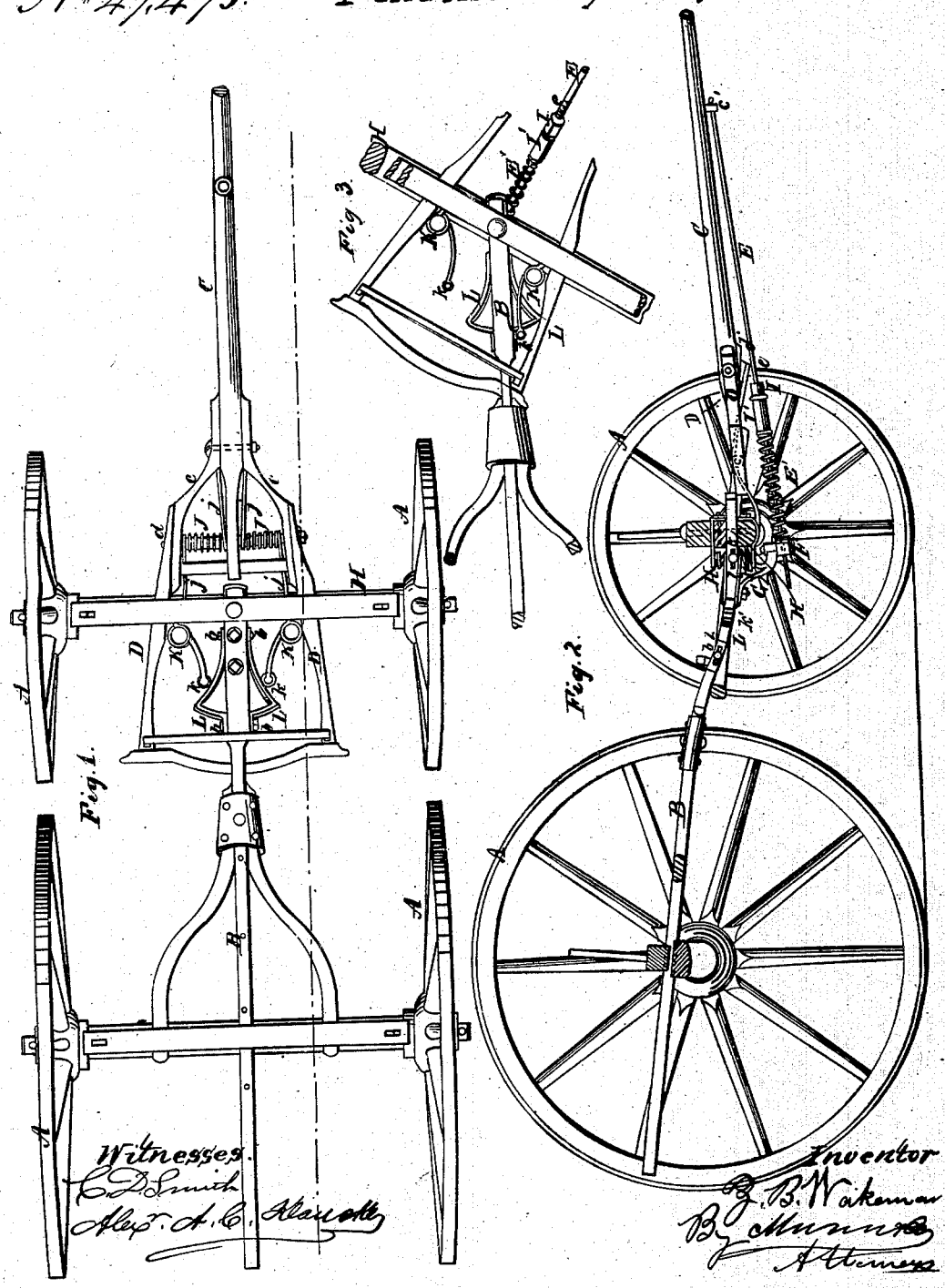
Z. B. Wakeman.

Tongue Support.

No. 47,473. Patented Apr. 25, 1865.



Witnesses.
C. D. Smith
Alex. A. G. Abercrombie

Inventor
Z. B. Wakeman
By Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

ZALMON B. WAKEMAN, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN VEHICLES.

Specification forming part of Letters Patent No. **47,473**, dated April 25, 1865.

To all whom it may concern:

Be it known that I, ZALMON B. WAKEMAN, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Vehicles; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of a wagon, with the body removed, illustrating my invention. Fig. 2 is a vertical longitudinal section of the same, the line *x x*, Fig. 1, indicating the plane of section. Fig. 3 is a detached view illustrative of the operation.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists, first, in new devices for supporting the tongue or neap, so as to relieve the horses of the weight thereof, and this part of my invention may be regarded as an improvement in the subject of my patent of March 10, 1857.

The invention consists, further, in a contrivance for steadying the tongue in turning or passing over rough places or obstacles, the purpose being to prevent the sudden jerking of the tongue and the striking of the same against the horses, which, when working in common vehicles, are continually subjected to injurious blows in consequence of the sudden lateral jerking of the tongue.

To enable others skilled in the art to which my invention appertains to fully understand and use the same, I will proceed to describe its construction and operation.

The accompanying drawings exhibit the running-gear of an ordinary wagon, A being the wheels, and B the reach.

C is the tongue or pole, having two forks or branches, *c c*, at its rear end, and these are pivoted to the hounds D D in such a way that the tongue is capable of vertical movement to any extent.

E is a rod extending beneath the tongue longitudinally, and employed to support the same in its working position. At its respective ends said rod E rests in a lug, *e'*, on the tongue, and in a box, F, swiveled or pivoted within a bracket, G, which is bolted to the under side of the reach B and axle H. Being swiveled, the box F is adapted to turn freely, and thus conform to the movements which the tongue C and rod E undergo in turning out of line with the reach B. The aperture in the box F, through which passes the rear end of the rod E, enlarges rearwardly in order that when the tongue C is moving vertically the rod E may move therewith without being subjected to strain or deflection. The supporting-power of the rod E is attained by the employment of a spiral spring, E', encircling the rear part of the rod, such part being made somewhat smaller than the remainder, which extends forward and has a screw-thread, *e*, cut upon it for the reception of a nut, I, whereby the elastic force of the spring E' may be varied so as to support the tongue C higher or lower, as may be desired. Between the spring E' and nut I is a tube, I', which prevents the screw-threaded portion *e* from being covered by the spring E', and thus protects it from the injury which would result from the contact. The tube I' also facilitates the adjustment of the spring E' on turning the nut I. By raising the tongue C by hand and screwing the nut I in the proper direction it can be made to occupy any desired position—that is, so far as vertical adjustment is concerned. The rod E and spring E' are assisted in supporting the tongue or neap by means of a helical spring or springs, J, secured on the rod or bolt *d*, passing through the forward ends of the hounds. The extremities of the spring or springs J extend beneath the axle and tongue, as seen at *j j j j*, Fig. 1. I propose to adjust this spring in conformity with the position at which the tongue is to be supported by any suitable means, not limiting myself to any specific contrivance for doing this. A screw-bolt working against the ends of the spring, so as to contract the same or allow it to expand, may be used; or a small wooden wedge passing between the ends of the spring and the forks *c* of the tongue will answer the purpose.

K K represent helical springs fastened to the axle and sand-board. I design fastening the helical springs to the hounds in the form of a grip. Instead of passing into the axle and sand-board, the ends are made to straddle the hounds. A small plate with two holes is slipped onto the ends up to the coils. The springs are then placed astride of the hounds, another plate is slipped on the ends in the same way, and nuts are screwed on the ends.

In this manner the springs are fastened to the hounds in the form of a grip, and are easily adjusted. Parts of these springs K K, extending from the main coils, are provided with rollers *k k*, which, when the vehicle is in the act of turning, move in contact with angular pieces of metal L L, which I term "protuberant knuckles." These knuckles are secured to the reach B by means of bolts, *b*, and, being slotted (as seen at *l*) at the points where the bolts enter, they may be shifted in position longitudinally upon the reach B, as varying circumstances may necessitate.

The principal function of the springs K and knuckles L will be apparent to persons in the habit of riding in vehicles over roads where ruts and uneven surfaces occur. On such roads the tongue of common vehicles is oftentimes thrown violently to one side and is only checked by the animal, who thus receives many injurious strokes. In resuming a straight course the tongue of the ordinary wagon on getting "right" is also liable to jerk and strike the horse, and, in fact, a sudden turn is also likely to produce the same result. Under such circumstances as these just mentioned, the springs K K, acting upon the knuckles L L, prevent the tongue from jerking or swinging forcibly to one side, and cause it to turn in such a steady and gentle manner that the horses are in nowise liable to be struck by the tongue. After the rollers *k k* have passed over the angles of the knuckles L, during the turning of the wagon, the pressure of the spring is restrained to such an extent that the wagon turns quite as easily as if no springs were applied. The springs L L operate together in such manner that the vehicle, when cramped to the utmost, has a tendency to straighten or assume its normal position.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. In combination with the tongue C, the swiveled box or bearing F, having an eye or aperture increasing in size from front to back, and employed to receive and support the end of the brace-rod E, substantially in the manner and for the purpose explained.

2. The combination of the coiled spring E′ and nut I with the supporting-rod E, the nut permitting the spring to be contracted and expanded at will for the purpose of varying the position of the tongue.

3. The tube I′, employed in combination with the spring E′, rod E, tongue C, and nut I, substantially as herein set forth.

4. The adjustable springs K K, adapted to operate in connection with the knuckles L L, in the manner and for the purposes set forth.

5. The spring or springs J, wrapped around the tongue-rod and with their ends secured under the tongue-hounds and the forward axle or the sand-board, adapted for adjustment in any manner, and employed for sustaining the tongue C, as set forth.

ZALMON B. WAKEMAN.

Witnesses:

SILAS G. TYLER,
ELI WILL.