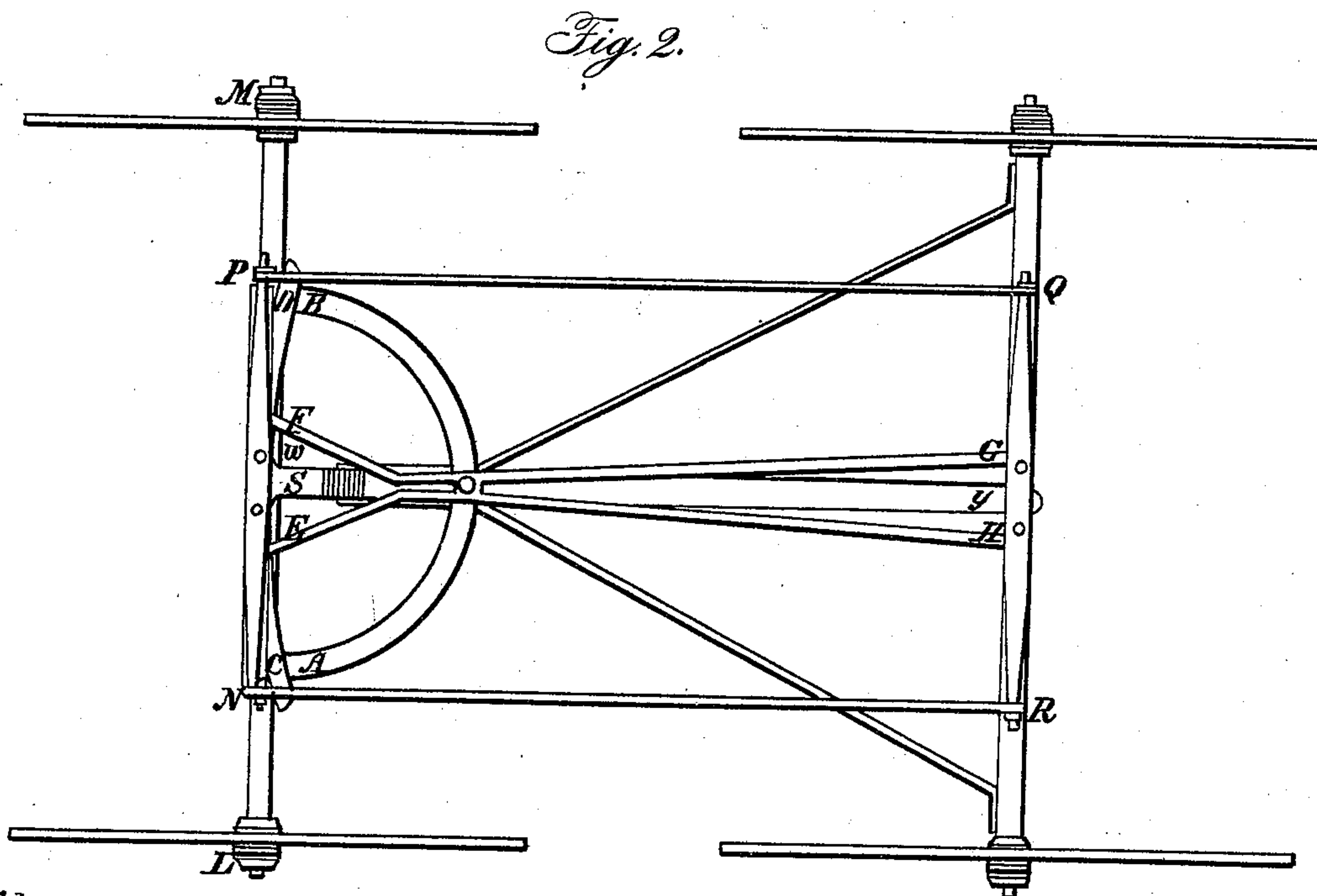
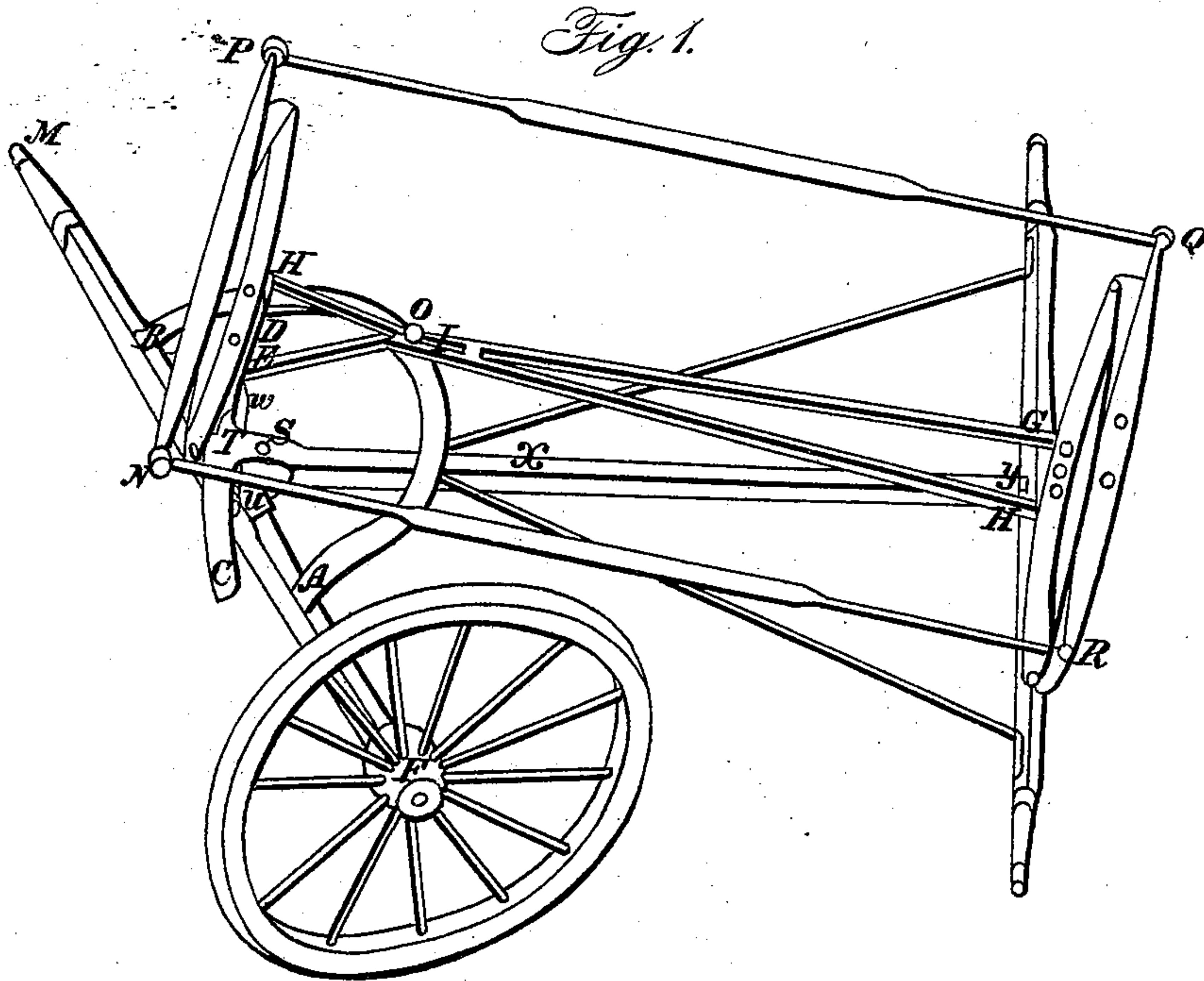


W. GREENLEAF.

Running-Gear.

No. 14,607.

Patented Apr. 8, 1856.



Witnesses

Jas H. Rothrock
C. K. Blackburn

Inventor

Wm Greenleaf

UNITED STATES PATENT OFFICE.

WM. GREENLEAF, OF GREENFIELD, OHIO.

CARRIAGE-COUPLING.

Specification of Letters Patent No. 14,607, dated April 8, 1856.

To all whom it may concern:

Be it known that I, WILLIAM GREENLEAF, of Greenfield, in the county of Highland, in the State of Ohio, have invented a new and improved mode for coupling carriages and buggies by which they can be turned short around without danger of upsetting and at the same time without turning the hind wheels in an opposite direction from the forewheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings as a part of this specification, in which—

Figure 1 is a perspective view in a turning position and Fig. 2 is a longitudinal elevation, or top view representing the running gear in a straight position.

C, D, S, (Fig. 2) is a circular T, the shank, S extending back 18 inches, 12 inches of which shank rests on the front end of the perch and is fastened thereon with two bolts; the center of the T plate rests upon the center of the front axle and is fastened with a king-bolt, with a countersunk head as seen at T (Fig. 1). The whole T is made of bar iron one inch and a quarter in width, and $\frac{1}{2}$ inch in thickness; the T plate C, D, being 3 feet long, and having a radius equal to the length of the buggy or carriage from the center of the hind axle; the T plate remains stationary with the perch when in a turning position as seen at C, D, (Fig. 1).

The letters V W (Fig. 2) represent a plate made of iron 12 inches long $\frac{1}{2}$ inch thick and $1\frac{1}{2}$ inches wide in the center, having a radius $\frac{1}{2}$ inch less than the T plate, and riveted fast to the under side of the T plate at each end, $\frac{1}{2}$ inch back from the front edge (of T plate) in order to give room for the hook to work over the front edge of the T plate.

The letter U (Fig. 1) represents an iron plate of the same size as V, W, except that it is only $\frac{1}{4}$ of an inch thick, fastened to the center of the front axle with two bolts one at each end.

A, O, B (Fig. 2) is a half circle with a radius of 18 inches made of bar iron 1 inch wide and $\frac{1}{2}$ inch thick, and is fastened to the front axle at the ends A, B, by means of clips as seen in Fig. 1, and is bent up so as to support the T plate when the weight of the body is thrown upon the end of it, when in a turning position as seen in Fig. 1.

The letters E F G H (Fig. 2) represent the moving rods which are made of $\frac{3}{8}$ oval iron with 2 small pieces of iron 4, 4, welded between the rods so as to form the mortise I, which is 6 inches long and $\frac{1}{2}$ inch wide, the front end of the mortise being 15 inches from the front part of the front spring. The ends of the moving rods at E and F are welded fast to the ends of a plate fastened to the lower side of the head block which plate is 12 inches long $1\frac{1}{4}$ inches wide and $\frac{3}{8}$ of an inch thick, and rests on the T plate C, D, and is of the same radius and slides on said T plate when turning as seen in Fig. 1, and is kept to its proper place by means of a hook in the center of it, turned down over the front of T plate C, D. The back end of the moving rods at G, H are welded to the ends of a plate of iron 7 inches long $1\frac{1}{2}$ inches wide and $\frac{3}{8}$ of an inch thick on which plate the back spring rests, this plate is kept to its proper place by means of a strong bolt passing through the center of the hind axle, and by a hook at each end turned down over the ends of another plate of the same dimensions; which last mentioned plate is fastened to the center of the hind axle by a bolt at each end. This allows the moving rods and hind spring to pivot on the center of the hind axle when turning as seen in Fig. 1.

The letter O (Fig. 2) represents a half inch bolt which is fastened solid in the center of the half circle A. O. B, extending up through the back end of the mortise I with a tap on the top which keeps it to its proper place. When the buggy or carriage is turning to the left as seen in Fig. 1, the bolt O moves the body N P Q R to the right until the end of the moving rod at F is at the end of the T plate C D at D, (or the reverse when the buggy is turned to the right) which throws the body out of the way of the fore wheel thereby allowing the buggy or carriage to turn short around. At the same time the bolt O slides to the front end of mortise I (Fig. 1) which prevents the forewheel from coming in contact with the body and thereby lessens the liability of upsetting, and also prevents any strain or stress upon the perch *x y*; the whole stress being lengthwise on the moving rods E F G H and the half circle A, O, B preventing any liability of breaking the perch. Also the end of the T plate C, D always resting upon the

half circle A, O, B when turning, renders the whole front part of the carriage or buggy firm and solid, and the moving rods being attached solid to both of the springs
5 prevents the springs from spreading from each other lengthwise of the buggy and thus being strained and racked in turning.

The several parts above described are intended for a common sized buggy 5½ feet
10 long. For a larger or smaller one the several parts must be proportioned accordingly.

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

The application of the moving rods E F, 15 G, H, the circular T plate C D S and the half circle A O B as above described or any other apparatus substantially the same and which will produce the same effects.

WM. GREENLEAF.

Witnesses to signature:

JAS. H. ROTHROCK,
C. H. BLACKBURN.