

A. L. FISH.
MILK WAGON.

No. 179,904.

Patented July 18, 1876.

Fig. 1.

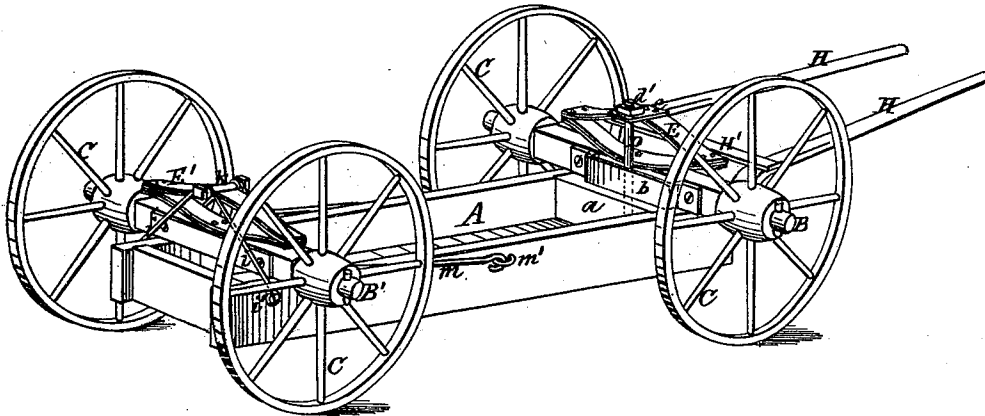


Fig. 2.

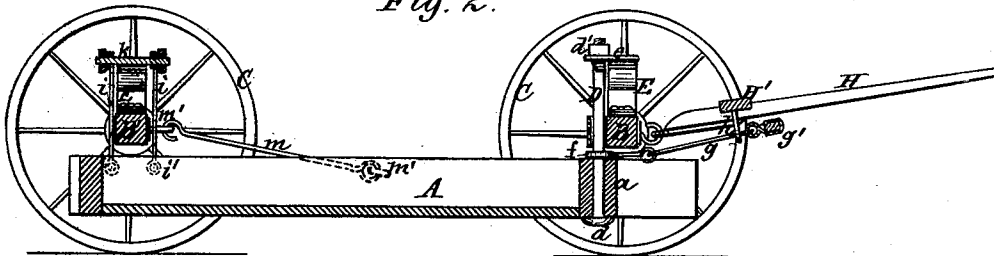


Fig. 3.

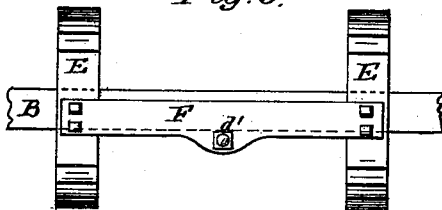
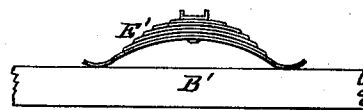


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

ALONZO L. FISH, OF CEDARVILLE, NEW YORK.

IMPROVEMENT IN MILK-WAGONS.

Specification forming part of Letters Patent No. **179,904**, dated July 18, 1876; application filed June 7, 1876.

To all whom it may concern:

Be it known that I, ALONZO L. FISH, of Cedarville, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Milk-Wagons; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of my milk-wagon. Fig. 2 represents the same in longitudinal vertical section. Fig. 3 represents in top view a modification of the springs attached to the axle. Fig. 4 represents in elevation a modification of the spring located upon the axle.

My invention relates to wagons designed, mainly, to carry milk in cans from the farmer's house to butter or cheese factories, to railroad-depots, or to customers; and is intended to keep the milk in the best possible condition. For this purpose the body of the wagon is suspended under the axles from springs resting upon said axles, so that any shock received by the wheels meeting obstructions upon the road is received by the springs, and is nearly imperceptible upon the body of the wagon. As the wheels can be made larger than usual, without materially raising the said body, they will pass over obstructions with less difficulty than others of smaller size. The body being suspended, near each extremity, from bolts over its center, can oscillate pendulum-like without any side jerks, and, having its center of gravity below the axles, will have a nearly perfect degree of stability. It will add, also, to the convenience over others in loading and unloading, and will save much in the wear of the milk-cans. My invention relates, also, to the manner in which the fore part of the body of the wagon is suspended under the axle from a king-bolt sustained by a spring or springs resting upon the axle, said king-bolt being retained in connection with the axle by a guide-plate, and by the tractile power applied directly to it. It also relates to the manner in which the rear part of the body of the wagon is suspended under the axle from converging rods passing on each side of the rear axle, attached at one end to the body of the wagon, and at

the other end to a bolt sustained by a spring or springs located upon the axle.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the body of the wagon or swinging rack suspended under the axles B and B', that are supported by the wheels C, made preferably of the same size for the front and rear axles. In the front part of the body A, and attached to it, there is a cross-piece, *a*, through which the king-bolt D passes, its head *d* forming a rest for the cross-piece *a*, while its upper part passes between the front axle B and a guide-plate, *b*, attached to the said front axle, and rests, by means of its nut *d'* alone, or jam-nuts, upon a plate, *e*, attached to the upper leaves of the spring E, while its lower leaves are bolted to the axle B. The king-bolt D serves, also, as a pivot, around which the front axle and shafts can turn freely without any fifth-wheel, to change the direction in which the front wheels are advancing. The king-bolt passes through a ring, *f*, to which the draft is applied, and, consequently, directly to the body of the wagon, by means of the rod *g* and the single-tree *g'*, thus obviating any shock received by the wheels being transmitted to the wagon, the rod *g* being supported, in relation to the shafts H, by a loop, *h*, attached to their connecting-bar H'. The shafts H are connected to the front of the axle B, so as to readily skew it around, when it is desired, using the king-bolt as a pivot, and dispensing with the use of a fifth-wheel or bolster. The rear part of the body A of the wagon is also suspended from the top of a spring, E', by diagonal rods *i* upon each side of the rear axle, to keep the spring in an upright position, the rods *i* having one of their extremities fastened to the body of the wagon at *i'*, while the other is connected to a central bolt, *k*, resting upon, and fastened to, the upper leaves of the spring E'. Thus both ends of the wagon or swinging rack are suspended from a central point on top of the springs, allowing it to oscillate laterally without any jolting motion. The rear axle is securely connected to the wagon by means of

rods m , having eyes at each end to engage with eyebolts m' , attached to the axle and to the sides of the body of the wagon, so as not to interfere with its swinging motion. If the axles are made of wood they are provided with light iron plates on the sides, to prevent any abrasion by the king-bolt, or the diagonal rods i .

In practice I have found my suspended milk-wagon preferable for that purpose to all others with which I am acquainted. It is cheaper and more simple in construction by dispensing with fifth-wheel and bolsters. The center of gravity being suspended below the the axles, there is scarcely any jolting motion perceptible, so that the milk-cans do not need to be strapped in the wagon, and larger wheels than usual can be used, thus making the draft easier on rough roads.

It is evident that two springs may be used in place of one upon the front axle, as shown in Fig. 3, and connecting them by a bar, F , for the reception of the king-bolt, and a nearly similar arrangement could be used over the rear axle, or a half-elliptic spring, as shown in Fig. 4.

The king-bolt may be made to pass through a slit in the middle of the front axle, with a spring in front and rear of it, united above by a plate for the support of the nut of the king-bolt; but I prefer the arrangement shown in Figs. 1 and 2, as it is cheaper, and answers all

purposes for light loads, and I have found rubber springs rather too rigid to accomplish the desired object.

Having now fully described my invention, what I claim is—

1. The body of a wagon for carrying milk and for other purposes, suspended under both the front and rear axles from springs located upon said axles by bolts or rods pivoted over the longitudinal central line of the wagon, to allow it to swing sidewise, substantially in the manner shown and described.

2. In a milk-wagon having its body suspended under both the front and rear axles from springs and bolts located over its central line, the guide-plate b , attached to the front axle to retain the king-bolt D , and allow it to oscillate transversely with the wagon, as and for the purpose described.

3. In a milk-wagon having its body suspended under both the front and rear axles, the transverse diagonal rods i , suspended centrally from the top of the spring E' , and the longitudinal rods m , to connect the rear axle with the said body, and allow it to oscillate substantially as and for the purpose specified.

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