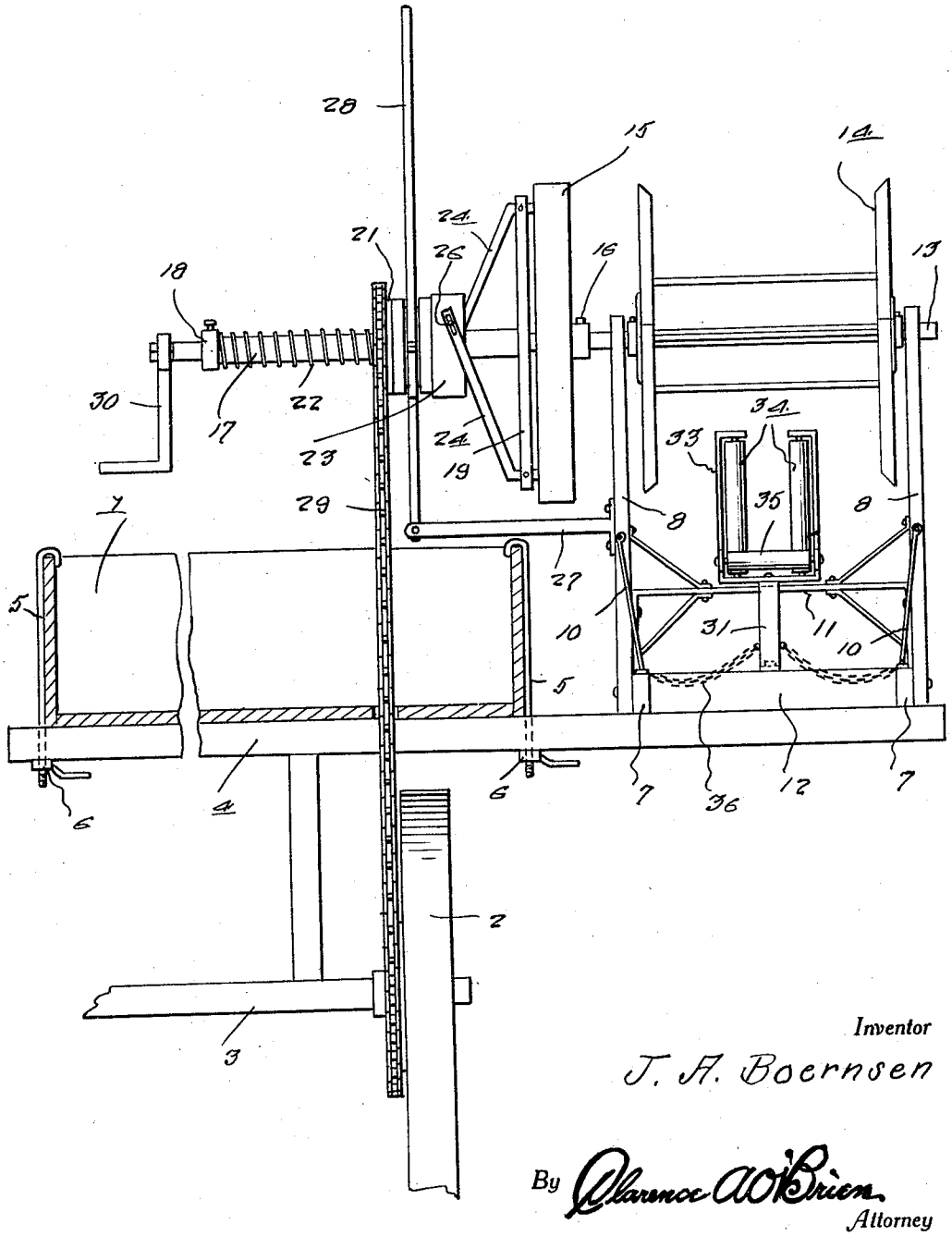
Sept. 6, 1932. J. A. BOERNSEN 1,876,390

WIRE REEL

Filed May 19, 1931 4 Sheets-Sheet 1

Fig. 1.



Inventor

J. A. Boernsen

By Clarence A. O'Brien

Attorney

Sept. 6, 1932. J. A. BOERNSEN 1,876,390

WIRE REEL

Filed May 19, 1931 4 Sheets-Sheet 2

Fig. 7.

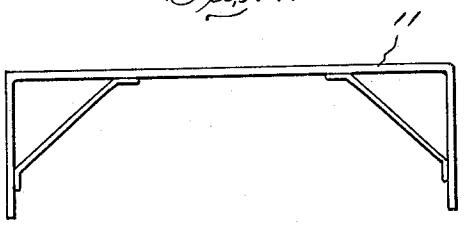


Fig. 2.

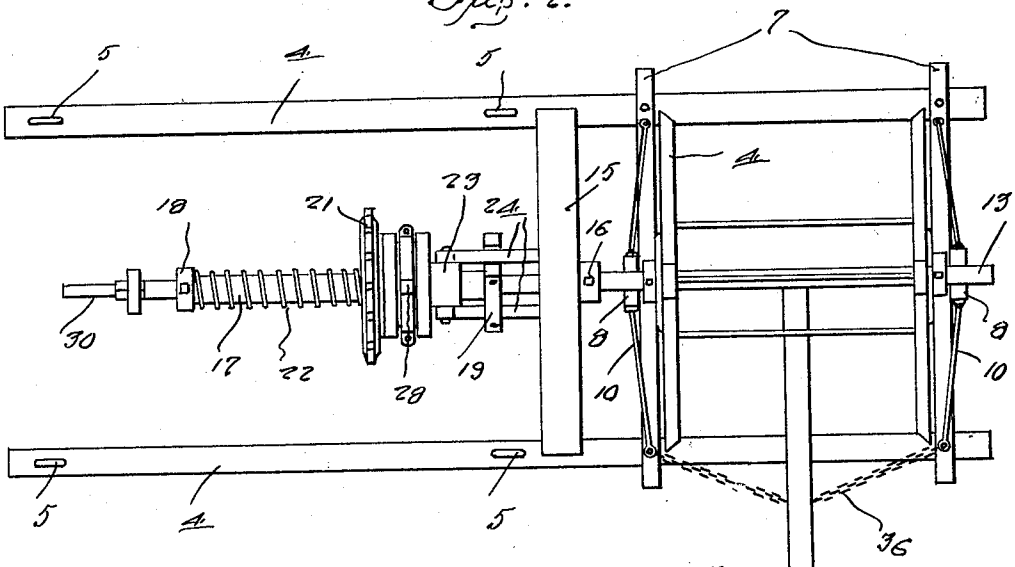
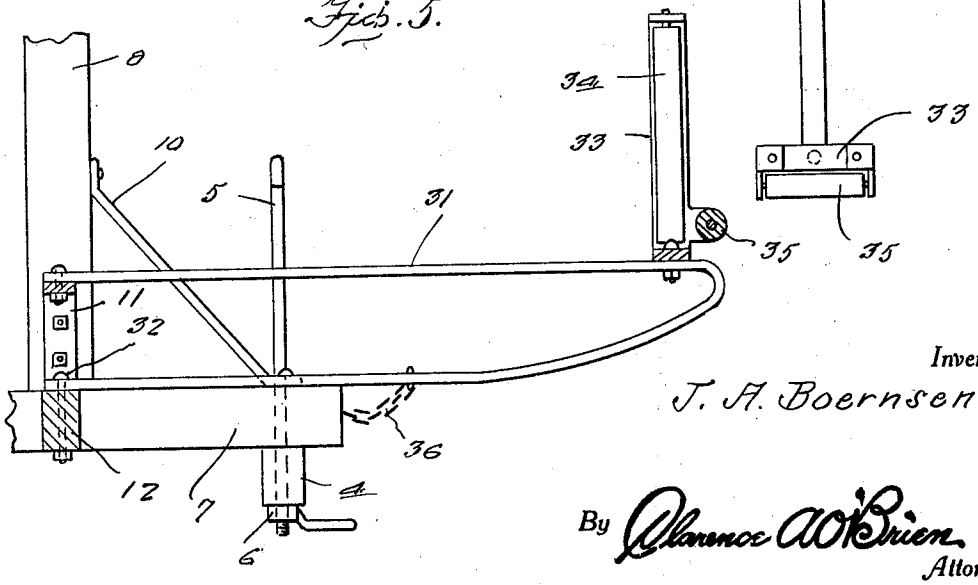


Fig. 5.



Inventor

J. A. Boernsen

By Clarence A. O'Brien

Attorney

Sept. 6, 1932. J. A. BOERNSEN 1,876,390

WIRE REEL

Filed May 19, 1931 4 Sheets-Sheet 3

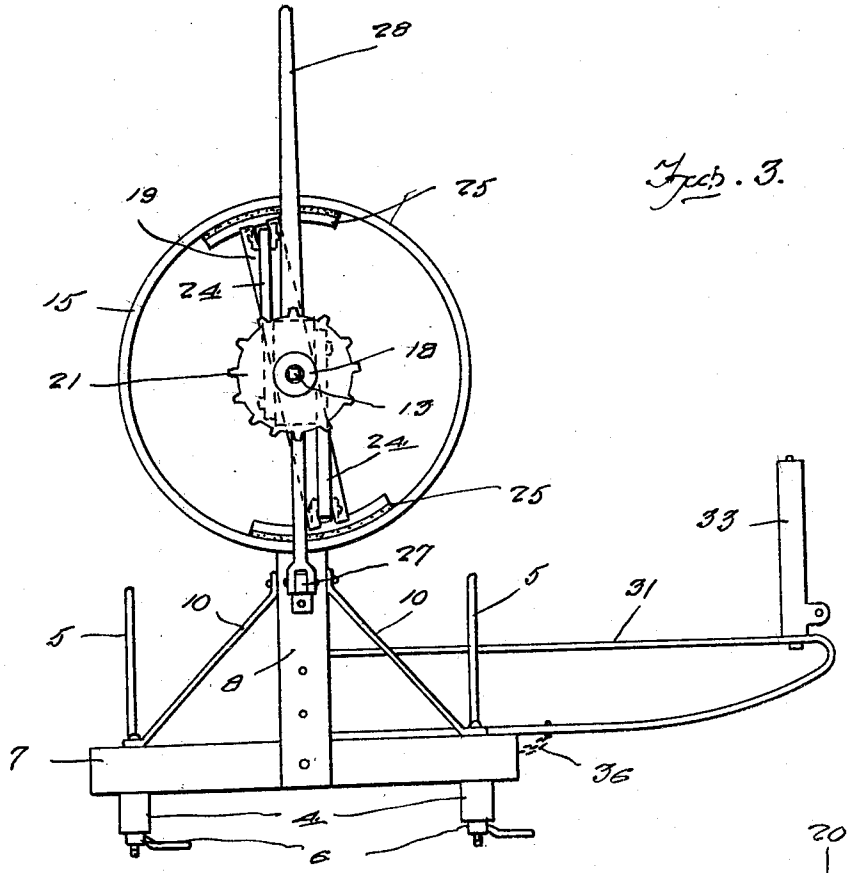


Fig. 3.

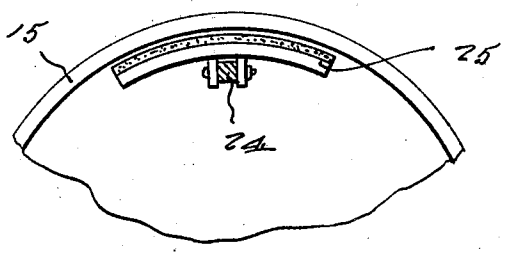


Fig. 8.

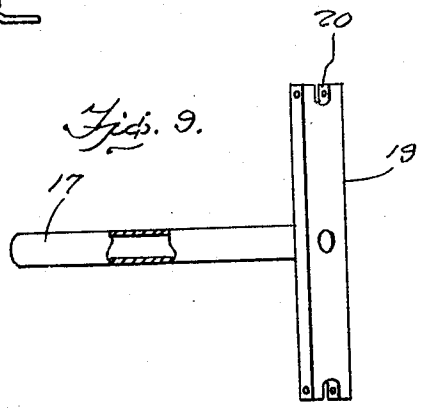


Fig. 9.

Inventor

J. A. Boernsen

By Clarence O'Brien

Attorney

Sept. 6, 1932. J. A. BOERNSEN 1,876,390

WIRE REEL

Filed May 19, 1931 4 Sheets-Sheet 4

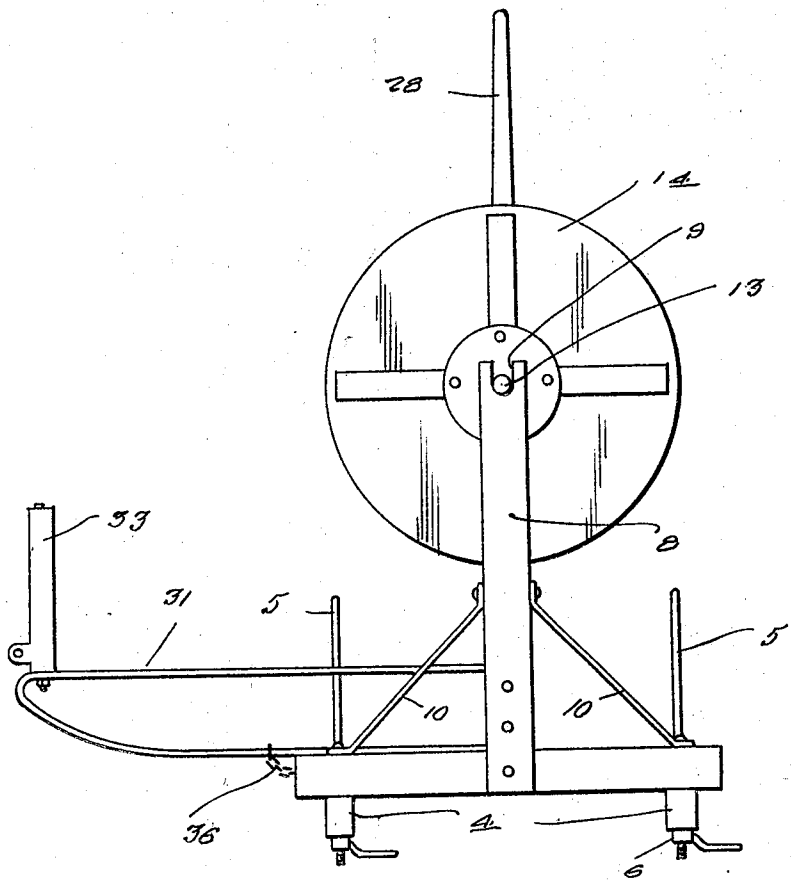


Fig. 4.

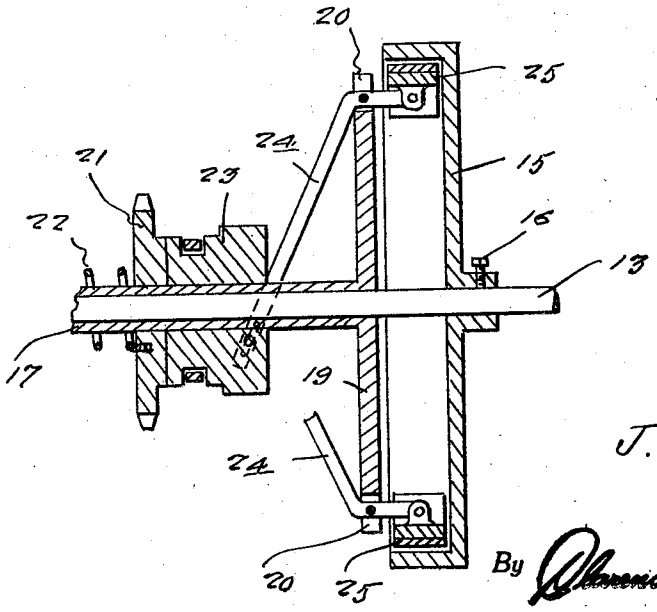


Fig. 6.

Inventor

J. A. Boernsen

By Clarence A. O'Brien

Attorney

Patented Sept. 6, 1932 1,876,390

UNITED STATES PATENT OFFICE

JOHN A. BOERNSEN, OF OCHEYEDAN, IOWA

WIRE REEL

Application filed May 19, 1931. Serial No. 538,523.

This invention relates to a wire reel and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character which is adapted to be operatively mounted on a wagon or other vehicle and which embodies a novel construction and arrangement of parts, whereby the wire may be expeditiously wound thereon or unwound therefrom.

Other objects of the invention are to provide a wire reel of the character described which will be simple in construction, strong, durable, efficient and reliable in operation and which may be manufactured at low cost.

All of the foregoing and still further objects, and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings, wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in vertical cross section through a wagon box showing a structure in accordance with this invention, mounted in position thereon, said structure being shown in front elevation.

Fig. 2 is a view in top plan of the device.

Fig. 3 is a view in side elevation looking at the device from the inner side thereof.

Fig. 4 is a view in side elevation looking at the device from the outer side thereof.

Fig. 5 is a fragmentary view in vertical longitudinal section through the forward portion of the device.

Fig. 6 is a detail view in vertical section through the clutch structure.

Fig. 7 is a detail view in front elevation of one of the reinforcing brackets, comprising a part of the supporting structure of the device.

Fig. 8 is a fragmentary view showing a portion of the clutch.

Fig. 9 is a detail view principally in perspective and partially broken away in section of the clutch shoe supporting element.

Referring now to the drawings in detail, the numeral 1 designates a conventional wagon box which is, of course, provided with supporting wheels, one of the rear wheels being designated by the reference numeral 2 and journaled on a suitable axle shaft 3.

The structure comprising the present invention includes a pair of spaced, parallel beams 4 which are secured transversely beneath the wagon box 1 through the medium of the elongated hooks 5 having their hooked upper ends engaging over the upper edges of the side walls of the wagon box, said hooks extending through the beams 4 and having clamping nuts 6 threaded on their lower end portions.

The beams 4 project laterally beyond one side of the wagon box 1 and have mounted thereon the spaced parallel, longitudinal bars upon intermediate portions of which the vertical standards 8 are rigidly mounted, said standards 8 having their upper ends provided with the notches or recesses 9. Braces 10 have their ends bolted to the standards 8 and the end portions of the bars 7. A substantially inverted U-shaped brace member 11 extends between the lower portions of the standards 8, and downturned side portions, bolted to the standards.

Also extending between the beams 4 and disposed beneath the brace member 11 is a cross member 12.

Removably disposed in the notches or recesses 9 in the upper ends of the standards 8 is a rotary shaft 13 upon which a removable reel or spool 14 is mounted and secured to said shaft for rotation therewith in any suitable manner. The shaft 13 extends inwardly over the wagon box 1 and has mounted thereon adjacent the innermost standard 8, a movable clutch drum 15 which is secured in position on the shaft by a set screw 16. A sleeve 17 is rotatably mounted on the shaft 13 between the clutch drum 15 and a removable collar 18, the end of the shaft which is adjacent the drum 15 having formed integrally therewith a head or plate 19 having notches or recesses 20 in its end portions.

A sprocket gear 21 is loosely mounted on the sleeve 17 and is resiliently connected thereto by a coiled spring 22 which encircles the sleeve and has one end anchored thereto and its other end anchored to the sprocket gear.

A block 23 is slidably mounted on the sleeve 17 between the sprocket gear 21 and the head or plate 19. Angular levers 24 are journaled in the notches or recesses 20 in the end portions of the head or plate 19 and extend into the drum 15, and have mounted thereon the clutch shoes 25 which are adapted for opposite engagement with the drum 15 in a manner to connect said drum with the sleeve 17 for actuation thereby. The inner end portions of the angular levers 24 are operatively connected to opposite sides of the slide block 23 by pin and slot connections 26 for actuation by the clock.

A bracket 27 is mounted on the innermost standard 8 and extends inwardly therefrom over the wagon box 1 and has pivotally mounted on its free end portion an upstanding lever 28 having an intermediate portion formed to encircle the block 23 to which said lever is operatively connected in any suitable manner to permit rotation of the block independently of the lever. An endless sprocket chain 29 is trained over the sprocket gear 21 and over a comparatively large gear which is fixed on one side of the rear wheel 2 of the vehicle for rotation with said rear wheel.

The inner end portion of the shaft 13 is of polygonal cross section to receive a crank 30 through the medium of which the shaft may be manually rotated.

A forwardly extending tongue 31 is mounted for swinging movement in a horizontal plane on the supporting structure, said tongue being formed from an elongated metallic bar bent upon itself in the manner illustrated to advantage in Fig. 5 of the drawings, and having its ends pivotally secured as at 32, to intermediate portions of the brace element 11 and cross member 12. An upstanding substantially U-shaped frame 33 is rotatably mounted on the free or forward end portion of the tongue 31 and has journalled therein the spaced, parallel vertical guide rollers 34 and a horizontally disposed guide roller 35 which is mounted adjacent the lower end portions of the vertical rollers 34.

Chains, or other flexible elements 36 extend from the forward end portions of the bars 7, to intermediate portions of the tongue 31 for limiting the swinging movement of said tongue in opposite directions. Any suitable means may be connected to the tongue and extend inwardly therefrom over the wagon box 1 to permit said tongue to be manually swung to cause the wire to be wound on the reel or spool as desired.

In use, when the block 23 is moved toward the clutch drum 15 through the medium of the hand lever 28, the angular lever 24 will be actuated in a manner to engage the clutch shoes 25 with the drum 15 thereby frictionally connecting the drum to the sleeve 17 for actuation by said sleeve.

As before stated, the sleeve 17 is driven from the rear wheel 2 of the vehicle through the sprocket chain 29, the sprocket gear 21 and the coiled spring 22 which provides a yieldable driving connection between the wheel and the sprocket gear. When the block 23 is moved in a direction away from the drum 15, the shoes 25 obviously will be disengaged from the drum, thereby disconnecting the shaft 13 from the vehicle wheel 2, as will be understood.

It is believed that the many advantages of a wire reel in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction, and in the combination and arrangement of parts, may be resorted to which will fall within the scope of the invention as claimed hereinafter.

Having thus described my invention, what I claim as new is:—

1. A wire reel comprising a supporting structure for detachable mounting on the box or body of a vehicle, said supporting structure including a pair of spaced, parallel beams extending transversely beneath the box and projecting laterally beyond one side of said box, elongated hooks anchored in the beams and engageable over the top of the box for clamping the beams therebeneath, spaced parallel, longitudnal bars on the projecting portions of the beams, standards hingedly mounted on intermediate portions of the bars, a brace extending between the lower portions of the standards and secured to said standards, and a cross member extending between the bars below the brace member, a spool mounted for rotation on the standards, means for actuating the spool, and wire guide means mounted on the supporting structure forwardly of the spool, said guide means including a tongue comprising an elongated bar bent upon itself and having its ends pivotally secured to the brace member and the cross member of the supporting structure, a substantially U-shaped frame disposed vertically and rotatably on the free portion of the tongue, said tongue adapted for swinging movement in a horizontal plane, spaced vertical rollers journaled in the U-shaped frame, a horizontally disposed roller journaled on the U-shaped frame, adjacent the lower ends of the vertical rollers.

2. A wire reel comprising a supporting structure for mounting on a vehicle, a shaft rotatably mounted on the supporting structure, a spool mounted on the shaft for rotation therewith, and means for releasably and yieldingly connecting the shaft to a source of power for actuation thereby, said means including a drum fixed on the shaft, a sleeve loosely mounted on the shaft adjacent the drum, a sprocket gear loosely mounted on

the sleeve, an endless chain trained over the sprocket gear for connecting said sprocket gear with the source of power, a coiled spring encircling the sleeve and having one end anchored thereto and its other end anchored to the sprocket gear and providing a yieldable driving connection from the sprocket gear to the sleeve, and means for connecting the sleeve to the drum for actuating said drum.

3. A wire reel comprising a supporting structure for mounting on a vehicle, a shaft rotatably mounted on the supporting structure, a spool mounted on the shaft for rotation therewith, and means for releasably and yieldingly connecting the shaft to a source of power for actuation thereby, said means including a drum fixed on the shaft, a sleeve loosely mounted on the shaft adjacent the drum, a sprocket gear loosely mounted on the sleeve, an endless chain trained over the sprocket gear for connecting said sprocket gear with the source of power, a coiled spring encircling the sleeve and having one end anchored thereto and its other end anchored to the sprocket gear and providing a yieldable driving connection from the sprocket gear to the sleeve, a head fixed on the sleeve, a block slidably mounted on the sleeve, a lever operatively connected with the block for sliding said block on the sleeve, angular levers pivotally mounted on the head and extending therefrom into the drum, clutch shoes mounted on the second-named levers within the drum for frictional engagement with said drum, and means operatively connecting one end of the second-named levers to the block for actuation by said block.

In testimony whereof I affix my signature.

JOHN A. BOERNSEN.