2 Sheets—Sheet 1.

G. F. GODLEY.

Draw Bar for Railway Cars.

No. 201,517. **Patented March 19, 1878.**

Fig. 1

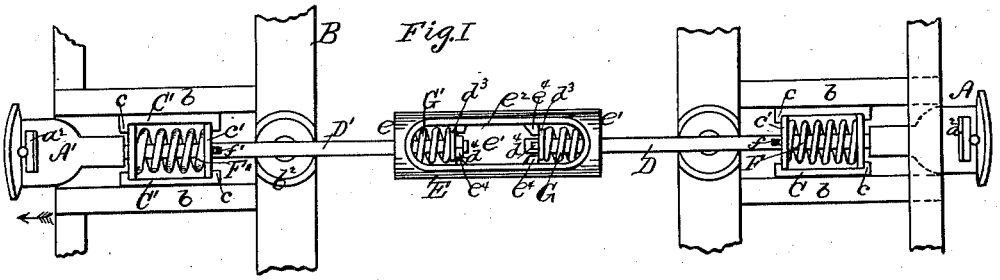


Fig. 2

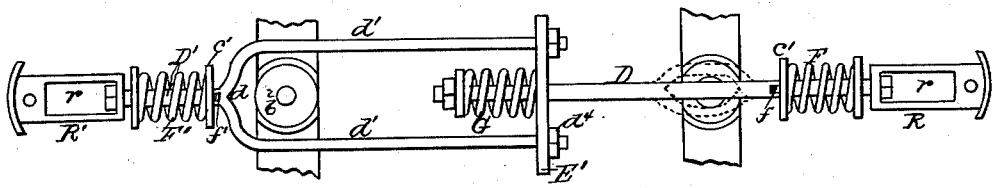
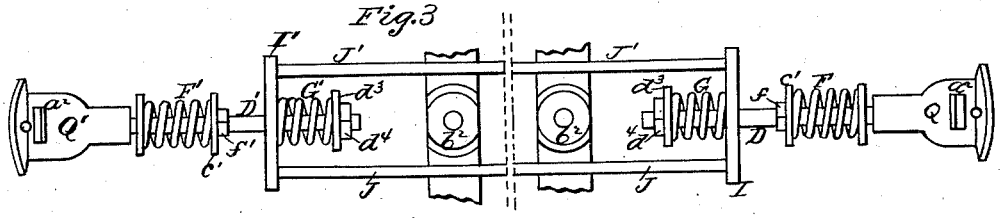


Fig. 3



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2 Sheets—Sheet 2.

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Draw Bar for Railway Cars.

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Fig. 4

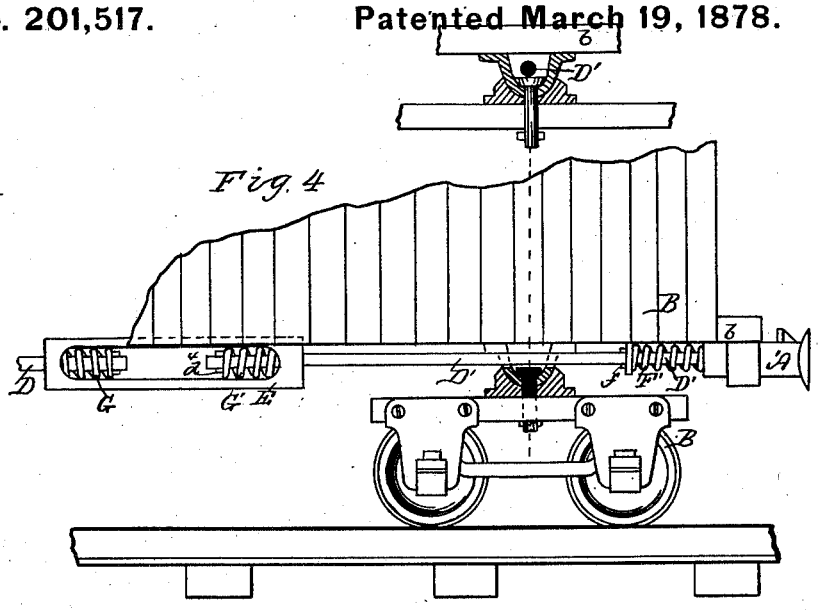
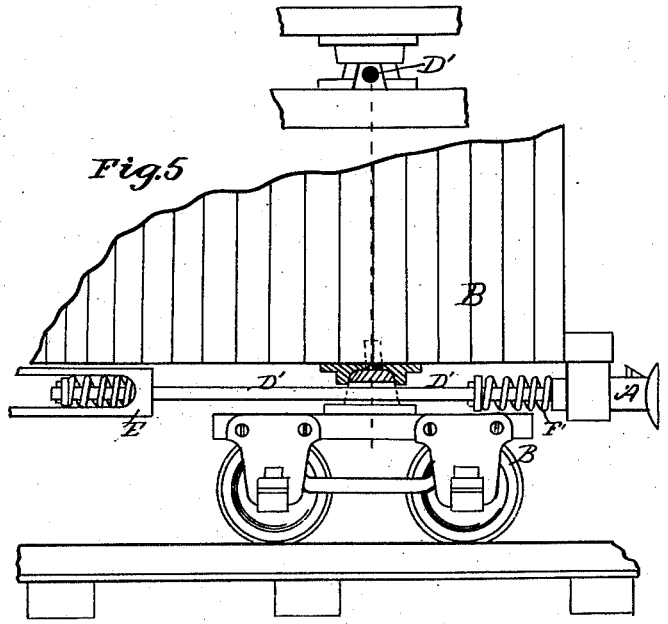


Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE F. GODLEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN DRAW-BARS FOR RAILWAY-CARS.

Specification forming part of Letters Patent No. **201,517**, dated March 19, 1878; application filed October 20, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. GODLEY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Draw-Bars for Railway-Cars; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figures 1, 2, and 3 are plan views of my invention, showing different styles of coupling for the connecting of the draw-head bars. Figs. 4 and 5 are broken side elevations of a car with my invention applied thereto.

My invention consists in the peculiar combination, construction, and arrangement of parts, as hereinafter more fully described.

Referring to the accompanying drawings, A A′ represent two draw-heads placed at either end of the car B, so as to slide between the timbers *b b*, which form part of the framework of the car. C C′ are metallic plates fastened to the sides of the timbers *b b*, as shown. D D′ are rods, which are secured to the draw-heads A A′ in any suitable manner. Said rods proceed rearwardly from the draw-heads, and pass into and are united by the coupling E, and form a continuous draw-bar for connecting said draw-heads.

The coupling E may be provided with a slot or slots, e^2, and a longitudinal recess, e^1, the latter forming a pocket for the reception of the springs G and G′, which respectively surround the extremities of the rods D and D′, and are held in place thereon between the heads *e* of the coupling E and the collars d^3, or other enlargements on said rods, by means of the nuts or keys d^4. *c′ c′* are sliding plates, placed upon the rods D D′ between the flanges *c c* of the plates C C, as shown, so as to form pockets for the reception of the springs F and F′, said rods D and D′ passing through said springs, as shown.

f f′ are nuts or keys, attached to the rods D D′ immediately to the rear of the plates *c c′*, for purposes hereinafter more fully described.

Operation: The draw-head A′ being drawn in the direction of the arrow, the rod D′, following therewith, acts first upon the spring F′ by means of the nut or key *f* impinging against the sliding plate *c′*, and thence against said spring F′, until it is wholly compressed. At the same time the collar d^3 on said rod D′ is drawn forward, partially compressing the spring G′, and also carrying said spring and the coupling E forwardly, which, in turn, act on the springs G and F in like manner, and partially compress said springs, the degree of compression of the springs F′, G′, G, and F decreasing in an inverse ratio from the draw-head A′, or the point at which the pulling force is exerted; or, in other words, when the spring F′ is wholly compressed, the spring G′ is compressed but three-quarters, the spring G but one-half, and the spring F but one-fourth, of the length of their resilient motion.

If a weight or force—as, for instance, the next car in the train—be now exerted upon the draw-head A, an elastic pull is still obtained, the uncompressed part of the springs G′, G, and F, as above set forth, being held in reserve for this purpose. A double elastic draw-bar is thus secured, the springs are all acted upon, and the pulling force exerted is transmitted from the center of the car outwardly toward the ends, and vice versa, at the same time, the car being relieved from all unnecessary jarring and straining.

If the nuts or pins *f f′* be dispensed with, as may sometimes be desirable, then, when the draw-head A′ is drawn forward, the springs F, G, and G′ are first brought into action, the next rear car acting upon the springs G, G′, and F′. If, however, the pulling force is exerted on both draw-heads simultaneously and equally, the springs G and G′ are alone acted upon; but in all cases a double elastic draw-bar is obtained.

In bumping, the draw-heads A or A′ are forced backwardly against the springs F and F′, while the rods D and D′ slide into the recess e^2 of the coupling E without acting upon the springs G and G′. This accommodation for the sliding back of the extremity of the bars D D′ allows me to use either a cast or wrought iron draw-head, the former being shown at A′ and the latter at A.

Figs. 2, 3, and 4 show various forms of rods and the manner of connecting them so as to

avoid the king-bolt that connects the car-body to its trucks, the construction shown in Fig. 4 being a counterpart of that shown in Fig. 1.

In the modification shown in Fig. 3 the coupling is increased in length, and consists of the ends I I′ and sides J J′, the pivotal connections of the car being between the ends I I′, the results in each case being the same.

I am aware that draw-bars have been used in which the rods attached to the draw-heads are united by an independent coupling device or link. I therefore do not claim, broadly, such construction. Nor do I claim, broadly, the double elastic draft.

What I claim as my invention is—

1. In a sectional draw-bar united by a centrally-independent coupling device, the arrangement of two or more sets of springs, one set of which is placed upon the draw-rods within the coupling device, and the remaining set to the rear of the draw-heads, so that when one set of springs is compressed by a force exerted at one end of the draw-bar the other set will be free to be compressed by a force exerted at the opposite end of the draw-bar, so as to obtain an elastic pull at both ends of the same, substantially as set forth.

2. In a draw-bar for connecting the draw-heads of railway-cars, consisting of the rods D and D′, united by the coupling E, the springs G and G′, placed on the ends of the rods D and D′ within the coupling E, substantially as shown and described, and for the purpose set forth.

3. The combination of the draw-heads A A′, rods D D′, and connecting-link E, and springs F F′ and G G′, the latter being placed upon the rods D D′ within the coupling E, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of October, A. D. 1877.

GEORGE F. GODLEY.

Witnesses:

EDWIN F. GLENN,

THEODORE JORDAN.