W. L. DEMPSEY.

WAGON.

APPLICATION FILED NOV. 12, 1914.

1,226,867.

Patented May 22, 1917.

2 SHEETS—SHEET 1.

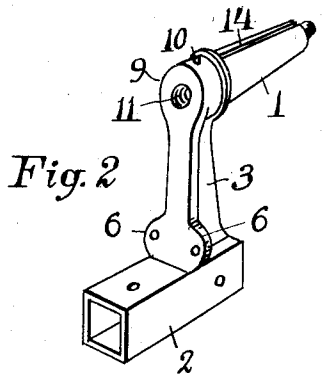


Fig. 2

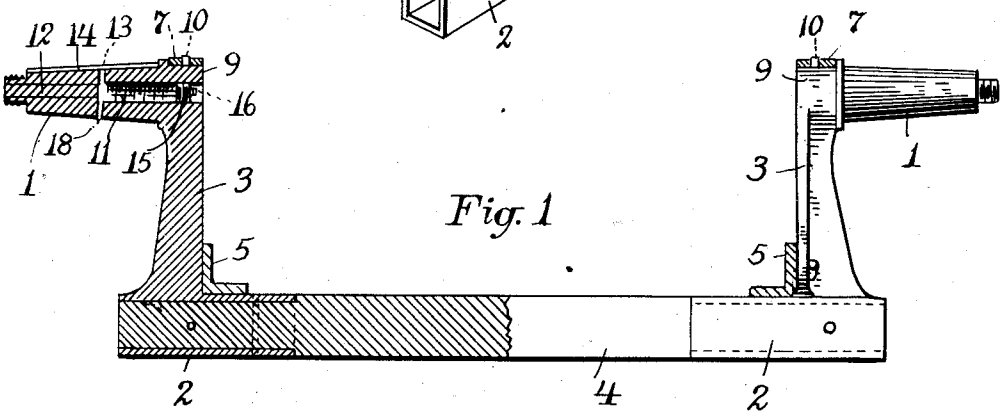


Fig. 1

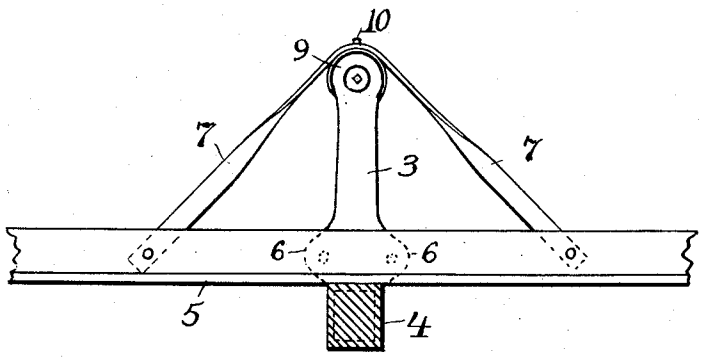


Fig. 3

Witnesses;

Joseph W. Downs

P. C. Waite

Inventor,

William L. Dempsey;

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W. L. DEMPSEY.

WAGON.

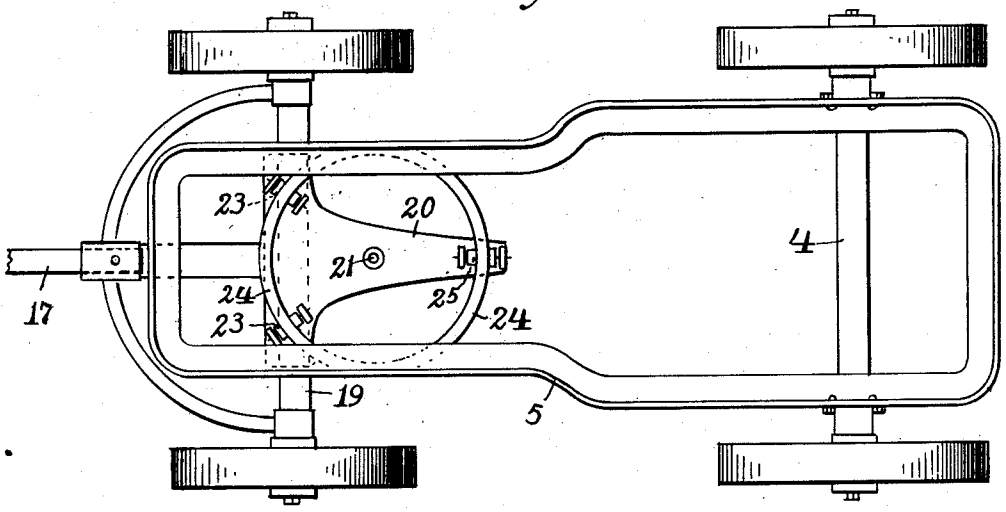
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2 SHEETS—SHEET 2.

Fig. 4



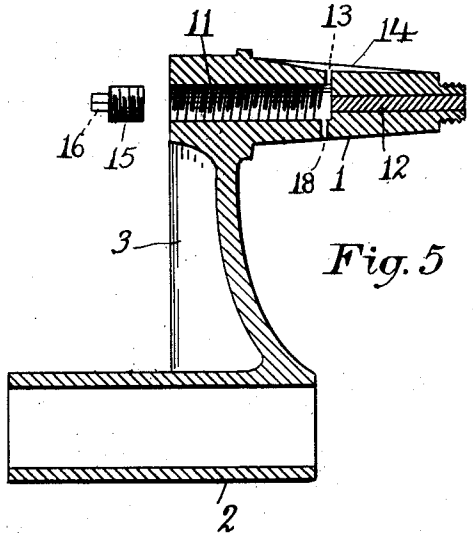


Fig. 5

Witnesses;

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UNITED STATES PATENT OFFICE.

WILLIAM L. DEMPSEY, OF SOMERVILLE, MASSACHUSETTS.

WAGON.

1,226,867. Specification of Letters Patent. Patented May 22, 1917.

Application filed November 12, 1914. Serial No. 871,828.

To all whom it may concern:

Be it known that I, WILLIAM L. DEMPSEY, a citizen of the United States, and a resident of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Wagons, of which the following is a full, clear, and exact specification.

One of the inherent defects in the ordinary farm and business wagon is the considerable height to which the produce and merchandise must be lifted in loading the same thereon. Attempts have been made to avoid such defect by lowering the wagon body, employing for such purpose a drop axle. While the latter provides the low body desired, it introduces a weakness which goes far to offset the advantage obtained.

This weakness arises from the fact that all such drop axles have heretofore been constructed from wrought iron, with the result that after heavy and continued use the iron gradually yields until the wheels spread outwardly at their points of contact with the ground, and approach the wagon body at their upper peripheries.

This is objectionable, both from the point of view of appearance, and from the practical point of interference with the load being transported, and from the presentation of an edge of the tires to the ground, instead of an even tread.

Another objection found to exist in the present type of low, or jigger, wagon, is the difficulty of greasing the axles, owing to the fact that it is very difficult to get a lifting jack beneath the low axles; and a further objection is the impossibility of turning the wagon about except in a very large circle.

The purpose of this invention is the construction of a wagon which shall avoid all these difficulties; whose axles will not warp and twist and so cause the pitch and gather of the wheels to be lost and the wheels to run hard and cramp upon the axles; whose axles will be provided with grease repositories adapted in a moment to deliver lubricant to the axles, and to a limited extent automatically delivered, without even stopping the wagon, much less removing the wheels; which can be turned in a small compass, and whose thills or tongues will not thrash the horses by lateral oscillation.

Referring to the drawings forming part of this specification, Figure 1 is a side elevation, one half in section, of a drop axle made in accordance with my invention. Fig. 2 is a perspective view of the crank skein alone. Fig. 3 is a cross section of the rear axle. Fig. 4 is a plan view of the running gear and wagon-body frame embodying my improvements. Fig. 5 is a side sectional elevation of the front crank skein.

The crank skein comprises the skein proper 1 made quite large in diameter, a thimble 2, and an arm 3 rigidly joining said parts. These parts 1, 2 and 3 are integral, and preferably composed of cast iron in order to be of maximum rigidity. The arm 3 is webbed in order to be of maximum strength with a minimum of metal.

The thimble 2 is square in cross section, and a wooden axle 4 is used for joining the opposing crank skeins, the ends of the wooden axle being squared to fit tightly within the thimbles, and are forced therein by hydraulic pressure.

The advantage in thus having the thimbles and axle square is the torsional rigidity obtained. Were the thimbles cylindrical and held from turning on the axle by a bolt or rivet alone, the rigidity would be much less and dependent entirely on the bolt and what friction might remain.

I prefer to make the frame 5 of the wagon body from angle iron and to bolt thereto the ears 6 of the rear thimble arms 3, as indicated in Figs. 1 and 2. While this materially adds to the strength of the skeins, I prefer still further to add thereto by a length of strap iron 7 passed over the butt 9 of each skein and having its ends bolted or riveted to the frame 5, as shown in Fig. 3. The portion of each strap bent over the butt 9 is given a hole entered by a lug 10 cast as a part of the skein, so that the expense is reduced to a minimum, while the crank skeins are very strongly braced thereby.

Each skein is cast hollow, with a cylindrical hole 11 extending either entirely through the same longitudinally, or half way in, a wooden plug 12 being used to fill the outer half of the hole when made clear through the skein. Rising from the inner end of the hole 11 at the mid-length of the skein is a small feed-hole 13 terminating in a groove 14 traversing the skein longitudinally. The hole 11 being internally threaded and provided with a screw plug 15 adapted to be turned by a square boss 16, the hole is filled with grease and the screw plug introduced therein to keep the lubricant in the

hole or reservoir 11. As the plug 15 is thus screwed in, it forces a suitable quantity of the contained grease up through the feed hole 13 and along the groove 14 until the wheel and skein are thoroughly lubricated. When, after continued use, the lubrication gets deficient, the plugs 15 are given another turn or two until a sufficient supply has again been forced up to the wearing surfaces.

By having the skeins made large in diameter, not only is space allowed for an ample supply of grease, but an extended wearing surface is given, which, being thus kept constantly lubricated, insures easy running and great durability.

It sometimes happens that the driver omits to screw in the plugs when the grease gets scanty upon the skeins, and consequently the latter will begin to warm up. I therefore form one or more holes 18 through the under part of each skein so that, the grease being partially liquefied by the warmth, will percolate down to the exterior surface of the skeins and thereby automatically provide the needed lubrication.

Since the wagon body seldom rises to the height of the screw plugs 15, the latter can be easily reached by a suitable wrench for manipulation; while, even if the body-sides do rise higher than specified, a hole can be bored through the same in alinement with said plug.

As illustrated in Fig. 4, the front section of the body frame 5 must be made narrower than the rear portion in order to permit the front wheels and axle to be swung far enough to permit the wagon to turn in a comparatively small circle. For enabling this to be made as wide as possible for the same radius of turning circle, and also to diminish the lateral thrashing of the wagon tongue 17, I fasten to the front axle 19 a plate or frame 20 extending rearwardly therefrom to a considerable distance, and in this plate and spaced from said axle is a hole 21 for the reception of the king-bolt which is held by the wagon body.

Since the weight of the body on the front axle cannot be taken by the portion of the bolster-plate immediately surrounding the king-bolt, but will be sustained directly by the axle, I provide the axle with two slightly tapering rolls 23 rotatably carried by the bolster plate and supporting the fifth-wheel 24. Otherwise the friction between the fifth wheel and the axle will be too great to permit easy turning.

At the rear end of the plate 20 is a third tapering roll 25 which by its upward pressure against the fifth wheel, supports the weight of the wagon-tongue 17 which is rigidly connected with the front axle.

In this manner a drop axle wagon is produced in which the front wheels can be substantially as large as the rear wheels, and the wagon can still be readily turned, the tongue or thills will not thrash the horses since the king-bolt is so far behind the line of the front wheels' tread, the wheels can be easily lubricated, and the crank skeins will not bend.

What I claim is:

1. A low wagon comprising crank axles having skeins of relatively large diameter, integral arms depending respectively from said skeins and thimbles of greater cross sectional area than that of said skeins integral with said arms, said thimbles being longitudinally apertured to receive the ends of the axle and presenting angularly disposed walls adapted to engage the faces of the axle and to prevent rotation thereof.

2. A low wagon comprising crank axles having skeins of relatively large diameter, integral arms depending respectively from said skeins, and thimbles of greater cross sectional area than that of said skeins integral with said arms and extending beyond said arms well beneath the mid-lengths of said skeins, said thimbles being longitudinally apertured throughout their length to receive the ends of an axle and presenting angularly disposed walls adapted to engage the faces of the axle and to prevent rotation thereof.

3. In a low wagon, a crank axle comprising a skein of relatively large diameter, an integral arm depending therefrom and a thimble having a longitudinal aperture presenting angularly disposed walls to receive the end of the axle, said thimble being of greater cross sectional area than that of the skein whereby a relatively large axle may be employed.

4. In a low wagon, a wooden axle having ends presenting angular faces, thimbles provided with longitudinal apertures corresponding in form to the ends of said axle tightly secured upon the same, arms integral with and extending vertically from said thimble and skeins extending outwardly from the upper ends of said arm in parallel axial alinement with the axis of said thimbles, each of said skeins being provided with an internal recess forming a lubricant receptacle; a duct leading from said grease receptacle to the surface of said skein, means operable from the inner end of the skein for forcing the lubricant through the duct and means for securing wheels upon said skeins.

5. An axle arm for a low drop wagon comprising a thimble having a longitudinal aperture angular in cross section, an integral arm rising from said thimble intermediate of its ends, a skein extending laterally from the upper end of said arm integral therewith, said skein being centrally bored from its inner end and screw threaded

to form a lubricant receptacle, a duct leading from said receptacle to the surface of the skein, and a screw threaded plunger having means adapted to be engaged by a rotating member sustained in said lubricant receptacle and adapted to force the lubricant through said duct.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 11th day of November, 1914.

WILLIAM L. DEMPSEY.

Witnesses:

A. B. UPHAM,

JOSEPH W. DOWNS.