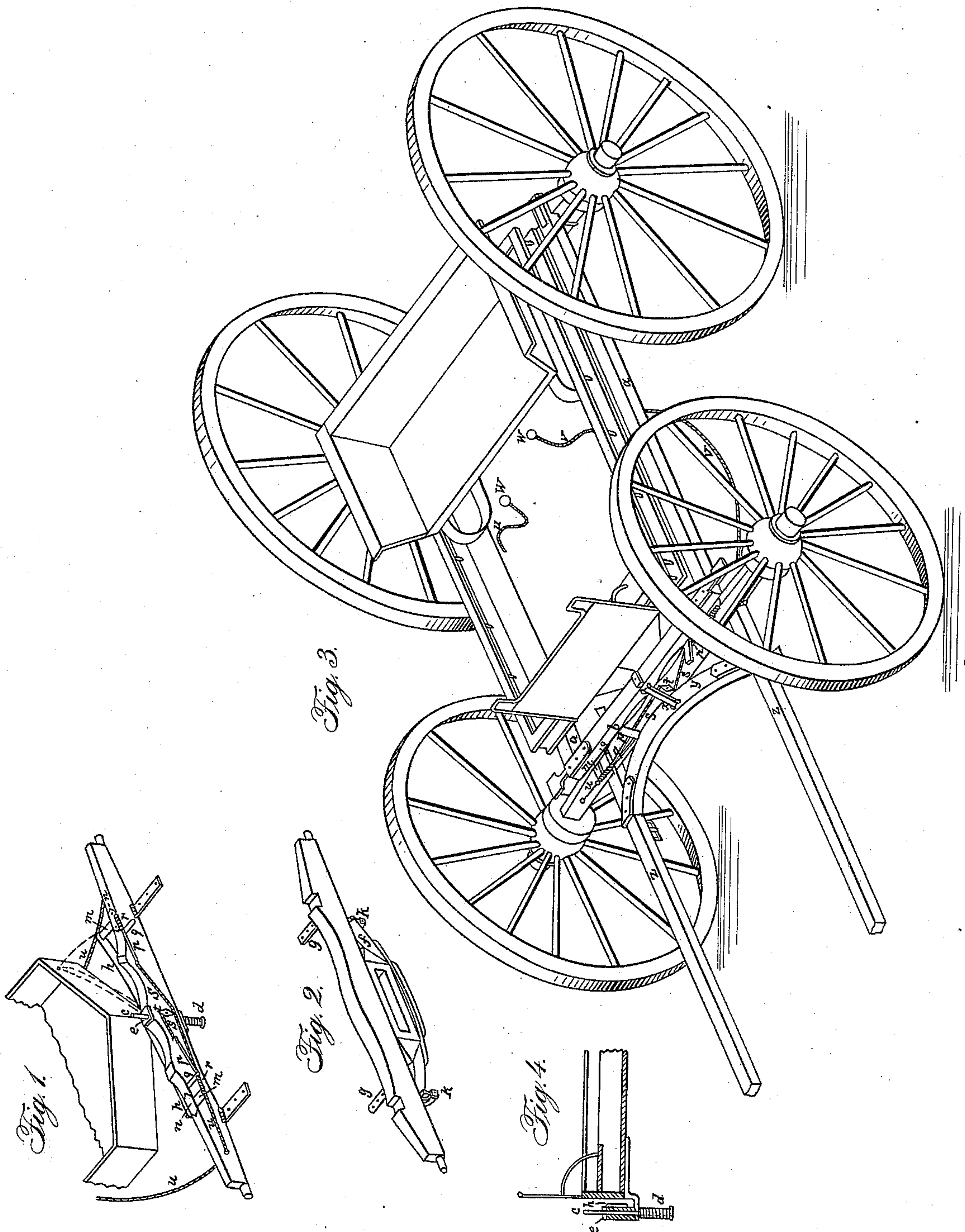


J. T. KIMBALL.

Whiffletree.

No. 4,121.

Patented July 22, 1845.



UNITED STATES PATENT OFFICE.

JNO. T. KIMBALL, OF KENNEBUNK, MAINE.

CARRIAGE.

Specification of Letters Patent No. 4,121, dated July 22, 1845.

Be it known that I, JOHN T. KIMBALL, of Kennebunk, in the county of York and State of Maine, have invented sundry Improvements in the Construction of Carriages; and I do hereby declare the following to be a full and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

My improvements consist in the manner of connecting the forward and rear axles of a carriage, and the manner of suspending the same to the lower side of the axles; also in the arrangement for instantaneously disengaging the horse from the vehicle—in case of necessity—in combination with a method of guiding the carriage in safety (after the horse is disengaged) till it stops.

In the accompanying drawings Figure 1, is a perspective view of the forward axle of a carriage, with a broken section of the front end of the body of the same attached thereto. Fig. 2, is a perspective view of the rear axle of the carriage, and Fig. 3, a perspective view of an entire carriage, having my improvements. Fig. 4, is a section, showing the manner of suspending the body of a carriage to the forward axle.

The same letters refer to corresponding parts in all the figures.

The front and rear axles of a carriage upon my improved plan, are connected together by the two side pieces *a, a*, which have their after ends made fast to the rear axle, and their front ends are connected together by the cross-piece *b*. The center of the cross-piece *b*, rests upon the center of the forward axle, and is secured in its position by the bolt *c*, passing up through the axle. The front end of the carriage body rests on its center upon a spiral spring *d*, which surrounds and vibrates on the bolt *c*, and rests upon the head at its lower end, underneath the axle. The weight resting upon the spiral spring and bolt *c*, is sustained by the nut *e*, placed between the axle and cross-piece *b*. The after end of the carriage rests upon a half elliptic spring *f*, made fast to the under side of the rear axle, each corner of the same rests upon the supporters *g, g*, which are secured in the shackles *h, h*, at each end of the half elliptic spring.

In the rear of the front axle, there is a draft spring *h*, with its center made fast

to the center of the axle; there is attached to each end of the draft spring plates of iron *m, m*, which pass through and work freely in mortises underneath the plates *n, n*, on the top of the axle. There are slots in the front ends of each of the plates *m, m*, with holes on each side of the same, into which the spring bolts *p, p*, work. The ends of the draft traces are placed in the slots in the plates *m, m*,—the bolts *p, p*, being first sprung back—the bolts are then forced by the springs *r, r*, through the holes in the end of the draft straps and at the sides of the slots, which firmly secure the trace in this position. *q, q*, are staples secured to the front of the forward axle, in which the spring bolts *p, p*, freely play backward and forward, and against the side of which the springs *r, r*, press the bolts into their places. *s, s*, are cords connecting the inner ends of the spring bolts *p, p*, with a balance lever *t*, in the center of the stock of the front axle *u*, is a detaching and guiding cord leading from the lower end of the balance lever *t*, through an opening in one end of the axle, and from thence it is carried up through an opening in the bottom of the carriage near the driver. A knot in the cord prevents its falling too far through, and allows it to hang sufficiently slack to enable the carriage to turn without straightening the cord. There is a hand ring *w*, upon the end of the cord; on the opposite end of the axle—to that which the cord *u*, passes through—there is fastened the guiding cord *v*, of similar size, and carried up through the bottom of the carriage; this likewise hangs loosely, so as to allow the carriage to be turned without straightening the same; there is also a hand ring *w*, on the end of this cord.

A string strap or chain *x*, connects the cross connecting bar *y*, of the shafts *z, z*, to the cross piece *b*, of the connecting frame of the axles, and prevents the front end of the shafts from falling to the ground. Should the horse, attached to the carriage, at any time run away, and the driver lose all control of him, and he should think there was danger of the carriage being dashed to pieces, he can disengage himself from the reins, at the same time taking hold of the hand rings *w, w*; by a sudden jerk at the cord attached to the balance lever *t*, he draws back the spring bolts *p, p*, and

allows the horse to clear himself from the carriage; then by steadily drawing the guiding cords, he can with ease and safety keep the carriage in the road till it loses its
5 impetus and becomes stationary. A slight pull at the grinding cords changes the direction of the carriage, from the fact that the whole weight of the carriage is suspended underneath the axle, there being
10 nothing but the weight of the cross and side pieces *a* and *b*, *b*, resting upon the axle. In turning the carriage, the ends of the draft spring *h*, strike against the front end of the body of the carriage, and prevents the

jar and shock occasioned by the wheels 15 striking against the side of the same.

What I claim as my invention and desire to secure by Letters Patent, is—

The combination of one of the steering ropes *U*, *U*, with the spring bolts *p*, *p*, 20 through the medium of the balance lever *t*,—or its equivalent,—substantially in the manner and for the purpose herein set forth.

JOHN T. KIMBALL.

Witnesses:

Z. C. ROBBINS,
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