2 Sheets—Sheet 1.

J. H. BAILEY.

TRACTION ENGINE.

No. 26,466. Patented Dec. 20, 1859.

Fig. 1.

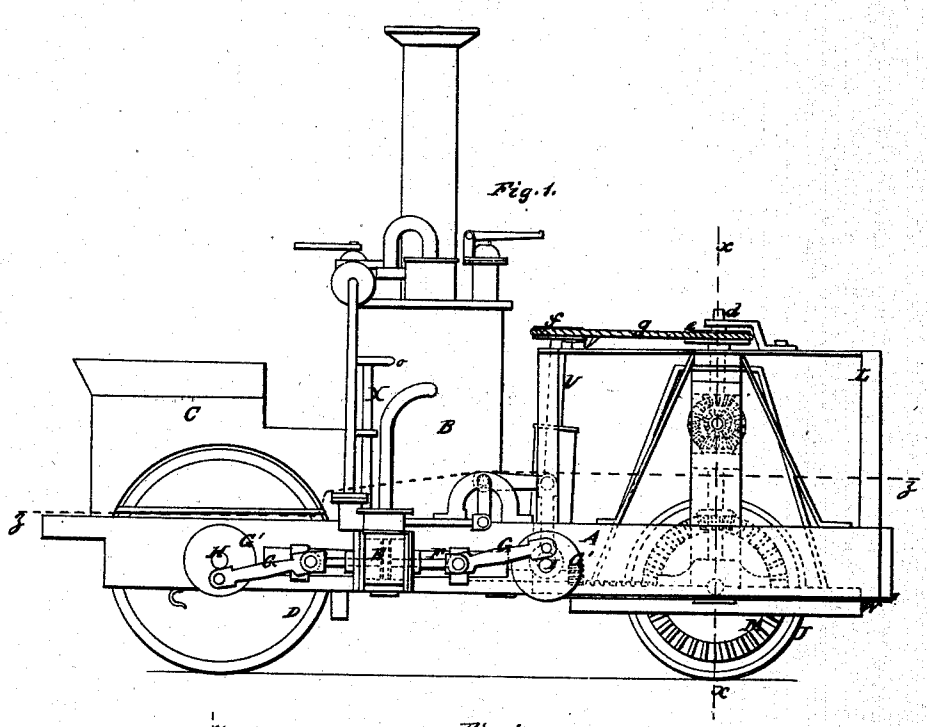
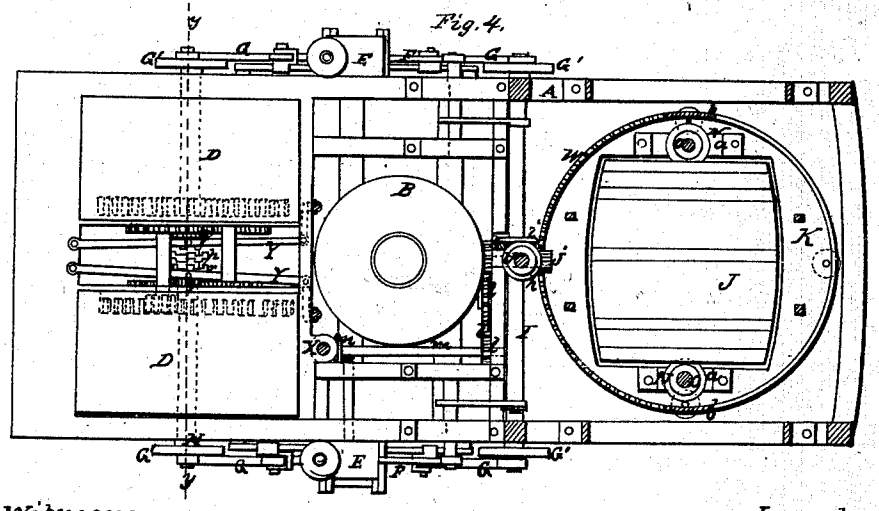


Fig. 4.



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2 Sheets—Sheet 2.

J. H. BAILEY.

TRACTION ENGINE.

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Fig. 2.

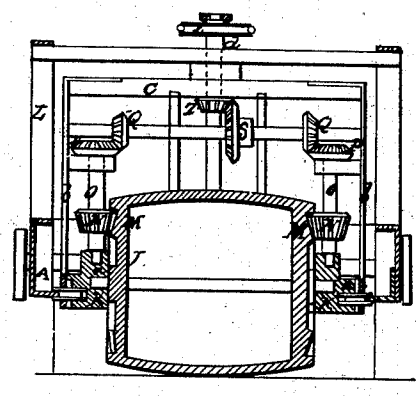


Fig. 3.

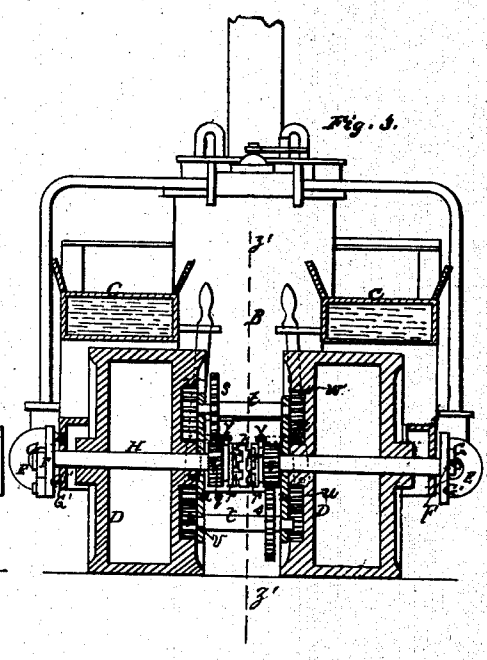
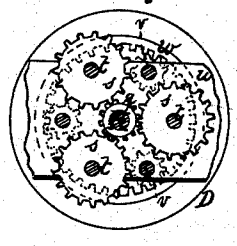


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN H. BAILEY, OF SANDFORD, INDIANA.

LOCOMOTIVE TRACTION-VEHICLE.

Specification of Letters Patent No. 26,466, dated December 20, 1859.

To all whom it may concern:

Be it known that I, JOHN H. BAILEY, of Sandford, in the county of Vigo and State of Indiana, have invented a new and Improved Traction-Engine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side elevation of my invention. Fig. 2, is a transverse vertical section of the same, taken in the line *x*, *x*, Fig. 1. Fig. 3, is a transverse vertical section of the same, taken in the line *y*, *y*, Fig. 4. Fig. 4, is a horizontal section of the same, taken in the line *z*, *z*, Fig. 1. Fig. 5, is a detached vertical section of the driving mechanism of the back wheels.

Similar letters of reference indicate corresponding parts in the several figures.

This invention is more especially designed for agricultural purposes, such as the drawing of gang plows, harrows, seeding machines, etc.

The invention consists in a peculiar arrangement of the driving gear, the manner of applying the power thereto, whereby the machine is placed under the perfect control of the engineer or attendant.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a rectangular frame on which an upright boiler B, is placed.

C, C, represent water tanks and wood boxes which are placed on the back part of the frame A, and over wheels D, D, which support the back part of the frame A.

At each side of the frame A, there is a steam cylinder E. These steam cylinders are provided with pistons, the rods F, of which project through both ends of the cylinders and are connected by rods G, and crank wheels G′, to two shafts H, I, the former shaft H, passing loosely through the centers of the wheels D, D, and the shaft I, passing through the frame A, just in front of the boiler B, see Figs. 1 and 4. The front part of the frame A, is supported by a barrel-shaped wheel J, which is nearly equal in width to the frame. The axle of the wheel J, is fitted in bearings *a*, which are secured to an annular frame K, said frame K, having two uprights *b*, *b*, attached to it at opposite sides, the upper ends of the uprights being connected by a traverse bar *c*, through the center of which a shaft *d*, passes, said shaft also passing through the top of a supplemental framing L, on the frame A.

The frame K, and consequently the wheel J, is allowed to turn freely within the frame A, in order that the machine may be guided or turned to the right or left. The wheel J, is driven as follows: At each end of the wheel there is attached a bevel wheel M, into which bevel pinions N, N, on upright shafts O, O, gear. On the upper end of each shaft O, there is a bevel pinion P, into which, pinions Q, Q, on a shaft R, gears. On the shaft R, there is also a bevel pinion S, which gears into similar pinions T, at the lower end of the shaft *d*. The upper part of the shaft *d*, above the supplemental framing L, has a pulley *e*, on it. At the back part of the supplemental framing L, there is a vertical shaft U, which has a pulley *f*, on its upper end around which pulley a belt *g*, passes, said belt also passing around the pulley *e*, of shaft *d*. The upper part of the shaft U, has its bearing in a lever V, the use of which will be presently shown. On the lower end of shaft U, a pinion *h*, is placed, and this pinion gears into a corresponding pinion *i*, on the shaft I.

The annular frame K, is encompassed by a toothed rim W, into which a pinion *j*, gears, the shaft *k*, of said pinion being connected by gears *l*, with a horizontal shaft *m*, which is connected by gears *n*, with a vertical shaft X, having a hand wheel *o*, on its upper end.

From the above description it will be seen that by turning the shaft U, the frame K, and consequently the wheel J, may be turned, and it will also be seen that when the engine is in operation the wheel J, will be rotated from the shaft I, by means of the gearing M, M, N, N, P, P, Q, Q, R, S, *h*, *i*, and the belt *g*. The wheel J, may be suddenly stopped at any time by throwing forward the lever V, and thereby loosening the belt *g*.

The shaft H, as before stated, passes loosely through the wheels D, D, and it has a wheel *p*, cogged at each side secured on it at its center. On the shaft H, and at each side of the wheel *p*, there is placed loosely a pinion *q*. These pinions have teeth *r*, on their sides which face the wheel *p*, and each pinion has a lever Y, attached to or connected with it. Each pinion *q*, gears into three wheels *s*, said wheels being on shafts *t*, the bearings of which are in plates *u*, *u*, at-

tached permanently to the frame A. On each shaft t, and at the ends opposite to those where the wheels s, are attached there are pinions v, which gear into toothed rims w, at the inner sides of the wheels D, D.

From the above description it will be seen that the operator or attendant by simply turning the shaft X, may turn the wheel J, with the greatest facility, and it will also be seen that by adjusting the levers Y, Y, either or both of the pinions q, q, may be thrown in gear with the pinion p, on shaft H, and consequently either or both wheels D, rotated. When the engine is proceeding in a direct line both wheels D, D, are of course rotated, but in turning, the wheel D, having the larger circuit to make or pass over is only rotated. By this means the turning of the machine is greatly facilitated. By throwing both pinions q, q, out of gear with wheel p, neither of the wheels D, will be rotated and when this is done in connection with the adjusting of the shaft U, to loosen belt g, the machine will remain perfectly stationary although the engine may be in motion. Thus when necessary the engine may be used as a stationary one. By having the power applied to the wheels D, D, by means of the gearing q, s, v, w, the wheels are subjected to an equal strain.

I am aware that barrel-shaped driving wheels J, have been previously used in traction engines and I do not claim such device separately or in itself considered; but,

I do claim as new and desire to secure by Letters Patent,

1. The means employed for rotating or communicating power to the wheels D, D, to wit, the fixed pinion p, on the shaft H, loose or sliding pinions q, q, wheels s, pinions v, and toothed rims w, w, substantially as described.

2. The combination of the wheels J, D, D, when applied to a traction engine and arranged for joint operation substantially as and for the purpose set forth.

JOHN H. BAILEY.

Witnesses:

EPHRAIM S. WOLF,

GEORGE BEAUCHAMP.