

(No Model.)

4 Sheets—Sheet 1.

L. DAFT.

ELECTRIC LOCOMOTIVE.

No. 283,759.

Patented Aug. 28, 1883.

Figure 1.

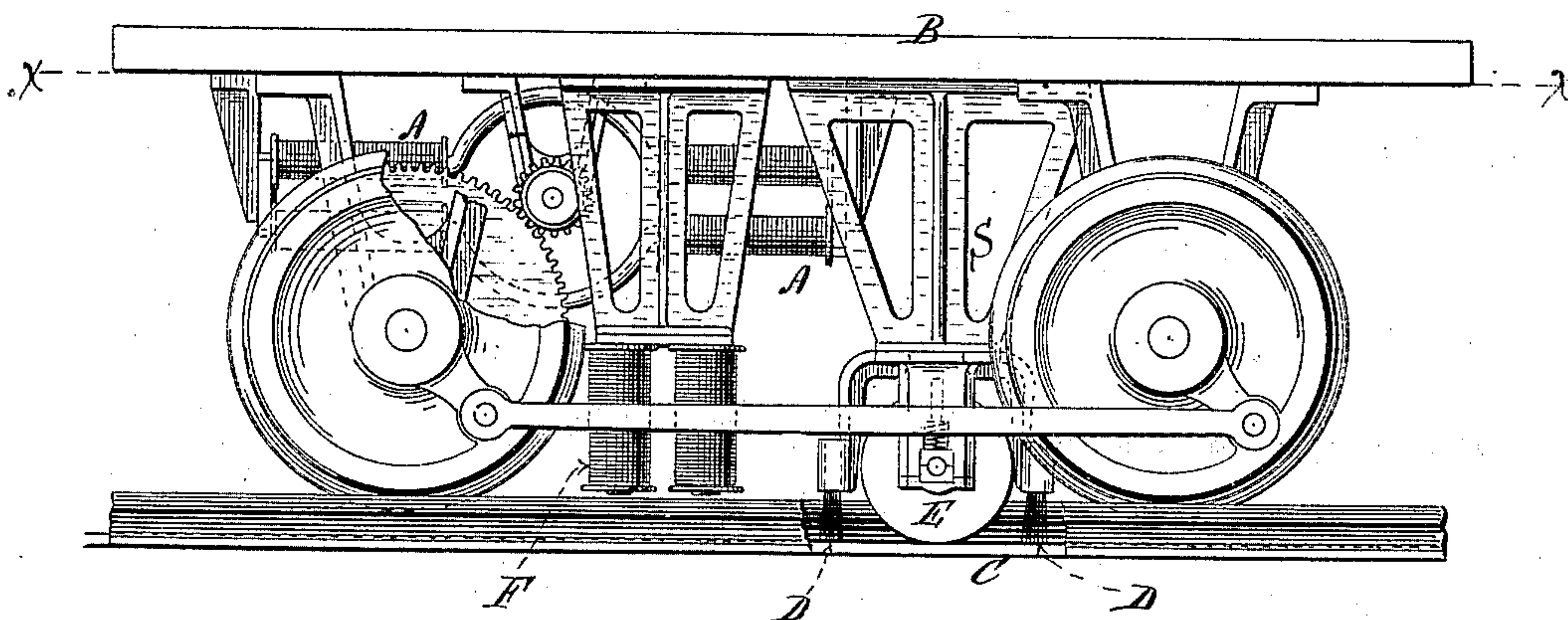
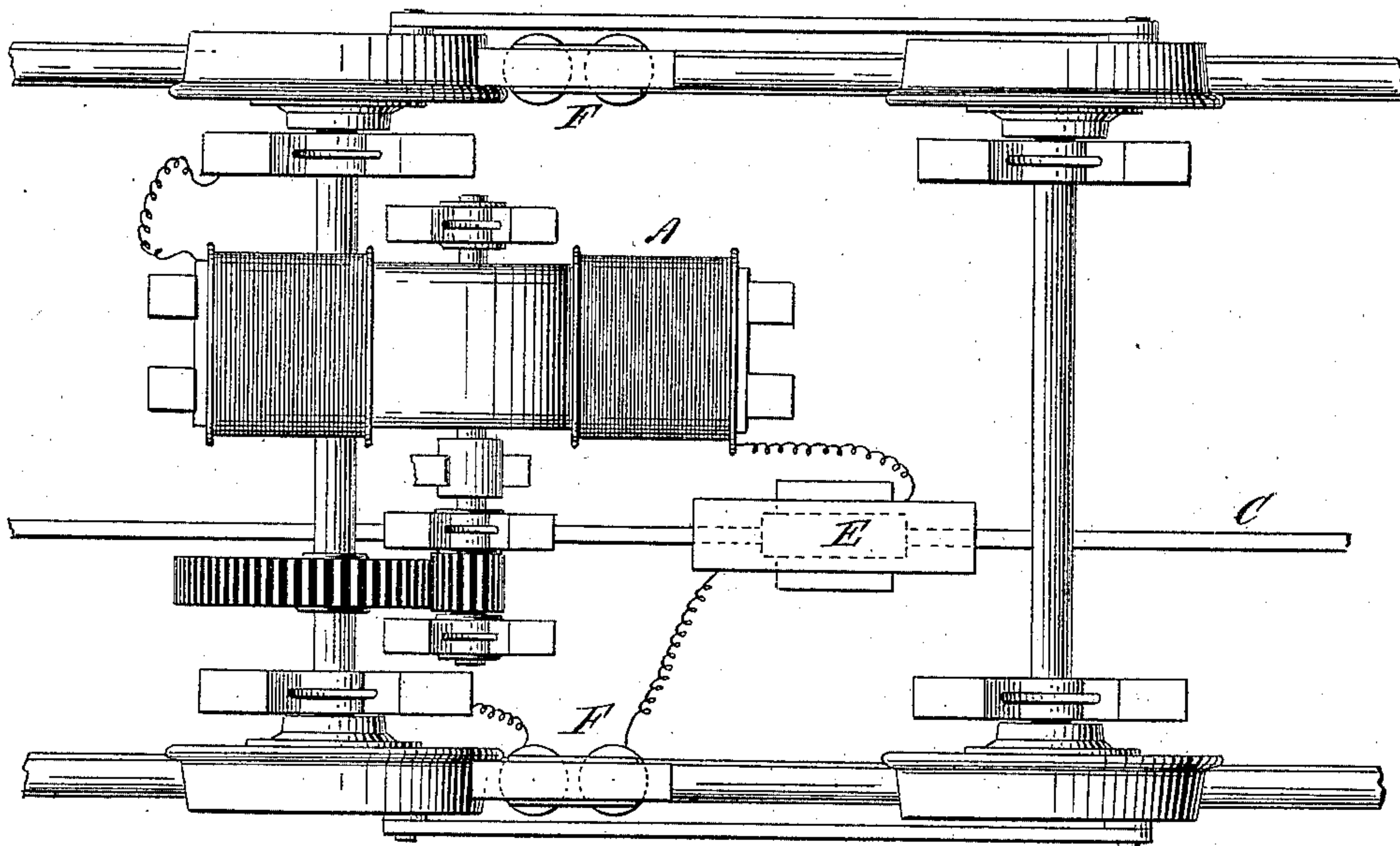


Figure 2.



Witnesses:
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Inventor
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Figure 3.

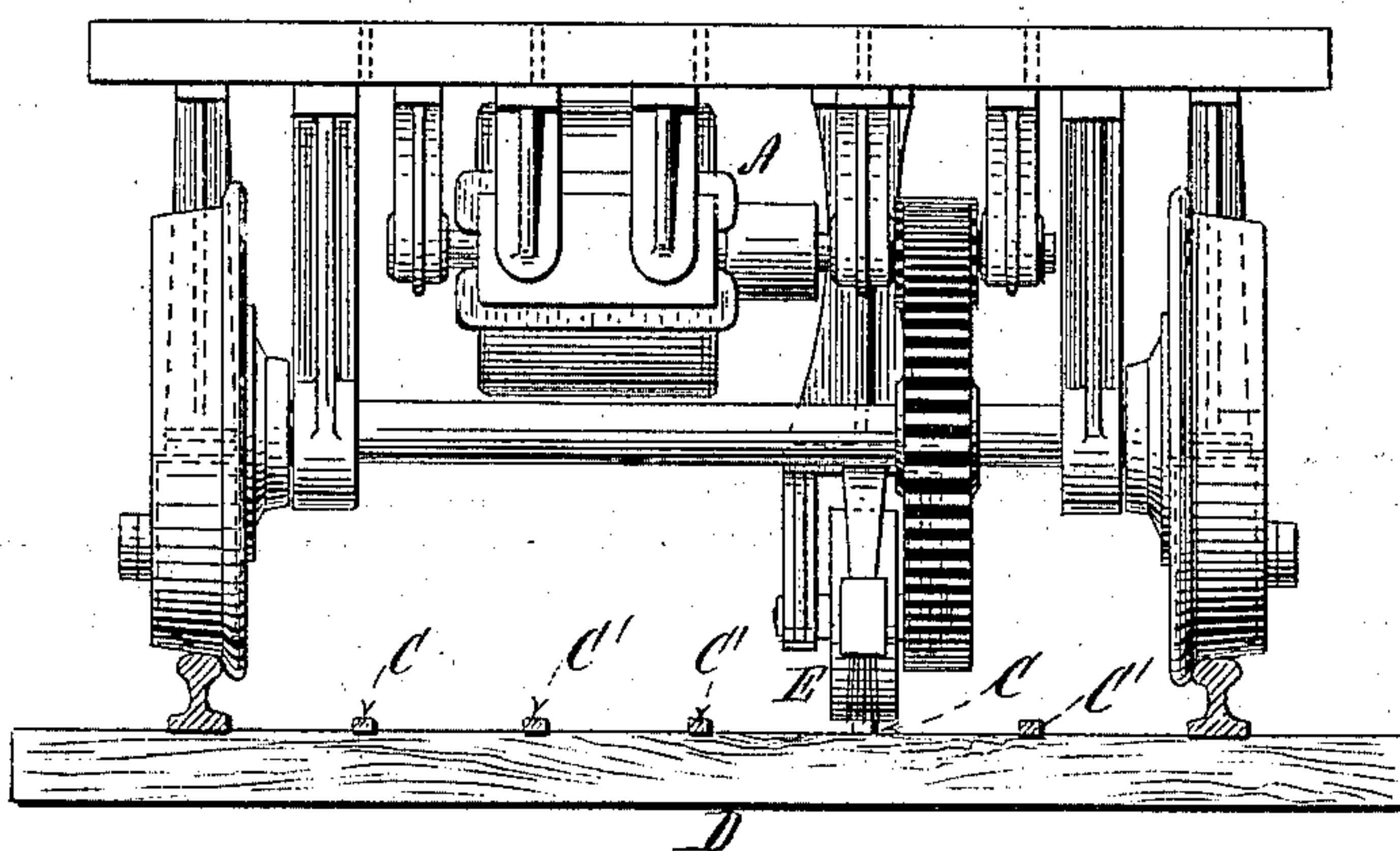
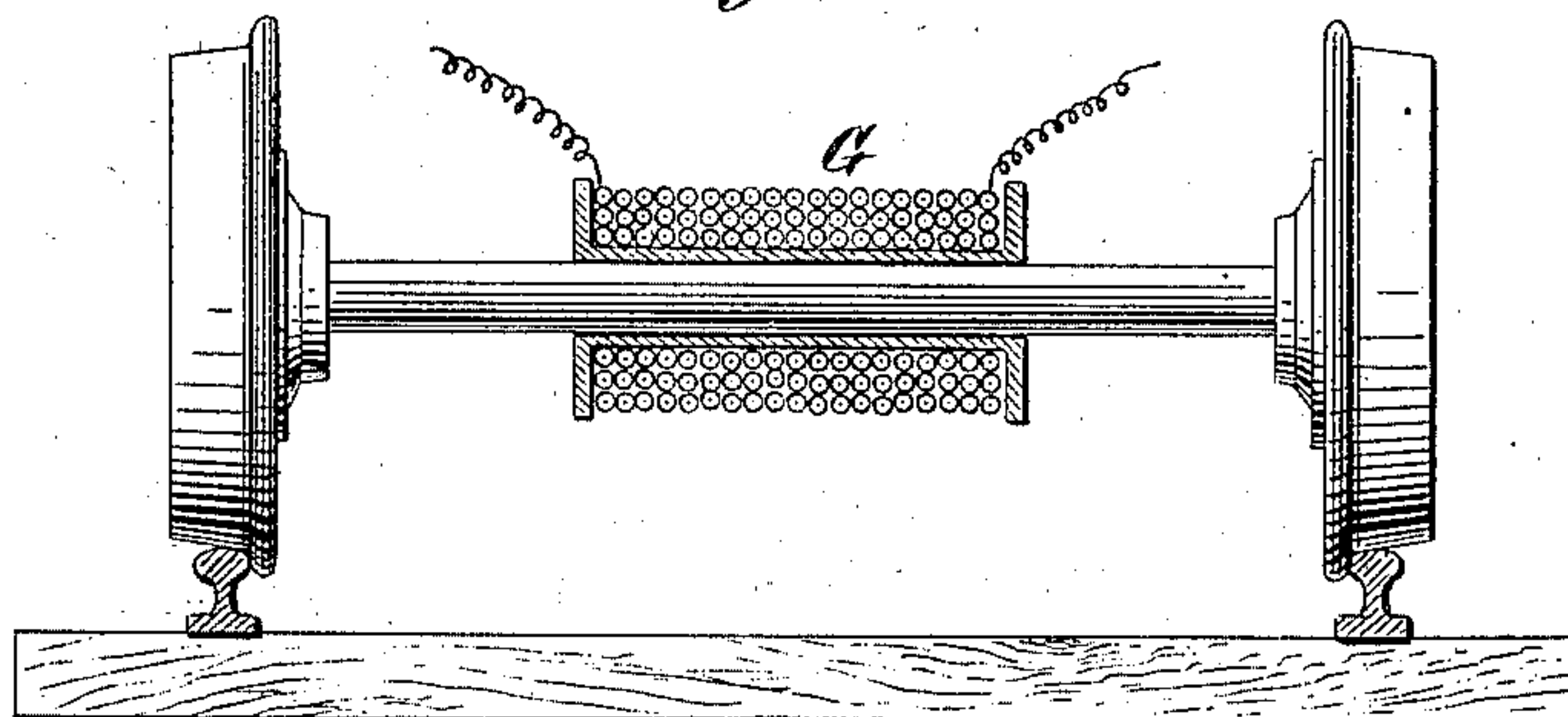


Figure 4.



Witnesses:
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Figure 5.

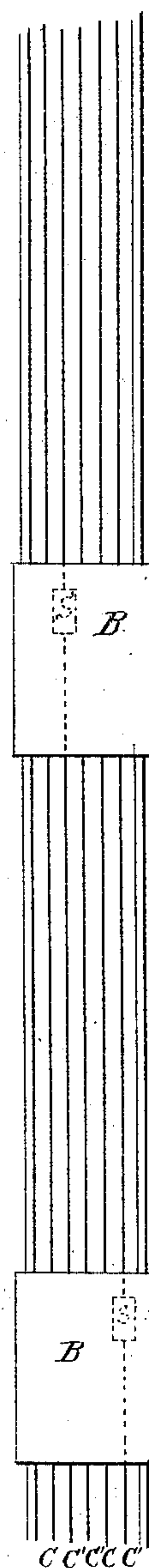
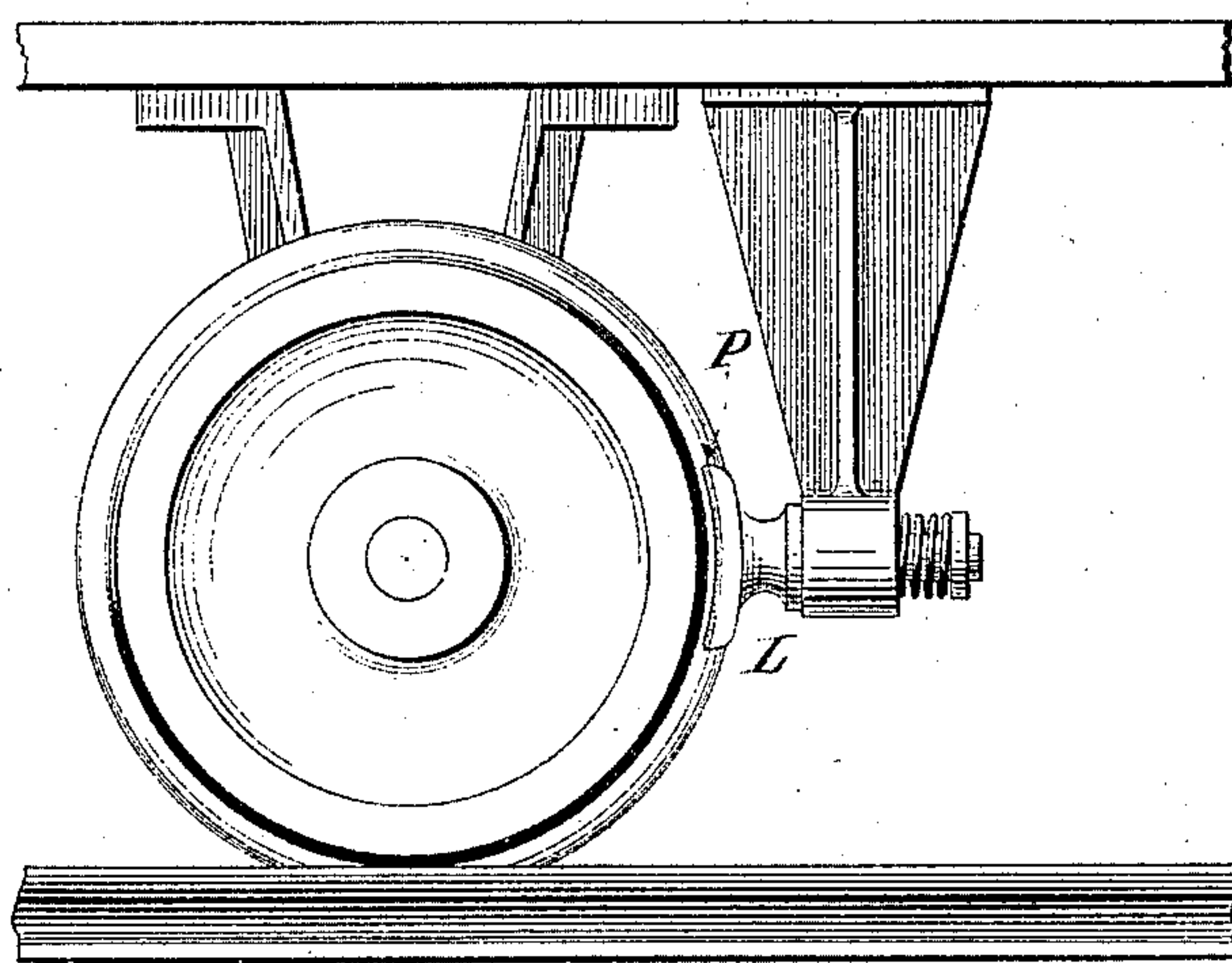


Figure 6.



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Figure 7.

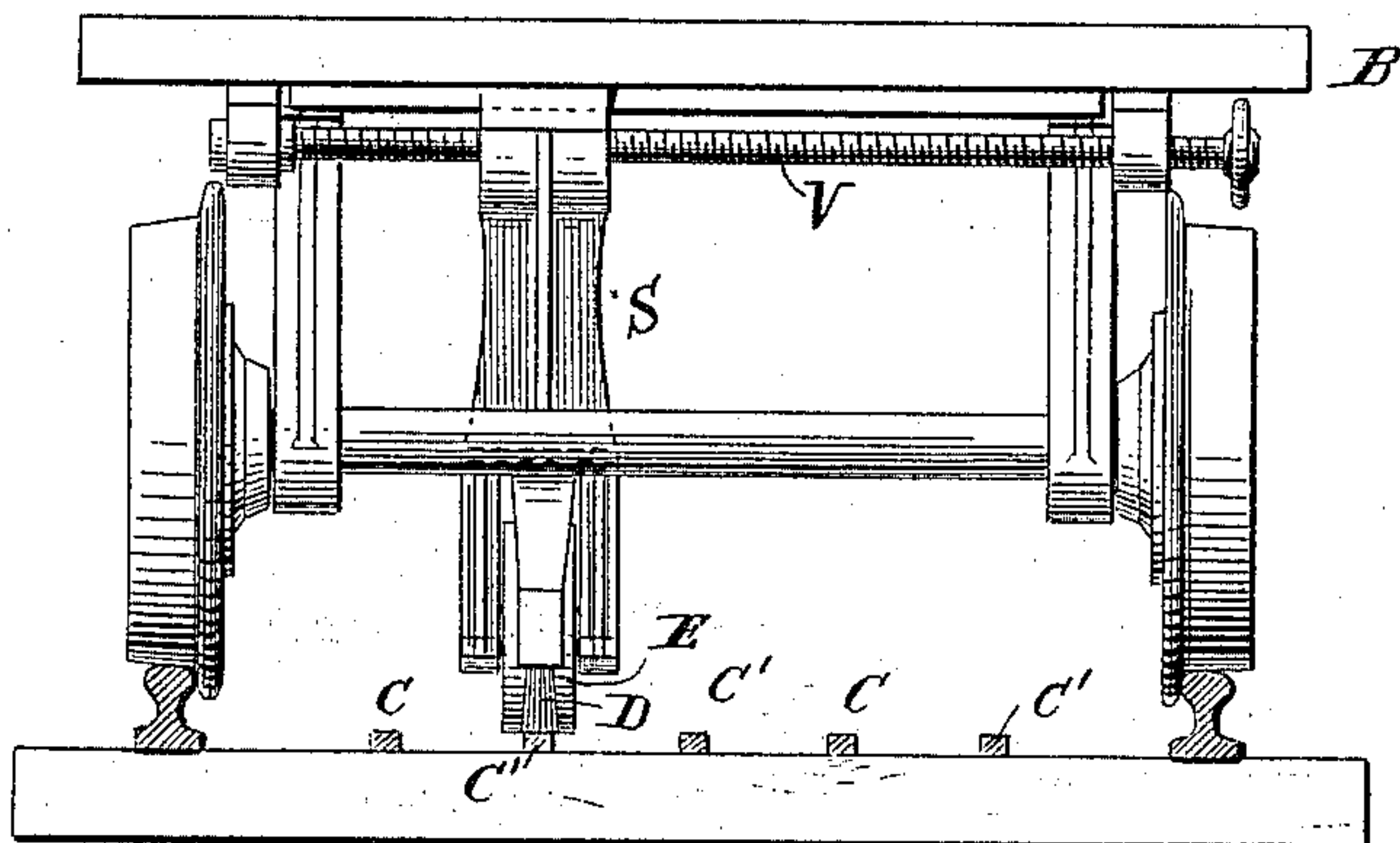
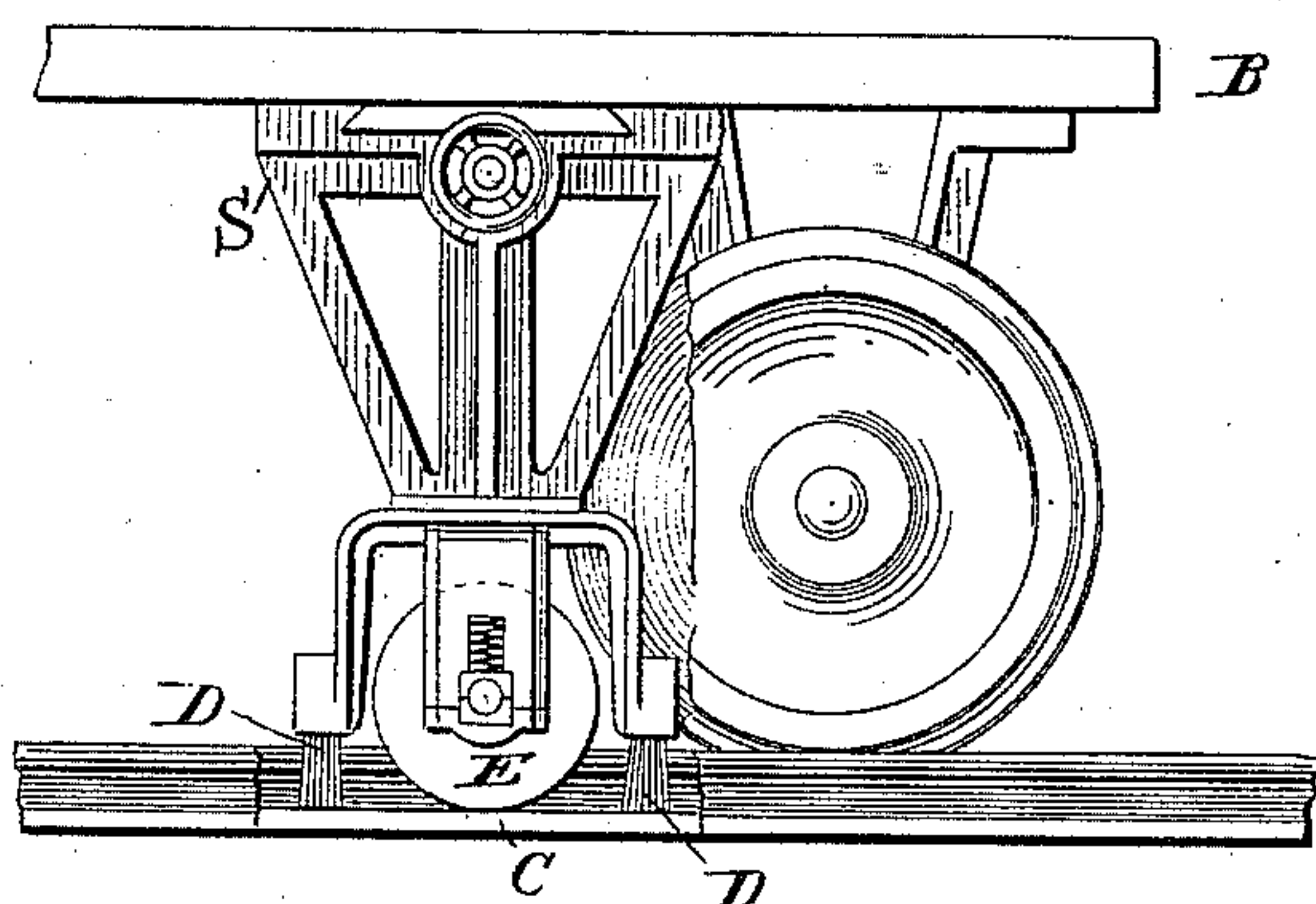


Figure 8.



Witnesses:
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Inventor:
Leo Daft
By his attorney
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UNITED STATES PATENT OFFICE.

LEO DAFT, OF GREENVILLE, NEW JERSEY.

ELECTRIC LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 283,759, dated August 28, 1883.

Application filed September 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEO DAFT, a citizen of Great Britain, now residing at Greenville, in the State of New Jersey, have invented a new and useful Improvement in Electric Locomotives, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

My invention relates to an improvement in electric locomotives or engines, especially to the mechanism for driving and stopping the same. By means of my improvement I am enabled to run a number of engines upon the same section by means of contiguous conductors carrying independent currents. I am also enabled to dispense with the weight hitherto necessary to insure traction, by substituting therefor magnetic attraction on the rail, which I consider a very important feature of my invention. I am also enabled by means of an electric brake of peculiar construction to arrest with any desired rapidity the motion of the engine.

My improvements will be readily understood from the accompanying drawings, in which Figure 1 represents a vertical view of part of my engine; Fig. 2, a plan view through Fig. 1 on the line $x x$, the platform being removed; Fig. 3, an end view taken at the dynamo end; Figs. 4 and 6, means of applying my electric brake. Fig. 5 is a diagram of a railway, conducting rails, and two locomotives on the same track-section. Fig. 7 is an end view, showing the contact-roller and adjusting appliance; and Fig. 8 is a side view of the same.

B represents generally the frame of the engine; A, the dynamo. In the method shown in Figs. 1, 2, 3 the electricity is conveyed to the engine by means of a separate conductor, C, placed between the rails. Upon this conductor C a wheel runs, which is forced against the conductor by means of a spring, as shown in Fig. 1. Upon either side of this wheel are placed brushes D, adapted to clean this rail or conductor before the wheel E comes in contact with it.

In order to run a number of trains upon the same section, I provide a number of independent conductors, C', (shown in Fig. 3,) and I arrange the wheels E and brushes so that they

may be laterally adjusted to come in contact with any one of said conductors at pleasure. This wheel may be supported upon a laterally-adjustable dovetailed slide, S, provided with a screw, V, to move it, or other suitable device may be used. Thus if five trains are to be run upon the same section, their wheels would be arranged to come in contact each with an independent conductor, which might, if desired, be supplied from an independent dynamo at the power-station. My driving-wheels are linked together by connecting-rods, so as to insure all the traction possible.

Between my driving-wheels I arrange traction-magnets F, preferably over both rails. These magnets are arranged as near as possible to the rails, and should be carried upon some part of the frame of the truck which is not supported on springs. As soon as a current is passed through these magnets the driving-wheels will be drawn tightly against the track, thereby increasing the traction of the locomotive to any desired extent. I prefer to use an electric brake for the arrest of my engine. In the form shown in Figs. 4 and 6 a coil surrounds the iron axis of the wheels, which axis is magnetically connected with said wheels. A current passing through said coil will magnetize the wheels, thereby increasing their tractive power upon the rails. An iron brake, L, is provided, which is withdrawn from contact with the surface or thread of the wheels by a spring. When the wheels are magnetized, the spring will be pressed and the shoe of the brake brought in contact with the surface of the wheel. I prefer to make an independent shoe, P, as shown in Fig. 6, to prevent absolute contact. It is obvious that these brake arrangements may be applied instantly the whole length of the train as well as upon the engine.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of two or more engines running upon the same section of track and two or more independent conductors laid side by side at different distances from the rails and extending parallel to the track, and adapted to supply electricity to the different locomotives, substantially as described.

2. The combination of an electric locomotive,

a conductor parallel to the track, a wheel in continuous contact with the conductor, and a brush or brushes clearing the conductor in advance of its contact with the wheel, substantially as described.

5 3. The combination, in an electric-railway engine, of a wheel and means for magnetizing the same, and a brake adapted to be attracted to said wheel, when said wheel is magnetized,

by being made the pole of a magnet, thereby to braking the wheels and preventing the slip of the wheel upon the track simultaneously, substantially as described.

LEO DAFT.

Witnesses:

GEO. H. EVANS,
WM. A. POLLOCK.