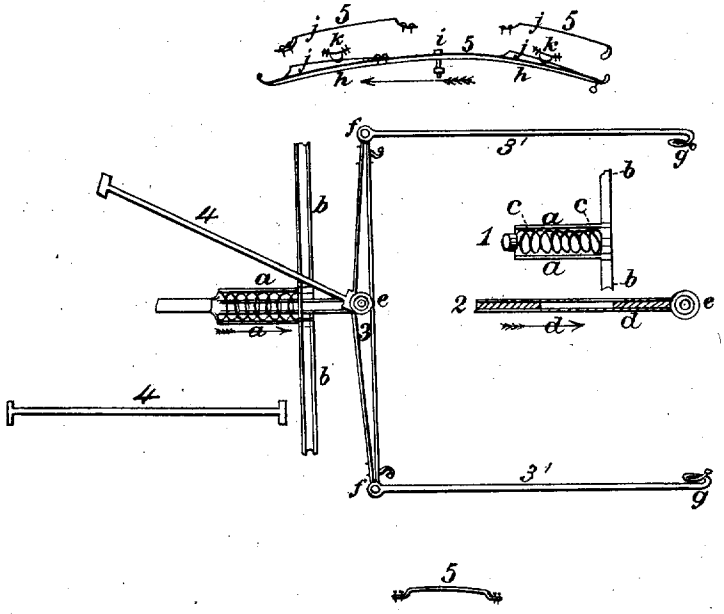
d Specification Avallable

7733X

H. KNOWLES.

Whiffletree.

Patented Aug. 29, 1833.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

8/29/1833 7733X

Aug. 29 1833

Hazard Knowles of Colchester Connecticut

Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Hazard Knowles himself of his improvement in the construction of the wheel Carriages by which the annoying efforts of the driver obstructing on the road are obviated & the ascending and descending of hilly facilitated

To all whom it may concern. Be it known that I Hazard Knowles of Colchester in the County of Rockingham and State of Connecticut have invented a new and useful mode of suspending Spiral or other Springs Axle and other two wheeled Carriages by which the bodies of such carriages are allowed to incline forward when the wheels are suddenly checked by any obstruction in travelling and the unpleasant and injurious effects resulting from the immediate stoppage of the momentum of such Carriages is in a great degree obviated, and the position of the Load is so changed in ascending or in descending hills as to be more favorable to the draft of the horse. And I do hereby declare that the following is a full and exact description of my said invention. The Spring which I use to prevent the direct arresting of the momentum of the body of the carriage is usually of the Spiral Kind which I consider as best adapted to the purpose. This Spring is contained within a Clasp Staple or other suspending as shown in No 1. in the accompanying drawing which represents the said Spring and its Clasp &c. a. a. is a Clasp or Staple attached to the draw bar b.b. containing within it the Spiral Spring c.c. The ends of this Spiral Spring bear against circular caps with projecting rims to retain them through holes in these caps and also in the draw bar, and in the bands of the Clasp staples The hole d. d. passing in at a Slot d.d. of a length equivalent to that of the Spring c.c. For the purpose of an ordinary axle the Spring may be from 8 to 9 inches in length and 3 inches in diameter and a stick of 21 or 22 inches in length will then have a good proportion to the Spring. through mortises or other suitable holes of an inch in diameter and the distance of the axle arms

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The part e embraces the whiffletree and is secured to it by a bolt. When the sliding part is through the centre of the spring two keys as fig a mean the outside of each clip and bearing heads on their ends. fig a shows the slot and working on the spring shows the inclination of the clips causes the motion of the whiffletree in either direction. The whiffletree No 3 has jointly at the ends ff to receive metallic or other ends 3,3 which may be 2 feet 9 inches long and must be of sufficient strength to hold back as well as draw the vehicle by the forward ends These ends are bent at the forward ends g.g. so as to hold the britching and to hook the tongs. The ends may pass either above or under the shafts and have loops of leather bolted to the shafts about 4 or 5 inches from the forward ends of the ends No 4. is a rod of metal or other material including from the forked end e. of the shafts to the underside of the body. Instead of connecting the ends of this bar to the body of the vehicle & to the whiffletree by iron eyes I usually employ a loop of leather strengthened by doubling it, the bolt of the whiffletree passing thro one of these loops, & another bolt is used to attach the other end to the body. The load is drawn by means of this rod. Below the body of the vehicle fig 5 shows a cross piece of wood or metal h.h. No 5 which rests upon the through braces. in a pig which are in use there are three feet 2 inches in length and in form resemble a cradle spring mounted. They are connected together by a cross bar fastened at i near their ends are rings of metal ff about 3 inches long assembling in form the pieces h.h and firmly fastened to them eye or staples k.k. secured to the underside of the carriage body enable it to slide backward and forward upon the rings ff which they embrace. There are many other methods in which this sliding part may be constructed, but the foregoing may serve as an example for the mode or principle of action. From the sliding motion of the carriage the play of the long straps may not always be sufficient to render the harnessing perfectly free to obviate which difficulty I make the long staples of the shafts longer than usual: but they need not be lengthened in a degree equal to the required play as the straps will endure the intended play free to a considerable extent. By the arrangement described the horse and rider will not only be relieved from the effects of sudden jolts or bumps on the road but the bearing of the shafts the position of the body & load of the whole vehicle when ascending or descending hills will be so changed as to be favourable to the draught of the horse. What I claim as my invention is the manner of placing the metal springs or springs so combined with the sliding motion of the body of a two wheeled

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carriage as to produce the effects described, whether the separate parts be considered exactly in the manner before set forth, or in any other operating upon the same principle and producing the same effects

Wilkinson
Thos. Jones
H. Badger.

Hazard Knowles. Esq. 1845

(Dr in portfolio)

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