2 Sheets--Sheet 1.

E. T SPROUT.

Carriage-Spring.

No. 5,674. Patented July 18, 1848.

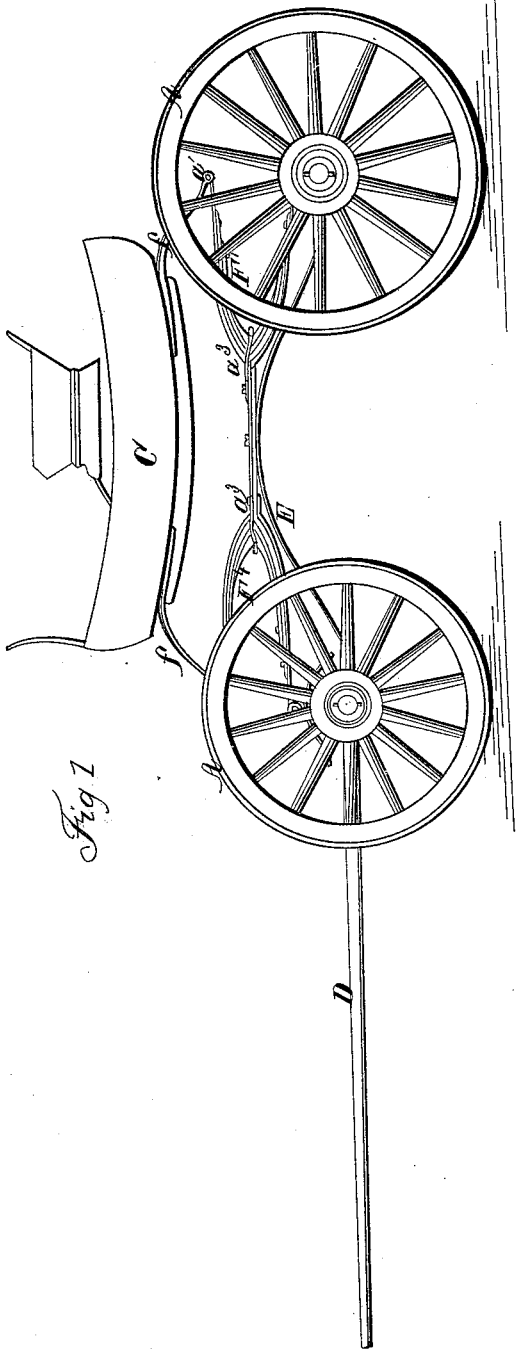


Fig 1

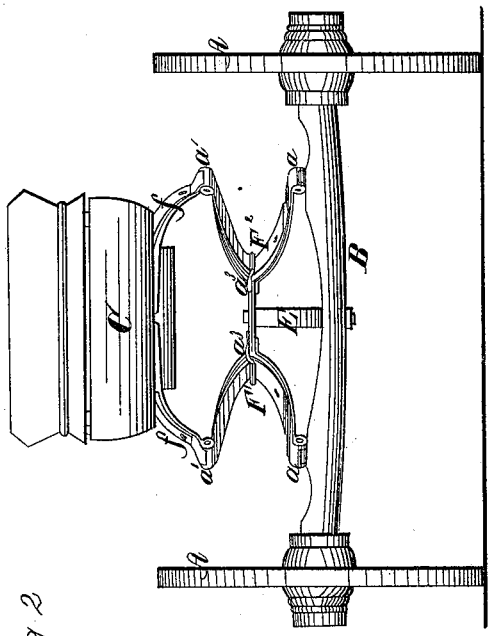


Fig 2

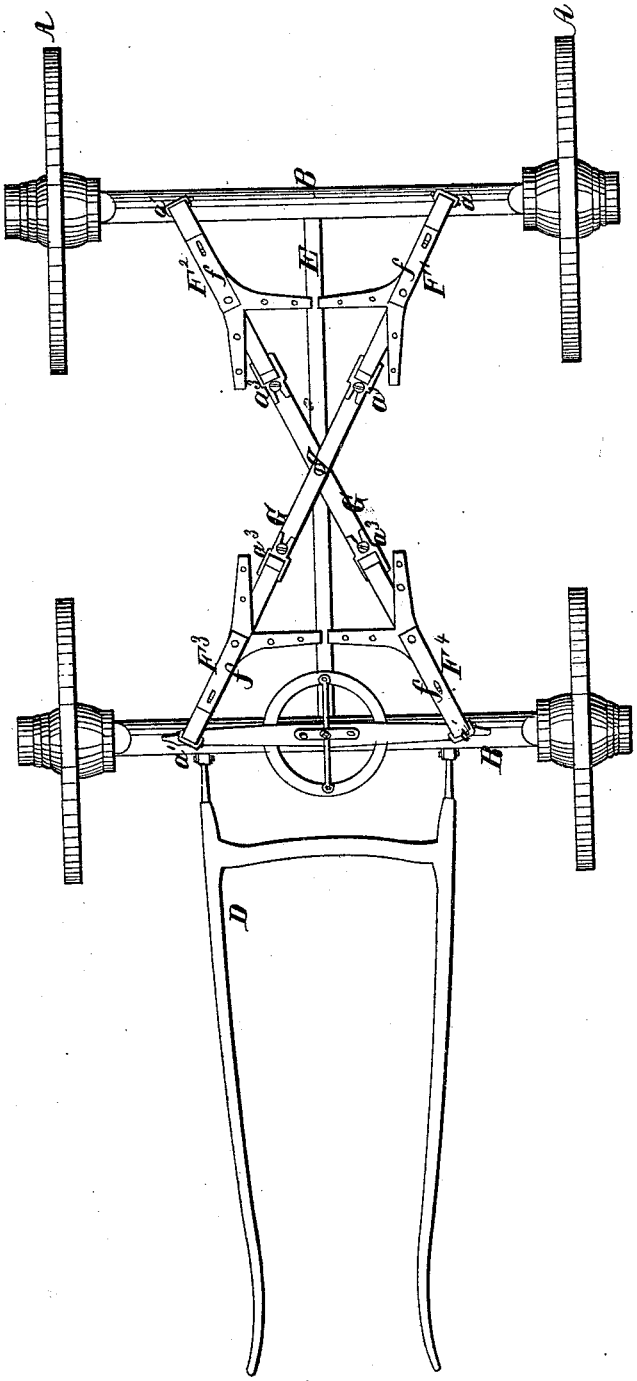
2 Sheets--Sheet 2.

E. T SPROUT.

Carriage-Spring.

No. 5,674. Patented July 18, 1848.

Fig 3



UNITED STATES PATENT OFFICE.

ERASTUS T. SPROUT, OF SPRINGVILLE, PENNSYLVANIA.

COMBINED CARRIAGE-SPRING.

Specification of Letters Patent No. 5,674, dated July 18, 1848.

To all whom it may concern:

Be it known that I, ERASTUS T. SPROUT, of Springville, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in the Construction and Arrangement of the Springs of Pleasure-Carriages, of which the following is a full, clear, and exact description, reference being had to the annexed drawings of the same, making part of this specification, of which—

Figure 1 is a side elevation, showing the several parts in connection. Fig. 2 is an end elevation. Fig. 3 is a top view, the body being removed.

The same letters of reference in the different figures refer to corresponding parts.

The nature of my invention and improvement consists, in constructing the springs of a four wheeled pleasure vehicle, of a serpentine zigzag form, arranging the same in diagonal lines across the carriage, and in connecting them with each other and with the perch, by diagonal bars.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The wheels A, the axles B, the body C, and shafts D, are constructed and arranged in the usual, or in any convenient way. The front and hind axles are connected together by means of a curved elastic spring steel perch E, and the springs F^1 F^2 F^3 F^4, with their connecting bars G, G, the diagonally opposite springs F^1 F^3 and F^2 F^4 being respectively connected together by the bars G G, as represented in Fig. 3—the bars being connected to the perch and to each other at the point of crossing, by the screw bolt, or rivet *g*, which passes through them. The springs are made of rolled steel prepared in the usual way. The springs F^1 F^2 F^3 F^4 are each composed of several plates, or leaves, bent nearly in the form of parabolic curves (see Figs. 1 and 2) and are connected by hinged joints to the axletrees behind, and to the bolster before; the other ends are connected by hinged joints (a' a' a' a') also, to the serpentine springs *f f f f*; which latter, are secured to the under side of the carriage body, in any suitable manner. The springs F^1, F^2, F^3, F^4 are connected at their vertex to the diagonal rods G G by the loops a^3, a^3, a^3, a^3; the interior leaves of these springs are the shortest, and the leaves gradually increase in length to the outermost, which is the longest. This difference in the length of the several leaves of the springs is made for the purpose of giving to them the required degree of flexibility, as in the common many-leafed spring. The springs *f f f f* may also be made of any required number of plates, or leaves, joined together in any suitable and convenient way, such as by rivets, headed studs, stirrups, or other analogous means.

Springs made and arranged in this manner from a given quantity of steel will possess just double the strength and elasticity they would if made and arranged in the usual manner, while at the same time they will possess a far greater degree of flexibility and will therefore more effectually intercept the shocks and concussions produced in driving over an uneven road, and give to the seat a gently undulatory agreeable motion, not unlike that of a boat in a gentle swell or ripple; which is a quality so desirable in and characteristic of a good pleasure vehicle.

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

The combination of the springs F^1 F^2 F^3 F^4 and diagonal braces G with the perch E in the manner herein set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses the twentieth day of November, A. D. 1847.

ERASTUS T. SPROUT.

Witnesses:

MILES PRICHARD,

HENRIETTA PRICHARD.