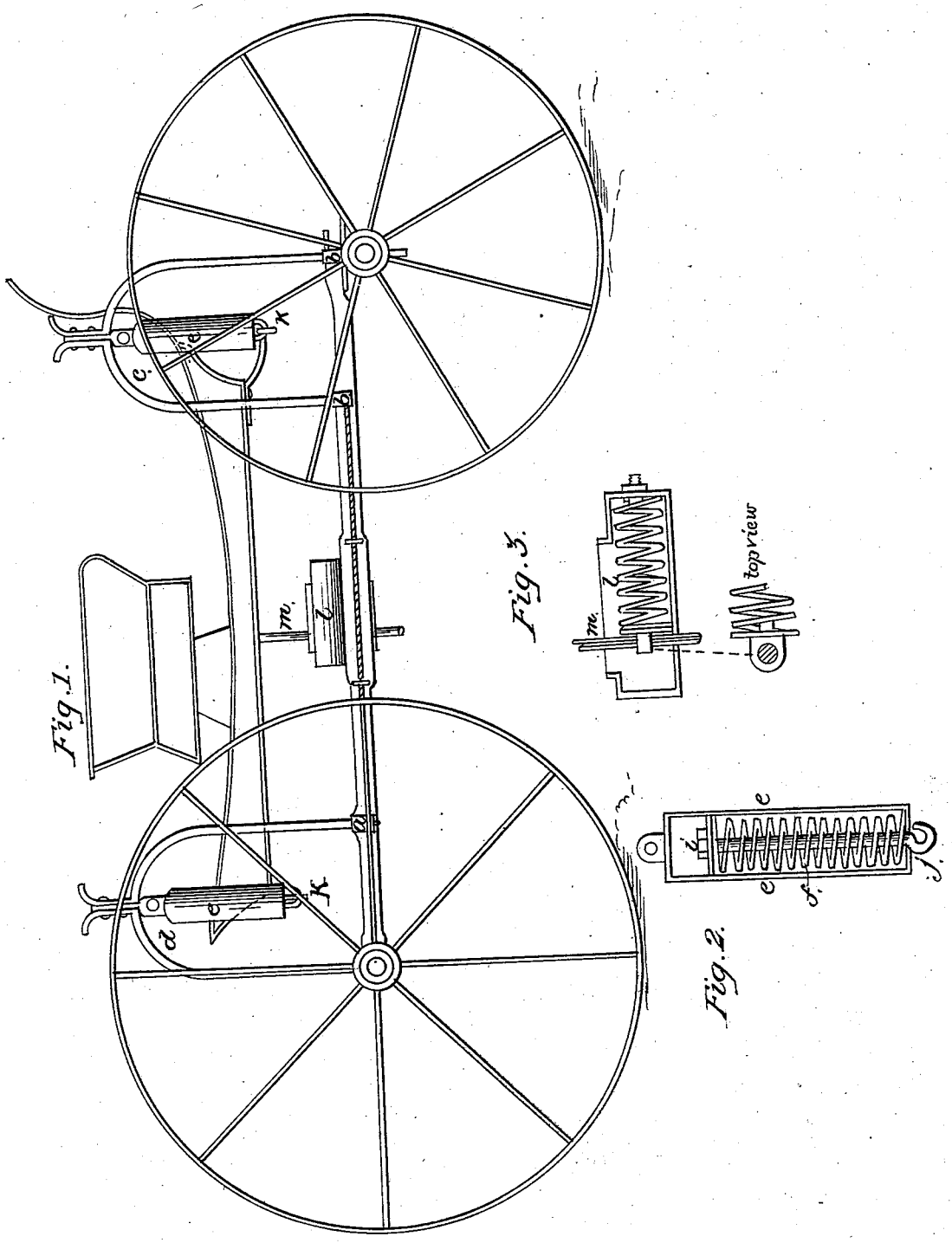
J. S. TOUGH.

Carriage-Spring.

No. 3,126. Patented June 9, 1843.



UNITED STATES PATENT OFFICE.

JNO. S. TOUGH, OF BALTIMORE, MARYLAND.

MANNER OF APPLYING SPRINGS TO CARRIAGES.

Specification of Letters Patent No. 3,126, dated June 9, 1843.

To all whom it may concern:

Be it known that I, JOHN S. TOUGH, of the city of Baltimore and State of Maryland, have invented a new and useful Improvement in the Springs of Carriages, Railroad-Cars, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification, in which—

Figure 1 is a geometrical side elevation, and Figs. 2 and 3 detached portions in section.

The nature of my invention consists in applying spiral springs to carriages in such a way that they shall have a free motion from the point of suspension.

The running gear is somewhat similar to that of common carriages with the addition of a bolster (*a*) which is fastened to the perch forward of, and parallel with the axle; and two parallel bars (*b*, *b*,) over the forward axle (the ends of which only are seen in the drawing); upon each end of the bars the lower ends of two arch pieces (*c*) are affixed, which rise up one on each side of the body of the carriage between it and the forward wheels; at the hind end of the carriage are two other arch pieces (*d*) one foot of which rests on the axle the other on the bar (*a*). Each of these arch pieces has a cylindrical case (*e*) suspended under it by a leather strap so that it can swing in any direction. In this cylinder is a spiral spring shown in the section (Fig. 2, *f*,) which rests on the bottom of the cylinder, the top of the spring has a plate (*i*) resting upon it from which a rod (*j*) descends down through the spring and a hole in the bottom of the cylinder and is formed into a ring outside. From the body of the carriage arms (*k*) project on each side opposite each spring, the ends of which are formed into hooks that catch into the rings on the rods (*j*) by which means the body is suspended and is capable of moving in any direction. In the center of the perch under the carriage, a horizontal cylinder (*l*) is affixed in which a spring is placed that presses against its forward end; a plate which fits the inside of the cylinder is borne against the other end of the spring by a stout rod (*m*) which is attached to the bottom of the carriage and descends down through a slot in the cylinder, in which it plays; this is for the purpose of receiving any shocks in the forward motion of the running gear being suddenly checked.

Instead of the arches above described for suspending the springs as above described; standards or gallows can be substituted.

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

1. In combination of the suspended spiral springs and arches or standards *c* and *d* with the body and running gear of carriages in the manner and for the purpose herein set forth.

2. I also claim in combination therewith the horizontal spring (*l*) constructed and arranged as above specified.

JOHN S. TOUGH.

Witnesses
JOHN HITZ,
J. J. GREENOUGH.