R. Cromelien,

Car Axle.

No. 79,555. Patented July 7, 1868.

Fig. 1.

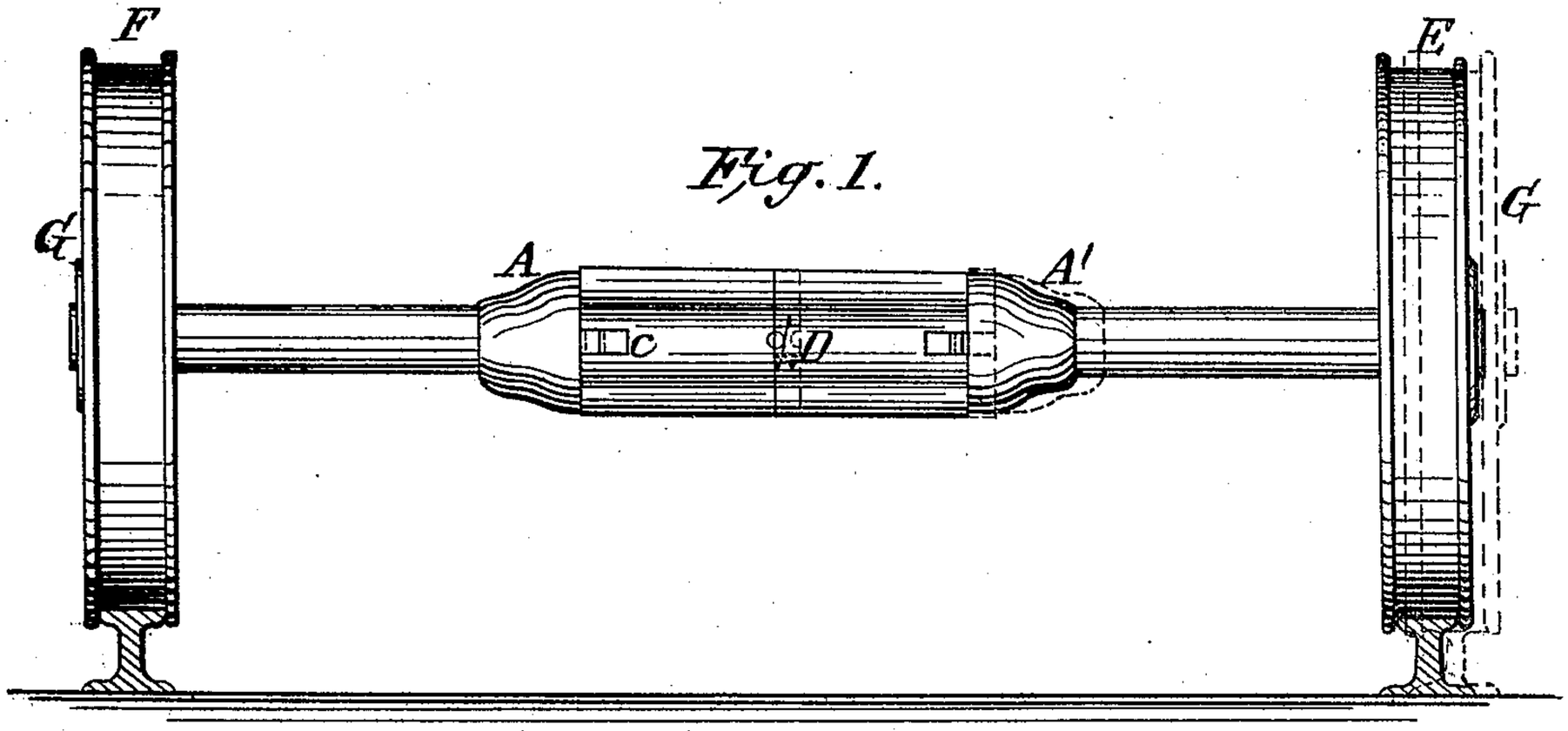
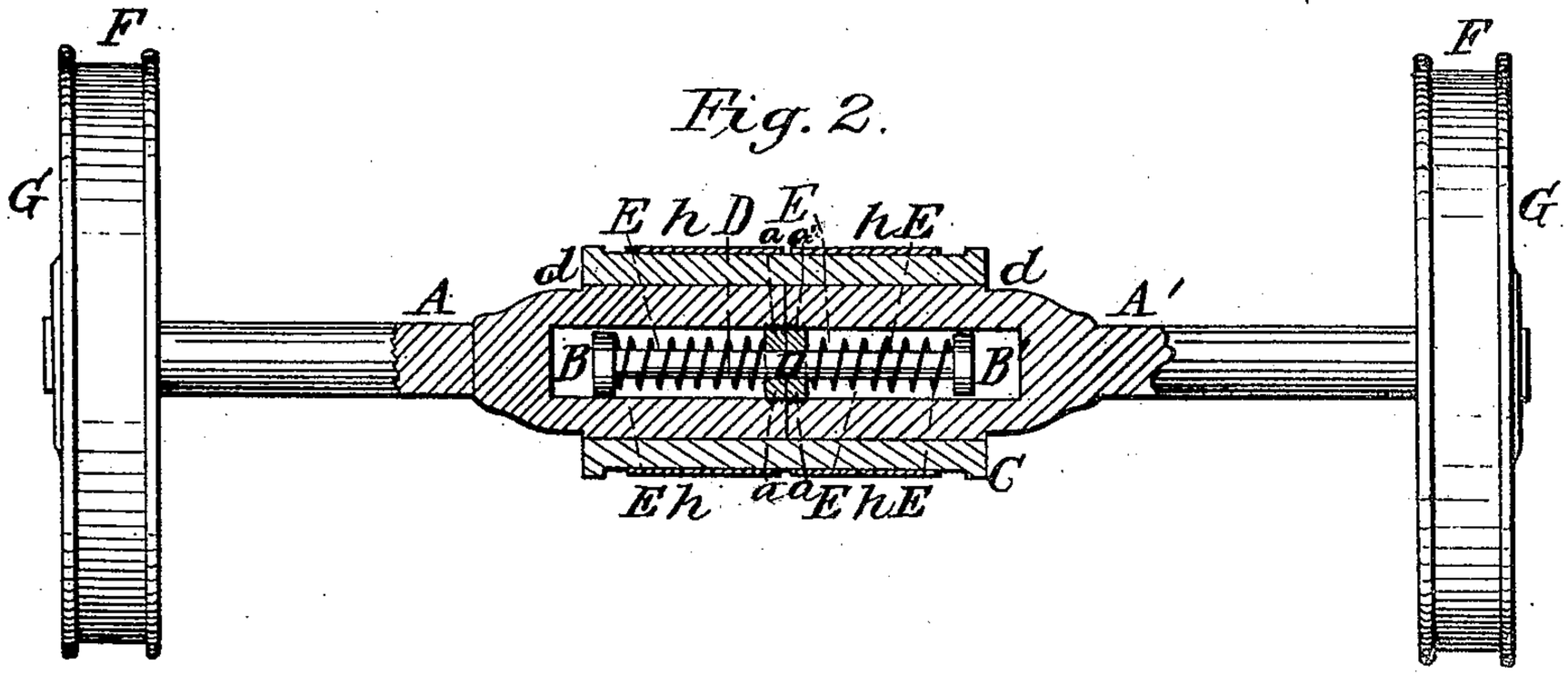


Fig. 2.



Witnesses:

E. Lorden Washington D.C.

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Inventor:

R. Cromelien

United States Patent Office.

ROWLAND CROMELIEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 79,555, *dated July* 7, 1868.

IMPROVED CAR-AXLE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROWLAND CROMELIEN, of Washington, county of Washington, District of Columbia, have invented a new and improved Mode of Constructing Self-Adjusting Car-Axles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in halving an axle in two parts from its centre, the centre part being near three times as thick as the ends, from which centre it is swelled down to the size for carrying the car-wheel.

In the centre of each half part of the axle is drilled or cored out sufficient room to lay in a bolt or iron rod. The bolt is secured by nuts on the inside, leaving it sufficiently free for the spring to open and close while the wheels are running over the sharpest curve, two sliding guards lying on the outside surfaces, above and below the centre of the axle, in such a manner as to slide to and fro in a groove as the spring works, and which guards are covered by a plate of iron over the opening, so secured by screws that said guards cannot get out, and also preventing dust from gathering on the inside of the axle.

The guard also gives additional strength to the main axle if in any possible way the spring should break.

Elliptic springs working on the same principle can be made and secured to work in each inside central half end in an upright position, working to and fro on slots, and do equally well. Gutta percha may also be used for the spring.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a top view.

Figure 2 represents a front view partially sectioned.

A, left part on side of car-axle.

A′, right part of car-axle.

B, left hole, drilled or cored in axle.

B′, right hole, drilled or cored in axle.

C C, sliding guard, dove-tail shape.

D, rod or bolt.

a a, nuts near the connection of the two axle parts.

d d, nuts on the bolt or rod holding the spiral spring.

E, spiral spring.

F, wheels.

G, double flanges.

h, cover over centre of axle.

I construct my axle of two separate pieces of wrought iron, as shown A A, which forms the complete axle of from six to eight feet long when put together for use as required.

The bolt or rod of iron lying longitudinally in the body of the axle, which is bored out of the swelled part for the purpose, is to be in length of from fifteen to eighteen inches, and one or two inches thick, securely fastened in the inside; and over and around said bolt is also securely placed a strong steel or brass spiral spring, which works to and from the centre. The two guards are pieces of iron, of grooved shape, working or sliding below and above the surface of the body of the axle in a dove-tailed groove cut on each end of the centre part of the axle, to be of size and thickness to suit the object, and are fully secured inside from getting out of place.

With the use of the car-axles constructed on the above-described principles serious accidents, which now often occur from split rails, would be avoided; also wheels with double flanges could be used, thereby greatly lessening the possibility of the cars running off the track, and making this mode of travelling more safe and greatly saving both life and property.

Axles constructed on this principle would also allow the cars to run from a narrow-gauge track on to a broad-gauge, and *vice versa*.

I disclaim the invention of car-axles, iron bolts, guards, or springs, except for the formation and use of my new improvement.

I claim the construction of the swelled axles A A′ when made hollow, and with inner shoulders and nuts *a a′*, and enclosing the bolt D with its spring E E, all as arranged, and combined with the outer clamps as and for the purpose set forth.

R. CROMELIEN.

Witnesses:

WM. E. WARNER,

ALONZO EATON.