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P. FLETCHER.

WAGON GEAR.

APPLICATION FILED DEC. 18, 1903.

NO MODEL.

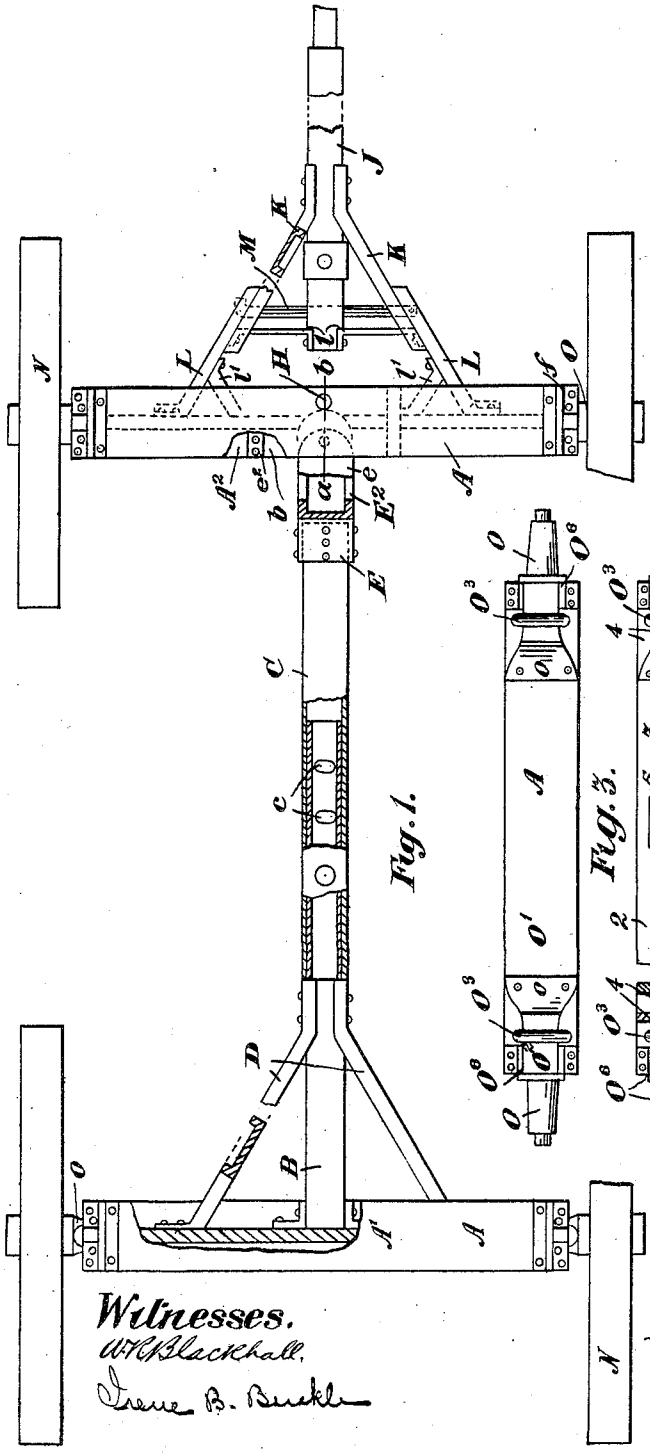


Fig. 1.

Fig. 3.

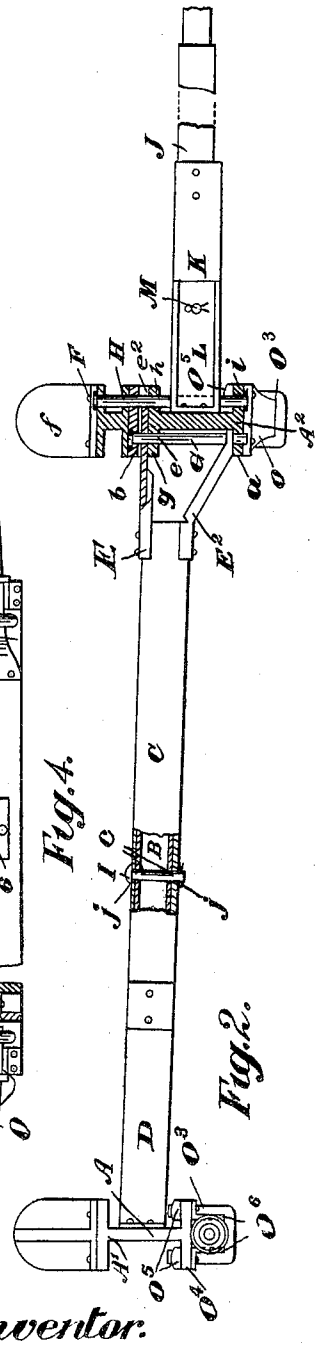


Fig. 4.

Fig. 2.

Witnesses.
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No. 770,746. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

PETER FLETCHER, OF MIDLAND, CANADA.

WAGON-GEAR.

SPECIFICATION forming part of Letters Patent No. 770,746, dated September 27, 1904.

Application filed December 18, 1903. Serial No. 185,758. (No model.)

To all whom it may concern:

Be it known that I, PETER FLETCHER, blacksmith, a subject of the King of Great Britain, residing in the town of Midland, in the county of Simcoe, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Wagon-Gears, of which the following is a specification.

My invention relates to improvements in wagon-gears; and the objects of my invention are, first, to construct a comparatively light yet very strong wagon-gear out of iron and steel; secondly, to provide a wagon-gear with an adjustable reach, and, thirdly, to make the line of draft as near on a line as possible with the center of the wheels, and thus prevent undue straining of the wagon-gear; and it consists in constructing the benches of either I-beam or T-beam steel and connecting them together by a reach preferably tubular in construction and providing said benches with stub-axles to mount the wheels on.

My invention further consists in a particular construction of tongue and braces or supports for same.

The construction of my gear will be hereinafter fully explained.

Figure 1 is a plan view of my gear, showing same partly in section. Fig. 2 is a side elevation of my gear, showing a vertical cross-section on the line *a b*, Fig. 1. Fig. 3 is a view of the under side of one of the benches, showing the stub-axles secured thereto; and Fig. 4 is a view of the under side of an alternative form of bench, partly in section, showing the stub-axles secured thereto.

In the drawings like letters of reference indicate corresponding parts in each figure.

Although I show and describe a particular construction for securing the tongue to my wagon-gear, it must be understood that I do not confine myself to same.

In my preferred form of invention the benches A are made of I-beam steel and are connected together by a suitable reach. The preferred form of reach used by me is made tubular and consists of the back member B, secured to the back bench A′, which slides within the front member C, pivoted to the front bench A^2. Bracing the back member B of the reach to the bench A′ are channel-irons D. The form of coupling I use for securing the reach to the bench A^2 is constructed as follows; but I wish it understood that I do not confine myself to any particular manner or construction for coupling the reach to the front bench.

E is a piece of channel-iron secured at its rear end to the member C and having its front end *e* resting upon the top of the bench A^2. E^2 is another piece of channel-iron secured to the member C and having its front end resting upon the flange *a* of the bench A^2.

Resting upon the top of the bench A^2 is a bolster F, constructed of I-beam steel. The bolster F is provided with any suitable standards *f*. In order to prevent the weight of the bolster F and weight carried thereby interfering with the movement of the end *e* of the member E of the reach-coupling, I suitably secure to the top of the bench A^2 a metal plate *b*, which spans the end *e* and is secured to the top of said bench by its ends e^2, which are the only parts of said plate which rest upon said bench. The reach-bolt G passes down through the plate *b*, end *e*, and flanges *g* and *a* of the bench A^2, thus securing the reach to said bench. By means of the plate *b* just described it will be understood that the reach-coupling and bench A^2 will have free movement independent of each other. In the drawings I have shown the king-bolt H held in the front flanges of the bolster F in the plate *b* and the flanges *h* and *i* of the bench A^2. I of course do not restrict myself to any particular way of mounting the king-bolt in place.

I preferably construct the reach-coupling of two members B and C before described, so that I may be able to lengthen or shorten the distance separating the benches. Although I have shown the said coupling and described same as being tubular, I do not confine myself to this particular shape. Passing down through the front member C and through the back member B by means of the holes *j* and the elongated slots formed respectively therein is the reach-coupling bolt I. The holes or slots *c*, formed in the back member B, are constructed with their greatest length at right

angles to the length of said member, so as to allow the members of the reach-coupling to have a certain amount of axial movement, thus relieving undue straining on the wagon-gear. In case I wish to increase the distance separating the benches I remove the reach-coupling bolt I and pull the members of the reach-coupling apart the required distance and then couple same together by means of said reach-coupling bolt I and the slots or holes before described. It will be understood that the reach-coupling bolt I has snug fit within the holes *j* formed in the front member C and the sides of the elongated slots or holes *c* in order to prevent longitudinal movement of the members of the reach-coupling. The tongue J is preferably constructed tubular and is provided with two braces K, constructed of channel-iron suitably secured thereto. The rear end of said tongue is suitably braced to said braces K by means of the braces *l*.

L represents channel-irons suitably secured to the bench A^2 and overlap for a certain distance the rear ends of the braces K. These channel-irons are braced by channel-irons *l'* to the bench A^2. Having bearing in the channel-pieces L, braces K, and passing through the rear portion of the tongue is the bolt M, which couples said tongue to said channel-pieces L.

I mount the wheels N on the benches by means of stub-axles O, which may be secured to or formed a part of said benches. I preferably attach the said stub-axles to the benches by the following preferred construction: The inner ends of said stub-axles are flattened out, as shown at *o*, and riveted to the under side O' of said benches. The portion O^2 of said stub-axles is formed square and is embraced by the metal strap O^3, the ends of which extend through the lower flanges O^4 of the rear bench A' and through the flanges *a* and *i* of the front bench A^2 and are threaded and provided with nuts O^5, which hold same securely in place. To additionally secure the stub-axles in alinement on said benches, I suitably secure to the under side O' of said benches angle-pieces O^6, which abut against the square sides of the portion O^2 of said stub-axles.

I have described my preferred form of bench; but it must be understood that I do not confine myself to using **I**-beam steel. Upon referring to Fig. 4 it will be seen that I have shown an alternative form of bench. This bench 2 is constructed of **T**-beam steel. Secured to or forming part of the web 3 of same I provide suitable angle pieces or blocks 4 on each side of said web, to which the said stub-axles may be secured. 5 is an angle piece or block suitably secured to or forming part of the web 3 to provide a lower bearing for the reach-bolt G, and 6 is an angle piece or block also secured to said web to provide a lower bearing for the king-bolt H.

It will be noticed that I have countersunk the head of the reach-bolt G in the plate *b*, so as to prevent same interfering with the movement of the bolster F.

It will of course be understood that I may make changes in the construction of my wagon-gear without departing from the spirit of my invention.

What I claim as my invention is—

1. A wagon-gear comprising front and rear **I**-beam-steel benches; stub-axles of same; a tubular reach-coupling comprising a rear member secured to the rear bench, and a front member pivoted to the front bench, said members fitting one within the other and provided with slots or holes to allow of their axial movement, and a coupling-pin passing through the holes or slots in the members of said reach-coupling to couple same together.

2. A wagon-gear comprising front and rear **I**-beam-steel benches; stub-axles of same; a tubular reach-coupling comprising a rear member secured to the rear bench, and a front member pivoted to the front bench, said members fitting one within the other and provided with holes or slots to allow of their axial movement; a coupling-pin passing through the holes or slots in the members of said reach-coupling to couple same together, and channel-irons bracing the rear member of said reach-coupling to said rear bench.

3. A wagon-gear comprising front and rear **I**-beam-steel benches; stub-axles of same; a tubular reach-coupling comprising a rear member secured to the rear bench, and a front member pivoted to the front bench, said members fitting one within the other and provided with holes or slots to allow of their axial movement; a coupling-pin passing through the holes or slots in the members of said reach-coupling to couple same together; channel-irons bracing the rear member of said reach-coupling to said rear bench; a lower channel-iron secured to the front end of said front member of said reach-coupling; an upper channel-iron secured to the front end of said front coupling and resting upon the top of the front bench; a metal plate secured to the top of said front bench and spanning the end of said upper channel-iron, and a reach-bolt pivoting said upper and lower channel-irons to said front bench.

4. A metal bench for wagon-gears constructed of **I**-beam steel, and provided at its under side with stub-axles, the inner ends of which are flattened out and secured to said bench; metal straps extending around said stub-axles and additionally securing same to said bench, and angle-pieces secured to said bench and abutting the sides of said stub-axles so as to securely hold same in alinement.

5. A bench for wagon-gears constructed of **I**-beam steel, and provided, on its upper side near its center portion, with a plate held above

the top of said bench except at its ends which are bent downward and secured to said bench.

6. A tongue-coupling for wagon-gears comprising a front bench constructed of I-beam steel, two channel-iron braces secured to the web of same and projecting forward; a tongue constructed of tubular metal; two channel-iron braces secured thereto and resting, in part, adjacent said channel-iron braces secured to said bench, and a bolt passing through the rear end of said tongue and pivoting same in said channel-iron braces.

7. A wagon-gear comprising front and rear metal benches, and a tubular reach comprising a rear member secured to said rear bench and a front member pivoted to said front bench, the said members fitting one within the other and being provided with holes or slots to allow of their axial movement, and a reach-coupling pin passing through the said holes or slots in the members of said reach-coupling and securing same together.

8. A wagon-gear comprising front and rear I-beam-steel benches, and a tubular reach comprising a rear member secured to said rear bench and a front member pivoted to said front bench, the said members fitting one within the other and being provided with holes or slots to allow of their axial movement, and a reach-coupling pin passing through the said holes or slots in the members of said reach-coupling and securing same together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER FLETCHER.

Witnesses:
DUNCAN S. STOREY,
BERTHA PHEW.