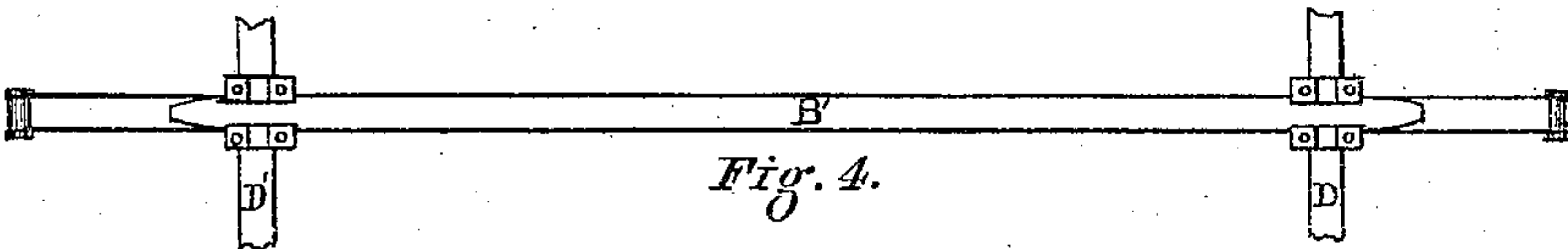
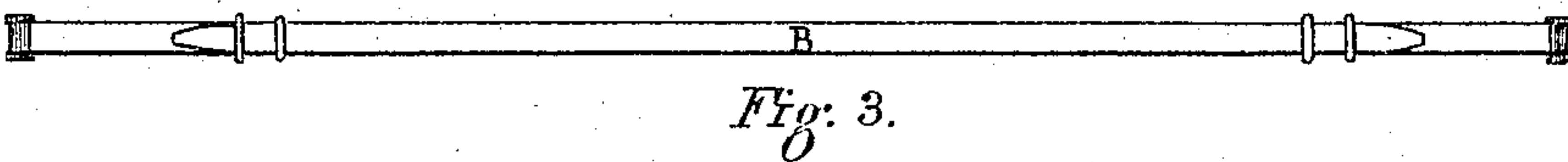
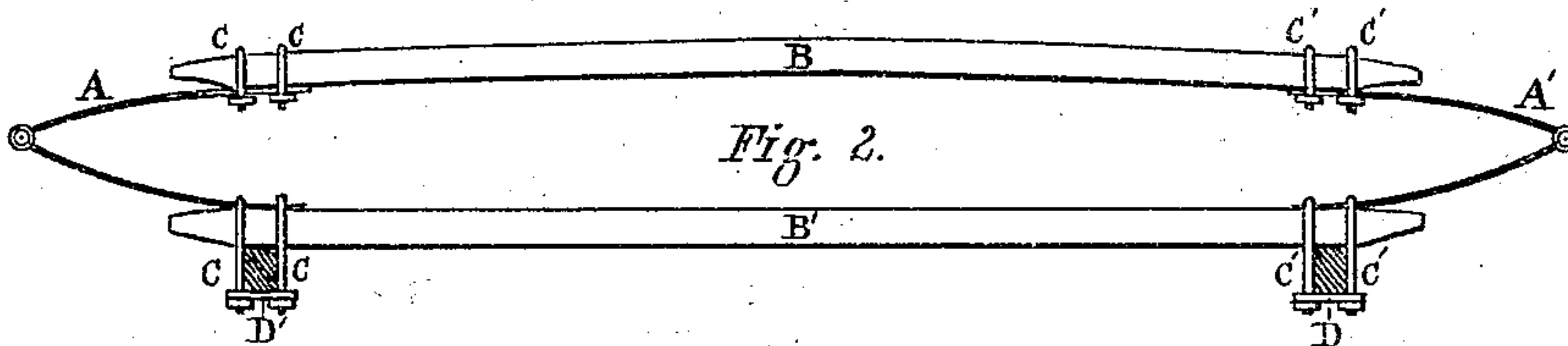
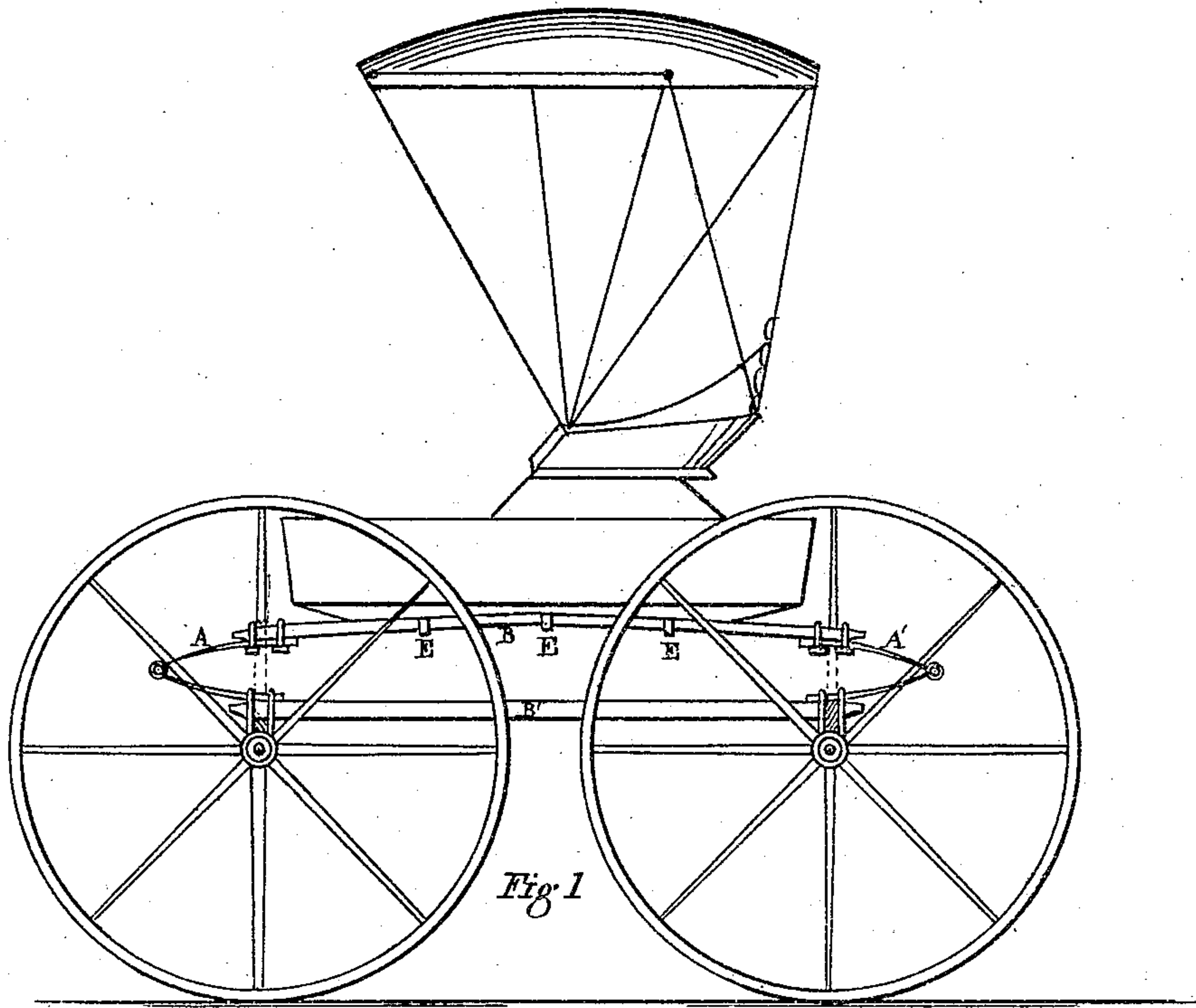


E. GRIMSHAW.
Spring- Reaches for Vehicles.

No. 153,334.

Patented July 21, 1874.



Attest
Will. H. Mason
W. Schaffer

Inventor
Ellwood Grimshaw
per A. H. & R. H. Evans
Attorneys

UNITED STATES PATENT OFFICE.

ELLWOOD GRIMSHAW, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSIAH TOWN, OF SAME PLACE.

IMPROVEMENT IN SPRING-REACHES FOR VEHICLES.

Specification forming part of Letters Patent No. **153,334**, dated July 21, 1874; application filed March 16, 1874.

To all whom it may concern:

Be it known that I, ELLWOOD GRIMSHAW, a resident of the city of Minneapolis, county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Carriage and Road-Wagon Springs, of which the following is a full, clear, and exact description:

The object of my invention is to provide an economical spring for road-wagons which will have no longitudinal motion; and it consists in attaching the ends of sections of ordinary elliptical springs to bars of wood which pass from the head-block to the rear axle and avoid the ordinary reach, the springs and connecting-bars acting in that capacity.

Figure 1 shows my invention as attached to a road-wagon; Figs. 2, 3, and 4 being details of the spring.

The same letters of reference are used in the various figures in the designation of identical parts.

Letter A, Fig. 2, shows one half of an elliptic spring, A' showing another half. Letters B B' show two wooden connecting-bars, to the ends of which the springs A A' are attached by the clips C C'. The clips C' secure the lower and rear end of the spring, as a

whole, to the hind axle D, the clips C securing the lower and front end of the spring, as a whole, to the head-block D', as shown in Figs. 1 and 2. In the use of the spring the lower elongating bar B' is made to take the place of a reach, as shown in Fig. 1. The wagon-body is attached to the upper elongating bars B by the aid of clips E, or other suitable devices, as shown in Fig. 1.

I am aware that the ends of C-springs have been attached to wooden bars to form a carriage-spring and laid parallel to the axles; this I do not claim.

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

The bar B, having one arm of the springs A A' fastened to its ends by clips C C', in combination with the bar B', having the other arms of the springs A A' fastened to its ends, with one end resting on the rear axle and the other end on the head-block, all constructed to operate in the manner and for the purpose set forth.

ELLWOOD GRIMSHAW.

Witnesses:

W. R. WILLARD,
K. L. GIFFORD.