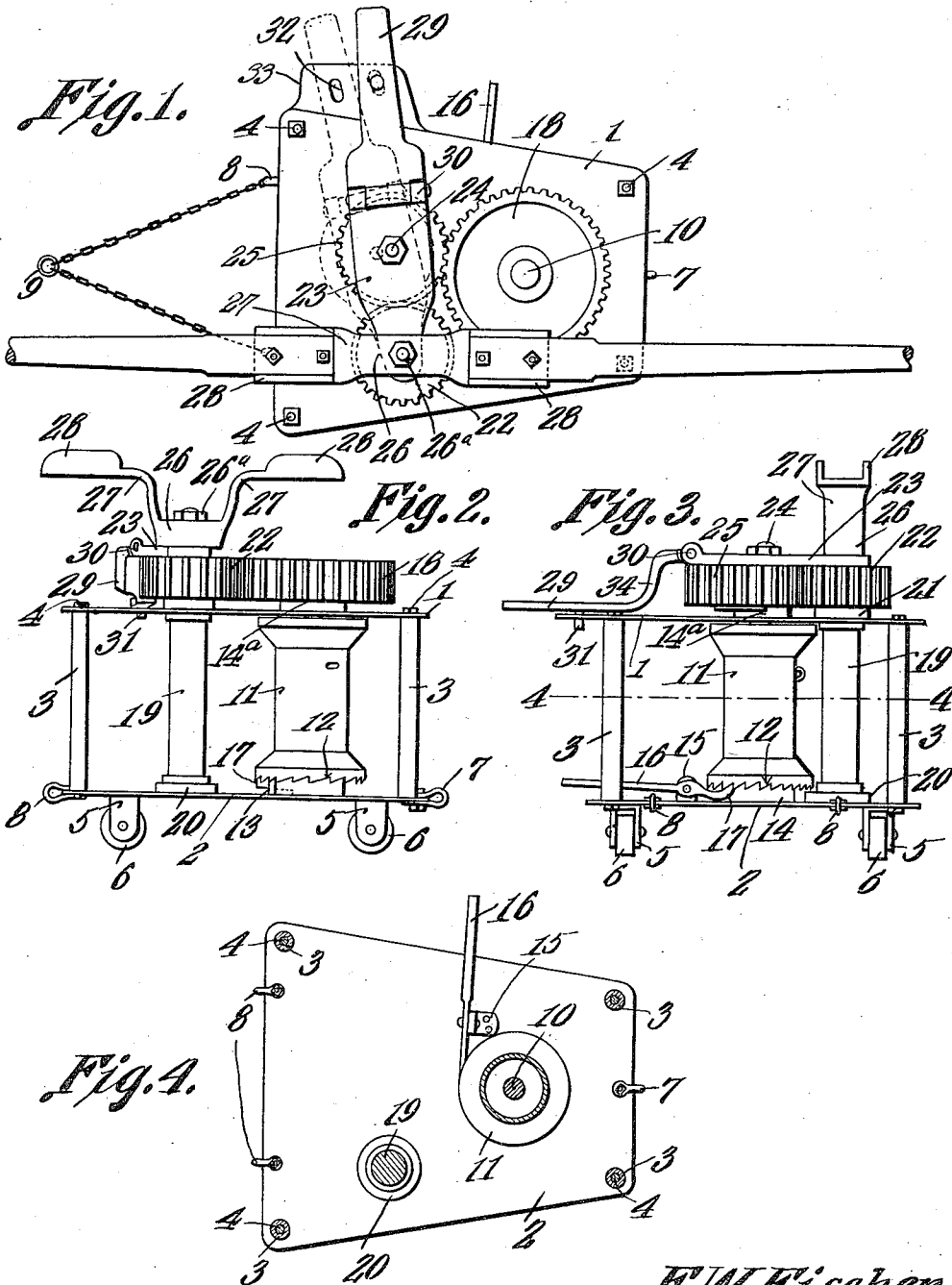


F. W. FISCHER.
GEARING.

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1,060,330.

Patented Apr. 29, 1913.



Witnesses

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UNITED STATES PATENT OFFICE.

FRIDRICH WILHELM FISCHER, OF NORFIELD, MISSISSIPPI.

GEARING.

1,060,330.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRIDRICH W. FISCHER, a citizen of the United States, residing at Norfield, in the county of Lincoln and State of Mississippi, have invented a new and useful Gearing, of which the following is a specification.

This invention aims to provide a novel form of gearing, adapted to be used, primarily, but not exclusively, upon a windlass or winch, whereby the shafts of the windlass or winch may be disconnected and be connected operatively at will.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings, Figure 1 is a top plan; Fig. 2 is a side elevation; Fig. 3 is an end elevation; and Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 3.

In carrying out the invention there is provided a supporting structure which comprises as fundamental elements, a top plate 1 and a bottom plate 2. These plates 1 and 2 are preferably cast metal, and may be of any desired thickness. The plates 1 and 2 are spaced apart by tubular posts 3 through which extend tie bolts 4 engaging the plates 1 and 2, to bind the same against the ends of the posts 3. Secured to the lower face of the bottom plate 2 are a plurality of brackets 5, in which are journaled supporting wheels 6. Secured to one end of the bottom plate 2 is a clevis 7, and other clevises 8 are secured to the other end of the bottom plate. The several clevises 7 and 8 may be employed for drawing the device about and for anchoring the same, suitable traction means 9 being ordinarily connected with the clevises 8.

The invention further includes a primary shaft 10 which carries fixedly connected thereto, a drum 11, located between the plates 1 and 2. The drum 11 is provided upon its lower end with a ratchet 12. The lower end of the primary shaft 10 is journaled in a thrust-bearing 14 carried by the bottom plate 2, and the upper end of the primary shaft is journaled in a bearing 14^a,

which may be secured to the upper face of the top plate. Fixed to and upstanding from the bottom plate 2 is a fulcrum bracket 15 upon which is pivotally supported a lever 16, having at one end a pawl 17 adapted to engage the ratchet 12 of the drum 11. Secured to the upper end of the primary shaft 10 is a main pinion 18 located above the top plate 1.

A secondary shaft 19 is shown, the same being supported for rotation in a thrust bearing 20 secured to the bottom plate 2, the upper end of the secondary shaft 19 being journaled in a bearing 21 which is carried by the top plate 1. Secured to the upper end of the secondary shaft is a secondary pinion 22 which is peripherally spaced from the main pinion 18. Supported for swinging movement upon the secondary shaft 19, above the secondary pinion 22 is a lever 23, carrying a depending stub shaft 24 upon which is journaled an auxiliary pinion 25. The auxiliary pinion 25, meshes with the secondary pinion 22. Superposed upon the lever 23 and secured to the upper end of the secondary shaft 19 is a head 26, constituting means for holding the lever 23 in place, the head 26, in its turn, being held upon the shaft 19 by means of a nut 26^a. The head 26 is equipped with outstanding, laterally extended arms 27, provided with sockets 28, adapted to receive sweep bars.

A latch 29 is hinged as indicated at 30, to the free end of the lever 23 for vertical swinging movement, the latch 29 being equipped with a depending stud 31, adapted to register in one of a pair of openings 32, formed in an extension 33 of the top plate 1. Intermediate its ends, the latch 29 is curved as indicated at 34, to extend across the periphery of the auxiliary pinion 25.

In practical operation, the cable is connected with the drum 11, and the lever 23 is swung with the secondary shaft 19 as a fulcrum, until the auxiliary pinion 25 meshes into the main pinion 18. The latch 29 is then swung vertically until the stud 31 engages in one of the openings 32, to hold the pinions 25 and 18 in mesh. Thereupon, when rotatory movement is imparted to the secondary shaft 19 through the medium of the sweep supporting members 28, rotation will be imparted to the secondary pinion 22, and from the secondary pinion 22 to the auxiliary pinion 25, the auxiliary pinion 25 meshing into and driving the

main pinion 18, the latter imparting rotatory movement to the primary shaft 10 and to the drum 11. To break the drive, the free end of the latch 29 may be lifted, with-
 5 drawing the stud 31 from the opening 32 in which it is mounted, whereupon the lever 23 may be swung laterally, the auxiliary pinion 25 being moved out of mesh with the main pinion 18 whereby the primary
 10 shaft 10 and the drum 11 are actuated. The drum 11 is then free to rotate, and the cable or chain may be paid out readily and rapidly, and drum 11 and the pinion 18 rotating independently of the secondary shaft
 15 19 and accessory parts. It will therefore be seen that the draft animals may be permitted to stand, during the time that the chain or cable is being paid out.

Obviously, the drum 11 may be held
 20 against rotation, to retain the tension in the cable, by the lever 16 and its pawl 17, the construction being such that the pawl 17 normally remains engaged with the ratchet 12. However, by pressing the free end of
 25 the lever 16, the pawl 17 may be disengaged from the ratchet 12, thereby permitting rapid reverse rotation of the drum, when the pinions 18 and 25 are out of mesh.

Having thus described the invention what
 30 is claimed is:—

In a device of the class described, a supporting structure; a main shaft journaled

for rotation therein; a main pinion secured to the main shaft; a secondary shaft jour-
 35 naled in the supporting structure; a secondary pinion carried by the secondary shaft and out of mesh with the main pinion; a lever fulcrumed on the secondary shaft for movement parallel to the plane of rota-
 40 tion of the pinions; an auxiliary pinion journaled on the lever and being continuously in mesh with the secondary pinion, the auxiliary pinion being adapted to mesh
 45 into the main pinion when the lever is swung on the secondary shaft; a latch pivoted to the lever for movement at right
 50 angles to the plane of rotation of the pinions; and interengaging elements on the latch and upon the supporting structure for holding the auxiliary pinion in and out of
 55 mesh with the main pinion; the latch being curved to extend across the periphery of the auxiliary pinion, thereby permitting the latch to rest upon the supporting structure and permitting the interengaging elements to cooperate.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRIDRICH WILHELM FISCHER.

Witnesses:

W. W. SMITH,
 A. W. BREWER.