(No Model.)

E. PENNEY & W. H. SNYDER.

TRACTION ENGINE.

No. 301,829 Patented July 8, 1884.

Fig. 1

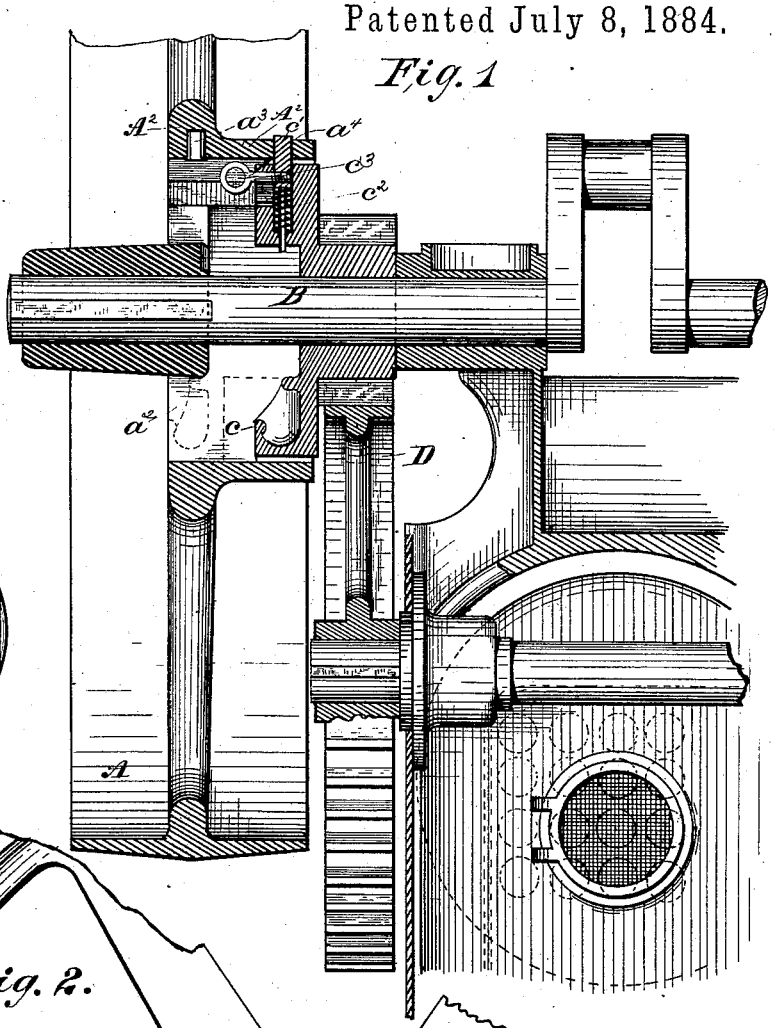


Fig. 3

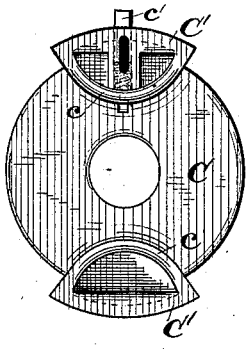
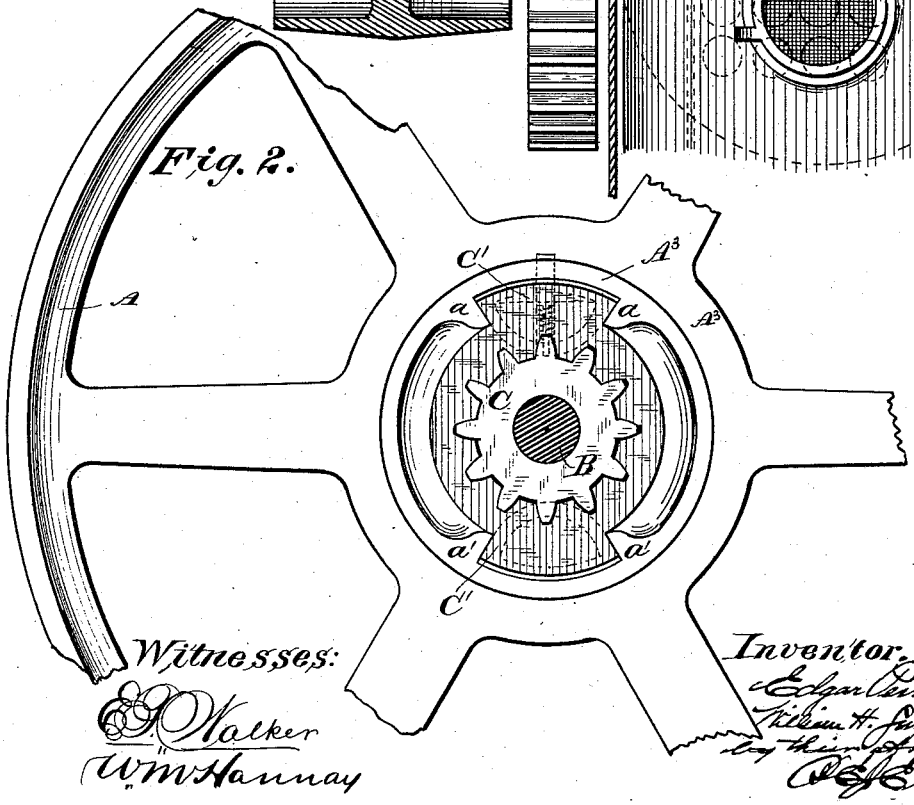


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDGAR PENNEY AND WILLIAM H. SNYDER, OF WAYNESBOROUGH, PA.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 301,829, dated July 8, 1884.

Application filed April 15, 1884. (No model.)

To all whom it may concern:

Be it known that we, EDGAR PENNEY and WM. H. SNYDER, citizens of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Traction-Engines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of traction-engines in which the traction-wheels are driven from the crank-shaft of the steam-engine through the medium of a train of gear-wheels of which the driving-pinion on the crank-shaft can be shifted, so that it may either be thrown in gear with the next wheel or disconnected therefrom, according as the steam-engine is to be used for propelling the machine or for driving other machinery.

Our invention consists, mainly, in fitting a part of the said pinion in a guide—one or more—on the fly-wheel, which guides also serve as clutch-teeth for driving the pinion, so that the usual driving-spline on the crank-shaft may be dispensed with.

In order that our invention may be clearly understood, we have illustrated in the annexed drawings, and will proceed to describe, a practical form thereof.

Figure 1 is a transverse section of so much of a traction-engine embodying our invention as will suffice to show the application of said invention. Fig. 2 illustrates in elevation one side of a portion of the fly-wheel and the whole of the pinion, the crank-shaft being shown in section. Fig. 3 illustrates the pinion, showing the reverse side.

The same letters of reference indicate identical parts in all the figures.

The fly-wheel A, having an ordinary outwardly-projecting hub, A′, by which it is keyed to the crank-shaft B, is also constructed with a ring-flange, A^3, projecting laterally from the inner side of the circular web A^2, which encircles the inner end of hub A′. The pinion C is constructed with wings C′ C′, which fit in guides on the interior side of the ring-flange, formed by parallel ribs *a a* and *a′ a′* thereon. These ribs serve as clutch-teeth for driving the pinion, and the usual spline for interlocking the pinion directly with the crank-shaft is omitted. The usual mode of driving the pinion by a spline on a crank-shaft is subject to the objection, among others, that the connection is liable to rapid wear, resulting in lost motion, which is not only annoying, but may sooner or later be the cause of breaking the pinion or other wheels of the train. Our mode of driving the pinion by the fly-wheel wholly overcomes the objection. The wings of the pinion are constructed with sort of handles *c*, and suitable hand-holes, a^2, are formed in the web A^2 of the fly-wheel, through which the operator may reach these handles of the pinion to facilitate shifting it. In Fig. 1 the pinion, as shown in full lines, engages the wheel D of the train for driving the traction-wheels of the machine. To disconnect it from said wheel D the pinion is retracted into the ring-flange of the fly-wheel. It is locked in either position by a bolt, *c′*, adapted to engage either of the holes a^3 and a^4 in the bottom of one of the guideways on the fly-wheel. The bolt *c′* is arranged in a hole in one of the wings of the pinion, and is projected by a spiral spring, c^2. It is also provided with a handle, c^3, by which it may be retracted.

It is obvious that a skilled mechanic may easily change the details of construction or the relative arrangement of the parts without departing from the essential feature of our invention pointed out above.

We claim as our invention—

1. The combination, substantially as before set forth, of the fly-wheel constructed with a ring-flange, and with guide-ribs on the interior side of said flange, and the shifting-pinion constructed with wings which are engaged by said guide-ribs.

2. The combination, substantially as before set forth, of the fly-wheel constructed with a laterally-projecting ring-flange, and with guide-ribs on the interior side of said flange, as well as with hand-holes in the web around the hub, and the shifting-pinion loose on the crank-shaft, but constructed with wings which are engaged by said guide-ribs, and are also provided with handles.

3. The combination, substantially as before set forth, of the fly-wheel constructed with a ring-flange, and with guide-ribs on the interior side of said flange, the shifting-pinion loose on the crank-shaft, but constructed with wings which are engaged by said guide-ribs, and a spring-bolt carried in the loose pinion for locking it to the fly-wheel.

In testimony whereof we affix our signatures in presence of two witnesses.

EDGAR PENNEY.
WILLIAM H. SNYDER.

Witnesses:
D. M. GOOD, Jr.,
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