3 Sheets—Sheet 1.

G. W. JANVRIN.

Wagon Running-Gear.

No. 80,489. Patented July 28, 1868.

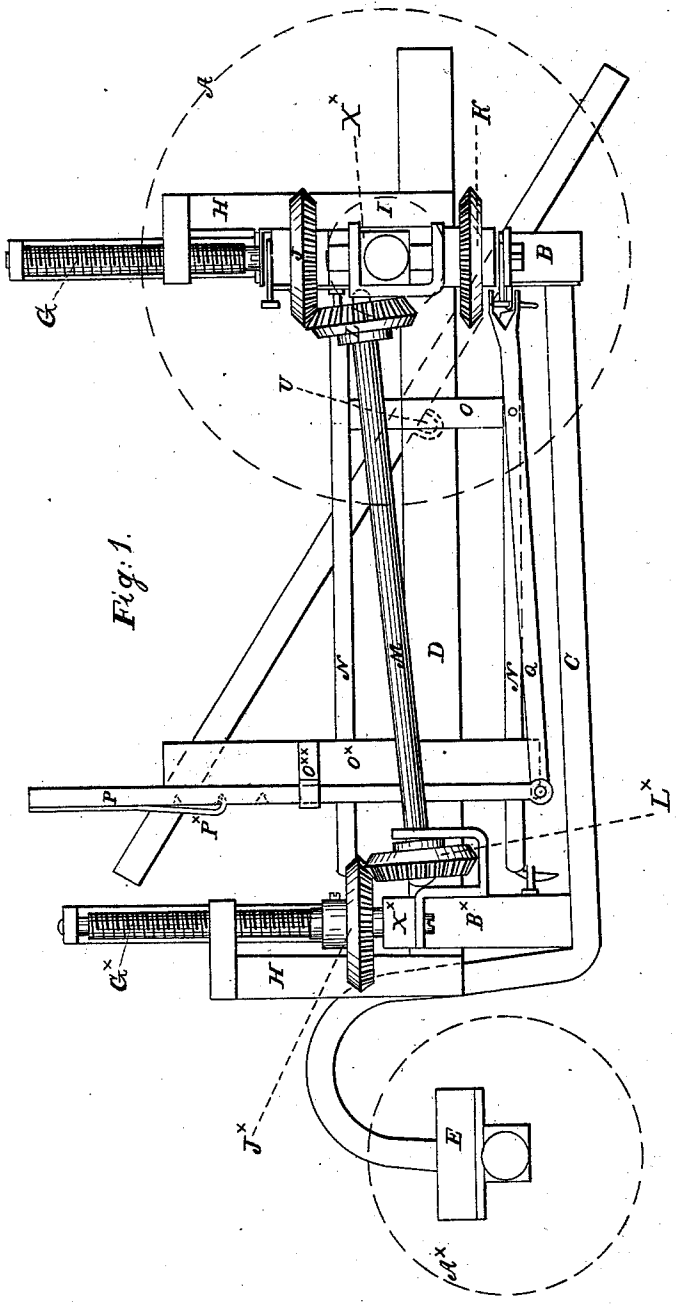


Fig. 1.

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3 Sheets—Sheet 2.

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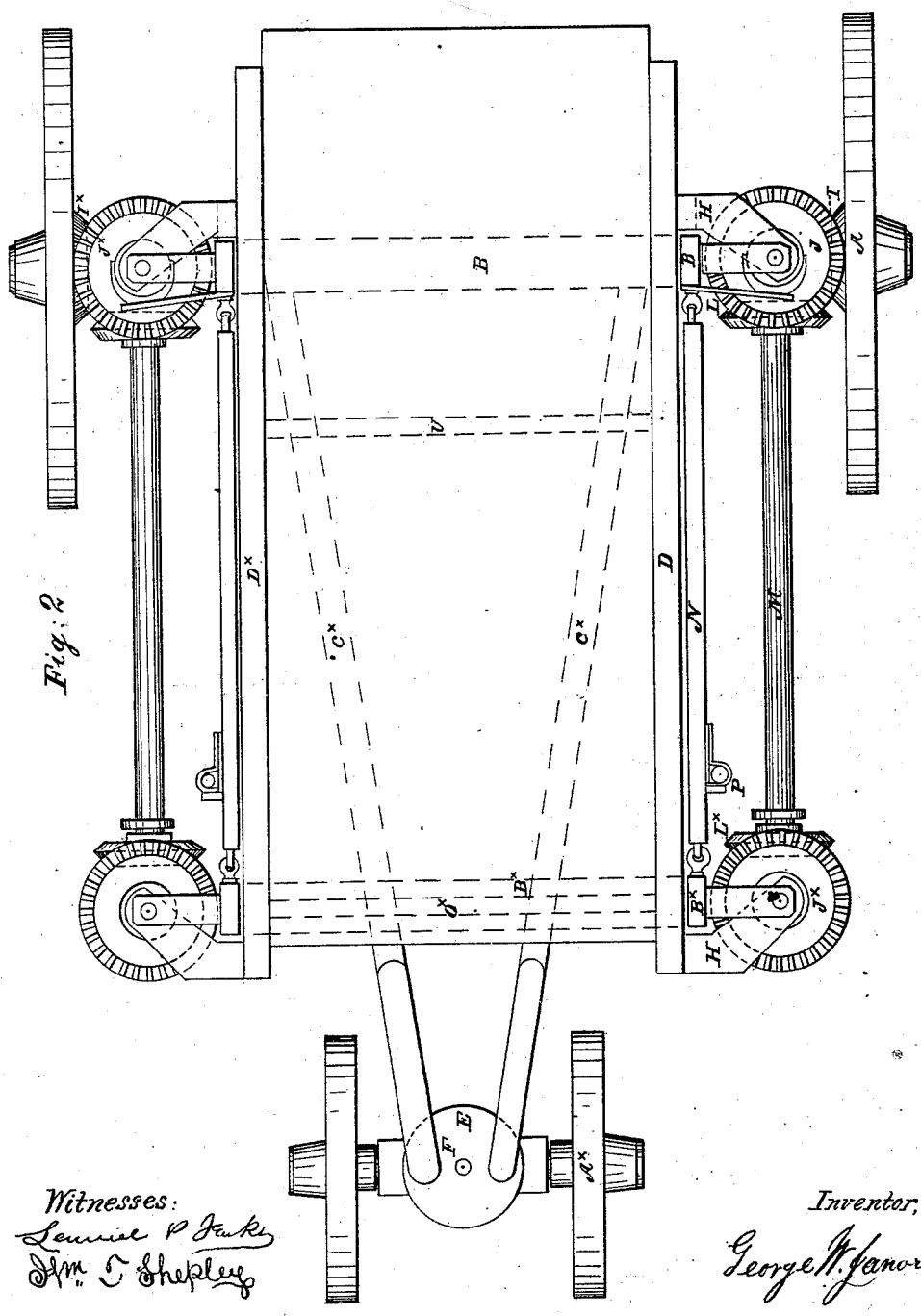


Fig: 2

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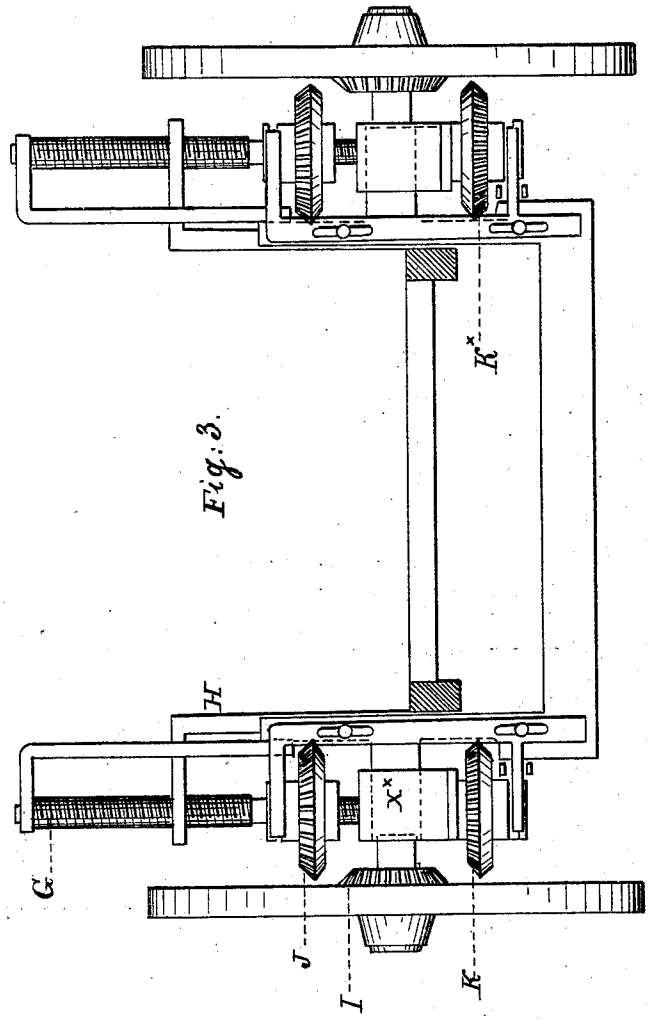


Fig. 3.

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United States Patent Office.

GEORGE W. JANVRIN, OF GREAT FALLS, NEW HAMPSHIRE.

Letters Patent No. 80,489, *dated July* 28, 1868.

IMPROVEMENT IN WAGONS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE W. JANVRIN, of Great Falls, Strafford county, State of New Hampshire, have invented a new and Adjustable Wagon; and I do hereby declare that the following is a full and exact description of the same, reference being had to the drawings herewith annexed, and to the letters of reference marked thereon.

The nature of my invention is that of a wagon so constructed as that its body may, by the same power as is exerted in its traction, be raised or lowered with or without freight thereon; and further, in an arrangement by which the bottom may be, at pleasure, caused to be inclined at an angle, and thus discharge freight like a tip-cart.

In the drawings annexed—

Figure 1 is a side view of my wagon with the bearing-wheels and attachment removed.

Figure 2 is a view from the top.

Figure 3 is a front view of the hind axle with some of its attachments.

And in the drawings, A A$^{\times}$, figs. 1 and 2, are the two right-hand wheels, with counterparts on the other side.

B B$^{\times}$, figs. 1 and 2, are the two cross-bars of the framework, B forming the hind axle.

C, fig. 1, and C C$^{\times}$, fig. 2, are two connecting-bars, which connect together the two cross-bars.

D, figs. 1 and 2, is one of the bottom bars, which holds the bottom of the wagon, and is raised and lowered by appropriate machinery, hereinafter described. This bottom bar has a counterpart on the side opposite to it, D$^{\times}$, fig. 2.

The two connecting-bars, C C$^{\times}$, referred to above, are fixed firmly in the hind cross-bar, B, and pass under the front cross-bar, B$^{\times}$, to which they are also firmly fixed, and in front of the front cross-bar, B$^{\times}$, they project perpendicularly upward, and at a short altitude are curved, so as to form the upper half of a circle, and at their ends bear a circular disk or plate, E, figs. 1 and 2, called the upper axle-plate. This upper axle-plate is perforated at its centre, and there bears perpendicularly a transient bolt, F, fig. 2, which transient bolt carries a plate, (seen in fig. 1,) circular, and of the same diameter, attached to an axle, which axle carries two wheels, (A$^{\times}$, figs. 1 and 2, and its counterpart, seen in fig. 2.)

G G$^{\times}$, figs. 1 and 3, are two upright screws, with counterparts upon the other side of the wagon, called the lifting-screws. These lifting-screws are held, at their lower ends, by horizontal projections, X$^{\times}$ X$^{\times}$, figs. 1 and 3, called the screw-holders, from the upright portions (two on each side, not hereinbefore adverted to,) of the cross-bars B B$^{\times}$, and, respectively, at their upper ends by substantially a perpendicular continuation of the upright portion of these cross-bars, called the cross-bar pillars, (see fig. 1,) where the two lifting-screws are represented in the centre, perpendicularly, of these continuations or cross-bar pillars.

In the drawings, these cross-bars are shown as separate pieces fastened on, but it is intended to make them, in practice, a mere continuation. There are four of these, two on each side.

H H, figs. 1 and 2, and H, fig. 3, are two upright bars, called the lifters, (with their counterparts on the other side, seen in figs. 2 and 3,) which are firmly attached, at their lower ends, to the bottom bar, D, figs. 1 and 2, and on the other side the counterpart upright bars or lifters are similarly attached to the counterpart bottom bar, D$^{\times}$, fig. 2. At their respective tops, these upright bars or lifters bend horizontally (in figs. 1 and 3, and diagonally also, as seen from a top view in fig. 2,) at a right angle, and have each, in these respective portions, a female screw, through which pass respectively the four male screws, (two seen in fig. 1 and two in fig. 3,) called the lifting-screws G G$^{\times}$.

I, fig. 1, and I I$^{\times}$, figs. 2 and 3, are two bevel-cog wheels, called the wheel-bevels, firmly and concentrically fastened respectively on the hubs of the two hind wheels, A, figs. 1, 2, and 3, and its counterpart.

J J$^{\times}$, fig. 2, and J, fig. 3, are the bevel-cog wheels, whose axes are vertical, and concentric, respectively, with the lifting-screws, and having their counterparts on the opposite side, which, being perforated at their

hubs, envelope the lifting-screws, with which they are concentric, and bear each a spline, (a screw being sometimes used for that purpose,) which splines fit respectively in slots in the respective screw-shafts G G×, which bear them. These bevel-wheels J and J×, and their counterparts, play loosely up and down upon their respective lifting-screw shafts, but with their rotation the lifting-screws also turn. They rotate when put in gear with the wheel-bevels I I×, by means hereinafter explained.

K, figs. 1 and 3, and its counterpart, K×, fig. 3, are two bevel-wheels, of the same diameter and number of cogs with the bevel-wheels J J×, also enveloping (by apertures in their hubs) the lifting-screws G G×, and similarly provided with splines, fitting into the same slots in the lifting-screw shafts. These bevel-wheels K K× fit upon the lower ends of the lifting-screw shafts beneath the screw-holders X× X×, (see figs. 1 and 3.)

L L×, figs. 1 and fig. 2, and L, fig. 3, are two bevel-cog wheels, called the side-bevels, whose axes are at right angles to the three (on one side) above described, and are both borne by a horizontal shaft, M, figs. 1 and 2, called the side bevel-shaft, and the counterpart of M, on the other side of the wagon, bears two counterparts to the side bevels L L×, (see fig. 2.) This side bevel-shaft M is supported at the front end of the wagon by a box, (see fig. 1,) by means of which the side bevel-wheel at that end is kept always in gear with the bevel-cog wheel J×, (see figs. 1 and 2.) At the hind or rear end of the wagon, the side bevel L, figs. 1, 2, and 3, is always in gear with the upper bevel-wheel, J.

This is effected by the following device:

N, fig. 2, and N N, fig. 1, are two horizontal round or other shaped bars, called the side bars, parallel to each other, and having pins firmly fastened to and projecting from them at right angles downward, (see fig. 1,) which pins pass into perforated ears, four on each side, fastened (screwed in) to the respective sides of the perpendicular parts of the cross-bars B B×, (see figs. 1 and 2,) and have their counterparts on the opposite side. These two side bars are connected together by the two side-bar holders, O O×, fig. 1, passing perpendicularly from one to the other, and firmly fastened to each. (These, of course, have their counterparts on the other side of the wagon.) The front side-bar holder, O×, (see fig. 1,) bears an ear, O××, fig. 1, through which passes perpendicularly the bar or lever called the shipper-bar, P, figs. 1 and 2, which has its counterpart, with the same attachments, at the opposite side of the wagon, and bears at its lower end, fastened to it by a hinge, the shipper-lever Q, fig. 1. This shipper-lever projects horizontally, or nearly so, toward the rear part of the wagon, and at its rear end is forked. The prongs of the forked end pass on each side, over and under, a horizontal projection, called the lower slide-arm, R, fig. 3, (counterpart on the opposite side, see fig. 3,) which proceeds at right angles from the shipper-slide S, (see fig. 3 for it and its counterpart,) which is a flat bar of metal, moving parallel and close to the front side of the supports B B×, fig. 1, to which they are held by the eight perforated ears, four on each side, above mentioned as supporting the side bars N N, (see fig. 1.) This shipper-slide S has attached to its upper end another horizontal projection, T, fig. 3, similar to R, called the upper slide-arm, which has its mate on the opposite side of the wagon, (see fig. 3.) Each of these upper and lower slide-arms (on each side) bears at its end, projecting back toward the rear of the wagon, a fork, (see figs. 1 and 2,) which forks partly envelope the hub of the respective bevel-cog wheels, J and K, and their counterparts, in a horizontal groove formed on the projecting hubs of the said bevel-cog wheels. Thus the raising or lowering of these slide-arm forks raises or lowers their respective bent-cog wheels, and places either the upper or lower wheel into or out of gear with the wheel-bevels I I×, figs. 2 and 3, or, at pleasure, in gear with neither. The shipper-bar P (see fig. 1) bears on its front side, at its upper end, a flat bar of steel, P×, called the shipper-bar clutch, firmly attached to its upper end, and disconnected as to its lower half, which lower half acts as a spring, and at its lower end is bent, for a short distance, at a right angle, toward the rear part of the wagon. This bent portion slips, at pleasure, into either one of three notches cut in the front edge of the front side bar, O×, fig. 1. Thus, as the shipper-bar is raised or lowered, it is by these means retained at the required elevation, leaving the upper bevel-wheel, J, or the lower bevel-wheel, K, or neither of them, at pleasure, in gear with the wheel-bevel I, fig. 1. This shipper-bar clutch, with the notches, has its counterpart on the other side.

I sometimes attach the device of a lever, (which can be arranged in many ways,) actuated by the ascending or descending body of the wagon, to prevent the too great ascent or descent of the wagon-body, in case of the negligence of the driver.

U U×, fig. 2, (U seen in fig. 1,) are two cross-bars, called the tip-bars, which pass from one side to the other across the wagon, and are, respectively, firmly fastened at each end to the insides of the bottom bars, D D×. These bars support the bottom of the wagon, which lies upon them disconnected from the front tip-bar, U×, fig. 2, but held to the hind tip-bar, U, by two staples, (one seen in fig. 1, dotted lines,) enveloping the said bar, and fastened at their fork-ends, in any convenient manner, to the under side of the bottom of the wagon.

I sometimes make the front tip-bar, U×, a spring, and I sometimes connect the hind tip-bar, U, with the bottom bars, D D×, by means of two springs.

And the operation of my combination of devices is this:

We will suppose the wagon to be loaded, and on its way to deliver its freight. The body and bottom of the wagon have been raised for convenience in loading. The height of the platform or the step upon which the load is to be delivered is, say, two feet lower. The driver, taking hold of the top part of the shipper-bar P, pushes the same down till the shipper-bar clutch enters into the lowest notch, thus throwing the lower bevel-wheel, K, into gear with the side bevel I. He then does the same with the counterpart shipper-bar on the other side of the wagon, and the same effect is produced there. The wagon-body and its freight, the traction of the horse or horses continuing, immediately begins to lower. When the proper altitude has been attained, the shipper-bars are pulled up till the clutch-ends enter into the middle notches. Neither the upper nor lower bevel-wheels are then in gear with the wheel-bevels, and the load is hauled to its destination, and with facility delivered, when reaching it, at the height of the platform or steps there.

It is subsequently desirable to raise the wagon to any certain altitude, to receive freight or to deliver part of the same on a higher platform or step. The driver then pulls up both shipper-bars till their respective clutch-ends enter into the uppermost of the three notches. The upper bevel-wheel, J, and its counterpart, is, by these means, thrown into gear with the wheel-bevel I, and its counterpart, and the wagon-body, the traction of the horse continuing, ascends to the required altitude, when its ascent is stopped by pushing the shipper-bars down till the clutches enter into the middle notch.

In discharging some kinds of freight, the driver desires to effect the same by the simple effect of gravitation. For this purpose he raises, in any convenient manner, the front end of the bottom of the wagon, thus making an inclined plane of the bottom, and restoring it to a horizontal position at pleasure.

It is sometimes desirable to load a wagon at the side. To facilitate this, the side bars N N, on each side, it will be seen, are readily removable.

I sometimes, also, for the same purpose of side loading, remove the side bevel-shaft M, or its counterpart, making the front bearing of the said shafts a slot, instead of a circular aperture, that the shafts may be readily removable.

And what I claim herein as of my own invention, and desire to secure by Letters Patent, is—

1. A wagon, so constructed and arranged as that the body of the same may be raised and lowered at option, by means of screws attached to and forming part of the wagon, when the said screws are acted upon by attachments to the carrying-wheels, substantially as described.

2. In combination with wagons, the wheel-bevels, with their corresponding bevel-wheels, when constructed and arranged substantially as shown and described.

3. The device shown, of the shipper-slides and their appended forks, in combination with the upper and lower bevel-wheels, J and K, and the wheel-bevels, in connection with the body of a wagon, when constructed substantially as described.

4. The shipper-bar clutches shown, when arranged in combination with the notched plates, the shipper-slides, and the body of a wagon, substantially as above described.

5. When in combination with wagons supported by more than two wheels, the tip-cart arrangement of two or more cross bars, U U$^{\times}$, and the pivoted bottom, when constructed substantially as described.

GEORGE W. JANVRIN.

Witnesses:

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WM. T. SHEPLEY.