March 7, 1950 A. J. LUCHANSKY 2,499,869

CONTRACTIBLE CORE AND WINDING DRUM

Filed March 28, 1946

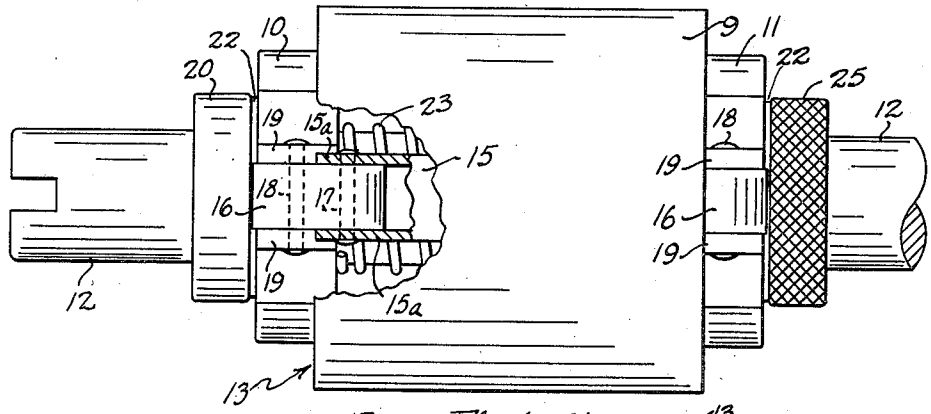


Fig. 1.

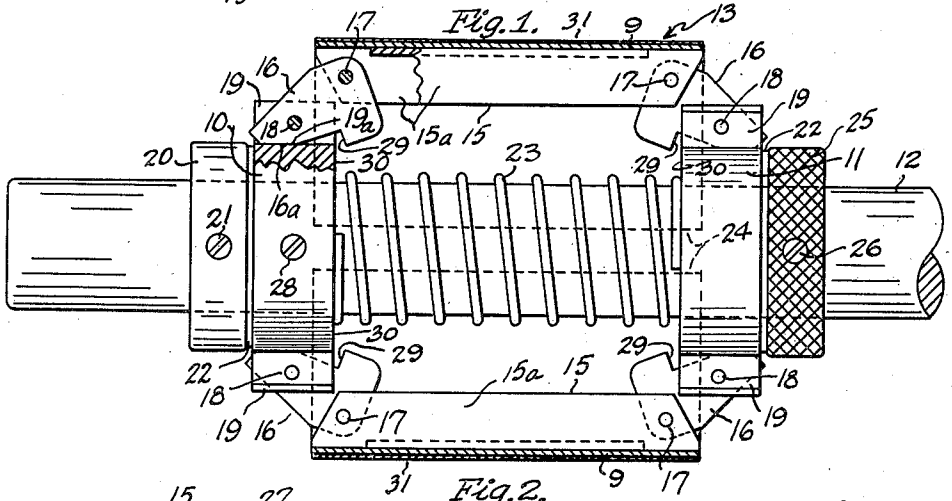


Fig. 2.

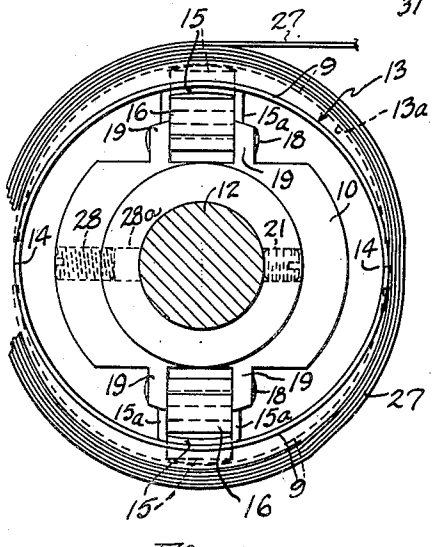


Fig. 3.

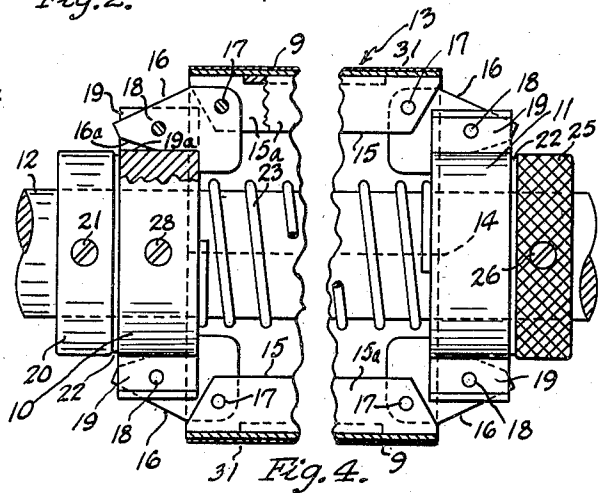


Fig. 4.

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Patented Mar. 7, 1950 2,499,869

UNITED STATES PATENT OFFICE

2,499,869

CONTRACTIBLE CORE AND WINDING DRUM

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Application March 28, 1946, Serial No. 657,671

5 Claims. (Cl. 242—72)

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This invention relates to a winding drum with a contractible core intended to be used primarily for winding webbing or similar material as it comes off the loom, and has for its principal object to provide a winding drum which is so constructed that the webbing wound upon it can be removed from the drum without unwinding or rewinding the webbing. It is, however, not limited to use with such materials, but may be employed for various materials.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In the drawing:

Fig. 1 is a top plan view with a section removed;

Fig. 2 is a side elevation with one side of the drum removed to show the interior construction, and with the drum in the expanded position;

Fig. 3 is an end view of the device showing webbing wound on the device, and dotted lines representing the drum in expanded position, the drum being shown collapsed or contracted in full lines, and

Fig. 4 is a partial side elevation with one side of the drum removed, with the drum in the contracted position.

The device comprises two head members or end blocks 10 and 11, mounted on a rotatable shaft 12. Between the two end blocks 10 and 11 is the winding drum 13, which consists of two semi-cylindrical sections 9 separated, as at 14, Fig. 3. On the inside of each of these sections of the drum 13 is secured, by a suitable means, such as welding or screws (not shown), a channel shaped member 15, located longitudinally of the drum 13.

At the end of each channel, and between its parallel sides 15*a*, levers 16 are pivoted by means of pivot pins 17, the levers 16 also being pivoted by pivot pins 18 between lugs 19 on the end blocks 10 and 11, thus securing the sections 9 of drum 13 to the end blocks 10 and 11. The device is located at any desirable position on the shaft by means of a locating collar 20 held on the shaft by a set screw 21, which permits the collar to be shifted longitudinally of the shaft to any desired location. The end block 10 is placed against the collar 20 and separated from it by a wearing washer 22 composed of fibre or other suitable material. A coil spring 23 embracing the shaft 12 is placed between the end blocks 10 and 11 so

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that it tends to push these blocks 10 and 11 away from each other. Now, however, if the end block 11 is pushed toward the end block 10, the pivots 18 will move toward each other causing the pivots 17 to move outwardly, and in this manner the drum may be moved to the expanded position, the sections separating as at 24, Fig. 2. The outward or expanding movement of the drum sections 9 is limited by the shoulders 16*a* on the levers 16 engaging the wall 19*a* at the bottom of the channel between the lugs 19. The drum is held in this expanded position by means of a movable collar 25 against the head 11 which is knurled to provide a convenient gripping means, and which is held in position by a set screw 26, and there may be another wear washer 22 between block 11 and collar 25. It is while the drum 13 is in this expanded position that the webbing 27 is wound on it, the drum being driven by the rotating shaft 12, through a friction drive in the end block 10, which consists of a leather plug 28*a* or other suitable material held to the shaft with any desirable pressure by means of a set screw 28. This friction drive permits the shaft 12 to rotate at a greater speed than the drum 13, thus keeping tension on the webbing at all times as it comes from the loom.

When the desired amount of webbing has been wound onto the drum 13, the collar 25 is released, permitting it to move to the right, or in a direction away from the collar 20. The coil spring 23 then spreads the end blocks 10 and 11 by moving the end block 11 away from the end block 10. In this manner the pivots 18 move away from each other, causing the levers 16 to contract the drum 13 to the position shown by solid lines, Fig. 3. Lugs 29 on the levers 16 provide a limiting means to engage the inner walls 30 of blocks 10 and 11 to prevent the end blocks from being spread farther than desired. When the drum 13 is thus contracted, the roll of webbing may be easily removed from the drum without unwinding or loosening the wound webbing, by simply sliding the webbing longitudinally off the drum. The drum sections may be covered with emery paper or other suitable material 31 if desired to give a better grip on the material being coiled.

After the webbing has been removed, the drum may then be moved to the expanded position, and another roll of webbing wound upon it. This comprises a very simple construction which is easily operated, and one which will positively retain its expanded condition under the tension of the web being wound.

Having thus set forth the nature of my invention, I claim:

1. A winding drum of the character described comprising a shaft, a pair of end blocks on the shaft relatively movable on the shaft toward and from each other, a spring between the blocks tending to separate them, drum sections extending between the blocks, levers connecting each section adjacent its opposite ends to the blocks pivoted to the sections and the blocks, said levers being arranged to shift the sections outwardly to expand the drum when the blocks are moved toward each other and to shift them inwardly to collapse the drum when shifted in the opposite direction, stop shoulders on the levers positioned to engage the adjacent block to limit outward expanding movement and inward contracting movement of the sections of the drum, and means for securing the blocks in different positions on the shaft.

2. A winding drum of the character described comprising a shaft, longitudinally spaced end blocks mounted on the shaft and at least one of which is slidable on the shaft toward and from the other block, a coiled spring on the shaft between the blocks tending to separate them, a drum comprising a plurality of sections extending between the blocks, a lever at each end of each section pivoted to the section and the adjacent block by spaced pivots arranged to force the sections outwardly as the movable block is shifted toward the other and to move them inwardly to collapse the drum as the block is shifted away from the other, a stop shoulder on each lever pivoted to the movable block positioned to engage this block and limit outward movement of this block, and means to secure the movable block in different positions on the shaft.

3. A winding drum of the character described comprising a shaft, longitudinally spaced end blocks mounted on the shaft and at least one of which is slidable on the shaft toward and from the other block, a drum comprising separate longitudinal sections extending between the blocks, a lever at each end of each section pivoted to the section and the adjacent block by spaced pivots arranged to force the sections outwardly to expand the drum by movement of a block in one direction and to shift them inwardly to contract the drum by movement of the block in the opposite direction, shoulders on the levers positioned to engage the adjacent block to limit inward movement of the movable block to limit

expansion of the drum, and means to secure the movable block in different positions on the shaft.

4. A winding drum of the character described comprising a shaft, a pair of longitudinally spaced end blocks mounted on the shaft and one of which is movable toward and from the other, a spring between the blocks tending to separate them, collars on the shaft on the outer sides of the blocks, means to secure the collars to the shaft to hold the blocks from separating, a drum comprising a pair of separate longitudinal transversely curved sections extending between the blocks, a pair of lugs on opposite sides of each block and aligned flanges on the inner sides of each drum section adjacent its opposite ends, and a lever pivoted between the lugs of each block and the adjacent flanges on the drum sections arranged to shift the sections outwardly on movement of one block toward the other and to shift the sections inwardly on movement of said block away from the other block, said levers being each provided with a shoulder positioned to engage the adjacent block to limit expansion of the drum.

5. A winding drum of the character described comprising a shaft, a pair of longitudinally spaced end blocks on the shaft and one of which is shiftable on the shaft toward and from the other block, a drum comprising a pair of substantially semicylindrical longitudinal sections extending between the blocks, a lever at each end of each section pivoted to the adjacent block and to the section by spaced pivots arranged to shift the sections outwardly by movement of the movable block toward the other block and to shift the sections inwardly on its movement in the opposite direction, and stop shoulders on opposite end portions of the levers positioned to engage surfaces on the blocks to limit movements of the sections in opposite directions.

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