2 Sheets—Sheet 1.

A. JILLSON.

Traction-Engine.

No. 227,259. Patented May 4, 1880.

Fig. 1

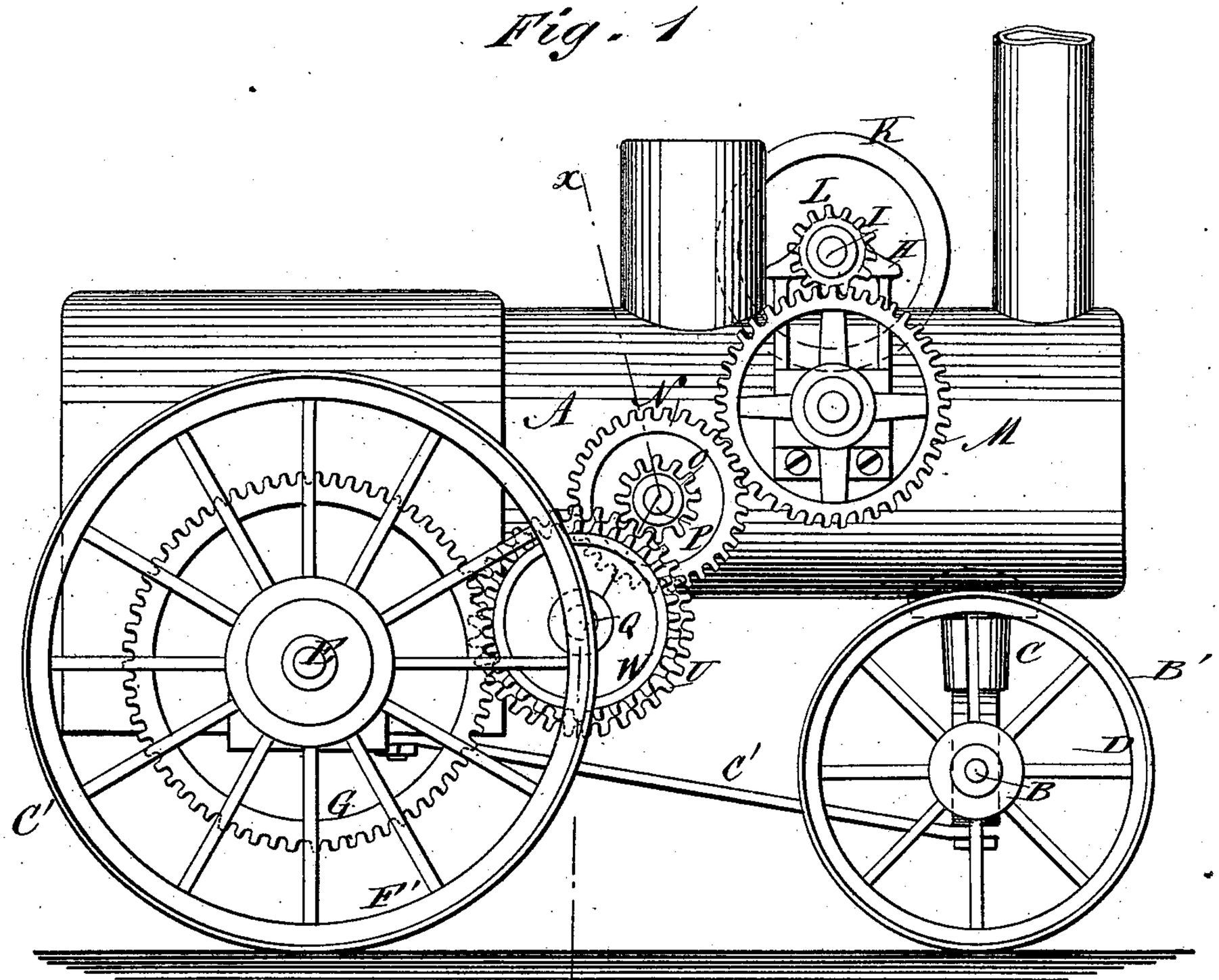
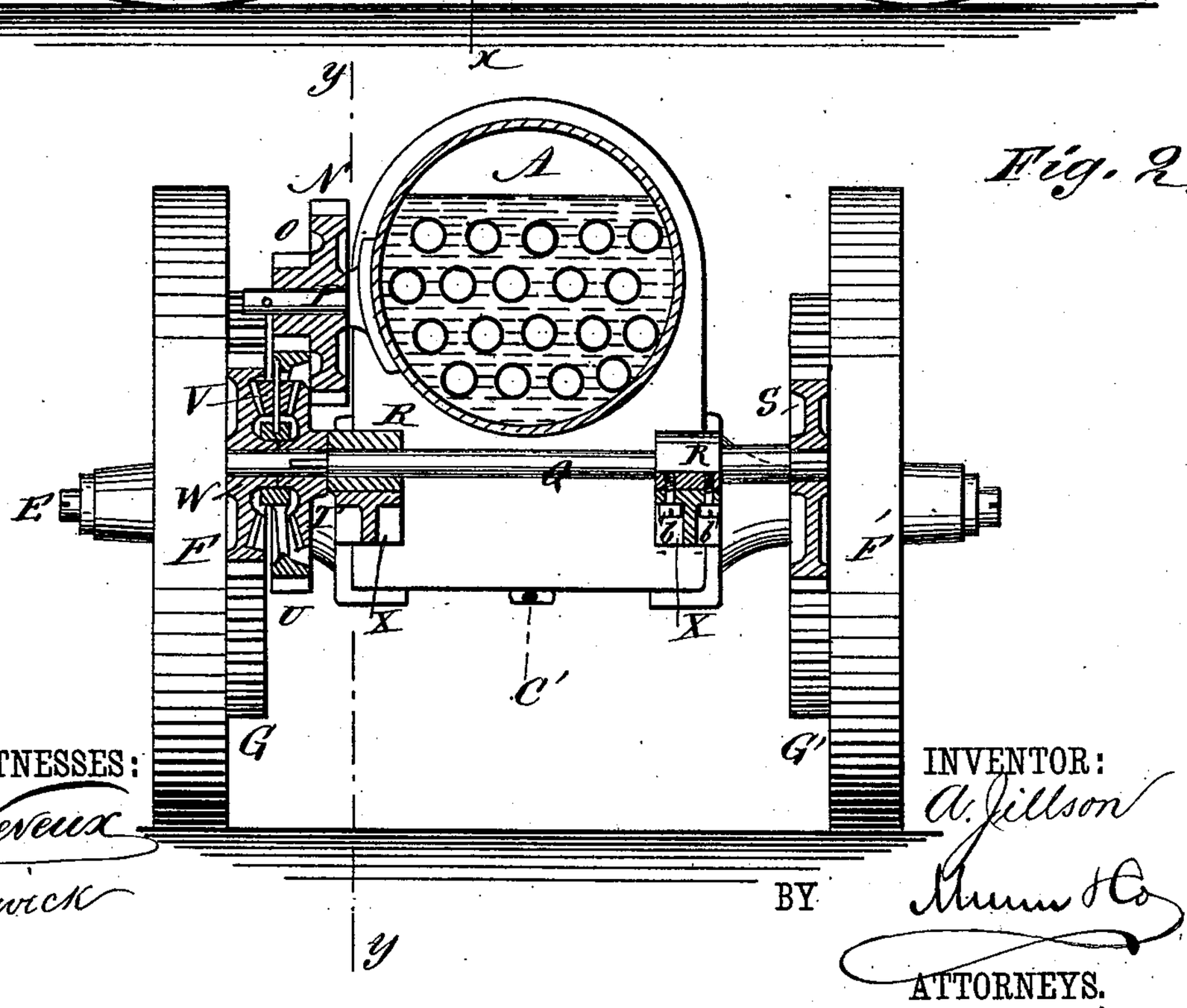


Fig. 2



WITNESSES:

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C. Sedgwick

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2 Sheets—Sheet 2.

A. JILLSON.

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Fig. 3

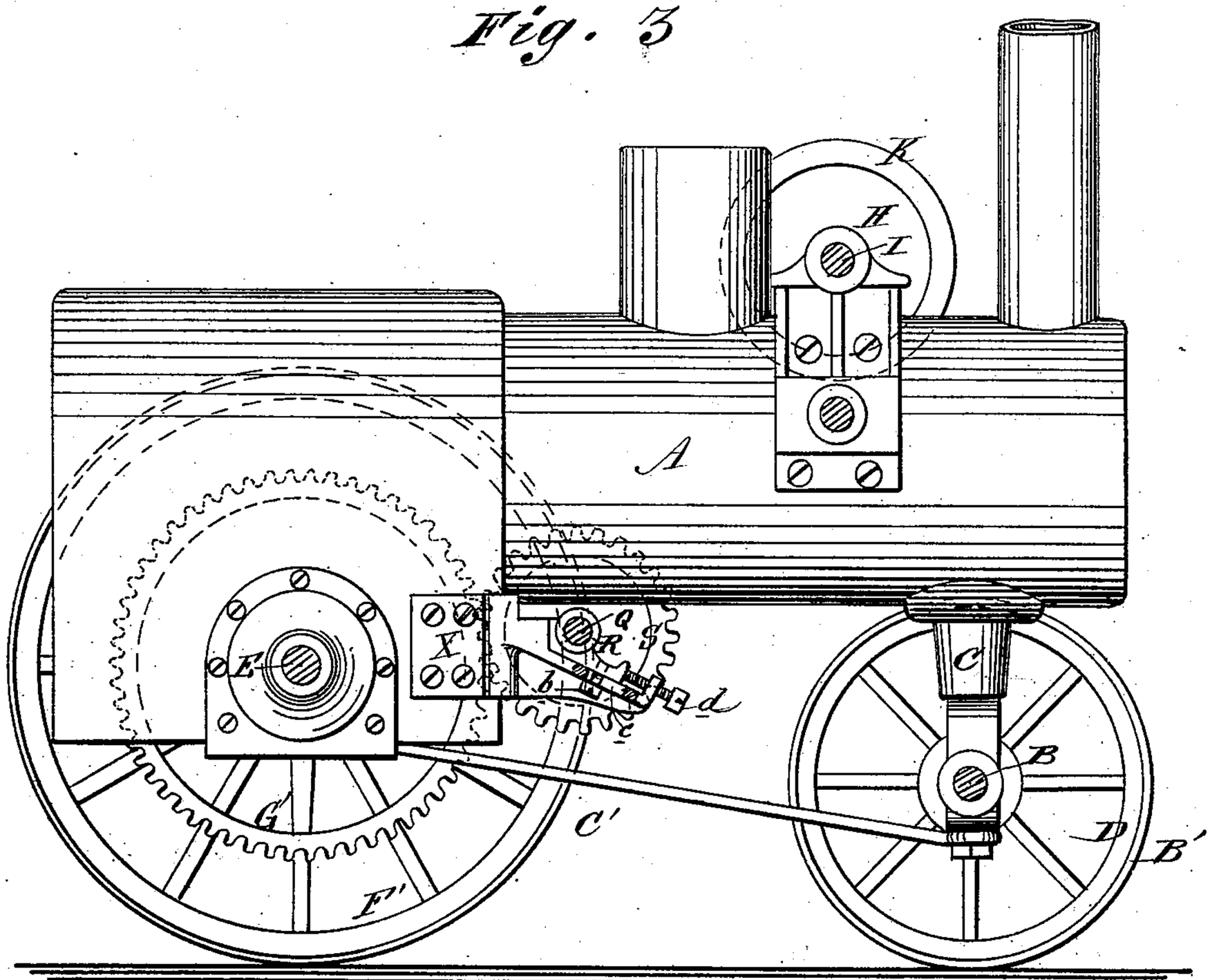


Fig. 4

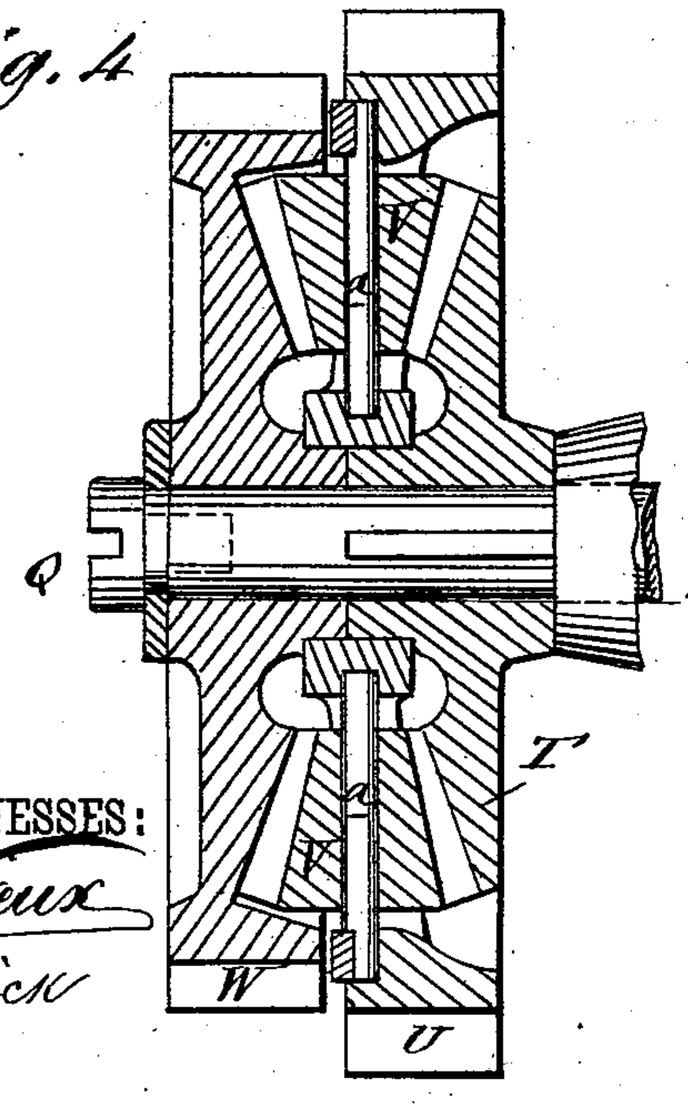
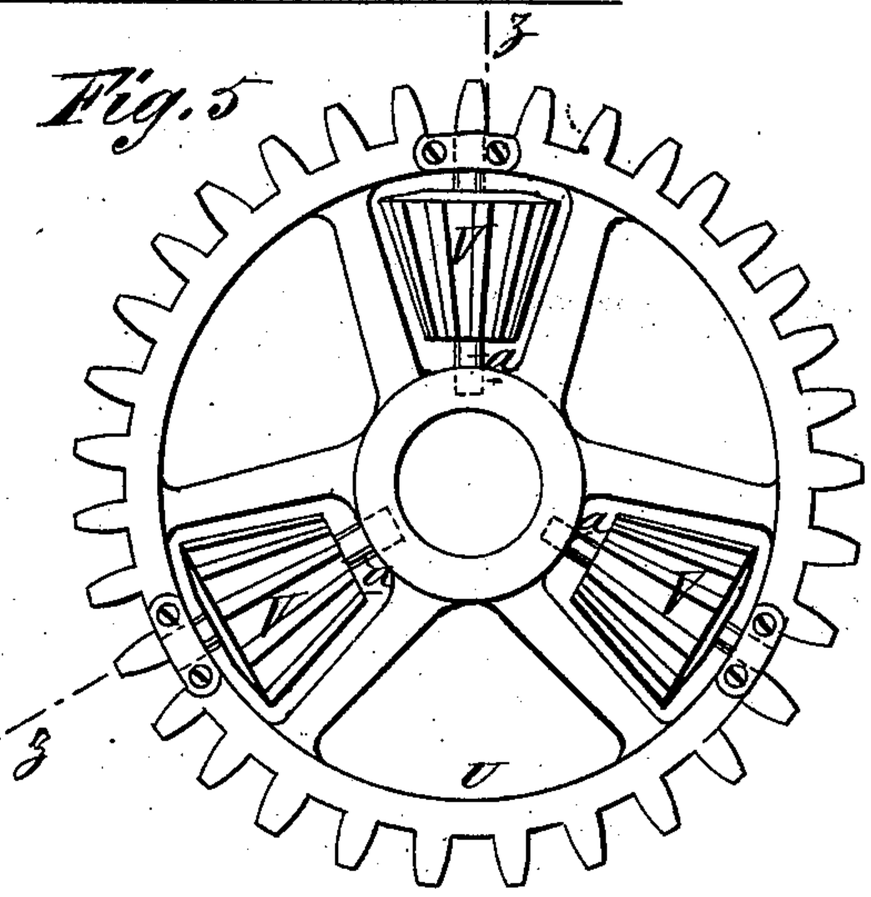


Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALONZO JILLSON, OF RACINE, WISCONSIN, ASSIGNOR TO J. I. CASE & CO., OF SAME PLACE.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 227,259, dated May 4, 1880.

Application filed February 5, 1880.

To all whom it may concern:

Be it known that I, ALONZO JILLSON, of Racine, Racine county, and State of Wisconsin, have invented a new and Improved Traction-Engine, of which the following is a specification.

Figure 1 is a side elevation of as much of the engine as is essential to show the improvement. Fig. 2 is a transverse sectional elevation on line *x x*, Fig. 1. Fig. 3 is a side elevation of the traction-engine, with certain parts removed the better to exhibit other parts, on line *y y*, Fig. 2. Fig. 4 is a transverse sectional elevation on line *z z* of the epicyclic train; and Fig. 5 is a side elevation of the spur-wheel of the epicyclic train containing the beveled pinions.

Similar letters of reference indicate corresponding parts.

The invention consists in combining sliding journal-boxes, slotted hangers, and adjusting-screws with a cross-shaft and wheels, as hereinafter described.

In the drawings, A represents the engine-boiler, supported on the forward or guiding truck, B′, and driving-truck C′. B is the axle of the forward truck, pivoted centrally to the block C under the front end of said boiler A. D D are the front wheels, moving loosely on the axle B. E is the rear axle, firmly and immovably secured to the boiler A at the rear thereof, and having the driving-wheels F F′ running loosely upon it, while bolted or otherwise secured to the inside of each of these driving-wheels F F′ are the spur-wheels G G′.

Journaled in suitable boxes H H, on the top of the boiler A, is the driving-shaft I of the engine proper that supplies the motive power, and said shaft I carries on one end the driving-pulley K, and on the other end the pinion L, that passes into the spur-wheel M, which spur-wheel M in turn meshes into the spur-wheel N, that, together with the pinion O, is set loosely upon the shaft P, which projects laterally from the side of the boiler A.

Q is a shaft that crosses underneath the boiler A, and is journaled in suitable boxes *h h*, and carries keyed on one end a spur-wheel, S, which meshes into the pinion G′, while on the other end of the said shaft Q is fixed an epicyclic train composed of the bevel-wheel T, which is keyed to the shaft Q of the central spur-wheel U, that rides loose on the hub of the bevel-wheel T, and carries in radial openings the beveled pinions V, that run loosely on stationary radial studs *a*, or may be keyed to a shaft and the shaft run in bearings fastened to the said spur-wheel U; and the said epicyclic train is further composed of the bevel-and-spur pinion W, which runs loose on the shaft *q* and meshes into the pinion or spur-wheel G, and drives the truck-wheel F independently of the bevel-wheel T, through which bevel-wheel T motion is transmitted for driving the truck-wheel F′.

With this arrangement of the spur and bevel wheels and pinions herein shown the traction-engine can be run backward by a simple reversal of the engine proper that moves the mechanism of the said traction-engine, and when the traction-engine is running forward or backward in a straight line the same rate of motion is imparted through the spur-wheel U and bevel-pinion V to the wheels F F′, with which they are connected, and all the said wheels T U V W move as if pinned fast together, the said bevel-pinions V revolving around the shaft Q without revolving on their own axes, while in turning the said traction-engine the unequal rates of motion in the same or opposite directions demanded by the driving-wheels F F′ will cause the said bevel-pinions V, through the medium of the spur wheels or pinions G G′ and wheels T W, to rotate upon their own axes, and, with their axes, around their common center, (the shaft Q,) without causing any change of motion to the wheel U, so that the same rate of motion may be maintained by the driving-shaft I, and different rates or directions of motion be given to the wheels T W, respectively, and there will be no loss of power by the slip of the wheels.

X X represent the slotted hangers secured to the under side of the boiler A and supporting the sliding journal-boxes R R of the shaft Q. These boxes R R are held in place by the bolts or screws *b*, that pass up through the slots *c* of the said hangers X X and of the adjust-

ing screws, *d*, that are entered through the ends of the said hangers and bear against the said boxes R R. By means of these screws *b d* the boxes R R can be moved up or down on the hangers X X, and securely held in either position, so that the shaft Q, with its attached wheels or pinions S T, can be moved or allowed to slide down, and thus disconnect the train of gears, in order that the traction-engine may be drawn by horses or motive power other than steam without unnecessary friction and waste of power, which would result were the gearing not disconnected.

The connection of the gearing may be renewed by simply turning up the bolt or screws *d*, so as to crowd the sliding boxes R R again into position, together with the shaft *q*, and wheels or pinions S T.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a traction-engine, the combination of the sliding journal-boxes R R, slotted hangers X X, and adjusting-screws *b d*, with the cross-shaft Q and wheels or gears S T, substantially as shown and described, whereby the said shaft and gears may be disconnected from the train of gears, as set forth.

ALONZO JILLSON.

Witnesses:
CHARLES H. LEE,
THOMAS ST. GEORGE.