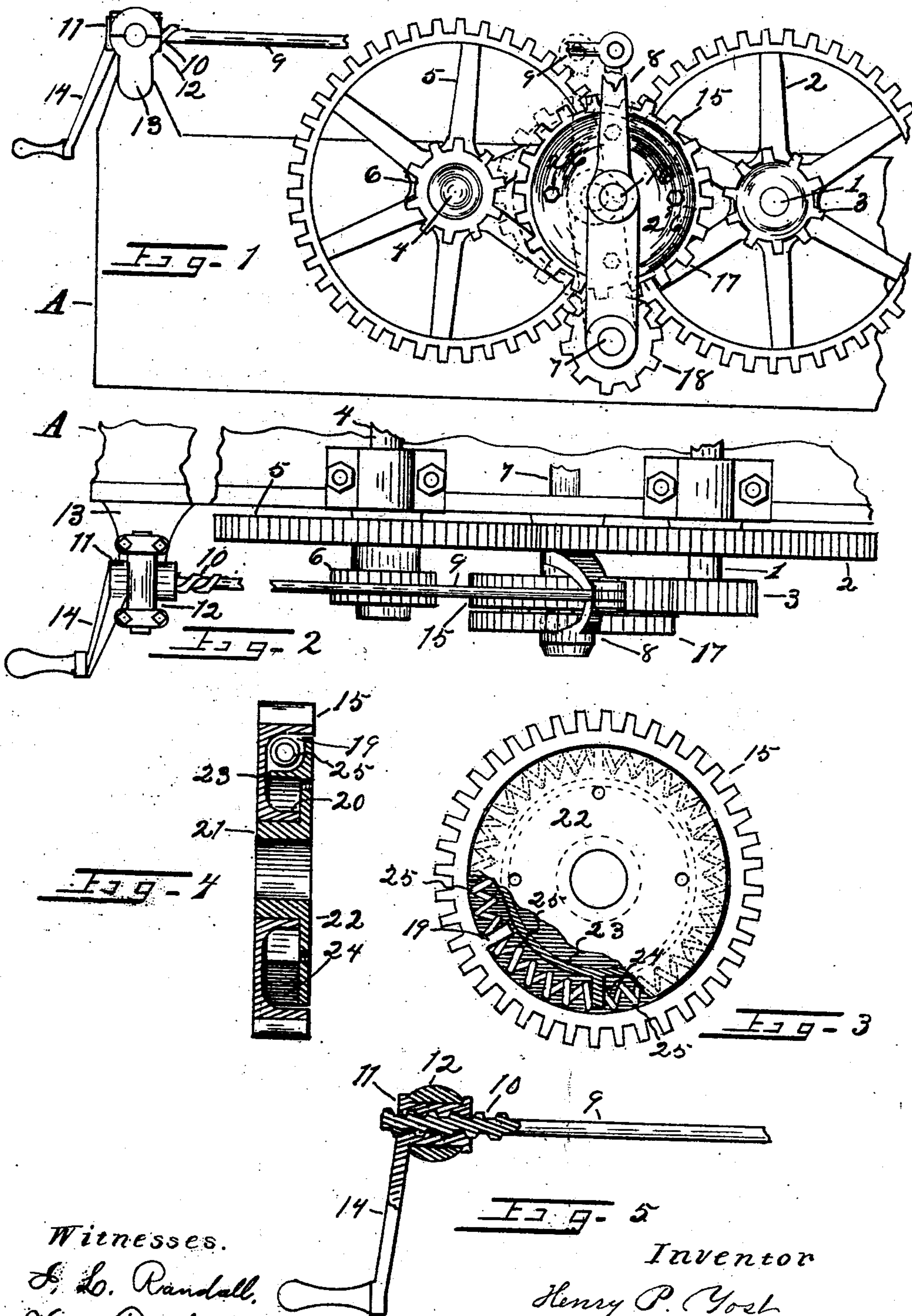


H. P. YOST.
REVERSING MECHANISM.
APPLICATION FILED NOV. 4, 1907.

907,549.

Patented Dec. 22, 1908.



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UNITED STATES PATENT OFFICE.

HENRY P. YOST, OF TEKONSHA, MICHIGAN.

REVERSING MECHANISM.

No. 907,549.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY P. YOST, a citizen of the United States, residing at Tekonsha, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Reversing Mechanism; and I do hereby declare the following to be a full, clear, and exact description thereof, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention is especially adapted to lifting, hauling and dredging machines, traction engines, and to any and all kinds of machinery where heavy loads are to be handled and where it is often necessary to reverse and change the motion of the operating parts, and among other objects it is my purpose to provide a compensating or recoil gear so constructed and arranged that the usual concussion or strain exerted on such machinery will be reduced to a minimum and the life of wearing parts correspondingly increased.

In the drawings forming a part of this specification, Figure 1 represents a side view of my improved reversing mechanism with the intermediate reversing gear thrown at a point between the oppositely-revoluble running gears, where it is at a standstill. Fig. 2 is a plan view with the intermediate reversing gear in mesh with one of the driving gears. Fig. 3 is a side elevation in part section of the intermediate cushion gear. Fig. 4 is a cross section of the intermediate cushion gear, and Fig. 5 is a detail section of the adjusting lever mechanism.

Like marks of reference refer to corresponding parts in the different views.

A, represents a common framework, it being understood that any suitable construction adequate to the purpose can be employed. Within this framework a main driving shaft, 1, is journaled; this shaft is provided with the fixed gears 2 and 3. In parallel arrangement with the shaft 1, a secondary stud or shaft, 4, is fitted; this also is fitted with gears, 5 and 6. The gears 2 and 5 are arranged to be in constant mesh, and, as is obvious, rotate in opposite directions. Journaled intermediate of the shafts 1 and 4 and at a point below their axles, a shaft, 7, is mounted. Upon this shaft a yoke, 8, is supported, to the upper end of which a rod, 9, is attached. This rod can be arranged to be operated by the customary latch and quad-

rant, but to insure ease in manipulation and stability of fastening, I have provided a quick or sharp pitch worm, 10, which operates within a corresponding sleeve, 11, the sleeve, 11, being fitted within a yoke, 12, mounted in a bracket, 13, to the main frame. To the outer extremity of the sleeve, a crank or handle, 14, is fixed. Within the yoke, 8, the intermediate reversing gear, 15, is mounted on the stud, 16. This stud also carries a secondary gear, 17, which in turn meshes with a gear, 18. The gear, 17, being mounted in the yoke, 8, is adapted to play freely about the shaft, 7, as the yoke is thrown to and from the gears 3 and 6 in the adjustment of the yoke in throwing the intermediate gear, 15, into contact with either of said gears. The intermediate gear, 15, is formed with a webbed side, and at uniform points within the rim thereof, depending lugs, 19, are provided. Through the hub 20, of this wheel, the hub, 21, of a disk, 22, is journaled. This disk is provided with a rim, 23, concentric with its hub and somewhat within its circumference, the circumference of the disk being adapted to play freely within the open side of the gear, 15, as shown in Fig. 4. At equi-distant points and projecting from the rim, 23, lugs, 24, are formed; these lugs are adapted to fit between the lugs, 19, of the gear portion, and between the lugs of the gear and disk, coil springs, 25, are fitted, the space between the rim, 23, and the gear rim, forming a chamber within which the springs are securely held in operative position. The gear 15 is loosely journaled on the stud, 16, as also is the disk, 22; to this disk the gear, 17, is secured by bolts, 26.

In operation it will be evident that when the gears 2 and 5 are running, and the intermediate gear 15 is thrown in contact with either of the gears 3 or 6 through the medium of the shifting yoke, 8, the intermediate gear communicating motive power to the gear 17 would cause the gear 18 to operate. Should it be necessary to reverse the intermediate gear, 15, in order to change the direction of the run, all that would be necessary to do would be to rotate the sleeve, 11, by means of the hand crank, 14, in a direction that would cause the shifting rod, 9, to throw the yoke, 8, carrying the intermediate gear, and cause said gear to disengage and intermesh with an oppositely-revoluble gear, as described.

By the arrangements of the springs, 25,

sudden concussion is avoided, the springs forming an elastic bearing between the lugs 19 of the gear 15 and the lugs 24 of the disk 22.

Having, therefore, set forth my invention, 5 what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the class described, the combination of two oppositely-revoluble shafts and gears fixedly mounted on said 10 shafts, a yoke pivoted intermediate of said shafts and in alinement with said gears, a gear mounted on the axle of said yoke, a gear mounted on a shaft within said yoke, a secondary gear fitted on said shaft, yielding members 15 fitted between said gears, one of said gears adapted to mesh with the gear mounted on the axle of said yoke the other, or opposite gear, adapted to be brought into engagement with a gear on one or the other of said oppositely- 20 revoluble shafts, and means to shift said yoke to and from one shaft to another, as and for the purpose set forth.

2. In a device of the class described, a 25 pivotally-supported yoke, a rod pivoted to said yoke, the opposite end of said rod forming a worm, a crank having a socket adapted to fit said worm, and a pivotally supported trunnioned yoke adapted to receive the socket

of said crank, as and for the purpose set forth. 30

3. In a device of the class described, the combination with two oppositely-revoluble shafts and fixed gears mounted on said shafts, of a yoke pivoted intermediate of said gears, a rod adapted to throw said yoke 35 to and from one shaft to another, a gear axially mounted in said yoke, said gear having radially-arranged interiorly-projecting lugs extending from the rim thereof, a disk having an annular rim with radially-arranged, 40 outwardly-projecting lugs, the annular rim of said disk adapted to fall within the rim of said gear and form arc-shaped chambers between the lugs of the respective parts, coil springs fitted within said chambers between 45 said lugs, a gear secured to or forming a part with said disk, a gear journaled on the axle of said yoke and adapted to intermesh with the gear secured to or forming a part with said disk, substantially as and for the 50 purpose set forth.

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Witnesses:

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