

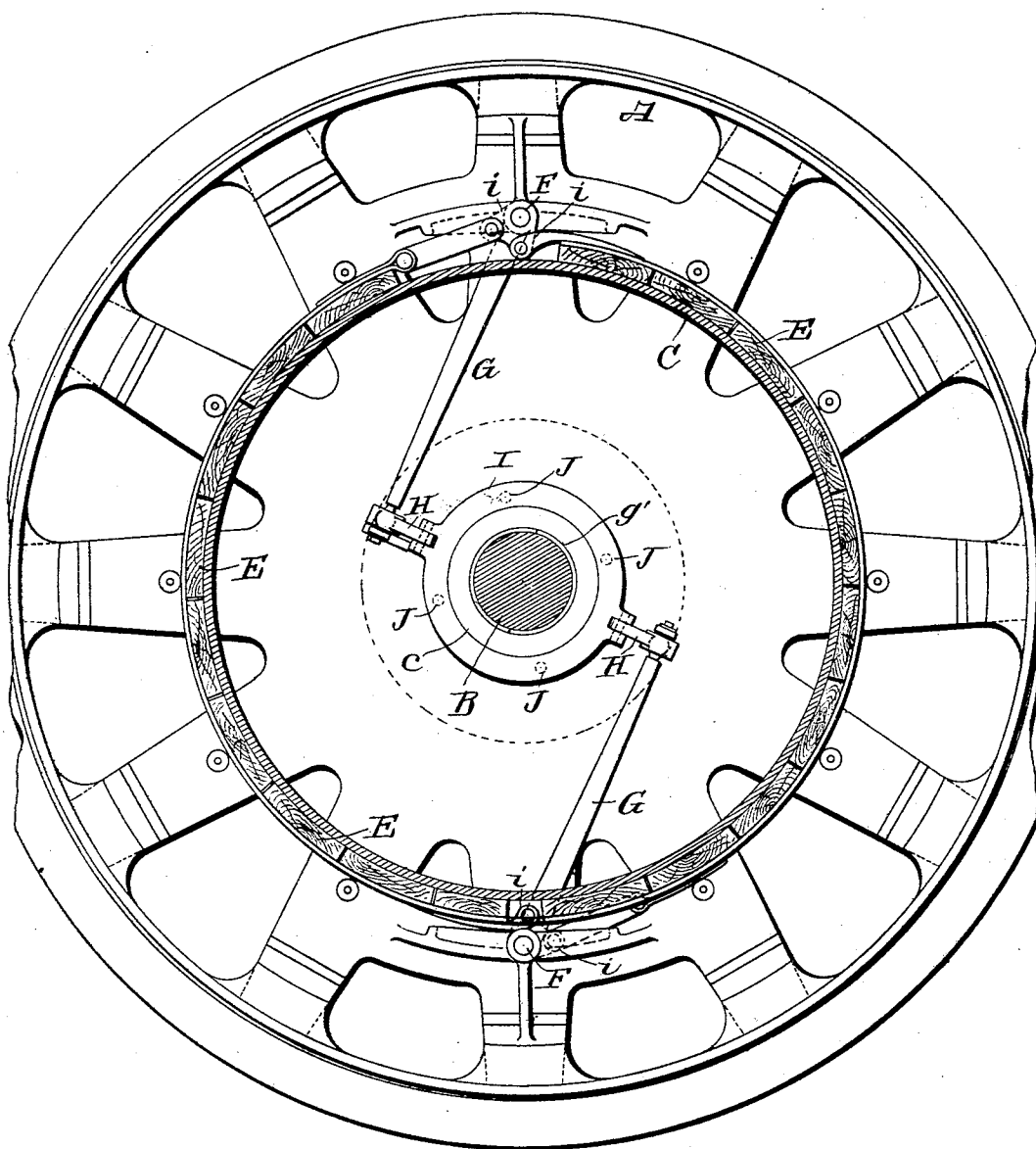
(No Model.)

2 Sheets—Sheet 1.

S. H. PITKIN.
WINDING REEL FOR HOISTING ENGINES.

No. 586,522.

Patented July 13, 1897.



Witnesses
E. J. Nottingham
G. F. Downing

Inventor
S. H. Pitkin
By *H. A. Seymour*
Attorney

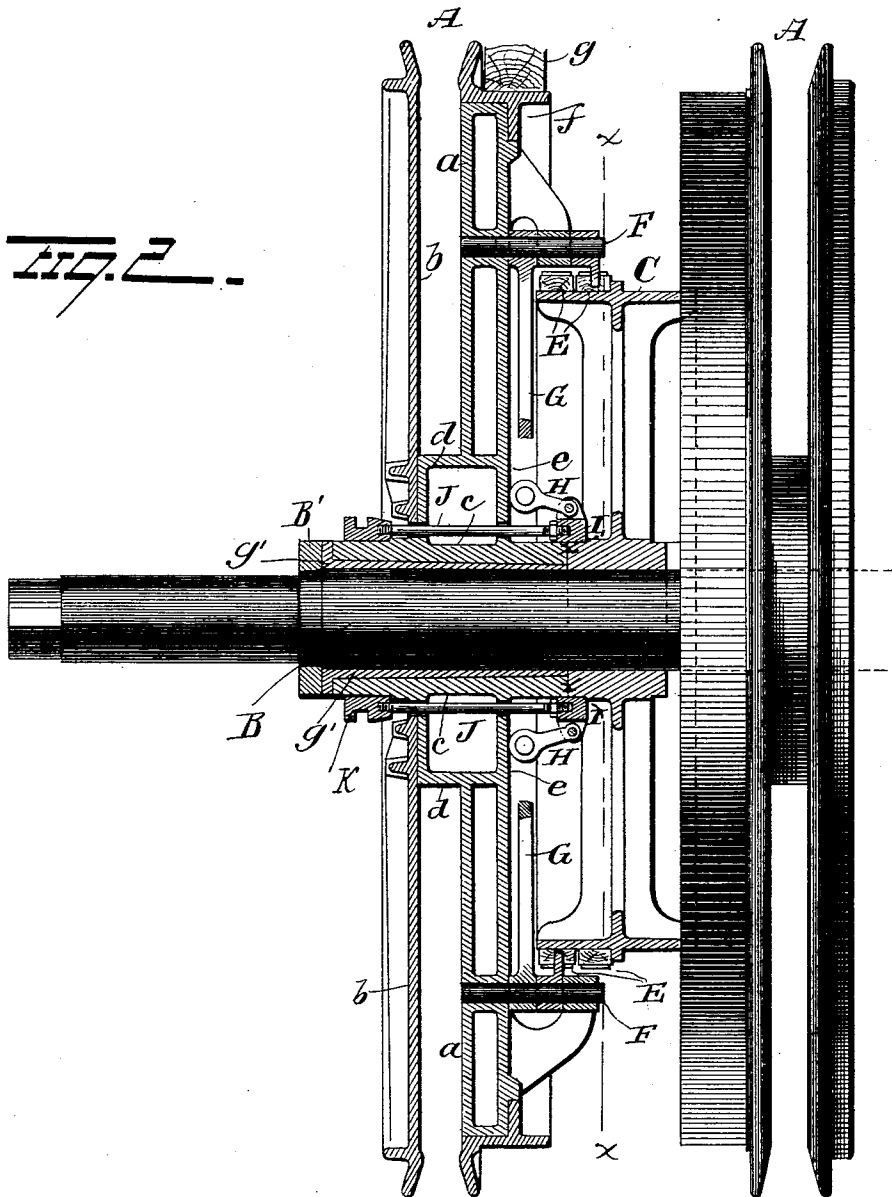
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UNITED STATES PATENT OFFICE.

STEPHEN H. PITKIN, OF AKRON, OHIO, ASSIGNOR TO THE WEBSTER, CAMP & LANE MACHINE COMPANY, OF SAME PLACE.

WINDING-REEL FOR HOISTING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 586,522, dated July 13, 1897.

Application filed August 29, 1896. Serial No. 604,307. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. PITKIN, a resident of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Winding-Reels for Hoisting-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in winding-reels for hoisting-engines.

The usual manner of arranging the parts of winding-reels is to place the clutches outside of the reels, as the distance between the reels is limited by the centers of the shaft-compartments, and such space is not sufficient for the accommodation of the clutches ordinarily used. With the clutches outside of the reels the engine centers are so far apart that a central bearing for the main shaft is essential.

The object of my invention is to assemble the reels and clutches on the center of the shaft, thus bringing the engine centers closer together, dispensing altogether with the center bearing for the shaft and permitting the use of more generous length of bearing of reel-hub on the shaft than has been heretofore possible.

With this object in view my invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in transverse section on the line *xx* of Fig. 2; and Fig. 2 is a view in side elevation, a part being in longitudinal section.

The hoisting-reels *A* are loosely mounted on the shaft *B*, the space between the two reels being occupied by the driving-head *C*. Each reel *A* is composed of two parts *a* and *b*, the part *a* constituting the body of the reel, while the part *b* constitutes the outer side thereof. The part *a* consists of an elongated hub *c*, which can be of generous size and project sufficiently at each side of the reel so as to give the latter a central bearing on the hub, a cylindrical shoulder or hub *d*, on which the flat rope which is used on this reel is wound, and the side *e*, the latter being of sufficient size and strength to support the clutch-oper-

ating devices, to be hereinafter described. Secured on the periphery of the part *e* is the brake-rim *f*, which latter is designed to be engaged by a brake *g* of any approved form for locking the reel against rotation when not locked to the shaft by the clutch. The outer side *b* of the reel comprises a plate secured against the face of hub *d* and to said hub or to the hub *c* of the reel. This plate is, if desired, provided with suitable strengthening-ribs, and its outer edge or rim, as is also the inner edge of brake-rim *f*, is made flaring outwardly, so as to guide the rope into position.

The hoisting-reels are used in pairs, as shown, and as both reels are alike it will be unnecessary to describe the other. The reels are loose on the shaft *B* and each has a composition bushing *g'* in its bearing on said shaft. These bushings are made tapering externally to fit corresponding bores in the hubs *c* of the reels, and each is made in two sections, which permit of their removal for repairs or for placing others in position without removing the reel from the engine-shaft. To replace a bushing, it is simply necessary to first remove the upper section of the old bushing and place the corresponding section of a new bushing in place and then give the reel a half-turn, so as to bring the remaining section of the old bushing on top. This section is then removed and replaced by a corresponding new section.

With the reels constructed with clutches on the outside it is impossible to remove the bushings without first disconnecting the engine and removing the driving-heads or friction-rings unless there is space sufficient between the reels. As previously stated, however, this space is limited to the distance between shaft-compartment centers, which is usually insufficient. With my improvement by simply removing the collar *B'* at the outer end of the reel-hub and removing the cap from main engine-bearing the bushing can be readily removed, one-half at a time, and new ones substituted.

Located between the two reels is the driving-head or friction-ring *C*. This driving-head or friction-ring is keyed to the shaft *B* and has a polished clutching-surface for each reel, the two surfaces being separated by a central web.

While one friction-band or other form of clutch would in some cases prove sufficient and be preferred, I have shown two friction-bands for each reel for the purpose of securing a more accurate balance of the parts. These bands E E are located side by side, the bands for one reel only being shown, the ends of one band terminating at a point diametrically opposite the ends of the other band. The free ends of each band are connected by links to the arms *i* on rock-shaft F, which arms are so arranged with relation to the free ends of the band that when moved in one direction they clamp the band tightly around the friction-surface of the driving-head and when moved in the opposite direction they are disengaged from the driving-head and leave the latter free to rotate within the bands. The rock-shafts are each journaled in bearings carried by the sections *a* of the reels, and the levers G, which actuate the bearings supporting the shafts between the bearings supporting the latter and project inwardly toward the hub of the reel and terminate at points diametrically opposite each other. The free ends of the levers are connected by links H with the sliding collar I. These collars slide on the hub of the reels and driving-head and are each actuated by four rods J, which pass through the two sections *a* and *b* of the reel and are attached to the sliding sleeve K, which latter can be actuated by a steam or air cylinder, (not shown,) as described.

From the foregoing it will be seen that by moving the sleeve K outwardly or away from its reel the collar I will be drawn toward its reel and the links H caused to move the inner ends of levers G outwardly away from the hub, thus firmly clamping both bands E to the friction-head and causing one or both of the reels, as the case may be, to rotate with the shaft.

With this improved construction of reel, which is designed for a flat rope, and consequently narrow, ample space is provided be-

tween the reels for the driving-head or friction-ring, and a much shorter engine-shaft can be used than has heretofore been possible.

It is evident that numerous slight changes might be made in the general form and arrangement of parts herein shown and described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not limit myself to the precise details of construction shown, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a main shaft, a pair of flat-rope-winding reels loose on the shaft, of a driving-head secured on the shaft in the space intervening between the two winding-reels, and clutching mechanism connected to the inside face of each reel and adapted to be made to engage the driving-head whereby said reels are secured to the shaft.

2. In combination with a main shaft, flat-rope-winding reels loose on said shaft, and a friction-band attached to the inner face of each reel, of a driving-head having friction-surfaces for the two clutches, keyed to said shaft, and devices for tightening and loosening said bands, substantially as set forth.

3. The combination with a shaft, of a reel adapted to receive flat rope, the said reel being composed of two parts one of which has a cylindrical shoulder or seat for the rope and a brake-rim, and a clutch attached to and carried by the reel for locking said reel to the shaft.

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

STEPHEN H. PITKIN.

Witnesses:

J. G. POPE,
W. G. PITKIN.