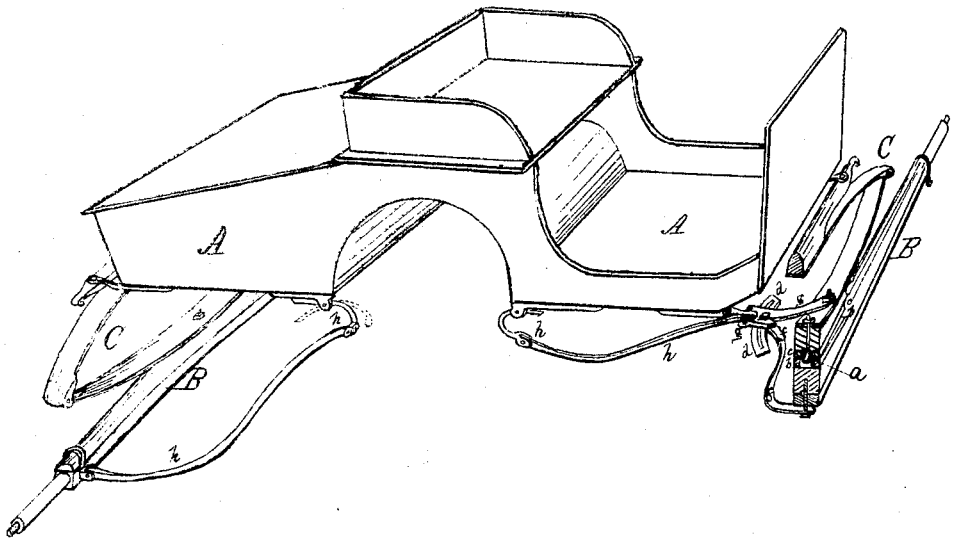
ROBERT JACK.

Improvement in Vehicles.

No. 114,149. Patented April 25, 1871.



Witnesses.
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UNITED STATES PATENT OFFICE.

ROBERT JACK, OF DES MOINES, IOWA.

IMPROVEMENT IN VEHICLES.

Specification forming part of Letters Patent No. **114,149**, dated April 25, 1871.

I, ROBERT JACK, of Des Moines, Iowa, have invented certain Improvements in Buggies, of which the following is a specification:

My invention is a means provided to mount a buggy or carriage body or box upon a gearing in such a manner that the front axle and wheels may be turned at a right angle with the hind axle and wheels, and the direction of the vehicle changed without advancing; also, to allow the wheels alternate up-and-down motion or play, while the springs and body and seat are retained in their natural perpendicular and horizontal positions.

It consists in the peculiar form and combination of a socket-joint king-bolt, an adjustable segment of a circle, a short stay-reach, and hinged and jointed braces, as hereinafter set forth.

My drawing is a perspective view of my buggy-box and part of the gearing, together illustrating the manner in which the box, the springs, and the axles are connected and operated.

A A is the box or body; B B, the axles; C C, the springs. *a* is the socket-joint king-bolt. *b* is a metal plate permanently secured to the axle, and has a spherical or conical projection on its upper side, in which the head of the king-bolt has lateral play. The king-bolt is passed upward through its socket thus formed in the plate *b*. The neck of the king-bolt is flat sided, and the opening in the socket is a corresponding slot. The surface of the plate *b* angles downward from its center, and this connection of the axle and plate and king-bolt provides for the vertical play of the front axle, and allows the front wheels to rise and fall.

c is a plate bolted on the lower side of the head-block. It has a spherical or conical cavity corresponding with the projection on the plate *b*, and together they form a universal joint. The king-bolt passes upward through this cavity and plate and through the head-block and the spring. A nut on the top secures all together, and the king-bolt and spherical cavity and projection together form a pivot, upon which the axle revolves right and left in such a manner that it may stand at a right angle with the rear axle.

d d is the adjustable segment of a circle, and performs the function of a fifth-wheel. It is supported by a bent arm, *f f*, that is pivoted under the middle of the axle. The segment has a slot, through which a bolt passes and connects it with the short stay-reach.

g g is the stay-reach. Its forked ends are bolted to the spring and head-block. In the drawing one of these ends is removed. Its rear end forms a hinge-joint with my jointed braces.

h h h h represent my hinged and jointed braces. Four are used, but only two are shown in my drawing. One of these connects with a hinged joint to the rear axle, and the other with the short stay-reach.

The upper ends of my jointed braces are in the form of a hook, and these hooks are hinged to the braces and also to the bottom of the buggy or carriage, as represented in the drawing. A pressure on the springs or a sudden jar from an obstacle on the ground will cause the jointed braces to distribute the weight of the pressure or the force of the blow by yielding to the same.

The dotted lines at the top and hooked end of the rear brace *h h* indicate how the brace lengthens and yields as the spring C is compressed. The elasticity thus provided in the braces also serves to keep the springs and the body or box in a perpendicular and horizontal position, and to prevent twisting, upsetting, and throwing out.

I am aware that front axles have been made to turn at right angles; that jointed braces have been used on carriages; and that stays have been used to keep springs in a perpendicular position, and claim only my peculiar mode of accomplishing the advantages sought thereby.

Claim.

I claim as my invention—

The socket-jointed king-bolt *a*, the adjustable segmental slotted circle *d d*, with its bent arm *f f*, the short stay-reach *g g*, the hinged and jointed braces *h h*, all made, combined, and operated with the gearing and body or box of a buggy or carriage, in the manner described, and for the purposes specified.

ROBERT JACK.

Witnesses:
M. S. DICKERSON,
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