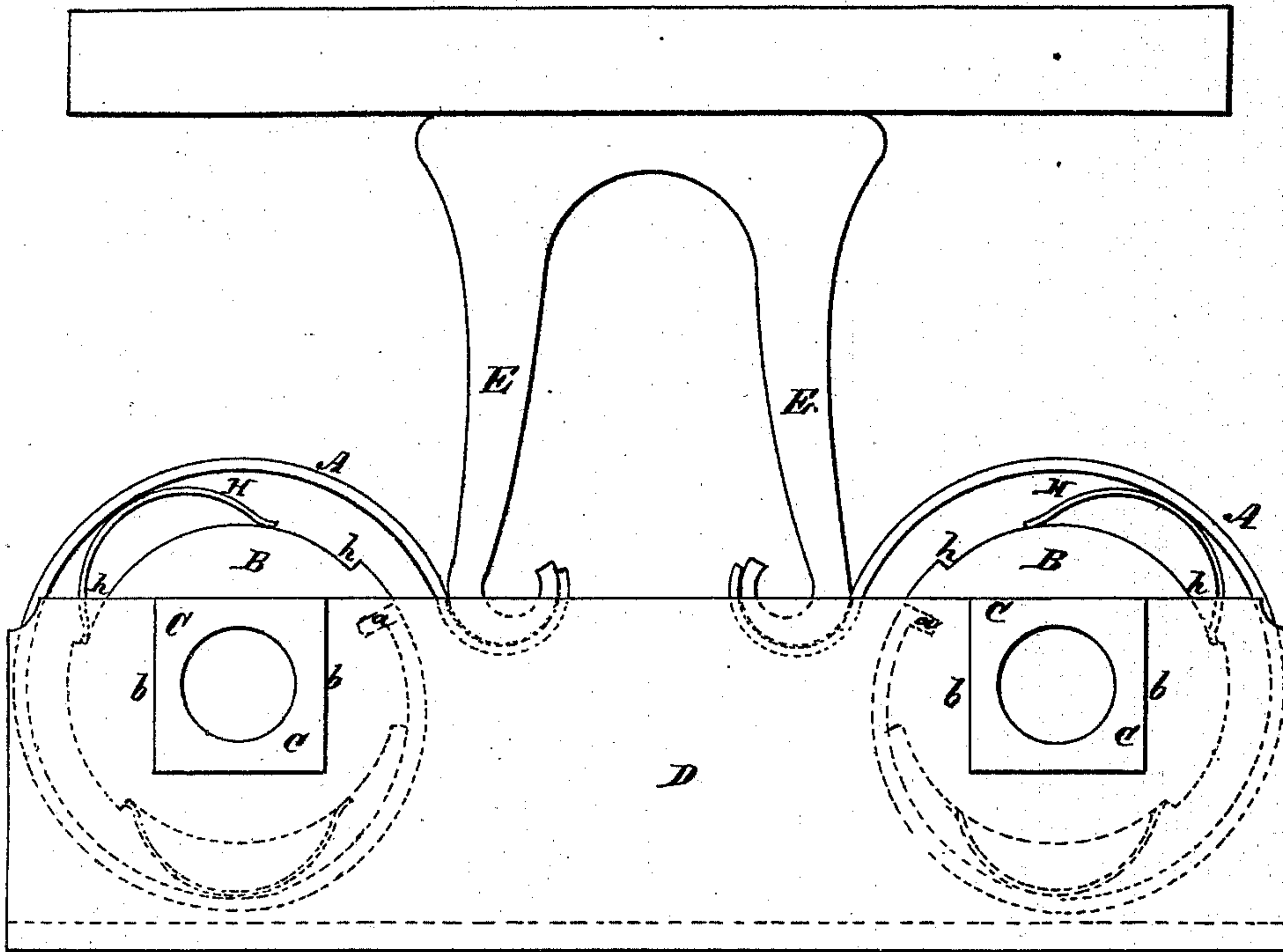


H. GARDINER.  
Carriage-Spring.

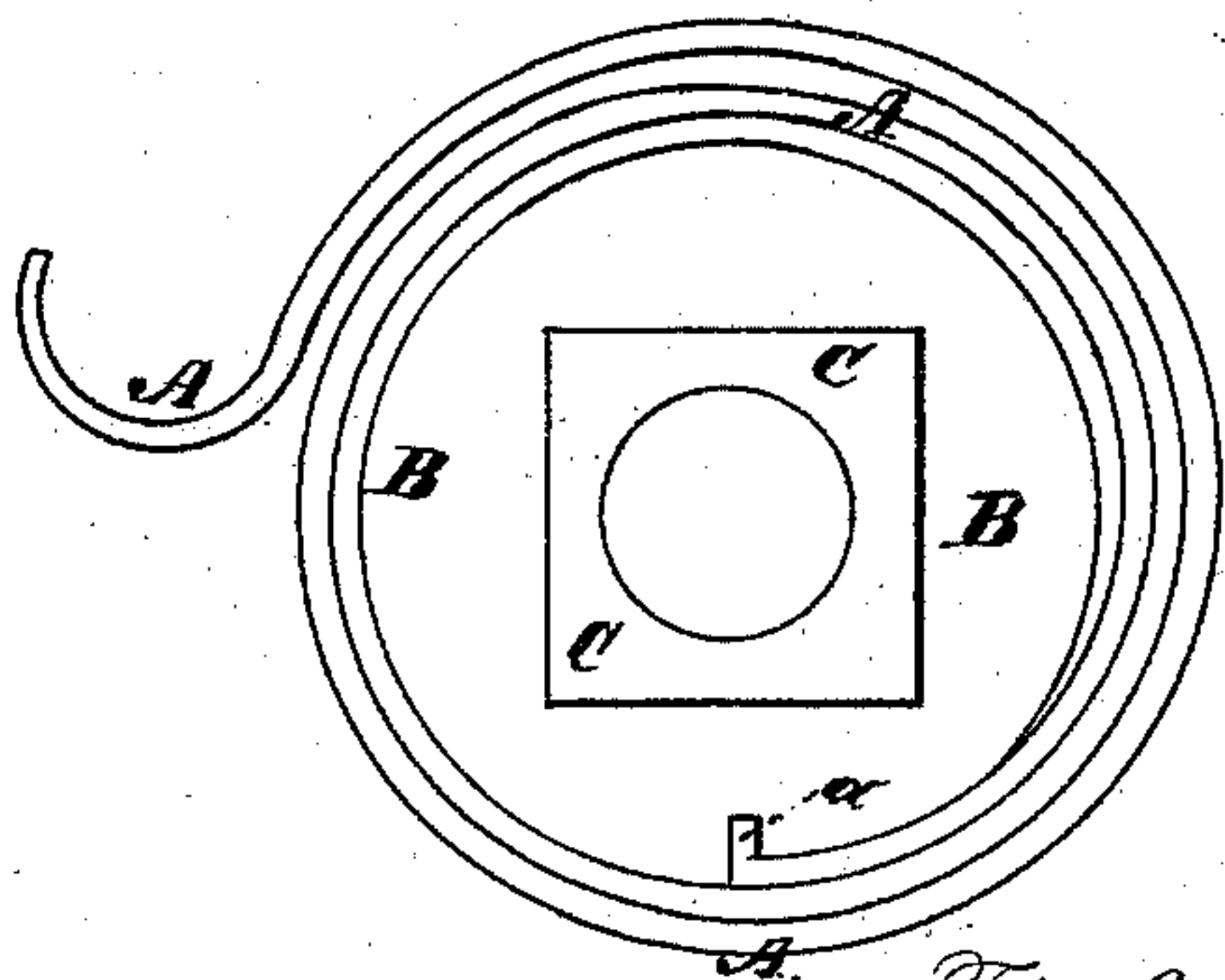
No. 26,668.

Patented Jan. 3, 1860.

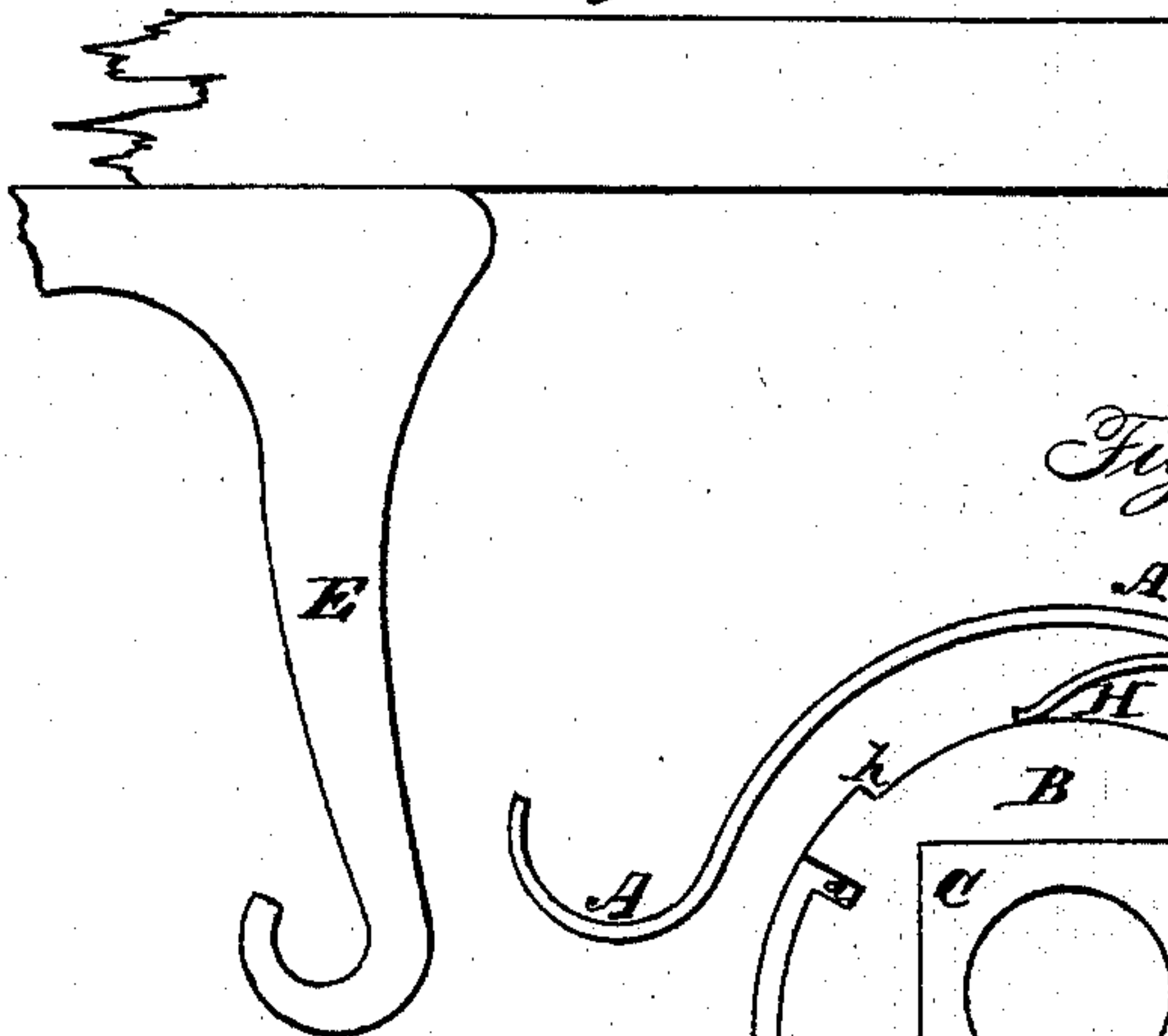
*Fig. 1.*



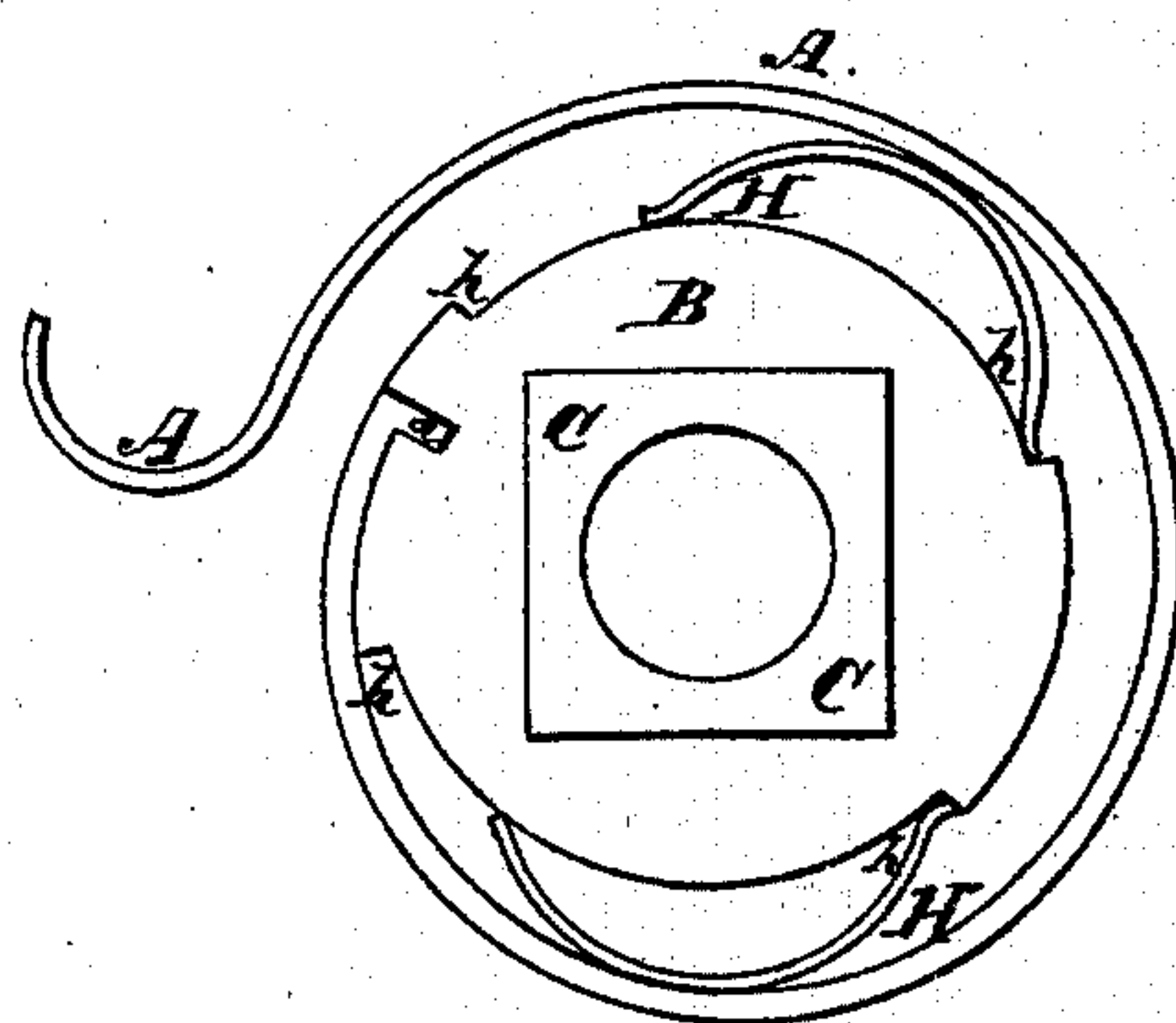
*Fig. 2.*



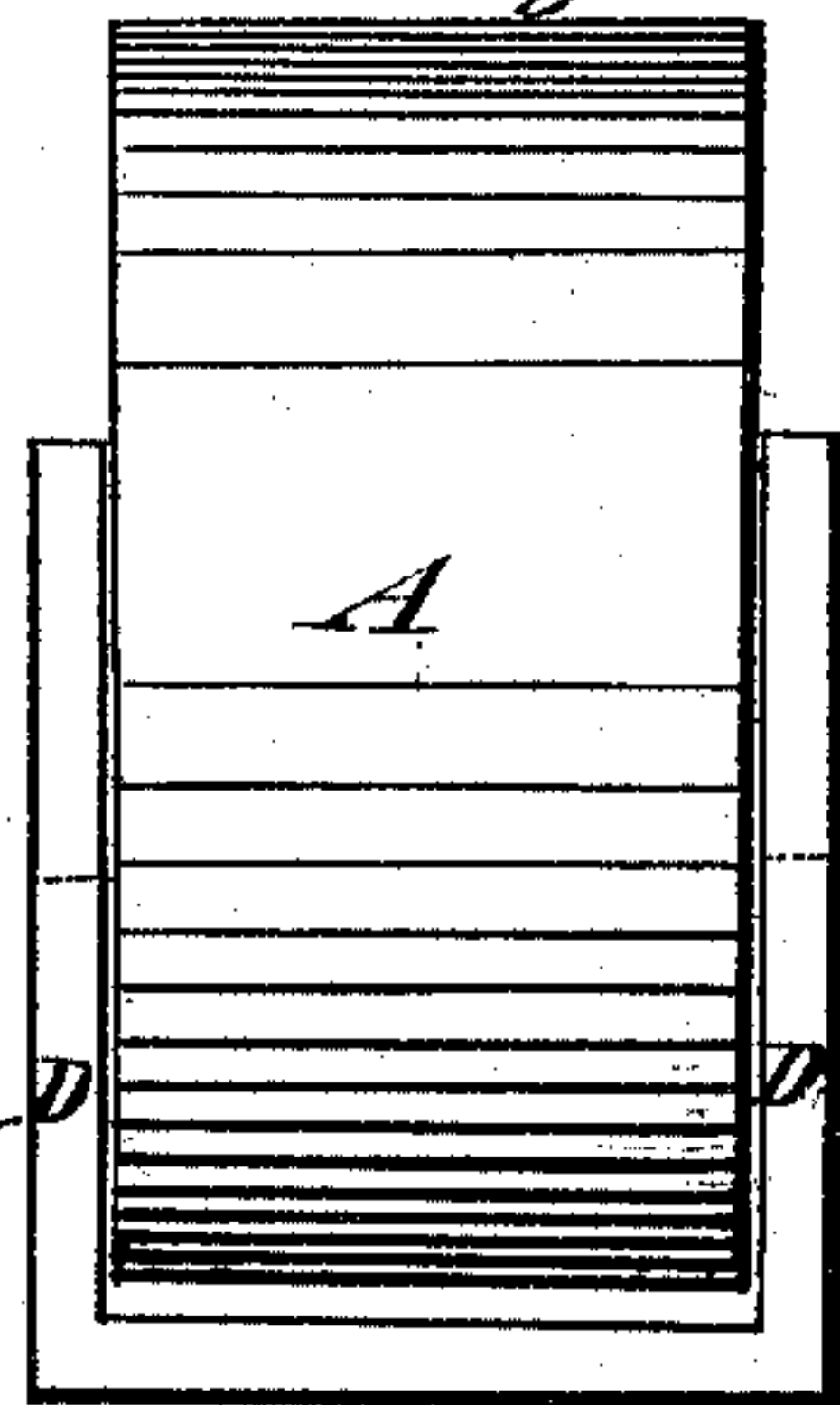
*Fig. 5.*



*Fig. 4.*



*Fig. 3.*



Witnesses:

*R. W. Prime*  
*J. B. Styles.*

Inventor:

*H. Gardiner*



# UNITED STATES PATENT OFFICE.

HEMAN GARDINER, OF NEW YORK, N. Y.

SPRING FOR CARRIAGES AND RAILROAD-CARS.

Specification of Letters Patent No. 26,668, dated January 3, 1860.

*To all whom it may concern:*

Be it known that I, HEMAN GARDINER, of the city of New York, have invented a new and useful Improvement in Springs Suitable Either for Carriages or Railroad-Cars, and that the following is a full and exact description thereof, reference being had to the drawings accompanying and making part of this specification.

10 The nature of my invention does not consist in the using or applying merely of the coiled or scroll steel spring, so as to close the coil when under pressure. I make no claim whatever to the use of such a spring independently of other arrangements; but the  
15 nature of my invention consists in arranging and combining such a spring upon a cylinder with semi-elliptical springs placed in recesses on the periphery of such cylinder as is  
20 hereinafter particularly set forth.

In the drawings accompanying, Figure I, is a side elevation of a spring, the box in which it rests, and the pedestal or bracket by which the spring is connected with the carriage body above it. Fig. II is a side elevation of the coiled blade, the cylinder and fixed bearing or axis at the center. Fig. III, is an end elevation. Fig. IV, shows the semi-elliptical springs in recesses upon the surface  
30 of the cylinders, and underneath the coil. Fig. V, is a bracket or pedestal of one arm, suitable for carriage springs.

In all the figures like letters represent like parts.

35 In Fig. II, A, represents the coiled or scroll spring; B, is a cast iron cylinder upon which the spring is fastened; C, the axis or central bearing upon which the cylinder

rests. The fixed end of the blade A, is fastened into a groove in the face of the cylinder as at *a*. These are placed in a metallic box D, as shown in Fig. I, in the sides of which are square openings to receive the axis, as seen at *b*, *b*. 40

The cylinder B, is not a complete cylinder or circle, but is depressed or pared away from the point *a*, so as to give a gradual bearing to the blade. Upon the surface or periphery of the cylinder are placed, on opposite sides of the cylinder, semi-elliptical  
50 springs, H, H, which are placed in recesses in the surface of the cylinder (their ends being free) where they are held; the coiled blade being over these springs, combines its action with that of the smaller springs H, H. 55

The cylinders should be cast hollow, for lightness. The outer sides of the scroll or coiled blade, are curved upward so as to receive a suitable bracket or pedestal E, to support the carriage. And these springs  
60 may be used singly or in pairs, with single or double bracket.

Having thus described my improvement what I claim therein as my invention is—

Combining and arranging the coiled  
65 spring or blade A, with the loose auxiliary semi-elliptical springs H, H, upon and around the central cylinder, having upon its periphery the recesses to receive the loose springs; the whole operating together in the  
70 manner and for the purposes described.

HEMAN GARDINER.

Witnesses:

R. WINNE,  
J. B. STAPLES.