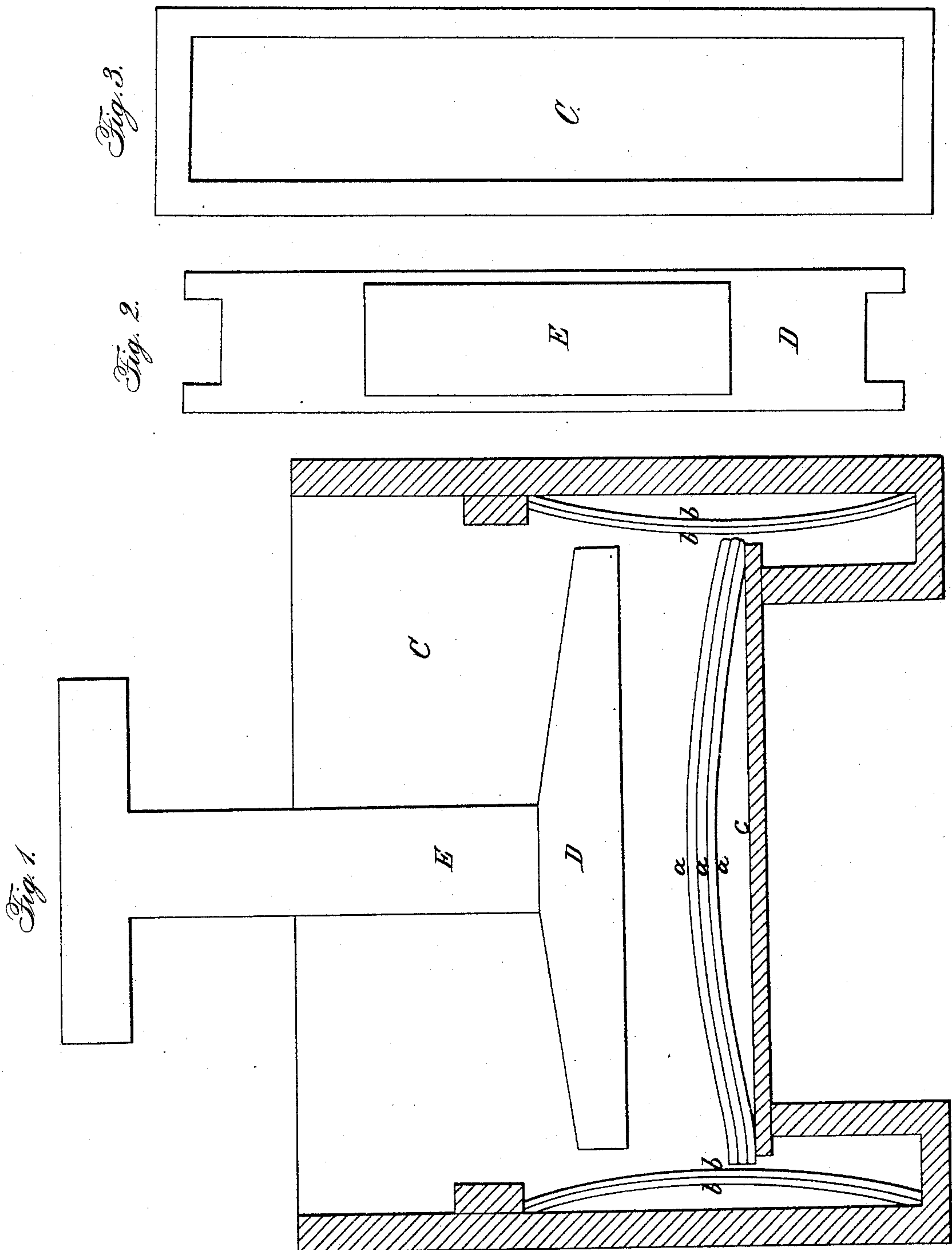


A. M. De HART.

Car Spring.

No. 20,148.

Patented May 4, 1858.



UNITED STATES PATENT OFFICE.

A. M. DE HART, OF READING, PENNSYLVANIA.

RAILROAD-CAR SPRING.

Specification of Letters Patent No. 20,148, dated May 4, 1858.

To all whom it may concern:

Be it known that I, ANDREW M. DE HART, of Reading, Berks county, Pennsylvania, have invented certain new and useful Improvements in Railroad-Car Springs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the employment of loose horizontal, and perpendicular semi-elliptic plate springs within a box, the ends of the horizontal springs resting against, and near the centers, of the perpendicular springs, the weight of the car pressing upon the horizontal springs as will be hereinafter described.

In order that those skilled in the art may use and manufacture my invention I will proceed to describe its construction and operation.

In the annexed drawings making a part of this specification Figure 1 is a section view showing the internal arrangement of the box. Fig. 2 is a top view of the press block and connecting rod. Fig. 3 is a top view of the box.

In Fig. 1, C represents a cast iron box, in which the springs are contained, said box being oblong and rectilinear, as seen in the drawing.

(c) is the bottom of the box on which the horizontal springs rest.

(a a a) are semi-elliptic plate springs made of sheet steel, cut to suit the size of the box and lying horizontally on the bottom of the box in the position shown in the drawing Fig. 1. (b b) are also semielliptic plate springs arranged perpendicularly on two sides of the box at the ends of springs (a, a, a).

D, is a press block which rests on springs (a a a).

E, is a rod connecting block D, with the car. This block and rod working in the box are guided and kept in place by means of the sides of the said box. It will be seen that the ends of the springs (b b) press against the sides of the box C.

In the operation of this spring, the springs (b b) being placed in position on the sides of the box as seen in a perpendicular manner, and the springs (a, a, a,) being placed horizontally on the bottom of the box, the press block D bearing the weight of the car, presses directly down upon the springs (a, a, a,). These springs lengthen as the weight is placed upon them and their ends, press against the centers of the springs (b b). These springs also give in due proportion, and bear their proportion of the weight and spring.

The peculiar advantages resulting from this mode of forming springs is, that the steel being confined and arranged as seen in this box has greater strength and at the same time sufficient elasticity. I am enabled by this arrangement to furnish car springs of the same elasticity at a cost of less than one-fourth of the ordinary spring. Each plate being separate I may drop into the box, as many as may be required for bearing any required weight and giving any required strength.

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

The combination of the semi elliptic plate springs (a, a, a,) and (b, b) as arranged with the box C press block D, and connecting rod E, substantially in the manner and for the purpose herein fully set forth.

A. M. DE HART.

Witnesses:

C. M. ALEXANDER,

JOHN S. HOLLINGSHEAD.