Feb. 8, 1927. 1,617,129

S. LIABO

SPEED REGULATING DEVICE FOR THE FEEDING ATTACHMENTS FOR THRASHING MACHINES

Filed July 15, 1926 2 Sheets-Sheet 1

Fig. 1.

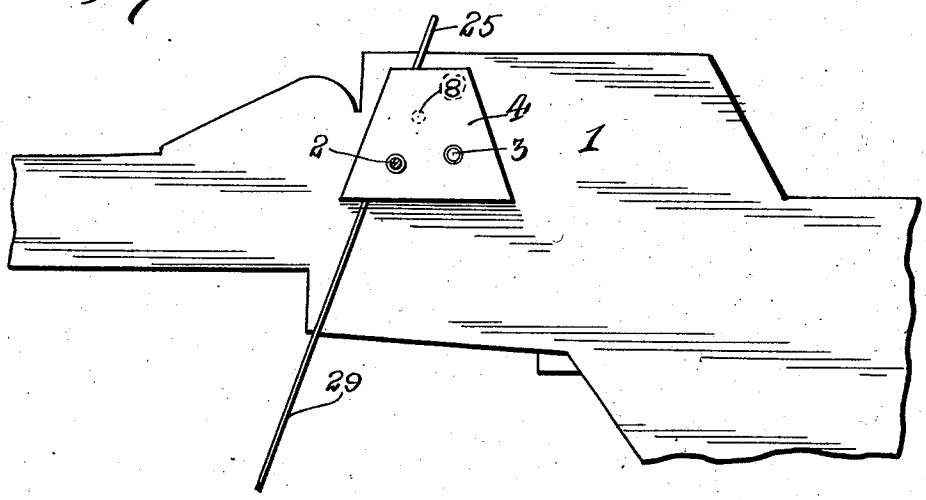

Fig. 2.

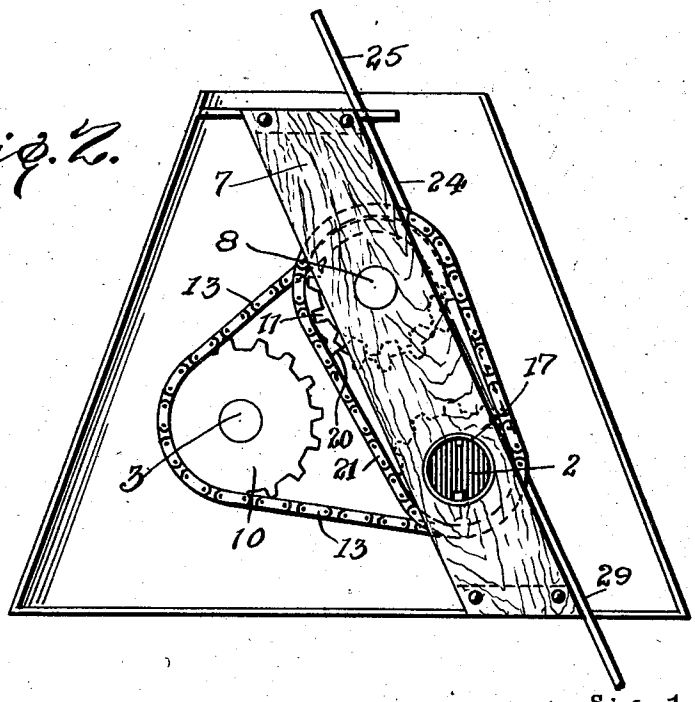

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Fig. 3.

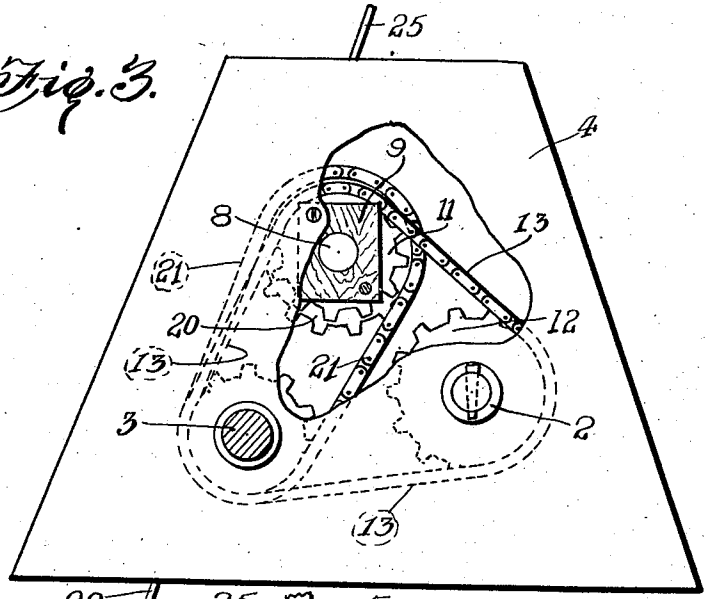


Fig. 4.

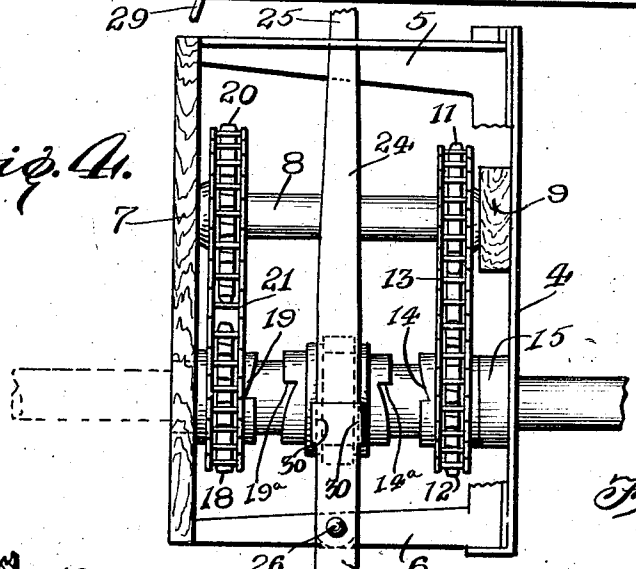
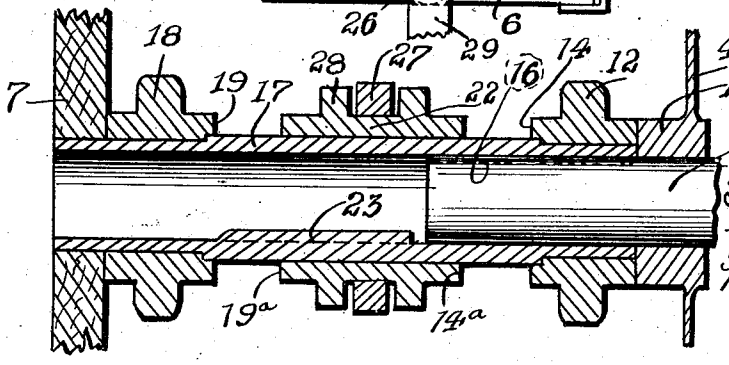


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SPEED-REGULATING DEVICE FOR THE FEEDING ATTACHMENTS FOR THRASHING MACHINES.

Application filed July 15, 1926. Serial No. 123,719.

This invention relates to new and useful improvements in speed regulating devices for feeding attachments for thrashing machines and has for one of its objects to provide manually controlled mechanism whereby the feeding attachment may be driven at two speeds and also capable of being shifted to a neutral or inoperative position to render the feeding attachment inoperative while the remaining thrashing machine structure is in operation.

In thrashing machines, there is a device that carries or feeds the bundles or sheaves into the separator and the present invention is designed to cause the bundle feeder to operate at two different speeds or to remain out of operation whenever desirous.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists of the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the accompanying drawing, wherein like reference characters designate corresponding parts throughout the several views,

Fig. 1 is a side elevational view of a part of a thrashing machine equipped with the present invention,

Fig. 2 is a side elevational view of the speed changing device removed from the thrashing machine,

Fig. 3 is an enlarged side elevational view of the device, with a part of the wall broken away to show the chain and sprocket drive mechanism,

Fig. 4 is an edge elevational view of the speed changing mechanism, and

Fig. 5 is a longitudinal sectional view showing the drive shaft of the thrashing machine and the gear and clutch mechanism associated therewith.

As shown in Fig. 1 the casing 1 has the drive shaft 2 extended laterally therefrom while the reference numeral 3 designates the carrier driven shaft. The invention being designed for varying the speed of rotation of the carrier driven shaft 3, there is provided chain and sprocket mechanism with a clutch connection interposed between the driving shaft 2 and carrier driven shaft 3.

The mechanism for procuring the variance in speed of rotation of the carrier shaft 3 is carried by a supporting structure comprising a metallic plate 4 carrying laterally directed bracket arms 5 and 6 adjacent the upper and lower ends thereof that support at their outer ends a wooden bar 7. The drive shaft 2 extends through the plate 4 and is journaled at its other end in the wooden bar 7 while the carrier driven shaft 3 extends through the plate 4 only. A counter shaft 8 is journaled at one end in the wooden bar 7 above the drive shaft 2 while the other end of the counter shaft 8 is journaled in the wooden block 9, the wooden bearings for the shaft becoming saturated with oil and eliminating the necessity of frequently lubricating the same.

A relatively large sprocket wheel 10 is fixed to the end of the carrier driven shaft 3 within the supporting structure while a relatively small sprocket wheel 11 is fixed to the end of the counter shaft 8 in tracking alinement with the sprocket wheel 10, a loose sprocket wheel 12 being freely journaled upon the drive shaft 2 and over all of which sprocket wheels, a sprocket chain 13 passes. The sprocket wheel 12 is retained against sliding movement upon the drive shaft 2 but is permitted to freely rotate thereon and as shown in Fig. 4 the sprocket 12 is carried by a hub bearing having a clutch face 14 upon one end thereof.

As shown in Fig. 5 the drive shaft 2 journaled in the bearing 15 in the metallic plate 4 is keyed as at 16 within one end of the tubular shaft 17 with the other end of the tubular shaft journaled in the wooden bar 7. The end of the tubular shaft 17 opposite the sprocket wheel 12 has a sprocket wheel 18 freely rotatable thereon and retained against sliding movement and with a clutch face 19 upon one end thereof as shown in Fig. 4, the sprocket wheel 18 being alined with the relatively large sprocket wheel 20 upon the end of the counter shaft 8 opposite the sprocket wheel 11, the sprocket wheel 20 being fixed to the counter shaft. A sprocket chain 21 passes over the alined sprocket wheels 18 and 20.

A clutch sleeve 22 is splined as at 23 upon the tubular shaft 17 as shown in Fig. 5 and has clutch faces 14^a and 19^a that are adapted to engage the clutch faces 14 and 19 carried by the sprocket wheels 12 and 18, the clutch sleeve 22 being slidable upon the tubular

shaft 17 and keyed thereto for rotation with the shaft. The shifting means for the clutch sleeve 22 includes a lever 24 extending upwardly as at 25 with the lower end thereof pivoted as at 26 to the bracket arm 6, the lever 24 carrying a fork 27 extending into the annular race 28 of said sleeve to permit free rotation of the clutch sleeve and also effect sliding movement thereof upon the tubular shaft 17. The clutch sleeve 22 may be operated from the upper side of the thrashing machine with either of the clutch faces 14—14ª or 19—19ª brought into play. It is also intended that the clutch sleeve be operated by a person standing on the ground, and as shown more clearly in Figs. 1 and 4, there is provided an arm 29 pivoted upon the pin 26 with side lugs 30 upon its upper end that engage opposite sides of the lever 24 for shifting the clutch sleeve.

It will therefore be seen that when the clutch sleeve 22 is moved to the right as shown in Fig. 4, the clutch faces 14 and 14ª are engaged to lock the sprocket wheel 12 to the tubular shaft 17 and to the sprocket chain 13 and sprocket wheels 11 and 10 drive the carrier driven shaft 3 at its greatest speed. When the clutch sleeve 22 is shifted in the opposite direction to cause the clutch faces 19 and 19ª to be engaged, the sprocket wheel 18 being keyed to the tubular shaft 17 operates the larger sprocket wheel 20 upon the counter shaft 8 at a lower speed. When the clutch sleeve 22 is in the neutral position shown in Fig. 4, the carrier driven shaft 3 is out of operation while the drive shaft 2 continues to operate the remaining mechanism of the thrashing machine.

From the above detailed description of the invention, it is believed that the construction and operation thereof will at once be apparent, and while there is herein shown and described the preferred embodiment of the present invention, it is, nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed is:—

1. In a feeder for thrashing machines, the combination with the drive and carrier driven shafts, of a counter shaft, a relatively small sprocket wheel fixed to the counter shaft, a sprocket wheel on the drive shaft, a sprocket chain inclosing the sprocket wheels, the sprocket wheel on the drive shaft being freely rotatable, a manually operable clutch for locking the same to the drive shaft, a relatively large sprocket wheel fixed to the counter shaft, a second sprocket wheel loose on the drive shaft, a sprocket chain connecting the same with the larger sprocket wheel and said second sprocket wheel being keyed to the drive shaft by said clutch.

2. In a feeder for thrashing machines, the combination with the drive and carrier driven shafts, of a counter shaft, a relatively small sprocket wheel fixed to the counter shaft, a sprocket wheel on the drive shaft, a sprocket chain inclosing the sprocket wheels, the sprocket wheel on the drive shaft being freely rotatable, a manually operable clutch for locking the same to the drive shaft, a relatively large sprocket wheel fixed to the counter shaft, a second sprocket wheel loose on the drive shaft, a sprocket chain connecting the same with the larger sprocket wheel and said second sprocket wheel being keyed to the drive shaft by said clutch, the means for operating the clutch including a lever pivoted at one end and a fork connection between the lever and clutch.

3. In a feeder for thrashing machines, the combination with the drive and carrier driven shafts, of a counter shaft, a relatively small sprocket wheel fixed to the counter shaft, a sprocket wheel on the drive shaft, a sprocket chain inclosing the sprocket wheels, the sprocket wheel on the drive shaft being freely rotatable, a manually operable clutch for locking the same to the drive shaft, the means for operating the clutch including a lever pivoted at one end, a fork connection between the lever and clutch, and a second lever extending in the opposite direction and engaging the aforesaid lever beyond its pivot for operating the first named lever and clutch.

4. In a feeder for thrashing machines, the combination with the drive and carrier driven shafts, of a counter shaft, a relatively small sprocket wheel fixed to the counter shaft, a sprocket wheel on the drive shaft, a sprocket chain inclosing the sprocket wheels, the sprocket wheel on the drive shaft being freely rotatable, a manually operable clutch for locking the same to the drive shaft, a relatively large sprocket wheel fixed to the counter shaft, a second sprocket wheel loose on the drive shaft, a sprocket chain connecting the same with the larger sprocket wheel and said second sprocket wheel being keyed to the drive shaft by said clutch, the means for operating the clutch including a lever pivoted at one end, a fork connection between the lever and clutch, and a second lever extending in the opposite direction and engaging the aforesaid lever beyond its pivot for operating the first named lever and clutch.

In testimony whereof I affix my signature.

SIVERT LIABO.