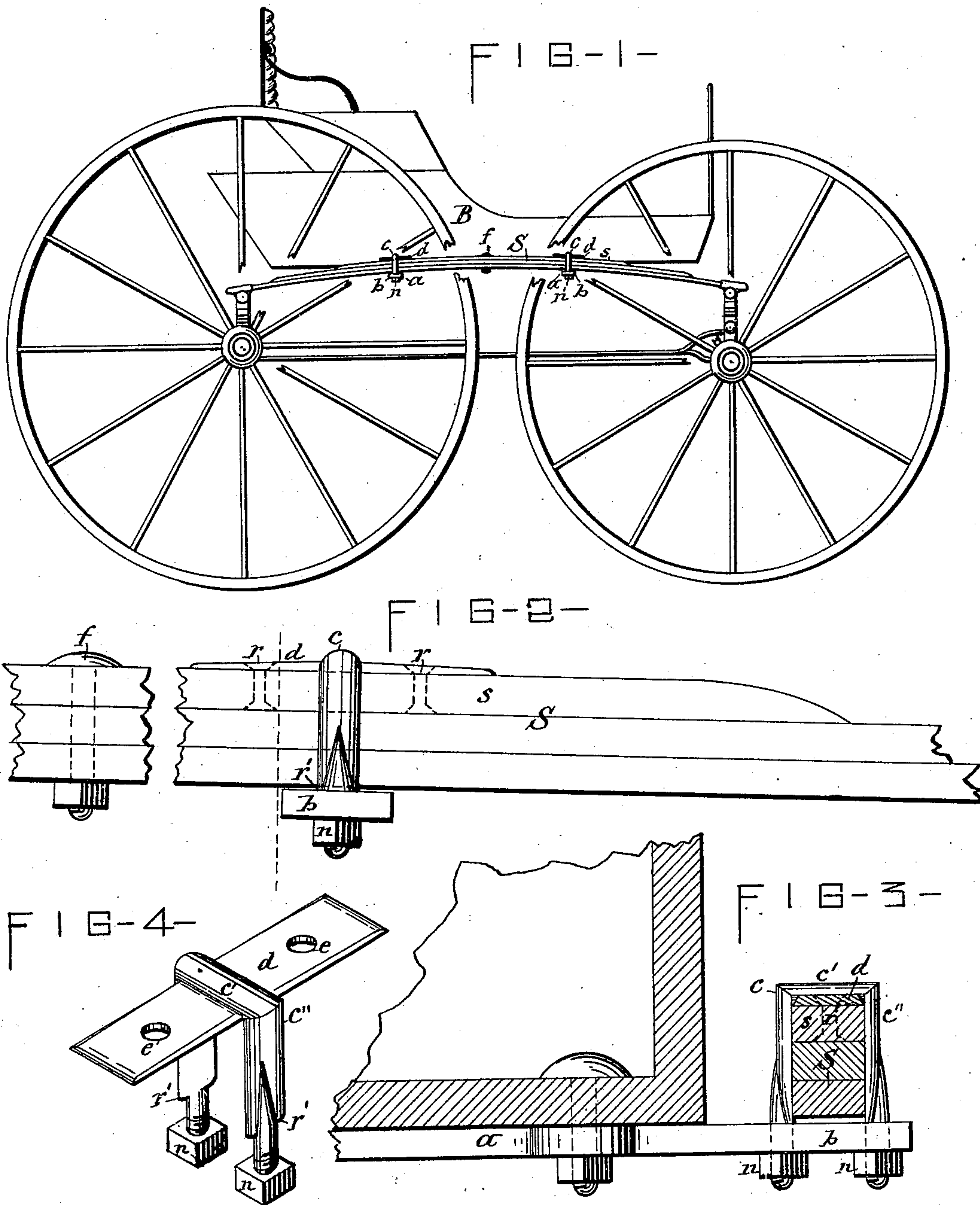


(No Model.)

T. D. LINES.
CARRIAGE SPRING.

No. 287,303.

Patented Oct. 23, 1883.



WITNESSES—
Wm B. Raymond
J. H. Gibbs

INVENTOR—
Thomas D. Lines
per Buell, Laessle & Key
his Atty

UNITED STATES PATENT OFFICE.

THOMAS D. LINES, OF SYRACUSE, NEW YORK.

CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 287,303, dated October 23, 1883.

Application filed July 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. LINES, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Attachments to Springs, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the attachment of the body-supporting bars or other inelastic or inflexible parts of a vehicle to intermediate portions of an elliptic, semi-elliptic, or analogous leaf-spring.

The object of the invention is to effect the aforesaid attachment without producing the usual gripping of the leaves of the spring, which gripping deprives the central portion of the spring of its elasticity.

This invention is fully illustrated in the accompanying drawings, wherein Figure 1 is a side elevation of a vehicle illustrating the application of my invention. Fig. 2 is an enlarged side view of that portion of the spring to which my invention is applied. Fig. 3 is a transverse section of the same and its connection with the body of the vehicle, and Fig. 4 is an isometric detached view of the clip.

Similar letters of reference indicate corresponding parts.

S represents the side spring of a vehicle, and B the body, supported on said springs by cross-bars *a*, secured to the under side of the body, and having its extremities projecting at opposite sides thereof, and formed into clip-bars *b*, which reach across the under side of the side springs, S.

c denotes the clip by which the aforesaid clip-bar is secured to the side springs. Said clip is placed astride the spring in the usual manner, and its cross-bar *c'* has rigidly attached to it or integral with it a plate, *d*, which projects at opposite sides of the clip and forms the top bearing thereof. Said plate *d* is provided at opposite sides of the clip with eyes *e*, for the reception of rivets *r*, by means of which the clip is fastened to the top leaf, *s*, of the spring S, as shown in Fig. 2 of the drawings. The two shanks *c''* of the clip, which embrace the sides of the spring in the usual manner, are formed with shoulders *r'*, slightly below the bottom of the spring, so as to prevent the clip-bar *b* from touching or pressing on the spring, as illustrated in Figs. 2 and 3 of the drawings, the clip-bar being fastened to the clip in the usual manner by nuts *n n*, which draw the clip-bar tightly against the shoulders *r'*. Said shoulders, holding the clip-bar isolated from the spring, or, at least, preventing it from gripping the spring, allows the several leaves of the spring to move independently of each other, and thus enables the spring to exert its elasticity throughout the entire length. A bolt or rivet, *f*, passes vertically through the center of the spring, to prevent the leaves thereof from shifting longitudinally, and the clips *c c* are applied to the spring at opposite sides of the center thereof, to receive the body-supporting bars *a* with their clip-bars *b*.

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

1. In combination with a semi-elliptic or analogous spring, a clip embracing three sides of said spring and attached to one of the leaves thereof, and provided at its extremities with shoulders projecting from the face of the spring, and sustaining the clip-bar isolated therefrom, as shown and set forth.

2. The combination, with a semi-elliptic or analogous spring, composed of two or more leaves, of a tie applied to the center of the spring to prevent the leaves from shifting, and clips placed astride the spring and fastened to one of the leaves, and provided at its extremities with shoulders projecting from the face of the spring and sustaining the clip-bar without frictional contact with the spring, substantially as and for the purpose specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 30th day of June, 1883.

THOMAS D. LINES. [L. S.]

Witnesses:

FREDERICK H. GIBBS,
WM. C. RAYMOND.