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M. WILSON.

DRIVING MECHANISM FOR TRACTION ENGINES.

APPLICATION FILED FEB. 19, 1906.

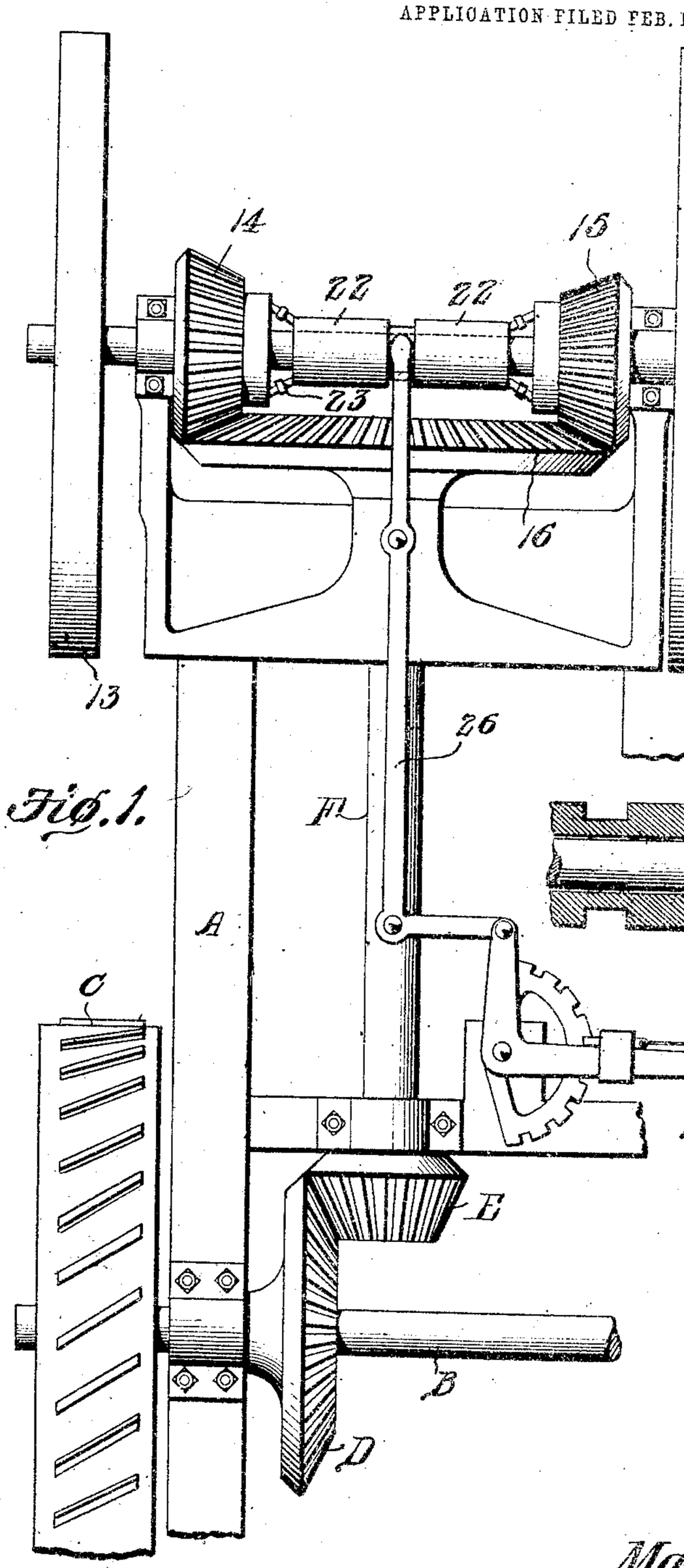

Fig. 1.

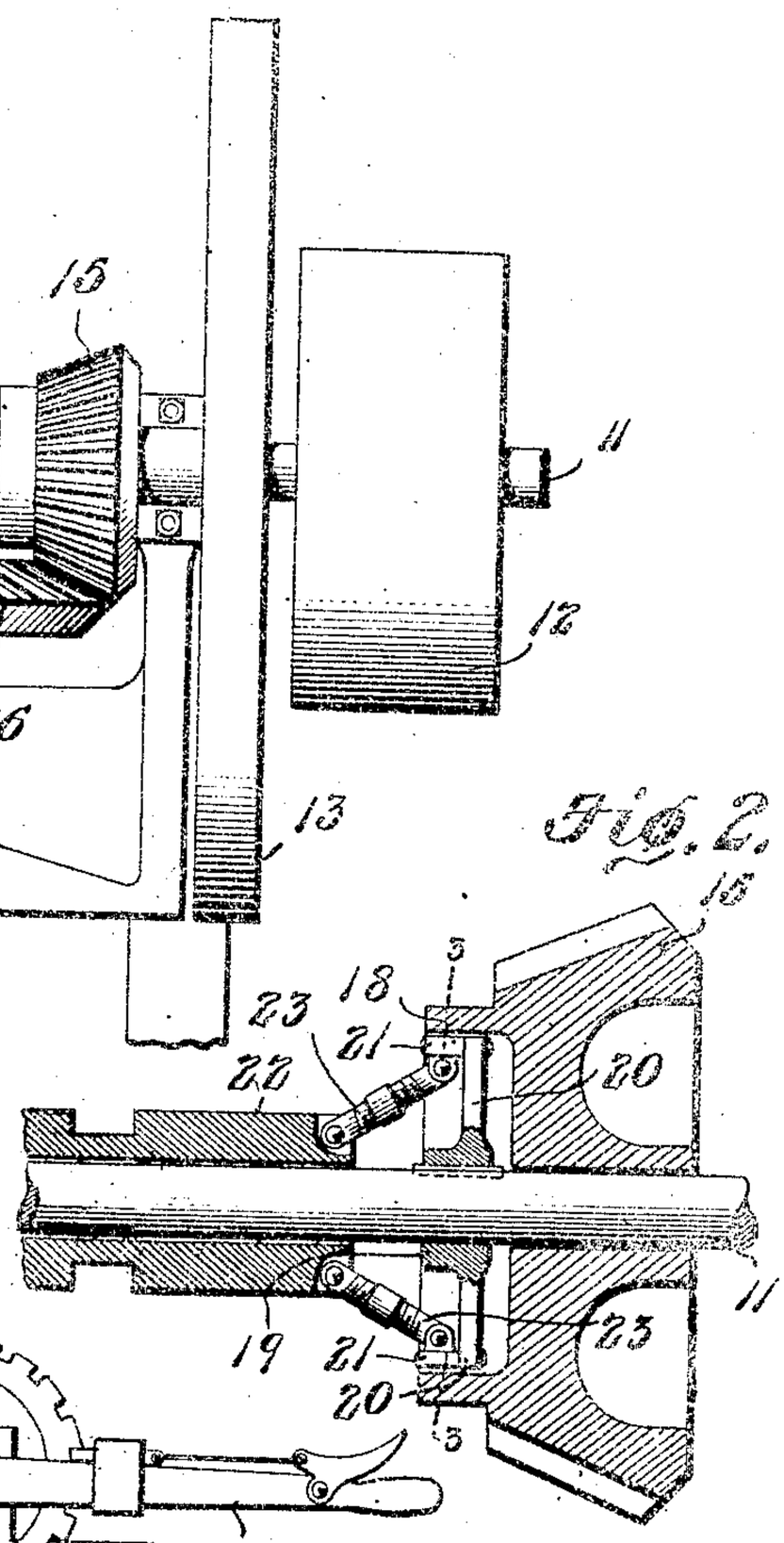

Fig. 2.

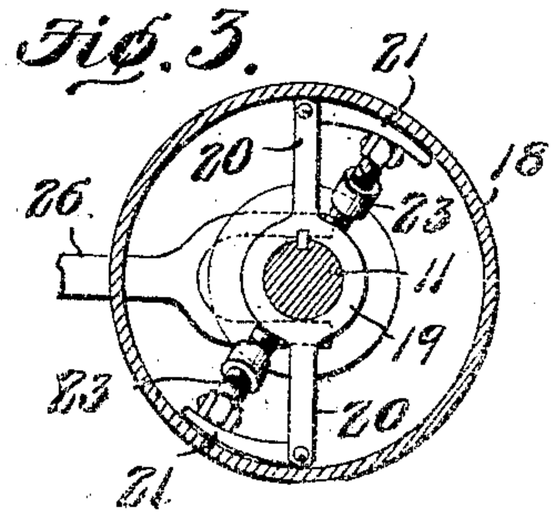

Fig. 3.

WITNESSES:

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MATTHEW WILSON, OF DYSART, IOWA.

DRIVING MECHANISM FOR TRACTION-ENGINES.

No. 839,914. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed February 19, 1906. Serial No. 301,862.

To all whom it may concern:

Be it known that I, MATTHEW WILSON, a citizen of the United States, residing at Dysart, in the county of Benton and State of Iowa, have invented a new and useful Driving Mechanism for Traction-Engines, of which the following is a specification.

This invention relates to traction mechanism, and has for its principal object to provide an apparatus of simple construction whereby the driving mechanism of a traction-engine or similar vehicle may be adjusted for the purpose of propelling the vehicle in either direction.

A further object of the invention is to provide a mechanism of this kind in which it will be unnecessary to stop the operation of the driving-engine or the rotation of the shaft or counter-shaft of the engine when changing the direction of travel of the vehicle.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a plan view of a portion of a traction-engine provided with driving and reversing mechanism arranged and constructed in accordance with the invention. Fig. 2 is a detail sectional view through one of the driving-gears and clutching devices, the view being on an enlarged scale. Fig. 3 is a transverse sectional view of the same on the line 3 3 of Fig. 2.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

A portion of the frame of a traction-engine is shown at A in Fig. 1, and said frame carries an axle B, on which one of the traction-wheels C is mounted. This shaft B further carries a bevel-gear D, which intermeshes with a pinion E, that is mounted on one end of a power-transmitting shaft F.

At a suitable point on the engine-frame is arranged a shaft 11, which may be driven through a belt-wheel 12 and suitable belting connections from an internal-combustion engine, the latter being employed in the present instance for purposes of propulsion. This shaft further carries a pair of balance-wheels 13, mounted in the usual manner. Mounted loosely on the shaft 11 is a pair of bevel-pinions 14 and 15, the teeth of which are constantly in mesh with a bevel-gear 16, that is rigidly secured to the shaft F, and one or other of the pinions may be clutched to the shaft 11 in order that power may be transmitted through the gear 16 and from thence to the traction-shaft, the direction of movement of the latter depending on the bevel-gear that is rigid to the shaft.

Each of the bevel-pinions 15 is provided with an annular flange 18, and arranged within this frame is a clutching mechanism, which in the present instance comprises a hub 19, keyed or otherwise rigidly secured to the shaft 11 and provided with a pair of diametrically-opposed arms 20. These arms carry pivoted shoes 21, that are arranged to follow the curvature of the inner wall of the flange and which may be pressed against such inner wall with sufficient force to firmly clutch the arms 20 to the flange 18.

Mounted loosely at the central portion of the shaft 11 is a sleeve 22, that is provided at each end with a pair of links 23, said links being preferably formed of adjustably-connected sections in order to increase or decrease their lengths. These links serve to pivotally connect the sleeve 22 to the clutching-shoes 21, and as said sleeve is moved in one direction or the other one of the bevel-pinions 14 15 will be firmly clutched to the driving-shaft 11. The central portion of the sleeve 22 is provided with an annular groove for the reception of the bifurcated end of a clutch-operating lever 26, which may be operated by a lever 27 in the usual manner for the purpose of effecting endwise movement of the sleeve 21.

The mechanism is so constructed and adjusted that the shaft 11 may revolve continuously, and while the sleeve 22 remains in mid-position both of the pinions remain loose on the shaft and no movement is imparted to the traction-wheel. As the sleeve is moved in one direction, say to the right, the links 23 at one end of the sleeve will force the shoe 21 outward into engagement with the inner circular wall of the flange 18 of bevel-pinion 15 and will gradually clutch said pinion 15 to the shaft, so that the movement may be transmitted without the abrupt starting and stopping incident to the employment of ordinary toothed clutches. When the lever is moved in the opposite direction, the bevel-pinion 15 is gradually released,

while the pinion 14 will be gradually locked to the shaft.

I claim—

In driving and reversing mechanisms for traction-engines and other vehicles, a driven shaft, a pair of bevel-gears mounted loosely on the shaft and facing in opposite directions, respectively, a pair of clutches for locking the bevel-pinions to the shaft, a sleeve carried by the shaft and forming an operating member for both clutching devices, a sleeve-actuating lever, an axle, a bevel-gear thereon, a counter-shaft disposed at an angle to both the driving-shaft and the axle, and a bevel-gear and a bevel-pinion carried by the counter-shaft, the gear intermeshing with the pair of loose bevel-pinions, and the pinion intermeshing with the bevel-gear of the axle, whereby movement may be transmitted from the driving-shaft to the axle in either direction, and the vehicle may be stopped without stopping the movement of the driving-shaft.

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

MATTHEW WILSON.

Witnesses:
GEORGE E. KNAPP.
E. T. BRYANT.