

T. S. MILLER.
HOISTING ENGINE DRUM.
APPLICATION FILED MAR. 25, 1901.

NO MODEL.

Fig. 1.

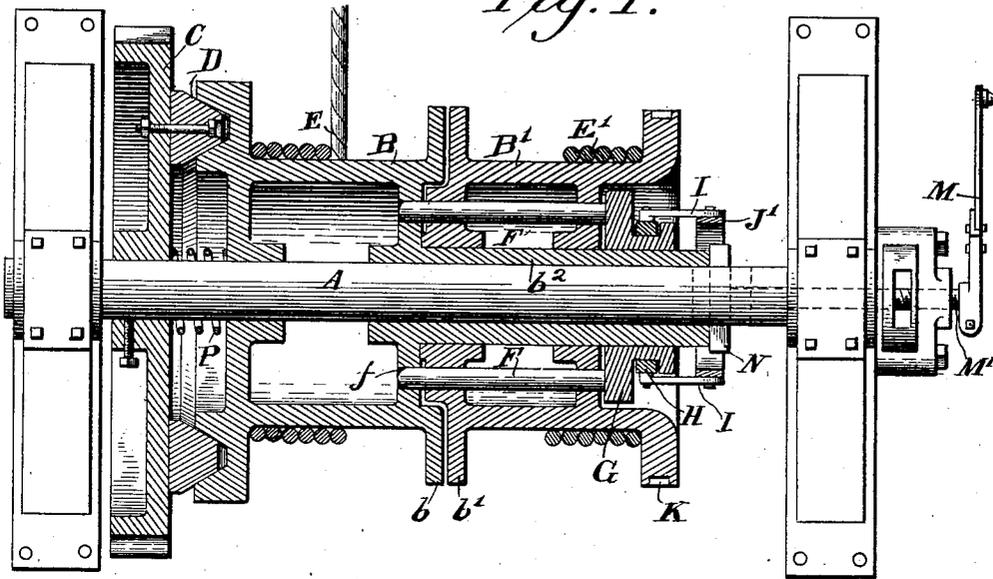


Fig. 2.

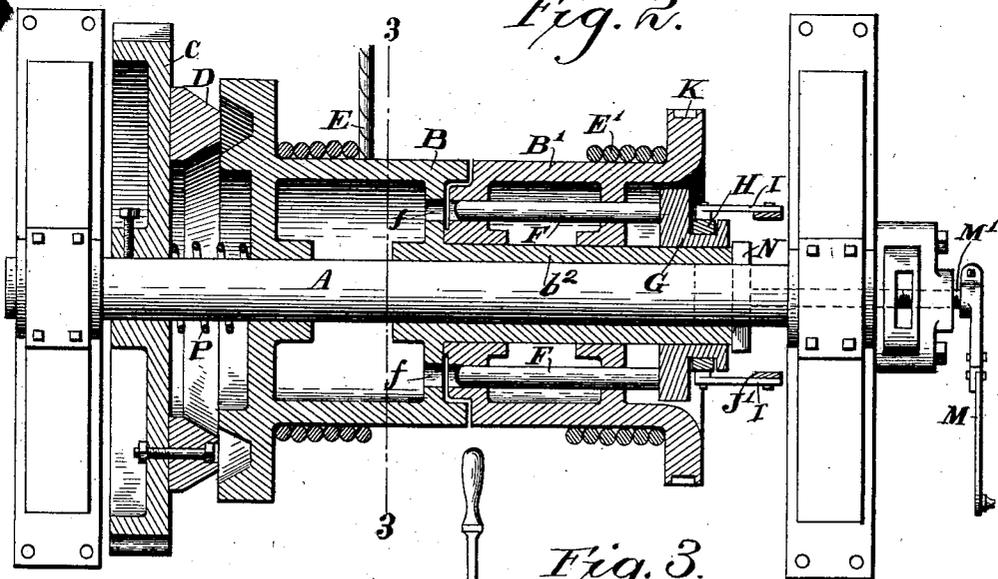
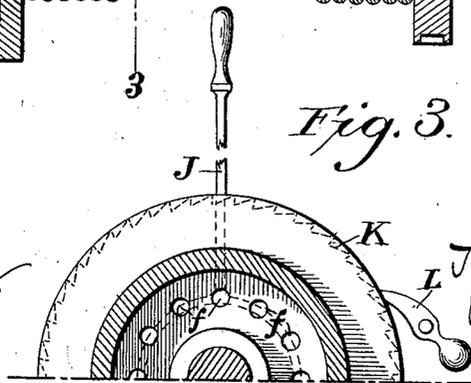


Fig. 3.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

THOMAS SPENCER MILLER, OF SOUTH ORANGE, NEW JERSEY.

HOISTING-ENGINE DRUM.

SPECIFICATION forming part of Letters Patent No. 761,089, dated May 31, 1904.

Application filed March 25, 1901. Serial No. 52,713. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SPENCER MILLER, a citizen of the United States, and a resident of South Orange, in the county of Essex and State of New Jersey, have invented an Improved Hoisting-Engine Drum, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hoisting-engine drums, and comprises certain novel features which will be hereinafter described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan of a drum, showing my improvements embodied therein. Fig. 2 is a similar view showing the two parts of the drum disengaged and also without the central separating-flanges, and Fig. 3 is a section taken upon the line 3 3 of Fig. 2.

In using a drum for the reception of the two ends of a looped rope—that is, where one end of the rope winds upon one end of the drum while the other end winds off of the other end of the drum—it is desirable to have some provision by which the amount of rope which is off of the drum at any time may be varied in order to adapt the drum for use in locations where the loop of the rope is to extend to different distances and also to adjust the same in order to take up slack. It often happens that a device of this sort is employed to operate at a certain distance from the drum and is then shifted to operate at a different distance. In such case it is desirable to be able to permanently wind up or pay out a sufficient amount of the rope to operate at either of the distances. With this object in view I have divided the drum transversely into two sections and provided means by which one of these sections may be held against rotation when desired, so that the other section may be adjusted relatively thereto and means by which the two sections may be locked together after the adjustment has been secured.

In the drawings accompanying herewith I

have illustrated a form of my invention which is at present preferred by me.

In the drawings a shaft A is shown which is rotated by any suitable power connection and upon which the drum, which consists of the two sections B and B', is loosely mounted. One of these sections, as the section B, is adapted to be rotated with the shaft A by means of a friction device or other suitable mechanism. The mechanism herein illustrated consists of friction-blocks D, carried by a friction plate or gear C, which latter is secured to the shaft. The friction-blocks D enter a groove in the plate, which forms one head of the drum B. A spring P is interposed between the drum and the plate or gear C to separate the two, the same being the usual construction for this purpose. The opposite end of the section B of the drum has a sleeve b^2 secured to or forming a part thereof and extending through the section B' of the drum, said sleeve being thus interposed between the section B' and the shaft A. The section B' of the drum is mounted to turn freely upon said sleeve, and suitable locking means are provided by which the two sections B and B' may be secured to turn together when desired. The locking or clutch mechanism for this purpose illustrated consists of longitudinally-extending bolts F, mounted to slide in the section B' and adapted to enter their ends in holes f in the adjacent head of the section B. The opposite ends of the bolts F are secured to a collar or sleeve G, which is mounted to slide upon the sleeve b^2 . The sleeve G is provided with a circular groove adapted to receive the ring H, and said ring is connected by means of links I with the yoke J', by means of which the clutch mechanism is operated. The yoke J' forms part of or is connected with lever J, (shown in Fig. 3,) by which it is shifted. The section B' of the drum is provided with ratchet-teeth K or other suitable means, by which it may be locked or held against rotation. A pawl L is shown as adapted to engage the teeth of the ratchet K.

The friction operating means herein shown consists of the cross-bar or pin N, which engages the end of the sleeve b^2 and which is operated by means of the threaded bar or bolt

M, which lies within an axial hole in the shaft and is operated by means of the lever M, said mechanism being of the usual construction for this purpose. Any form of friction operating mechanism may, however, be substituted therefor.

In Fig. 1 the two parts of the drum are shown as being provided with flanges *b* and *b'* upon their adjacent ends, so that the two parts of the rope E E' may not engage with each other. In Fig. 2 these central flanges are omitted, and the rope may thus wind from one section to the other.

When it is desired to vary the amount of rope which is unwound from the drums, the ratchet L or an equivalent locking mechanism is applied to the section B' of the drum, so as to hold the same against rotation. The clutch mechanism connecting the two sections of the drum is then operated to free said two sections and the power applied to the section B to wind in or pay out the rope, as is desired, until the proper amount of rope is extended. When this result is secured, the clutch mechanism is operated to lock the two sections of the drum together. In order that a fine adjustment of the amount of rope may be secured, the holes *f*, which are engaged by the bolts F, are made as a series, so that the two sections of the drum may be secured to each other at points varying only slightly.

It is evident that other forms of clutching or locking mechanisms may be substituted for that herein shown. This will, however, not alter the spirit of my invention, as I am aware of such possibilities and have herein illustrated and described only a form of mechanism for this purpose which is preferred by me. I do not, therefore, wish to be limited to the exact form of the mechanisms herein shown, as it is evident that changes of such a character may be readily made.

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

1. In combination, a driven shaft, a friction-clutch secured thereto, a drum rotatably mounted on said shaft and engaging said friction-clutch, means whereby the engagement of said friction is controlled; said drum being divided transversely into two sections the combined surfaces of which present a substantially uninterrupted winding-surface and being provided with means for locking the two sections together.

2. In combination, a winding-drum divided transversely into two sections each adapted to receive a rope end, a friction-clutch by which one section is propelled, a device whereby the other section may be held against rotation and means for locking the two sections together.

3. A winding-drum divided transversely into two sections each adapted to receive a rope

end, said sections being of equal diameter and having abutting ends void of flanges, a holding mechanism for one section and a clutch for securing the two sections together.

4. A winding-drum divided transversely into two sections each adapted to receive a rope end, said sections being of equal diameter and having abutting ends void of flanges, longitudinally-movable bolts carried by one section of the drum, the other section having a series of holes for the reception of said bolts.

5. A winding-drum divided transversely into two sections each adapted to receive a rope end, said sections being of equal diameter and having abutting ends void of flanges, a holding mechanism for one section, a power connection with the other section to turn it, and a clutch for connecting or freeing the two sections when desired.

6. A winding-drum divided transversely into two sections each adapted to receive a rope end, said sections being of equal diameter and having abutting ends void of flanges, a holding mechanism for one section, a power connection with the other section to turn the same, and longitudinally-movable bolts carried by one section and adapted to engage the other section to lock the two together.

7. A winding-drum divided transversely into two sections each adapted to receive a rope end, said sections being of equal diameter and having abutting ends void of flanges, a holding mechanism for one section, a power connection with the other section for turning it, longitudinally-movable locking-bolts carried by one section, and the other section having a series of holes for the reception of said bolts, whereby the two sections may be adjusted relatively to each other.

8. The combination with a rotative shaft, a drum loosely mounted thereon and divided transversely into two sections, a sleeve upon one section interposed between the shaft and the other section, of means for locking together or freeing the sections from each other, and means for turning one section from the shaft.

9. The combination with a rotative shaft, a drum loosely mounted thereon and divided transversely into two sections, means for turning one section from the shaft, the other section being rotatively supported by the driven section, and means for locking together or freeing said sections.

10. The combination with a rotative shaft, a drum loosely mounted thereon and divided transversely into two sections, means for turning one section from the shaft the other sections being rotatively supported by the driven section, means for locking together or freeing said sections, and a holding mechanism adapted to engage said other section to prevent its rotation.

11. The combination with a rotative shaft,

a drum divided transversely into two separable sections, and a friction driving device adapted to connect one section with the shaft, of a sleeve on said section interposed between the
5 other section and the shaft, a friction operating device engaging the said sleeve, and means for locking together or freeing said sections.

12. The combination with a rotative shaft,
10 a drum divided transversely into two separable sections, a friction driving device adapted

to connect one section with the shaft, of a sleeve on said section interposed between the other section and the shaft, a friction operating device engaging the said sleeve, a holding device for the other section, and means for locking together or freeing said sections.

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