

(No Model.)

G. B. HAMLIN.
SIDE SPRING FOR VEHICLES.

No. 401,272.

Patented Apr. 9, 1889.

Fig 1

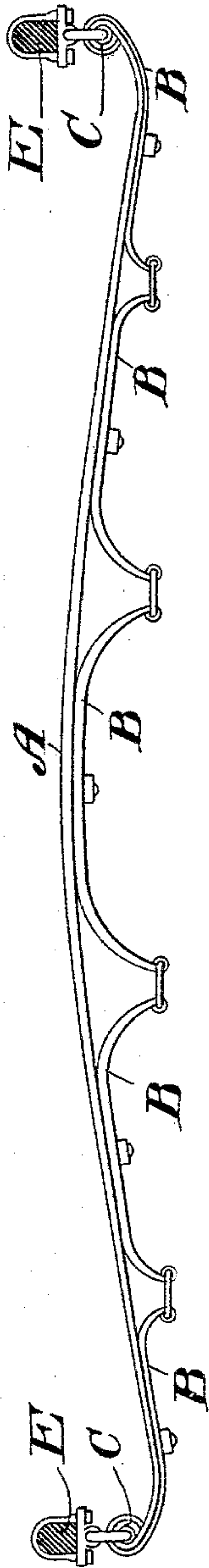
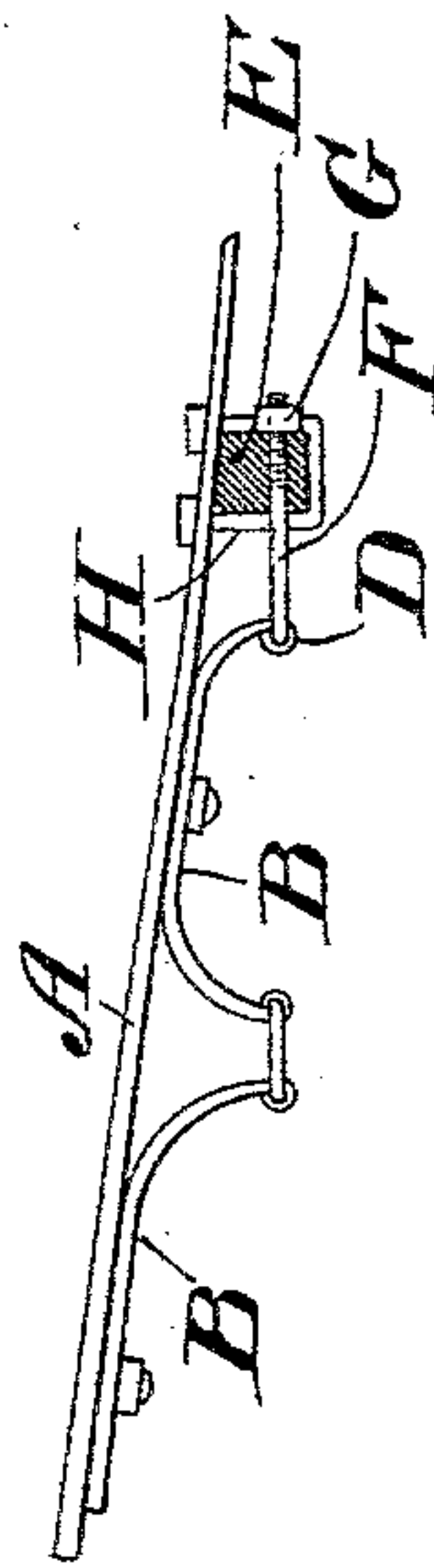


Fig 2



Witnesses
S. Williamson
E. S. Sumner

Inventor
George B. Hamlin
By *J. M. Smith*
attly.

UNITED STATES PATENT OFFICE.

GEORGE B. HAMLIN, OF PROVIDENCE, RHODE ISLAND.

SIDE SPRING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 401,272, dated April 9, 1889.

Application filed June 4, 1888. Serial No. 276,032. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. HAMLIN, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Side Springs for Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in the construction of vehicle-springs, but more especially to that class known as "side springs," or springs which extend lengthwise of the vehicle-body, and has for its object to produce a light, cheap, and soft-riding spring, and also to prevent the side roll and rebound so prevalent in this class of springs, especially when used in light or narrow vehicles.

With these ends in view my invention consists in the details of construction and combination of elements, such as will be hereinafter fully set forth and then specifically designated by the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improvement, and Fig. 2 a detail side elevation of one end of the spring, showing the manner of attaching the same directly to and rigid with the axle.

Similar letters denote like parts in both figures.

The principle which underlies my invention rests in the broad idea of rendering the spring element resilient within certain limits and more rigid and unyielding as the limit of depression is approached, and this will be best understood from the following description.

A is the main leaf or bar of a side spring having an upward bow sufficient to effect any desired elevation. This bar may be constructed of one or more leaves according to the strength desired.

B are light semi-elliptical auxiliary springs bolted or otherwise secured at their centers to the under side of the bar A and extending throughout the length of said bar. These springs are so shaped that they have contact

with the bar A throughout a considerable extent, while their free adjacent ends are coupled together in substantially the same horizontal plane.

In case the bar A is attached to the bar E by a swinging connection, I form eyes C at the ends of said bar and curl the outer extremities of the end springs, B, around said eyes, the axle being shackled, in the usual manner directly to said eyes. If, however, said bar is to be secured rigid with the axle or head-block, I prefer to form an eye, D, at the extremity of each end spring, B, and attach this eye directly to the axle E by means of a staple, F, and nuts G, (only one being shown,) the ends of said staple being threaded to accommodate the nuts. In this latter connection I would secure the bar to the axle by a clip, H, in the usual manner.

The operation of my improvement is as follows: When the bar A is depressed, the extended contact-surfaces of the springs B will afford a substantial bearing, and at the same time will present a resistance uniformly distributed throughout the length of said bar, while the greater said depression is the stiffer will become the springs B. This will be readily understood by bearing in mind that the ends of these springs B are normally coupled in the same horizontal plane. It will thus be seen that the main spring or bar is stiffened in the direct ratio of its depression by auxiliary springs, which while they are secured to said bar still have a separate and independent spring action.

One of the great advantages gained by the use of my improvement is that the spring, while effecting a very soft and easy motion to a wagon-body, is instantaneous in its resiliency, and this is owing to the fact that there is no lost motion or play of the component parts of the spring, taken as an entirety.

I claim—

1. In a vehicle-spring, the combination, with a main leaf or bar, of a series of auxiliary semi-elliptical springs secured to said bar, the ends of said springs being coupled together in substantially the same horizontal plane, as and for the purposes set forth.

2. In a vehicle-spring, the combination,

with a main leaf or spring bar, of a series of
secondary springs secured at their centers to
said bar, their adjacent ends being coupled
together, and the extremities of the two outer
5 springs secured to the axle or bolster sup-
ported thereby, substantially as and for the
purpose set forth.

In testimony whereof I affix my signature in
presence of two witnesses.

GEORGE B. HAMLIN.

Witnesses:

ALBERT D. BEAN,
WARREN R. PERCE.