

(No Model.)

2 Sheets—Sheet 1.

G. GIBBS.
CAR SPRING.

No. 488,474.

Patented Dec. 20, 1892.

Fig. 1.

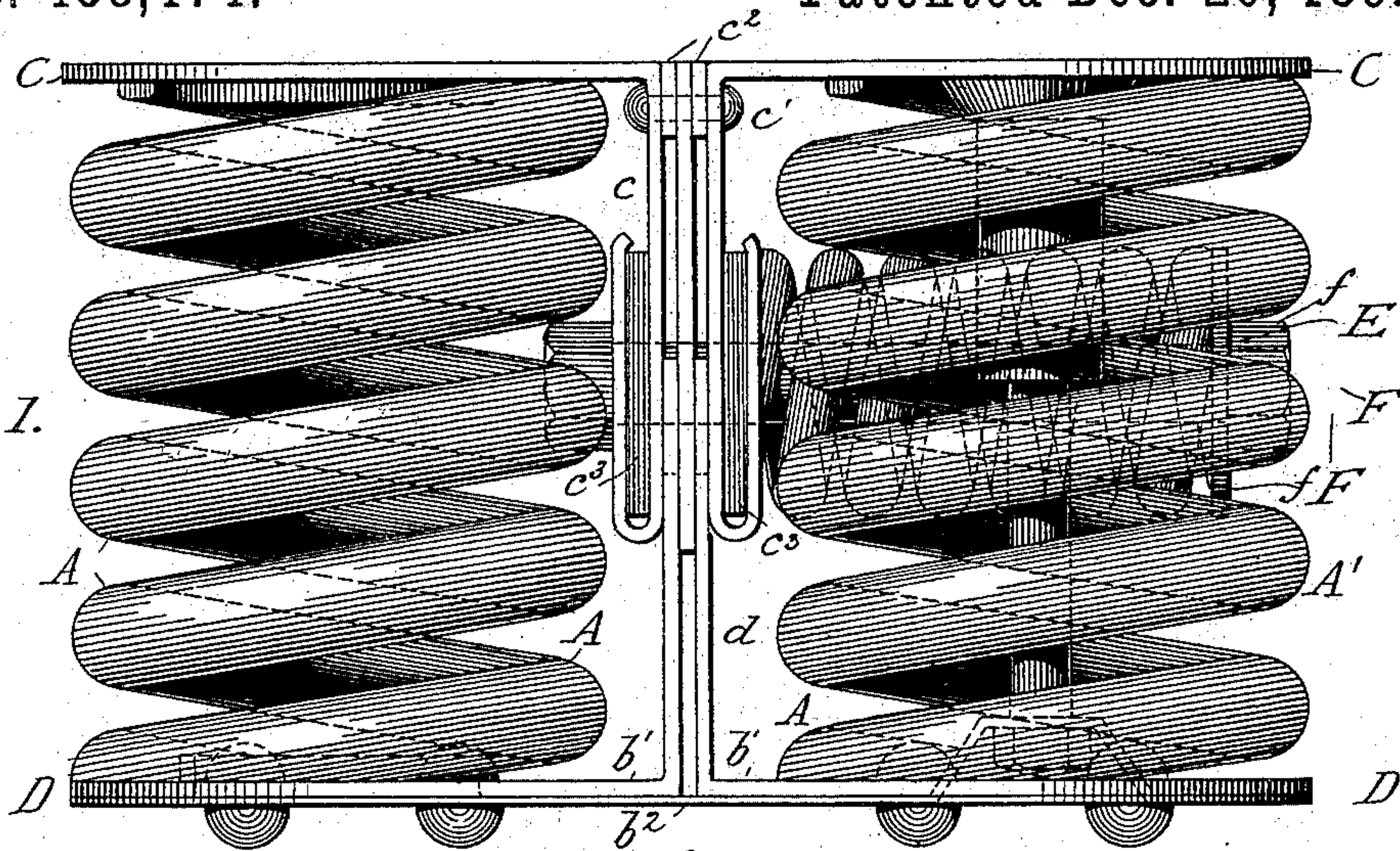
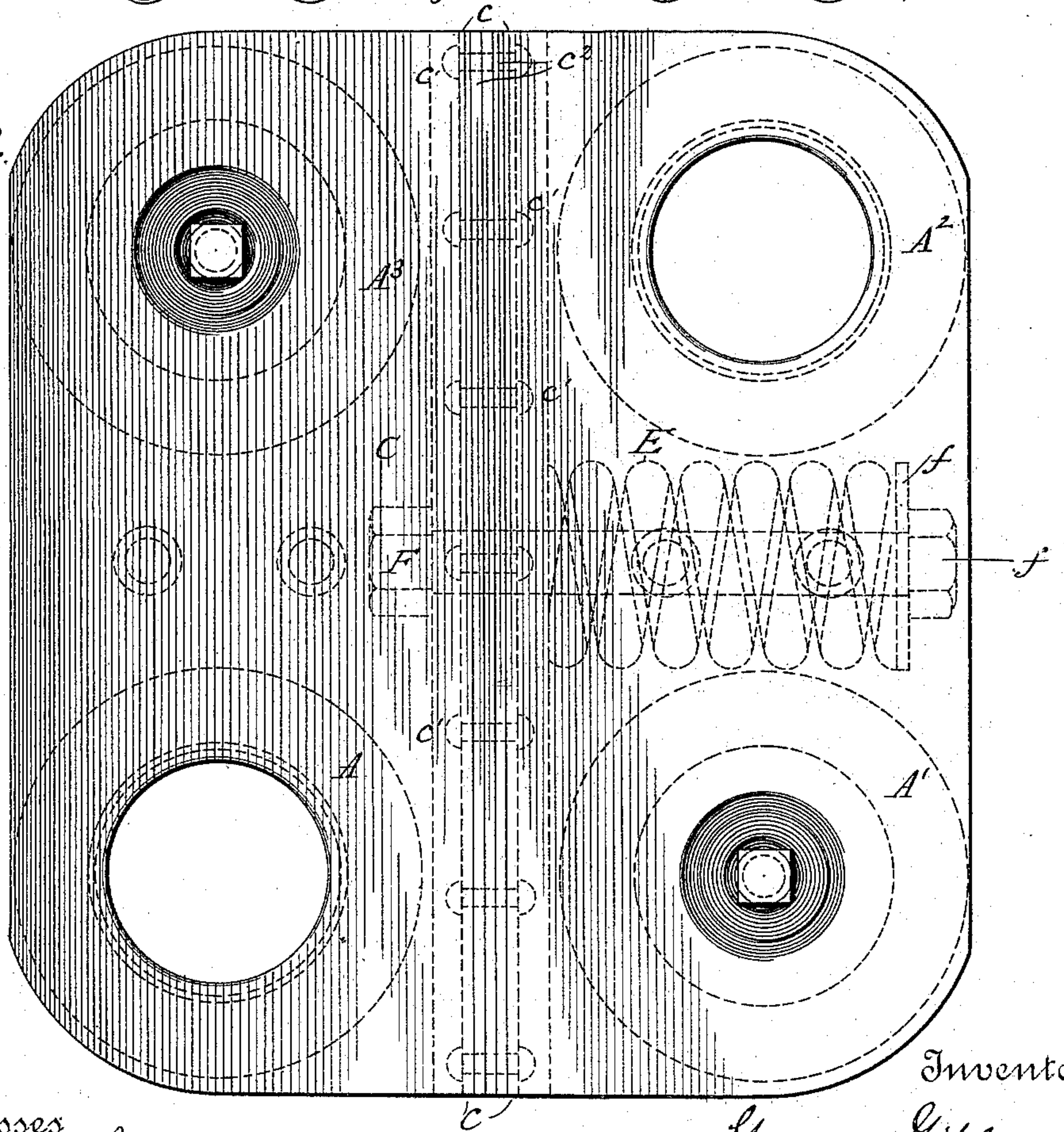


Fig. 2.



Witnesses
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Inventor
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No Model.)

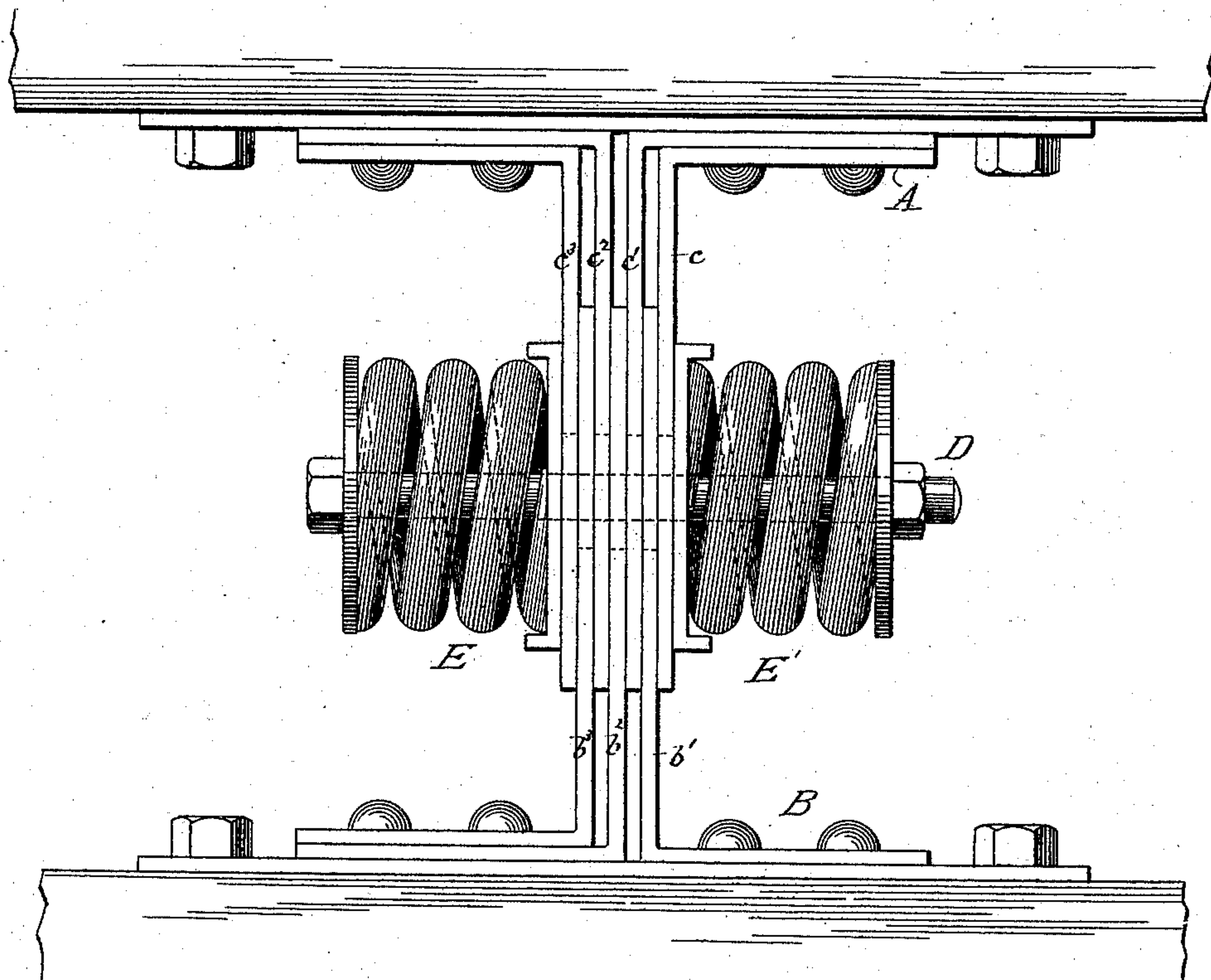
2 Sheets—Sheet 2.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE GIBBS, OF MILWAUKEE, WISCONSIN.

CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 488,474, dated December 20, 1892.

Application filed November 23, 1891. Serial No. 412,832. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GIBBS, of Milwaukee, county of Milwaukee, and State of Wisconsin, have invented a new and useful
5 Improvement in Car-Springs, &c., of which the following is a specification.

Railway cars are commonly provided at the present day with bolster-springs to ease the motion of the body and prevent shocks as the
10 car passes over inequalities in the track. In practice it is found that these springs, particularly those of helical form, have a tendency to vibrate in a short, quick and disagreeable manner. It is the aim of my invention to avoid this action by dampening or re-
15 tarding their movements, and to this end I introduce between the upper and lower cap-plates of the spring, or between that portion of the car-truck frame which is rigid on the
20 axles, and that portion of the truck or body which has its action relieved by the spring, friction devices consisting essentially of plates sliding on each other under pressure, in such manner that they may resist sudden move-
25 ments without materially affecting the capacity of the springs under static pressure. The dampening devices may be connected directly with the springs in the same bundle, or applied independently at any suitable point.
30 They are applicable not only in ordinary railway cars having swiveling trucks, but also in street cars having axles in fixed positions, to prevent the disagreeable dancing or bobbing action of the car body.

35 In the accompanying drawings,—Figure 1 is a side elevation of a helical car-spring provided with my improvement. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of the same in an alternative form.

40 Referring to Figs. 1 and 2, A A' &c., represent four helical springs mounted in an upright position between top and bottom plates C and D. The plates are formed or provided respectively at the middle with vertical inter-
45 acting plates or leaves *c* and *d*, which may be varied in number, and which slide frictionally upon each other as the top plate rises and falls with the springs. The friction plates or leaves are drawn forcibly together by a hori-
50 zontal spiral spring E, which acts against a washer *f*, fixed on one end of a bolt F, extending through the leaves and provided with nut

f'. When the tension of spring E is properly adjusted the friction between the leaves will be such as to permit a free and easy action 55 of the main springs, but at the same time, prevent the disagreeable sudden and short vibrations referred to above. The vertical leaves may be formed or applied in any suitable manner, but I recommend the construc- 60 tion represented in the drawings. The bottom plate is composed of two parts or plates *b' b'*, riveted to an underlying plate *b²*, and bent upward at their inner edges to form the leaves or friction surfaces. The top-plate is made 55 in like manner of two parts bent into angular form, and connected by rivets *c'*, their vertical leaves being held apart by an intermediate leaf and the spreading bars *c²*, through which the rivets pass. The lower leaves are 70 slotted vertically that the bolt may not interfere with their motion, and the upper leaves are preferably turned upward at their lower ends to confine plates *c³*, in order to afford a larger and firmer bearing for the end of the 75 bolt and to distribute the pressure.

Referring now to Fig. 3, it will be observed that the construction therein shown, as regards the friction devices, is essentially the same as in the preceding figures. As herein 80 shown, however, the structure is independent of the springs and is adapted for application at any suitable point between the body or bolster and the underlying frame or truck to dampen the vertical vibration of the body. 85 The top-plate consists of a series of flat plates *c. c'. c²* &c each bent at a right angle in order to present a vertical downwardly-projecting friction member. The horizontal portions of the plates are seated one upon another and 90 riveted firmly together. The bottom-plate B is constructed in like manner. The vertical portions of the upper and lower plates or leaves passing between each other, as in the first form of apparatus, are drawn together by 95 means of two springs E E', applied to opposite ends of a through-bolt D, which encircles the bolt and are seated against washers upon its ends. The plates or leaves being urged together by means of springs operate in the 100 same manner and with the same effect as those in the first described device. One of the springs may be omitted and a single spring used with the bolt, as in the first example.

In the first form of device the bolt may be elongated and two springs used, as shown in Fig. 3.

Having thus described my invention, what I claim is,—

1. A dampening mechanism for springs, consisting essentially of a plurality of flat friction plates lying face to face in planes parallel to the line of action of the spring, and a spring independent in its action of the movement of the parts and adapted to press and hold said plates together with a constant pressure, substantially as shown and described.

2. In combination with a car spring, a dampening or retarding mechanism comprising a plurality of flat parallel plates secured to one of the parts between which the spring acts, and a plurality of similar plates secured to the other parts, said plates alternating with each other, a bolt passing through coinciding

slots in the plates, and a spring mounted on the bolt and acting to press the plates together and to maintain a constant frictional contact, substantially as shown and described.

3. The combination with a car spring of a dampening or retarding apparatus, comprising a plurality of flat friction plates secured alternately to the opposite parts between which the spring works and lying together face to face in planes parallel to the line of action of the spring, and a spring for pressing said plates together with a constant pressure, substantially as shown and described.

In testimony whereof I hereunto set my hand, this 10th day of September, 1891, in the presence of two attesting witnesses.

GEORGE GIBBS.

Witnesses:

W. H. ELLIOTT,
J. C. GRIEB.