No. 687,229. Patented Nov. 26, 1901.

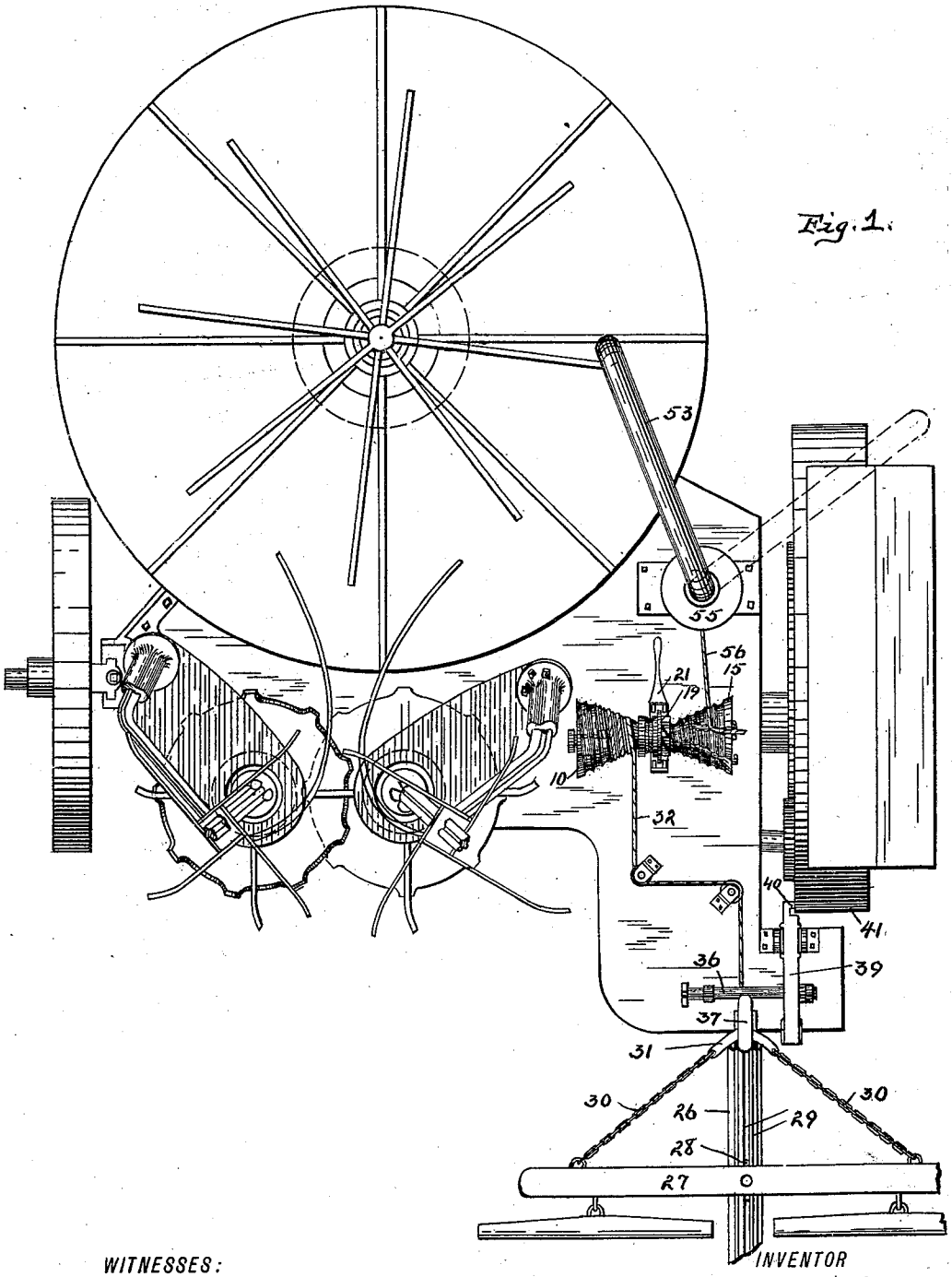
A. N. HADLEY.

LIFTING MECHANISM.

(Application filed Apr. 15, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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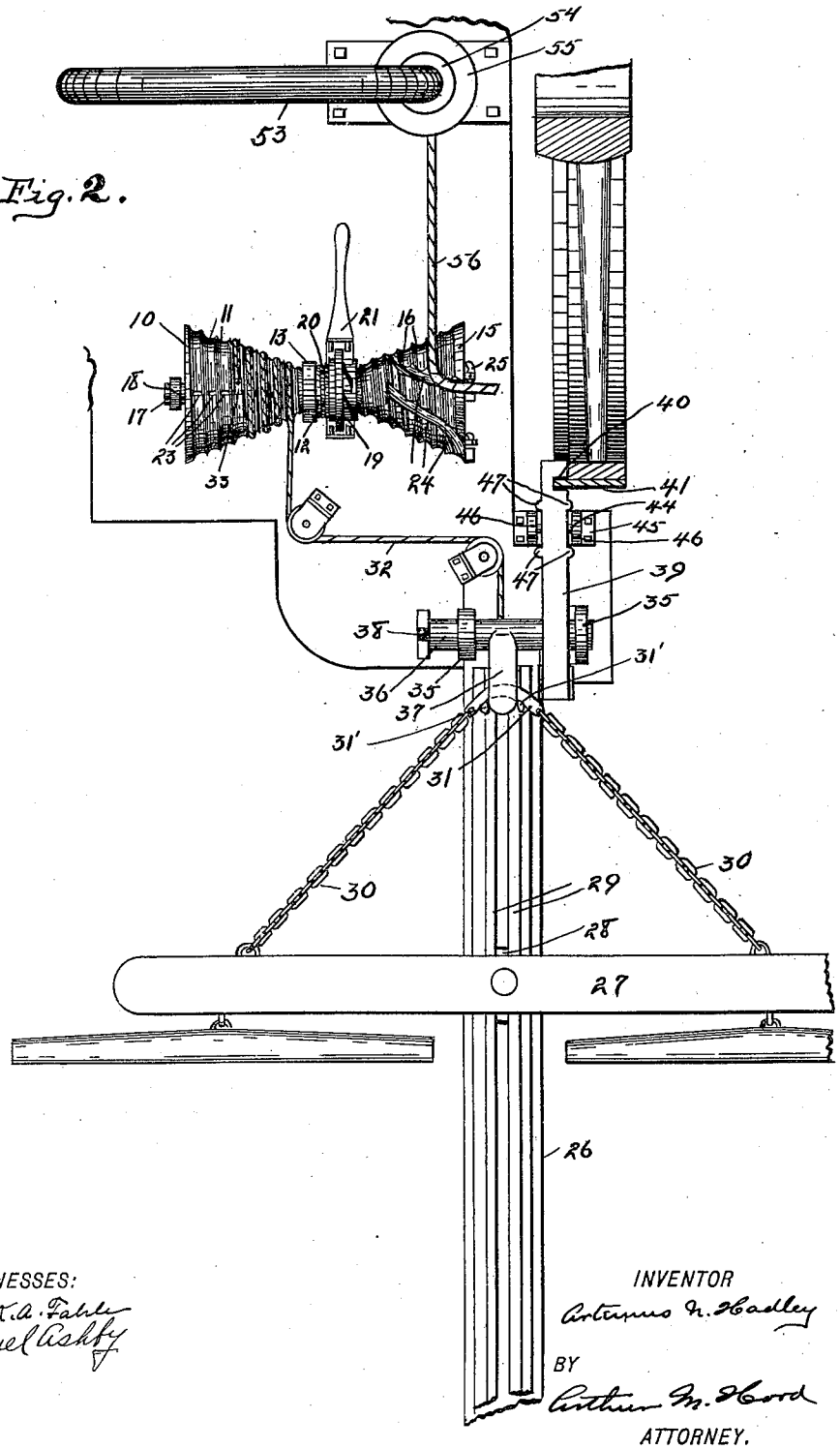
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Fig. 2.



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Fig. 3.

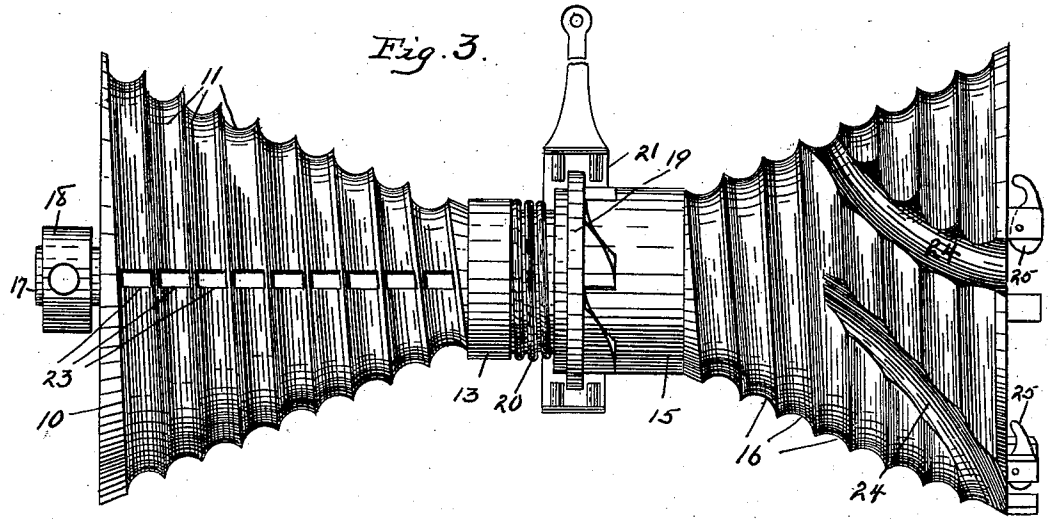
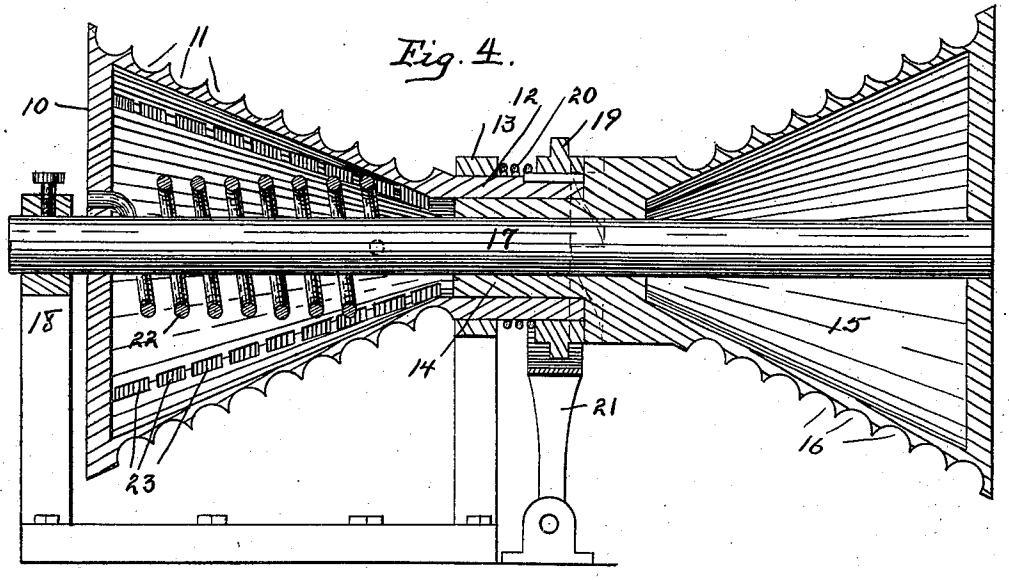


Fig. 4.



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UNITED STATES PATENT OFFICE.

ARTEMUS N. HADLEY, OF INDIANAPOLIS, INDIANA.

LIFTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 687,229, dated November 26, 1901.

Application filed April 15, 1898. Serial No. 677,727. (No model.)

To all whom it may concern:

Be it known that I, ARTEMUS N. HADLEY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Lifting Mechanism, of which the following is a specification.

My invention relates to an improvement in hoisting mechanisms.

The object of my invention is to produce a hoisting mechanism designed more particularly for use in connection with my improved corn-harvester described and claimed in my pending application, Serial No. 655,841, by means of which the shocks of corn may be lifted from the machine by the horses which draw said machine. It is to be understood, however, that my present mechanism is not limited to use in connection with said corn-harvester, but may be used wherever a power hoisting mechanism is desired.

The accompanying drawings illustrate my invention.

Figure 1 is a plan showing my device mounted in position on my corn-harvester. Fig. 2 is a plan, on a larger scale, of the hoisting mechanism. Fig. 3 is a plan, on a still larger scale, of the hoisting-drum. Fig. 4 is a central vertical section thereof.

In the drawings, 10 indicates a hollow cylindrical preferably conical drum provided on its periphery with a continuous track 11, in which a rope or cable may be wound. One end of drum 10 is provided with a hollow cylindrical hub 12, which is rotatably mounted within a suitable bearing 13. Sleeved within the hub 12 is a similar hub 14, carried by a cylindrical preferably conical drum 15, which is similar to the drum 10, the said drum 15 being provided on its periphery with a continuous rope-track 16. Extending through hub 14 is a shaft 17, one end of which finds a bearing in the outer end of the drum 10 and is secured within a stationary bearing 18, the shaft thus forming a support for the outer ends of the two drums. The hub 12 extends through a bearing 13, and keyed to said extended end and longitudinally movable thereon is a clutch 19, which is held normally in engagement with suitable clutch-teeth carried by the drum 15 by means of a spring 20. Clutch 19 may be thrown out of engagement with drum 15 by means of a suitable yoke 21, thus allowing the said drum 15 to rotate independently of the drum 10. Mounted within the drum 10 is a spring 22, one end of which is secured to the said drum and the other end to the shaft 17, the arrangement being such that the said drum will be returned to its normal position by said spring. Formed through the periphery of drum 10 is a series of openings 23, the purpose of which will be made to appear. Drum 15 is designed to operate upon the load-carrying cable or rope, and in order that said cable may be engaged by the drum at any desired point I form a series of grooves 24, which lead from the outer end of the drum across the track 16, the arrangement being such that the rope being laid in said groove it may be easily directed into any desired portion of the track 16. For the purpose of gripping the rope and holding it within the groove 24 any desired means, such as the grip 25, may be used. By this means and the conical drums any desired leverage may be obtained upon the load-carrying cable.

Longitudinally movable upon the tongue 26 is the usual doubletree 27, to which the rope 32 may be attached. Secured to each end of rope 32 is a pin 33, provided with an offset, and is so arranged that it may be inserted in any one of the openings 23 of the drum 10. The lifting-cable 36 is passed over a suitable derrick 50.

In operation, the parts being in the position shown in Fig. 2, the operator places cable 56 in one of grooves 24, allowing grip 25 to engage the free end thereof, and then directs it into any portion of the track 16, depending upon the conditions of the load. If there is a large amount of slack to be taken up, then rope 56 is placed in that portion of the track 16 nearest the outer larger end of the drum 15, and vice versa. Pin 33 is inserted in one of the openings 23. The operator then throws clutch 19 out of engagement with drum 15, thus allowing the said drum to freely rotate in the reverse direction and the load to drop.

It will be noticed that by throwing rope 56 into any desired portion of the track 16 and by shifting pin 33 into any one of the openings 23 any desired relation of leverages between the horses and load may be obtained. It will also be noticed that with the parts in

the position shown in Fig. 1 the first forward movement of the horses will draw the rope 56 up quickly, thus taking up all slack and forming the "waist" of the shock, the movement of the horses being considerably less than the movement of the rope 56, and that when the weight of the load is felt the positions of the ropes 56 and 32 on their respective drums will be changed and the movement of the horses be more nearly equal to or even greater than the movement of the load.

I claim as my invention—

1. In a lifting mechanism, a winding-drum therefor consisting of two parts, one of which may be rotated independently of the other, a clutch carried by one of said parts in position to engage the other, and means for returning one of said parts to its normal position.

2. In a lifting mechanism, a winding-drum therefor consisting of two parts, one of said parts being relatively rotatable upon the other, means for causing said parts to rotate together, and means for returning one of said parts to its normal position.

3. In a lifting mechanism, a biconical winding-drum the two cones thereof being relatively rotatable, means for causing said cones to rotate together, means for returning one of said cones to its normal position and means for securing a rope or cable thereto.

4. In a lifting mechanism, a winding-drum therefor consisting of two parts, one of which may be rotated independently of the other, a clutch carried by one of said parts in position to engage the other, and a spring for returning one part of said drum to its normal position.

5. In a lifting mechanism, a biconical winding-drum, means carried by said cone for securing a rope thereto, and a spring for returning one part of said drum to its normal position.

6. In a lifting mechanism, a biconical winding-drum consisting of two conical sections, the said sections being relatively rotatable, means for causing said sections to rotate together, and a spring engaging one of said sections in position to return it to its normal position.

7. In a lifting mechanism, a conical winding-drum having one or more grooves 24 formed in its periphery, the arrangement of said grooves being such that a rope or cable may be directed to any desired portion of the drum, substantially as described.

8. In a lifting mechanism, a conical winding-drum having a continuous rope-track formed on its periphery, and one or more grooves extending across said track whereby a rope may be directed to any desired portion of the drum.

9. In a lifting mechanism, a biconical winding-drum, a rope-track formed on the periphery of each cone, and one or more grooves extending across the track on one of said cones whereby a rope may be directed to any desired portion of the cone.

10. In a lifting mechanism, a biconical winding-drum, the two conical sections thereof being relatively rotatable, means for causing said sections to rotate together, a rope-track formed upon the periphery of each cone, and one or more grooves extending across the track of one of said cones whereby a rope may be directed to any desired portion of the cone.

11. In a lifting mechanism, a biconical winding-drum, the two conical sections being relatively rotatable, means for causing said sections to rotate together, a rope-track formed upon the periphery of each cone, one or more grooves extending across the track of one of said cones whereby a rope may be directed to any desired portion of the cone, and a spring for returning one part of said drum to its normal position.

12. In a lifting mechanism, a biconical winding-drum consisting of a pair of conical sections each of which is provided, at one end, with a hollow sleeve, the said sleeves being mounted so as to rotate one upon the other, and a clutch keyed to the outer sleeve and arranged to engage the other drum-section.

13. In a lifting mechanism, a biconical winding-drum consisting of a pair of conical sections each of which is provided, at one end, with a hollow sleeve, the said sleeves being mounted so as to rotate one upon the other, a clutch keyed to the outer sleeve and arranged to engage the other drum-section, a bearing for the said outer sleeve, and a shaft passing through the said drums, substantially as described.

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