

C. D. GIBSON.
CAR SPRING.

No. 39,769.

Patented Sept. 1, 1863.

Fig. 1.

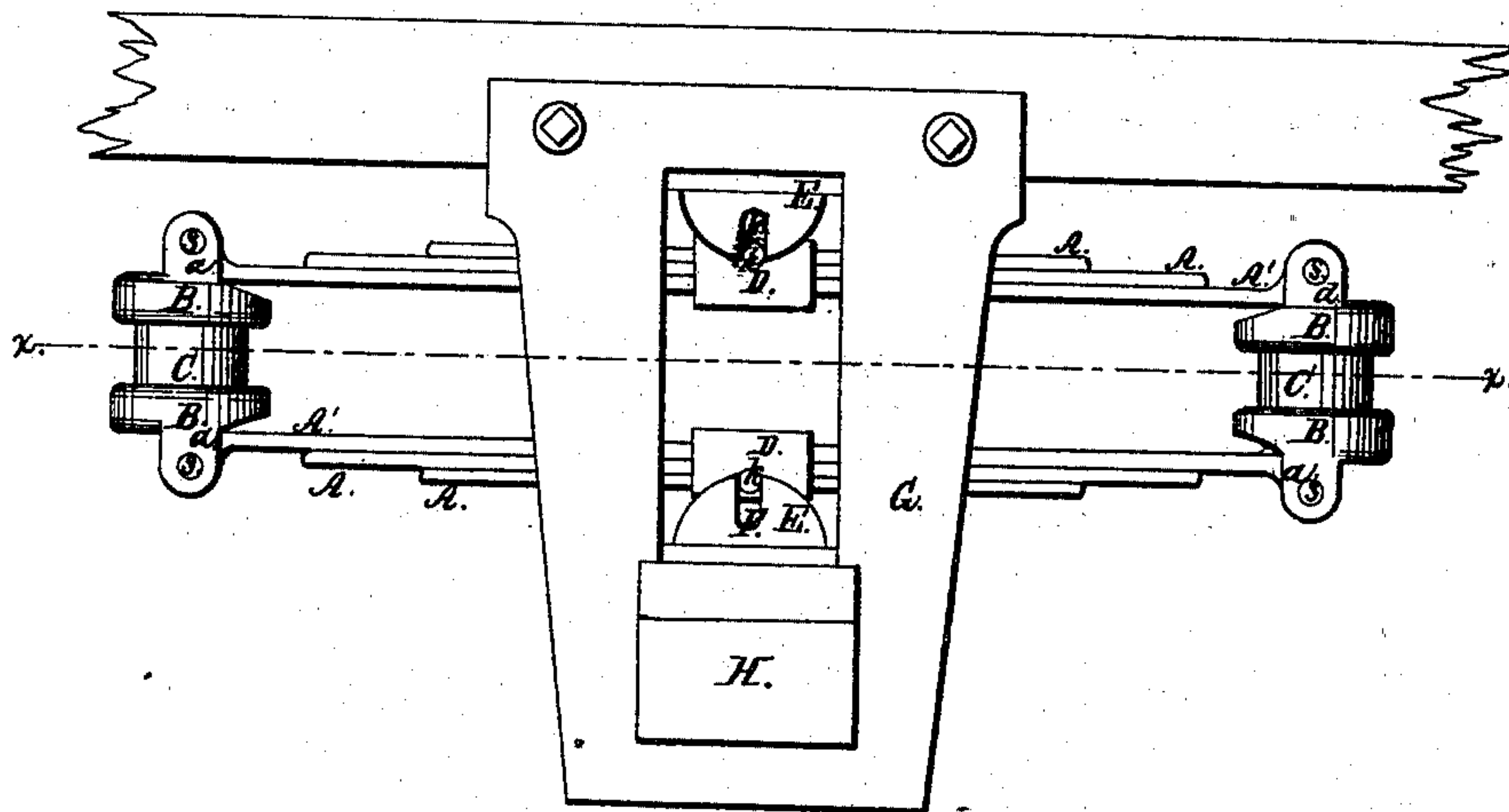
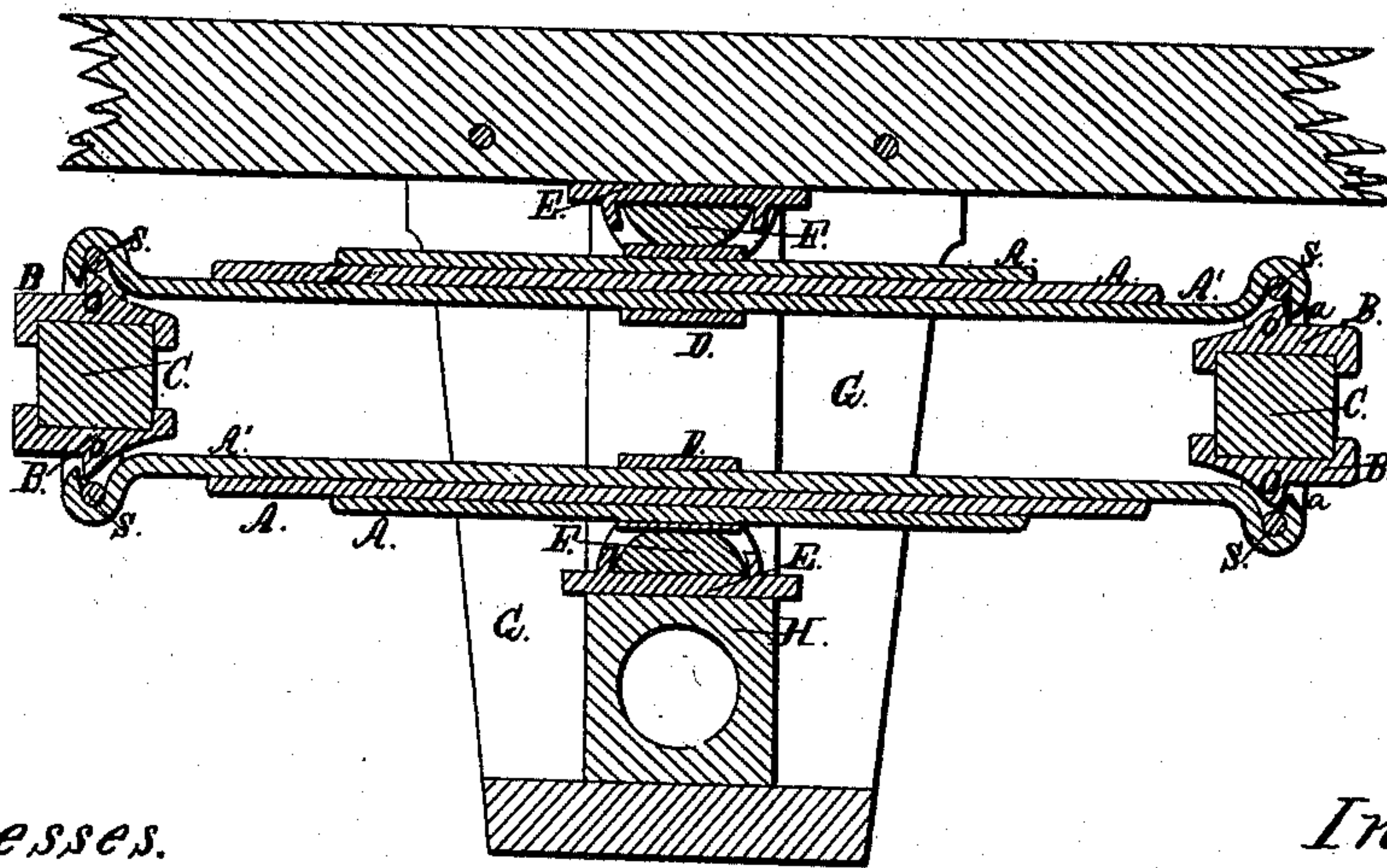


Fig. 2.



Witnesses.

Randolph H. Hodge
J. W. Jenkins

Inventor.

Chas. D. Gibson
By *Robbing & Burr*
attys.

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Fig. 3.

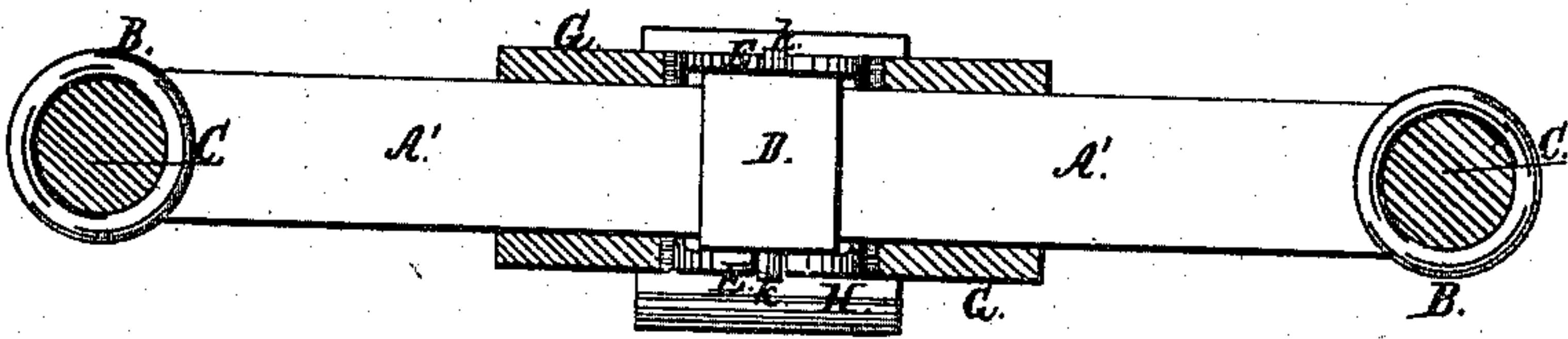


Fig. 4.

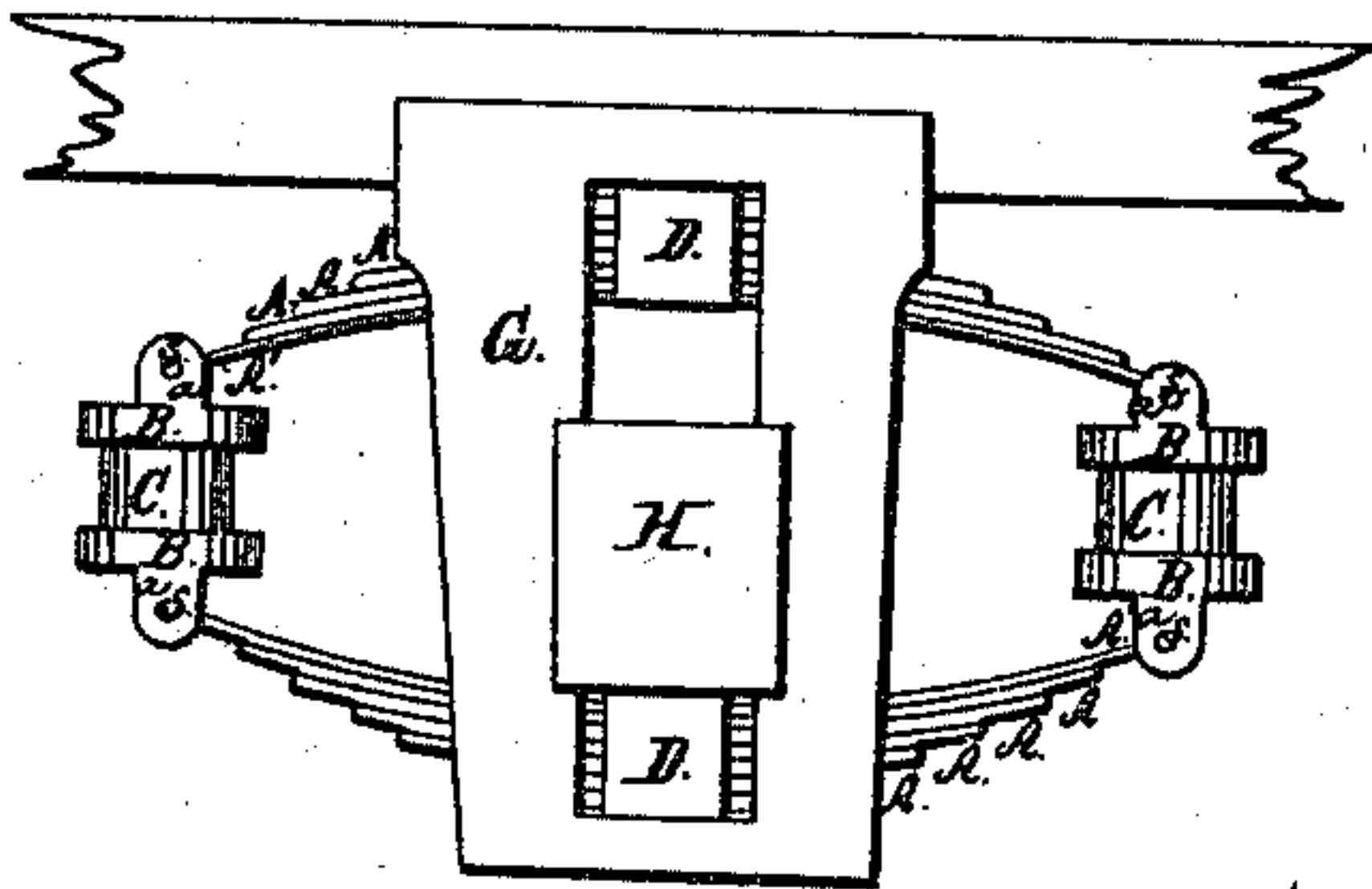
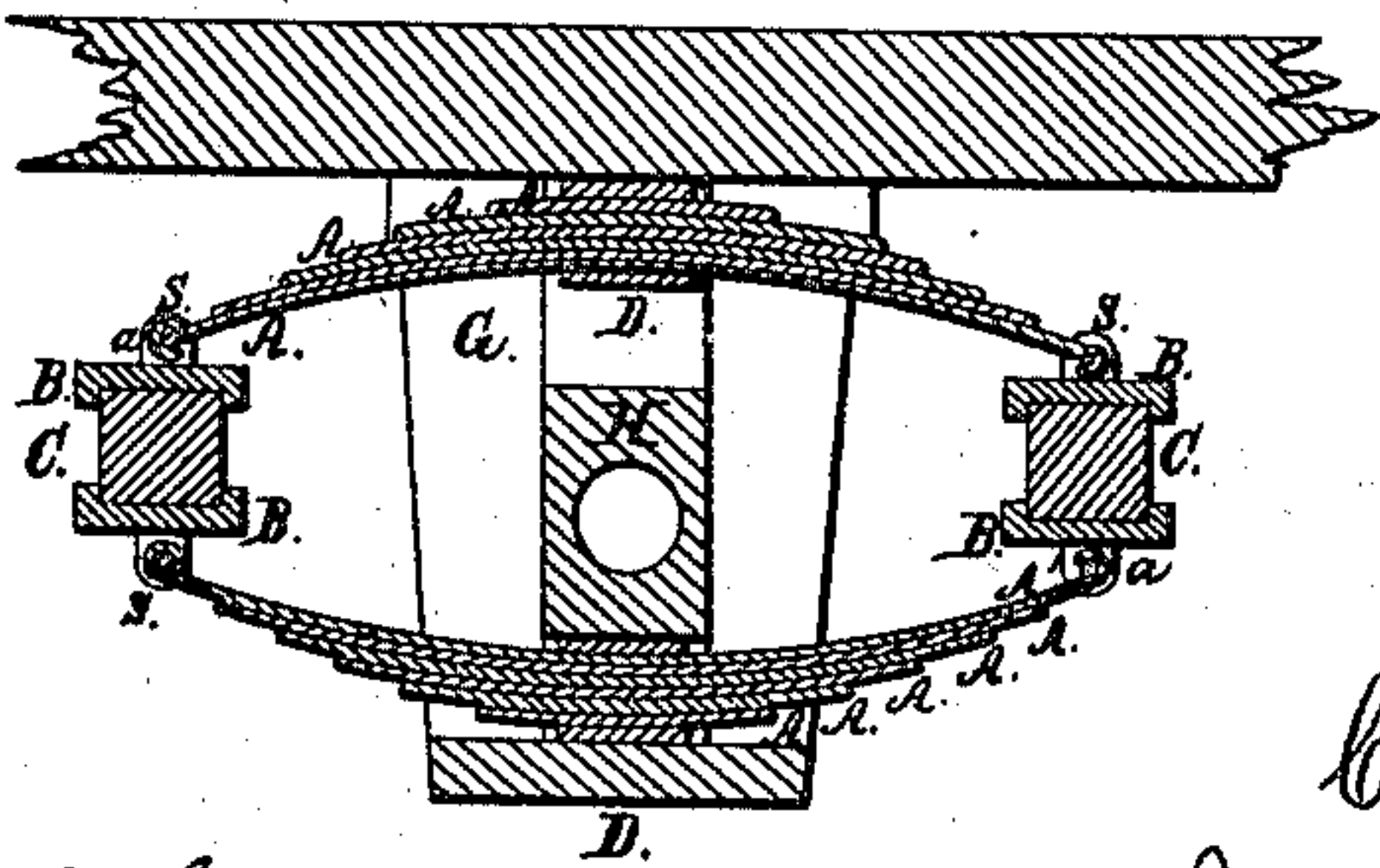


Fig. 5.



Witnesses.

Randolph K. J.
J. W. Lusk

Inventor.

Chas. D. Gibson
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UNITED STATES PATENT OFFICE.

CHARLES D. GIBSON, OF NEW YORK, N. Y., ASSIGNOR TO CHAS. S. S. LENOX.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. 39,769, dated September 1, 1863.

To all whom it may concern:

Be it known that I, CHARLES D. GIBSON, of the city, county, and State of New York, 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 thereof, reference being had to the accompanying drawings, which form a part of this specification, and of which—

Figure 1 is a side elevation of my improved rectilineal spring; Fig. 2, a longitudinal central section of the same; Fig. 3, a transverse section in the line *x x* of Fig. 1; Fig. 4, an elevation of my improved elliptical form of spring; and Fig. 5, a longitudinal section of the spring, illustrated by Fig. 4.

Similar letters indicate like parts in each of the drawings.

The nature of my improvement consists in the combination of an elastic cushion or packing with the ends of metallic plate-springs to facilitate and perfect their regular and easy action.

My improved springs are composed of one or more leaves or plates, *A A'*, of elastic metal, which may be either straight, as in the rectilineal spring, illustrated in Figs. 1 and 2, or elliptically curved, as shown in Figs. 4 and 5. The end caps, *B B*, which serve to confine and unite the opposite sections of the spring, may be conveniently made of a circular form, as illustrated by the drawings, although other forms will answer the purpose required. The caps *B B* are furnished with ears *a a*, projecting outward vertically in a central plane. The intervals between the ears upon a diameter of the outer face of either of the caps are equal to the width of the spring-plates *A A'*, which are combined therewith by means of pivot-pins *s s*, secured in said ears *a a*, and which pass through terminal loops formed at the ends of the plates *A A'*, as is clearly shown in Fig. 2 of the accompanying drawings. Stops *o o* project outwardly between the ears *a a*, which, in connection with the looped ends of the spring-plates, prevent the caps from swinging outwardly, as is fully illustrated in the sectional Fig. 2. The outer faces of the caps *B B* are beveled from these stops inwardly toward the center of the spring, to allow them free play upon their pivoted

bearings *s s* in that direction. The inner or opposite surfaces of the caps *B B* are recessed (see Fig. 3) to receive and hold the heads of springs *C C* of solid rubber or other suitable material.

When two or more elastic plates are combined in the construction of my improved springs, they may be secured centrally by embracing-bands *D D*, Figs. 1 and 4.

In the construction of the rectilineal form of spring, Figs. 1 and 2, I secure guiding-pins *k k* upon either side of these embracing bands *D D* in a plane which is coincident with the center of the spring-plates. These pins *k k* are received into slits formed in the ears of a bearing-plate, *E*, which embrace the bands *D D*, and inclose also an auxiliary bearing-spring, *F*, of india-rubber, or its equivalent, as illustrated in Fig. 2. By thus pivoting or hinging the central bearings of the spring upon pivot-pins *k k*, or in a manner equivalent thereto, an oscillation of the spring is obtained by which all cross-strain thereon is avoided.

This device is peculiarly advantageous in rectilineal springs, as herein indicated, but may also be applied to elliptic springs.

The upper bearing-plate of my improved spring is attached to the under side of the truck-frame, while the lower bearing-plate is secured to the journal-box *H* of the car-axle within the pedestal *G*, as shown in the drawings. The play of the inclosed bearing-spring *F* is limited and its elasticity protected by the length of the slits guiding the pins *k k*. The rectilineal spring thus formed and hinged and packed, both in its central bearings and end fastenings, has a free, accommodating, elastic motion and play, which adds greatly to its efficiency and durability.

It will be observed also that by pivoting the end caps, which secure the packing springs *D D*, the latter are always retained in a vertical and active position. I contemplate in this connection packing the metallic plates of my improved spring with felt, or its equivalent, to protect and preserve their temper and elasticity, and where greater strength is desired in the rectilineal spring an additional auxiliary spring may be interposed centrally between the spring-plates *A' A'*.

In interposing an elastic packing between

the ends of the elastic leaves or plates of a spring, as described, I design to use the same either with or without end caps, B B, as the packing may be placed directly between plates secured in the ordinary manner.

Having thus fully described my improvements in railroad-car springs, what I claim therein as new, and desire to secure by Letters Patent, is—

1. Combining any suitable elastic packing or auxiliary springs U C with the ends of rectilineal or curved metallic springs A' A, substantially in the manner and for the purpose herein set forth.

2. Combining the retaining caps B B with the ends of metallic spring-plates by means of hinged or pivoted joints, substantially in

the manner and for the purpose herein described.

3. Pivoting or hinging the central bearings of metallic plate springs substantially in the manner and for the purpose herein set forth.

4. The use and combination of an auxiliary bearing-spring, F, of india-rubber, or its equivalent, with a metallic plate spring, when arranged substantially in the manner and for the purpose herein set forth.

The foregoing specification of my improved rectilineal spring signed by me this 29th day of June, A. D. 1863.

CHARLES D. GIBSON.

In presence of—

JOHN B. SPAULDING,
RICH. VOTE.