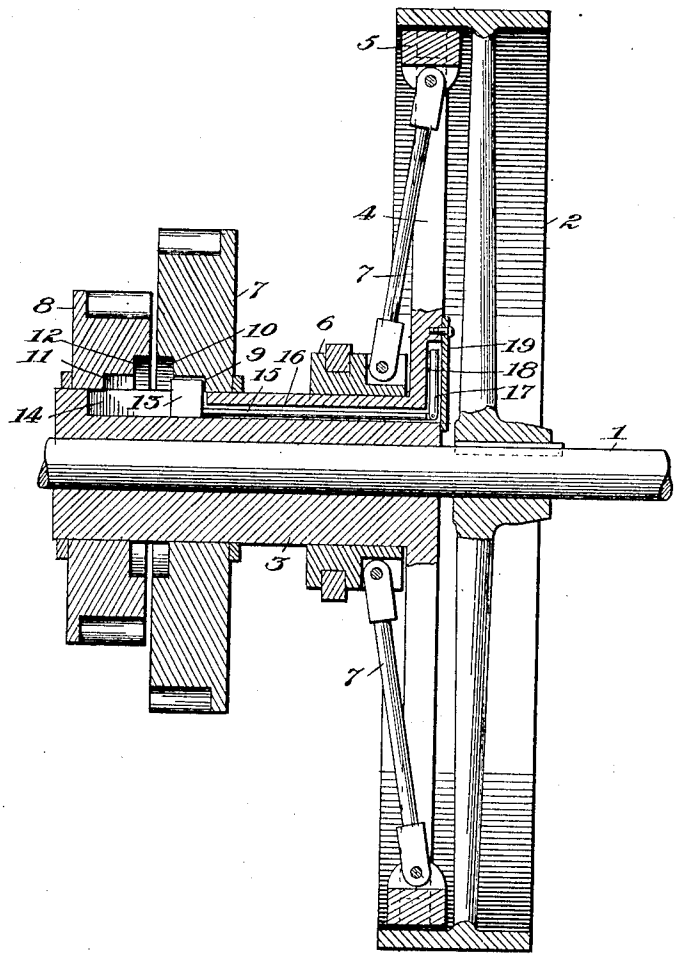
No. 887,410. PATENTED MAY 12, 1908.

W. P. MATHEWS.

DRIVING MECHANISM FOR TRACTION ENGINES.

APPLICATION FILED MAY 22, 1907



Witnesses:

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THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM P. MATHEWS, OF KERNERSVILLE, NORTH CAROLINA.

DRIVING MECHANISM FOR TRACTION-ENGINES.

No. 887,410. Specification of Letters Patent. Patented May 12, 1908.

Application filed May 22, 1907. Serial No. 374,998.

To all whom it may concern:

Be it known that I, WILLIAM P. MATHEWS, a citizen of the United States, residing at Kernersville, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Driving Mechanism for Traction-Engines, of which the following is a specification.

This mechanism is constructed to drive a traction-engine at either of two speeds, a sleeve being revolubly mounted on the driving shaft and provided with a clutch for causing it to rotate with the shaft, and two gears of different size being revolubly supported on the sleeve and provided with a sliding key for causing either gear to rotate with the sleeve.

Referring to the accompanying drawing, in which the figure is a vertical axial section of the speed-changing mechanism: the driving shaft 1 of the steam-engine or other motor carries a fly-wheel 2. A concentric sleeve 3 is revolubly supported on the driving shaft and has at one end radial arms 4 carrying an expansible clutch-rim 5. A ring 6 is arranged to slide on the sleeve 3 and, by means of arms 7 which are pivoted both to the ring and the expansible clutch rim 5, to force this rim into engagement with the rim of the fly-wheel 2 and thereby cause the sleeve 3 to rotate with the driving shaft. Two gears 7, 8 of different diameters are revolubly supported in proximity to each other on the sleeve 3. The gear 7 has a keyseat 9 and an annular recess 10. The gear 8 has a keyseat 11 and an annular recess 12. A key 13 is arranged to slide in a longitudinal groove 14 in the sleeve 3, being shifted by a rod 15 extending through a longitudinal opening 16 in the sleeve. This rod has a jointed outer end 17 which can be folded into a recess 18 in the end of the sleeve 3 and retained by a pivoted cover 19. By this mechanism, either gear may be clutched to the sleeve and may then be driven by clutching the sleeve to the driving shaft. Or the key may be shifted to lie in the opposed recesses of the gears so that both are free to rotate on the sleeve.

I claim:

1. In a traction engine, a driving shaft, a sleeve revolubly supported on said shaft, gears of different size revolubly supported on said sleeve, each gear having a keyseat, means for clutching said sleeve to said shaft, and a key mounted to slide in said sleeve and engage either gear.

2. In a traction engine, a driving shaft, a sleeve revolubly supported on said shaft, gears of different size revolubly supported on said sleeve, said gears having keyseats and opposed annular recesses, and a key mounted to slide in said sleeve and engage either gear or disengage both gears.

3. In a traction engine, a driving shaft, a sleeve revolubly supported on said shaft, gears of different size revolubly supported on said sleeve, each gear having a keyseat, means for clutching said sleeve to said shaft, a key mounted to slide in said sleeve and engage either gear, and a key-shifting rod extending through a longitudinal opening in said sleeve.

4. In a traction engine, a driving shaft, a sleeve revolubly supported on said shaft, gears of different size revolubly supported on said sleeve, each gear having a keyseat, means for clutching said sleeve to said shaft, a key mounted to slide in said sleeve and engage either gear, a key-shifting rod extending through a longitudinal opening in said sleeve, said rod having a jointed outer end, and means for holding said jointed end in straight or angular position.

In testimony whereof, I affix my signature in presence of two witnesses.

WILLIAM P. MATHEWS.

Witnesses:
L. E. GRIFFITH,
W. C. STAFFORD.