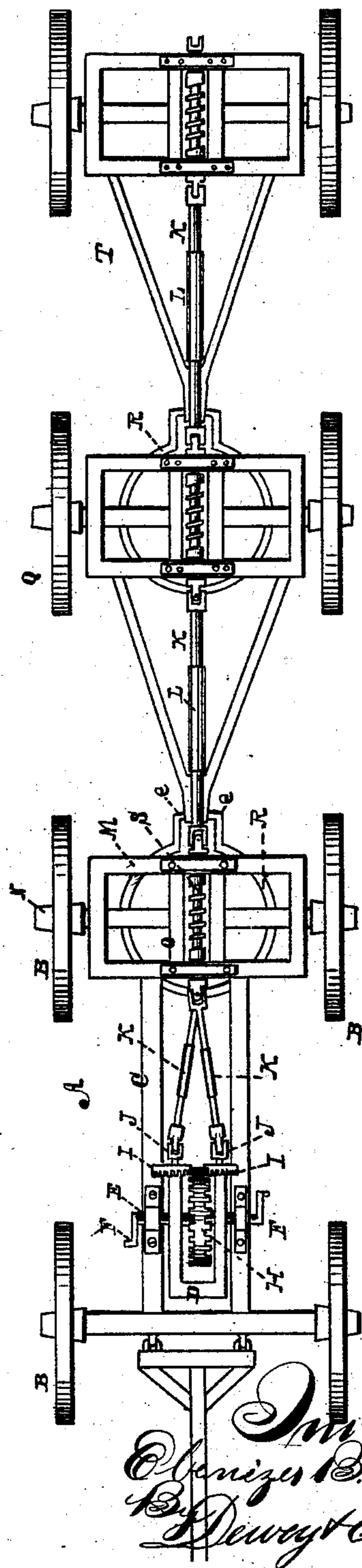
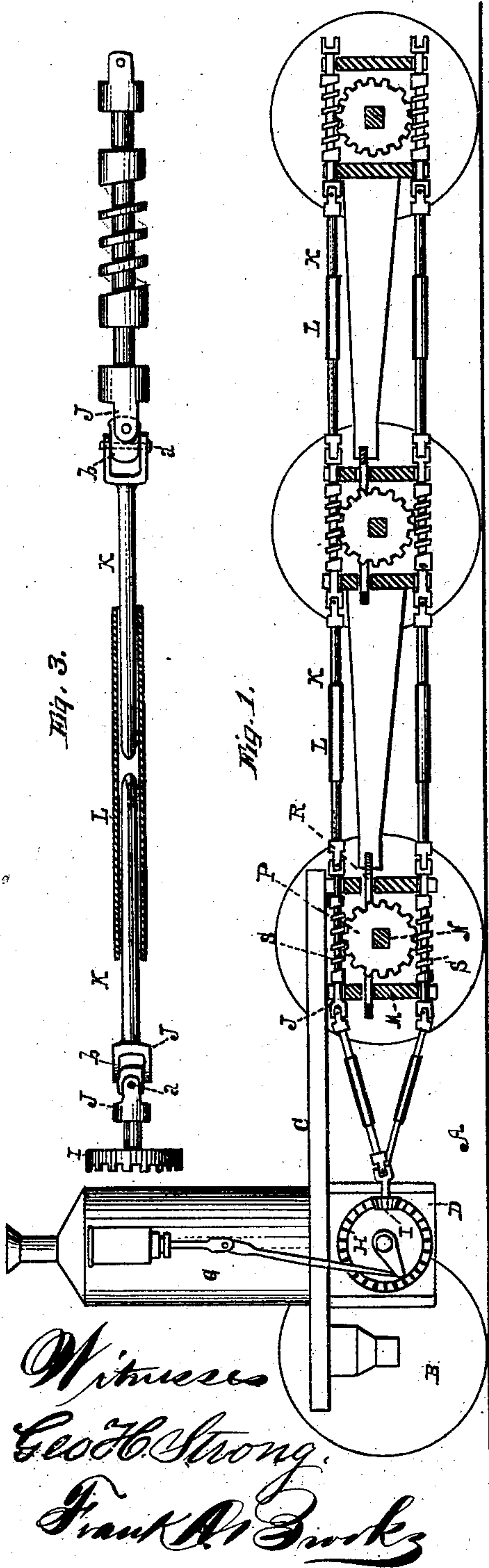


(No Model.)

E. B. TOWL.
ROAD WAGON.

No. 248,235.

Patented Oct. 11, 1881.



UNITED STATES PATENT OFFICE.

EBENEZER B. TOWL, OF FRANKTOWN, NEVADA.

ROAD-WAGON.

SPECIFICATION forming part of Letters Patent No. 248,235, dated October 11, 1881.

Application filed July 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER B. TOWL, of Franktown, county of Washoe, State of Nevada, have invented an Improved Road-Wagon; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful road-wagon; and it consists in a novel means of propelling it and coupling several wagons into a train, the whole being easily guided, all of which will hereinafter more fully appear, reference being made to the accompanying drawings, in which—

Figure 1 shows a side view of the wagon. Fig. 2 shows a top view. Fig. 3 shows a detail of the tumbling-rod and connections.

Let A represent a wagon having wheels B and a frame, C. Under the forward part of the frame C is a casing or box, D, in which is journaled a shaft, E, the ends of which are furnished with cranks F, to which any suitable power may be applied. I have shown in this instance an engine, G. The shaft E, within the casing, carries a double gear-wheel, H, which engages with pinions I, journaled in each side of the box or casing D. The pinions I are upon shafts which extend rearwardly through the box and have secured to them the forked heads J. Within the forks of these heads are the blocks b, pivoted by a pin, a, to the heads.

K K represent tumbling-rods, which have similar forked heads to those marked J. These are pivoted to the blocks b by pins at right angles to the pins a. This connection makes a joint adapted to be moved to either side and up or down, while yet not permitting either piece to be turned independently of the other. The tumbling-rods are severed in their middles, and their severed ends are fitted into sockets or tubes L, thus practically forming single rods, while allowing them to be extensible and easily separated. This construction is preserved throughout the train of wagons, and my tumbling-rods are all therefore easily connected and disjointed, and are rendered extensible, for the purpose hereinafter shown.

Upon the rear portion of the frame of wagon A, I construct a casing or box, M, through the ends of which the axle N of the rear wheels

passes. Across the middle of box M, I make another casing, O, open above and below. The axle N passes through this casing and can turn easily. The wheels B are fast upon the axle N. Within the casing O the axle N carries a gear-wheel, P, which is fast upon the axle.

Lying on top of and below the casing O are worm-gears S, which are properly journaled, one above and engaging with the gear P on top, and one below engaging with the gear P underneath. The forward ends of these worms are provided with forked heads J, similar to those in front, and have the intermediate blocks, b, pivoted within them, to which are secured other heads upon the rear ends of the tumbling-rods K K. It will be perceived, therefore, that one tumbling-rod passes below and the other above the axle, and by being attached to the worm-gears will, when revolved, cause said worms to operate the gear P and axle N, and thus revolve the wheels and advance the wagon. By applying power to the cranks F the double gear-wheel H is operated, which engages with and operates the side pinions, I, and thus revolves the tumbling-rods K K.

Let Q represent a second wagon, the frame of which extends forward, and is supported by the rear of the first wagon. R represents a circular band passing horizontally through the casing M above the axle. Its ends are not joined, but are formed into points e at the rear of the box, which fit into sockets in the front of the frame of wagon Q. The band R is loosely fitted in the box M, and can turn from side to side in the casing M, so that the train may bend. It thus answers the purpose of a king-bolt.

Upon the rear of the wagon Q is a mechanism precisely like that upon the rear of the first wagon—namely, worm screws engaging with a gear-wheel upon the axle, to which the wheels are firmly secured. The mechanism in front is joined to that behind by having the tumbling-rods fit into the tube L, these rods being connected to the worm-screws by the peculiar forked heads and intermediate block already mentioned. Therefore the power applied to the cranks F on the forward wagon is transmitted through the double lines of tumbling-rods to the wheels of both wagons. This connection through the movable coupling

band R and the tumbling-rods K K may be carried on indefinitely, and the train of wagons made as long as desired.

Another wagon I represent by T. If preferable, the two marked Q and T may be considered as one wagon, having both sets of wheels adapted to be driven, as shown. It has this advantage, that power is applied directly and independently to each wagon. If the power were exerted by the first wagon alone, any obstruction to its wheels would stop the whole train; but in this power is applied to each wagon, and any one failing will not have the dead weight of the others to overcome as well as its own difficulty. The circular coupling-band is easily adjusted, and allows the train to wind itself, when necessary. The tumbling-rods are readily secured, and it will be seen that they are extensible within the connecting-tube. This extensibility is required to allow the wagons to conform to inequalities of ground. The joints of the tumbling-rods allow them to extend in any direction, side-wise or up and down, yet cause them to turn each other.

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

1. The road-wagon A, with its wheels B, the rear ones being fast to and turning with the axle N, the driving gear-wheel P, fast to the axle

N, the engaging worm gears or screws S, the tumbling-rods K K, with their forked heads J and intermediate blocks, b, the side pinions, I, double gear H, cranks F, and operating-engine G or its equivalent, when arranged and used substantially as and for the purpose herein described.

2. In combination with the road-wagon A, driven by the engine G or its equivalent through the mechanism of the double gear-wheel H, side pinions, I, tumbling-rods K K, worm-screws S, and gear-wheels P, the wagon Q, coupled to the wagon A by means of the sliding horizontal band R, and having a driving mechanism consisting of the gear-wheel P, fast upon the wheel axle, and the worm-screws S, said worm-screws being connected with the driving mechanism of the wagon A by means of the tumbling-rods K K, substantially as described.

3. The road-wagon A, having a box or casing, M, in combination with the wagon Q, coupled to the wagon A by means of the horizontal circular band R, when arranged substantially as herein described.

In witness whereof I have hereunto set my hand.

EBENEZER B. TOWL.

Witnesses:

S. H. NOURSE,

FRANK A. BROOKS.