

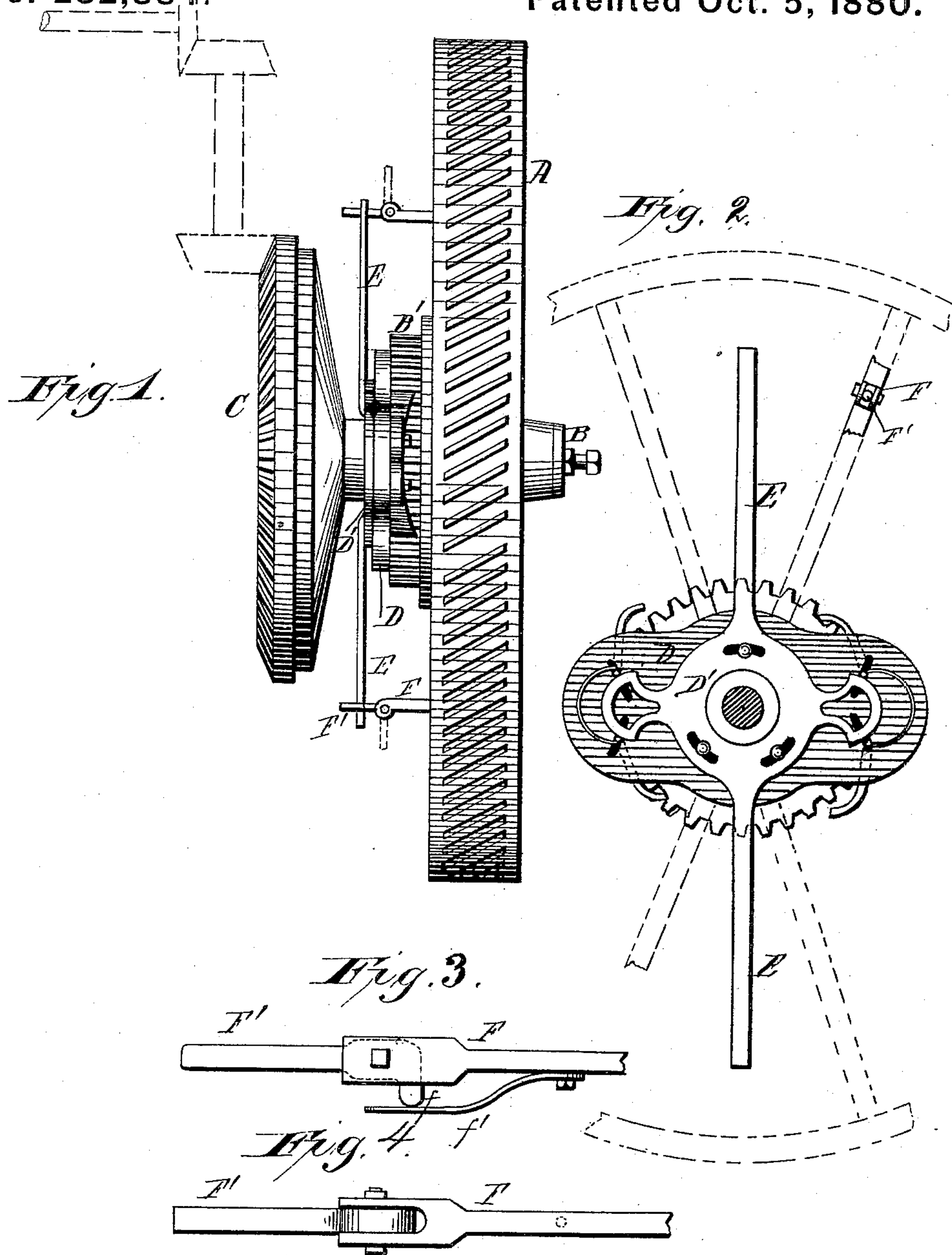
(No Model.)

J. H. COX.

Pawl Shifter for Traction Engines.

No. 232,884.

Patented Oct. 5, 1880.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOSHUA H. COX, OF MANSFIELD, OHIO, ASSIGNOR TO THE AULTMAN
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PAWL-SHIFTER FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 232,884, dated October 5, 1880.

Application filed August 18, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA H. COX, of Mansfield, county of Richland, State of Ohio, have invented certain new and useful Improvements in Automatic Pawl-Shifters for Traction-Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a rear view of one of the main ground or carrying wheels of a traction-engine, showing my improvement applied. Fig. 2 is a side elevation of the pawl-shifter, pawl-carrier, &c. Fig. 3 is a side view of the piv-
15 oted arm or stop against which the pawl-shifter strikes, and Fig. 4 is a top view of the same.

My invention relates to a novel arrangement of devices for automatically shifting the pawls which operate to drive the wheels of traction-engines, whereby the operation of reversing the movement of said wheels is facilitated, as will be explained.

20 The machine to which my improvements are applied is similar in construction to that described in the patent granted to Joseph Altonas, November 4, 1879, No. 221,266, and only so much of the engine as is necessary to illustrate my invention is shown in the drawings
30 or will be described in the specification.

In the drawings, A is one of the main ground or carrying wheels, mounted loosely on the axle B, and to which wheel is rigidly connected the ratchet-wheel B'.

35 C is the bevel-wheel, which is rigidly connected to the axle, and through which motion is communicated from the main driving-shaft of the engine to the ground or carrying wheel.

40 D is the pawl-carrier, rigidly connected to the bevel-wheel C, and D' the pawl-shifter, these parts being constructed and operating in a manner similar to those described in the patent above referred to.

45 The pawl-shifter D' is provided with two or more arms, E E, rigidly connected therewith, which serve to vibrate the pawl-shifter on the

pawl-carrier for shifting the pawls and bringing either set of pawls into engagement.

F F are arms or brackets bolted or otherwise firmly secured to the spokes of the ground or carrying wheel, and F' are arms forming extensions of the arms F, and which are pivoted thereto in such manner as to be turned down out of the way of the arms E when it is desired to hold the pawls out of engagement with the ratchet-wheel B'. These arms F' are provided with heel-extensions f, bent at right angles to their main portion, which, in connection with a spring, f', serves to hold the arms in position when the arms are turned out for acting on the pawl-arm. 50 55 60

The arms F and F' are arranged at such a distance apart on the ground-wheel that the arms E shall not come in contact therewith for throwing the pawls into engagement with the ratchet-wheels in reversing or starting the engine forward until the main driving-shaft of the engine has made three or more revolutions, so that the engine shall be under good headway before the ground-wheels are connected with the driving-shaft to propel the engine over the road. 65 70

When it is desired to draw the engine over the road by means of animal power, not using the power of the engine, the arms F' are turned down out of the path of the arms E, and consequently the pawls are held out of engagement with the ratchet-wheel; but as soon as it is desired to use the power of the engine to propel it, then the arms F' are thrown out, when the arms E, coming in contact therewith, force the pawls into engagement, and the power of the engine is exerted to drive or propel the machine over the ground. 75 80 85

The arms F' may be pivoted directly to the spokes of the carrying-wheel, and the arms or brackets F be dispensed with.

It will be seen that modifications in the location and arrangement of the parts may be made without departing from the spirit of my invention. 90

Having now described my invention, I claim—

1. In a traction-engine, the reversely - arranged pawls pivoted to the pawl-carrier, in combination with the pawl - shifter, automatically operated by means of stops on the traction-wheels, for reversing the pawls when the engine is reversed, substantially as described.
2. The pawl-shifter provided with rigid radial arms, in combination with arms or stops

for actuating the same hinged to the traction-wheels, substantially and for the purpose described. 10

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