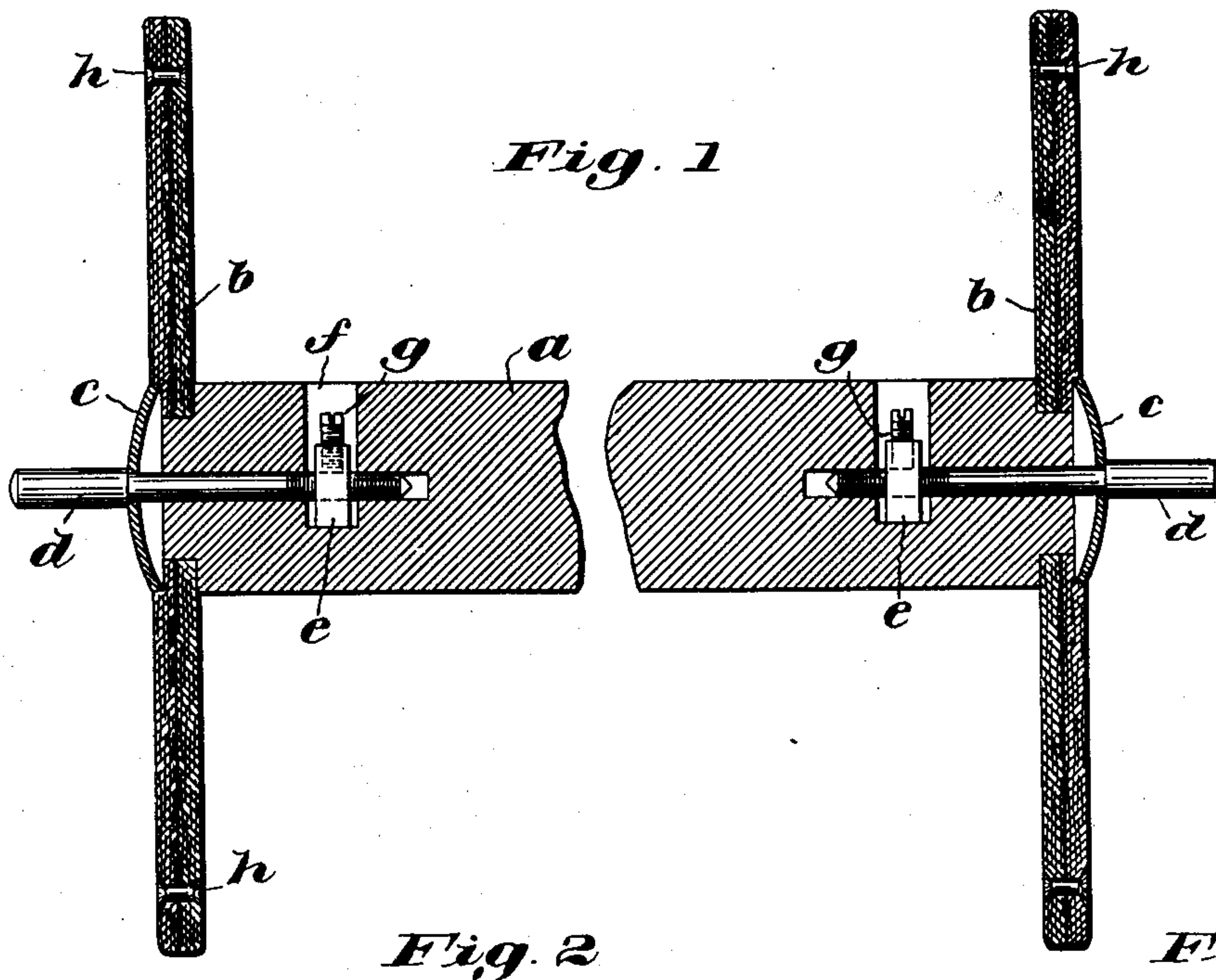
No. 810,506.

PATENTED JAN. 23, 1906.

S. T. PACKARD.

HEAD FOR JACK SPOOLS, WARP BEAMS, OR THE LIKE.

APPLICATION FILED DEC. 8, 1904.



Witnesses:
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UNITED STATES PATENT OFFICE.

SUMNER T. PACKARD, OF BROCKTON, MASSACHUSETTS.

HEAD FOR JACK-SPOOLS, WARP-BEAMS, OR THE LIKE.

No. 810,506.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed December 8, 1904. Serial No. 235,963.

To all whom it may concern:

Be it known that I, SUMNER T. PACKARD, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Heads for Jack-Spools, Warp-Beams, or the Like, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention consists in improvements in heads for jack-spools, warp-beams, or the like, being particularly intended to provide a head which shall have the property of remaining true, smooth, firm, and rigid under severe treatment, while effecting no marked increase in the weight thereof.

Jack-spools as at present constructed have their heads formed of two thicknesses of wood placed with the grain of one crossing the grain of the other. Used as they are, however, in the shipment of yarn from the spinner to the weaver the wooden heads rapidly become splintered and split from the rough handling in shipment, as well as from severe mill usage, presenting entangling projections to the yarn which is wound upon the spools and limiting this form of spool to a very short life. The heads of these wooden spools also easily become warped and out of true, this feature rendering the spool objectionable during the process of winding the yarn upon or unwinding it from the barrel of the spool, during which process the spool is rotatably mounted in a machine, leaving but little clearance at its ends. The same is true of warp-beam heads when constructed of wood. They rapidly give way to the rough usage of the mill, while the warping thereof is more disastrous than with the jack-spools. When made of iron or steel, the former tends to crack and the latter bend unless made unusually heavy.

In the drawings, Figure 1 is a central sectional view of a jack-spool provided with heads constructed according to my invention. Fig. 2 is an end view of the spool shown in Fig. 1, and Fig. 3 is a section of a spool-head embodying a modified form of my invention.

In the drawings, referring particularly to Fig. 1 and to the jack-spool there shown, the barrel *a*, which will ordinarily be several inches in diameter and from two to five feet in length, is preferably of wood and is turned down at each end to provide a shoulder upon

which is seated the spool-head *b*. The latter is of disk form, usually six to twelve inches in diameter, with a central opening to fit the shouldered end of the barrel, and is countersunk to seat the metal convex retaining-washer *c*, which latter is held against the spool-head by the shouldered stud *d*. The ends of the barrel are bored to receive the inwardly-projecting threaded end of the stud *d* and permit the engagement thereof with the nut *e*, the latter being presented to the threaded end of the stud through the lateral barrel-recess *f*. When the spool is assembled, the head is placed upon the barrel, the nut *e* inserted in the recess *f*, the washer placed upon its countersunk seat, and the stud inserted through the washer and into the barrel and screwed down tightly to fasten the spool-head securely upon the barrel. The set-screw *g* is then screwed down to lock the nut and prevent the stud and the head from working loose. When the yarn is wound on or unwound from the spool, the latter is suitably journaled in the machine upon the projecting ends of the studs *d*.

Instead of constructing the spool-head of wood, as has heretofore been the custom, I form the same of a fibrous, but grainless, material, and for this purpose I have found in practice that the best results are obtained with a manufactured vegetable-fiber board or composition, the material best suited for the purpose being, as I have found, a hardened composition of flax fiber. This fiber board will not chip, splinter, or split, as does the grained wood, and the spool is thus rendered not only more durable, but more serviceable as well, for a perfectly-smooth surface will invariably be presented to the yarn as distinguished from one presenting splinters and the edges will remain smooth and unbroken, nor will a spool-head constructed as described bend, warp, or crack under any usual conditions of service. The hardened flax-fiber spool-head presents a surface which is unaffected by the shocks, concussions, and blows which are ordinarily accorded to jack-spools in their transportation and employment in the mill and is superior to a spool-head of wood fiber, since the former is susceptible to a far greater degree of induration and the indurating treatment insures a more uniformly flat and disk-like shape. The flax-fiber head is also superior to steel or iron heads, for the former will bend and the latter crack under the customary usage unless made

too heavy and clumsy for practical employment. Such fiber board, while grainless and fibrous, is built up to a certain extent of separate layers or laminæ. While the laminæ of the hardened flax board are effectively held against separation by any ordinary treatment, if the edges of the spool are subjected to excessive abuse it is of course possible for the spool-head to be weakened at its edges by the splitting or separation of the different layers. The possibility of weakening the spool-head even by excessively-abusive treatment is here obviated by placing a series of rivets *h h* near the periphery thereof, these rivets acting as a means for opposing any separation of the laminated structure along its edges.

In Fig. 1 I have shown the disk head as built up of two separate sheets of flax fiber, these sheets being cemented together. In Fig. 3 it is shown as composed of a single sheet of such fiber. In each case the peripheral strengthening-rivets are employed, acting to bind together the individual laminæ of the sheets and in the head shown in Fig. 1 acting also incidentally to give additional security to the attachment of the cemented sheets. Although a head may be constructed, as shown in Fig. 3, of a single sheet of fiber, I have found in practice that the strength of a head composed of a plurality of

separate sheets, as in Fig. 1, even if of no greater aggregate thickness than the head composed of a single sheet, nevertheless possesses greater strength and firmness.

It will be obvious that my invention is not limited to the specific structure by which I have illustrated the same, but that the details may be varied extensively without departing from the spirit thereof.

I claim—

1. A removable end for a jack-spool or the like constructed of a laminated, fibrous, grainless material and having means near the periphery thereof for binding together the individual laminæ.

2. A removable end for a jack-spool or the like consisting of a disk composed of a laminated, fibrous, grainless material and having a plurality of rivets adjacent the periphery thereof.

3. A removable end for a jack-spool or the like consisting of a plurality of united flax-fiber disks provided with a central opening and peripheral strengthening means.

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

SUMNER T. PACKARD.

Witnesses:

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EDITH E. CHAPMAN.