

(No Model.)

W. FELDMANN.

ELEVATED RAILWAY WITH SUSPENDED VEHICLE.

No. 574,316.

Patented Dec. 29, 1896.

Fig. 4.

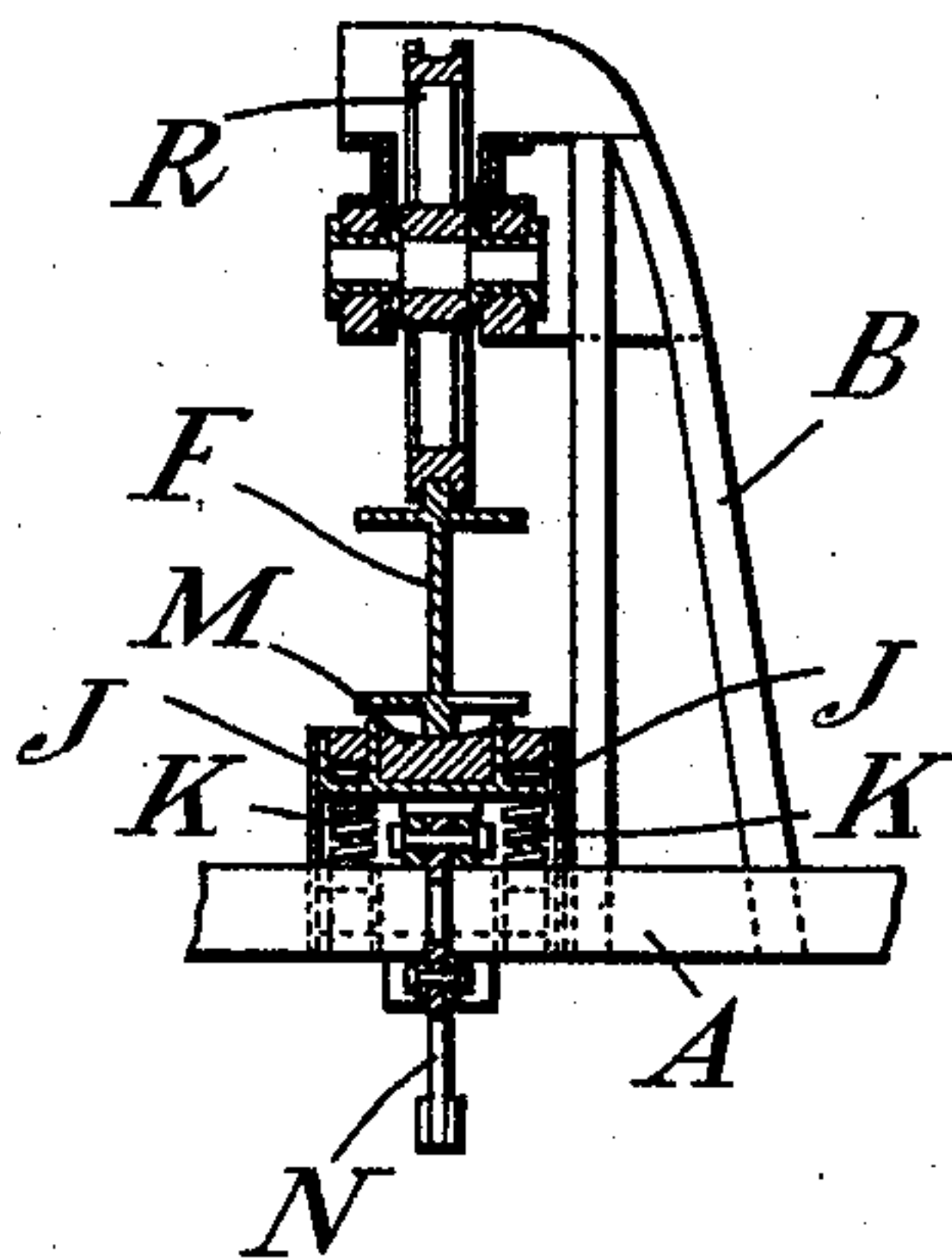


Fig. 5.

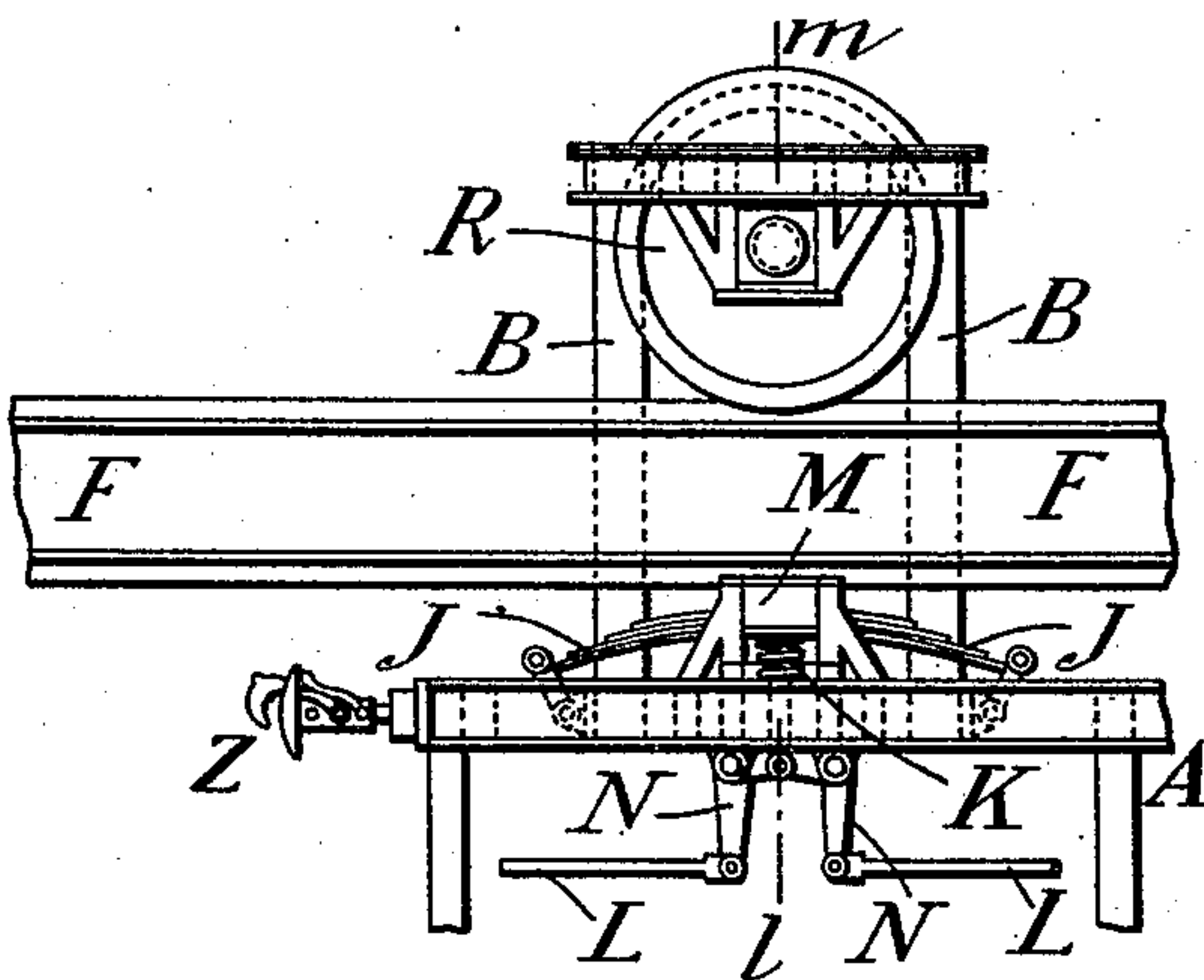


Fig. 1.

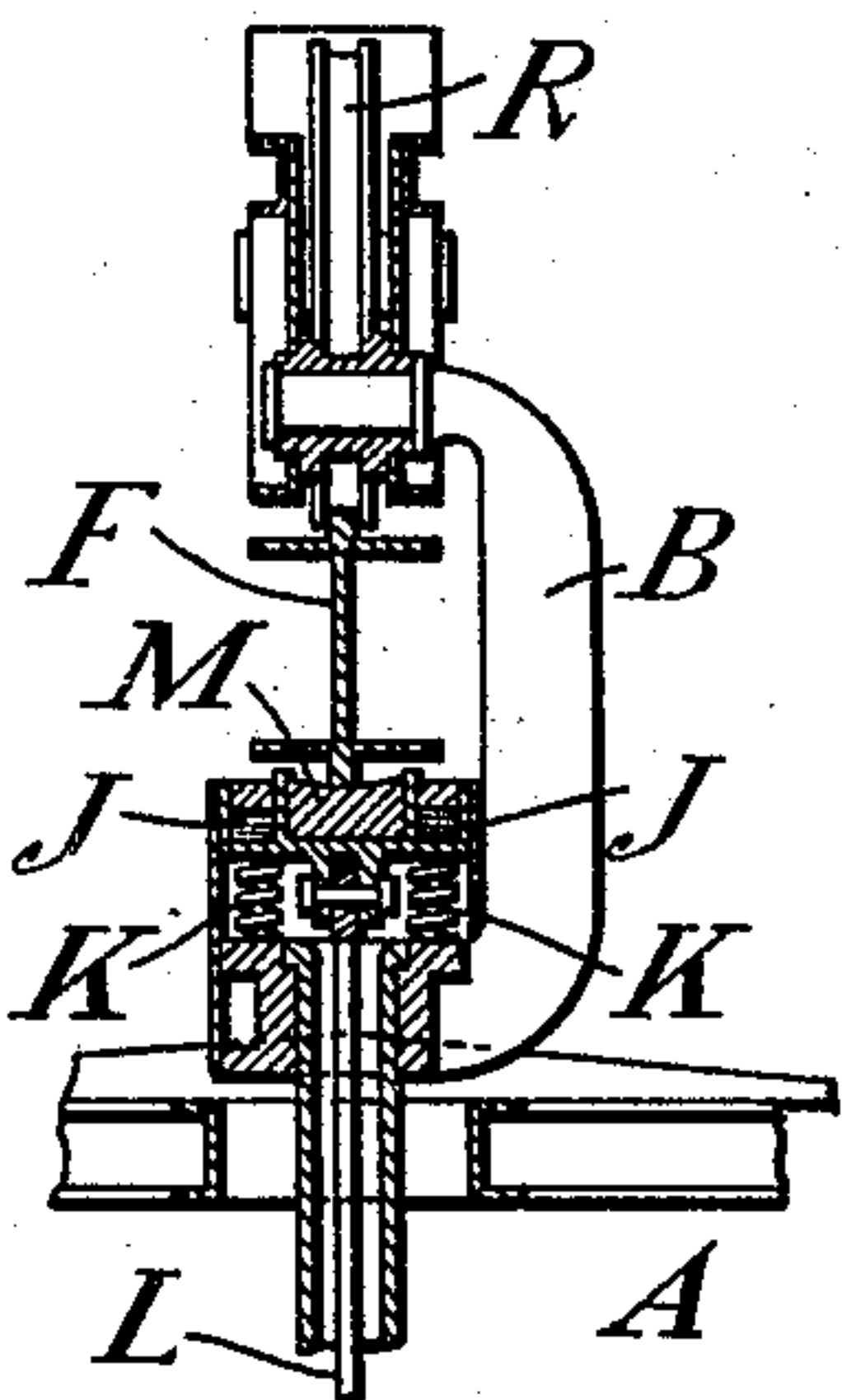


Fig. 2.

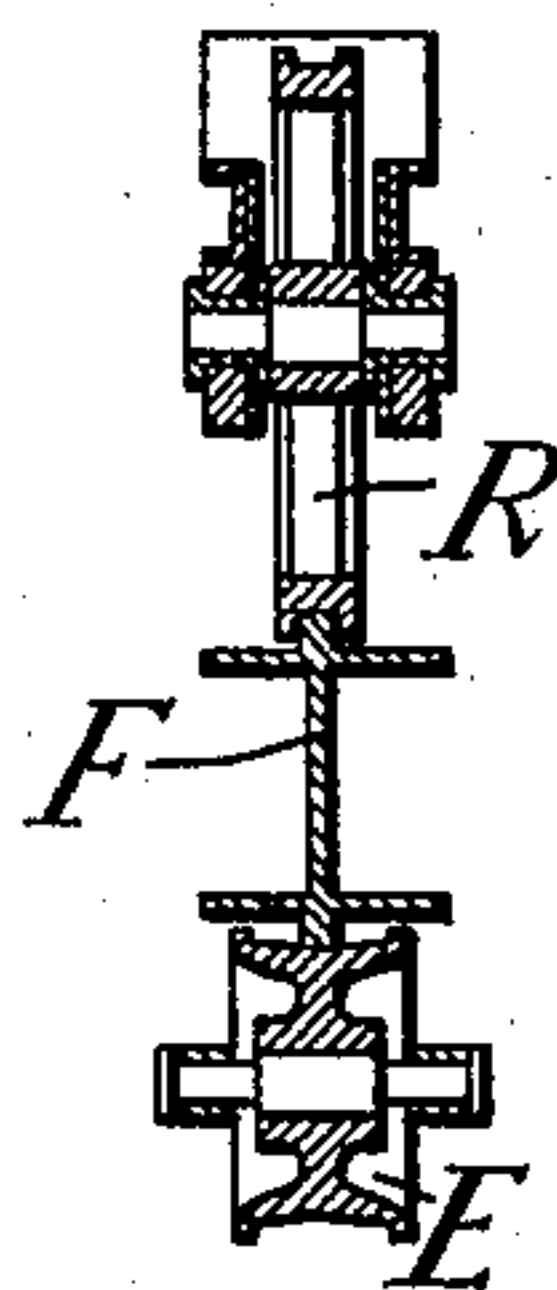
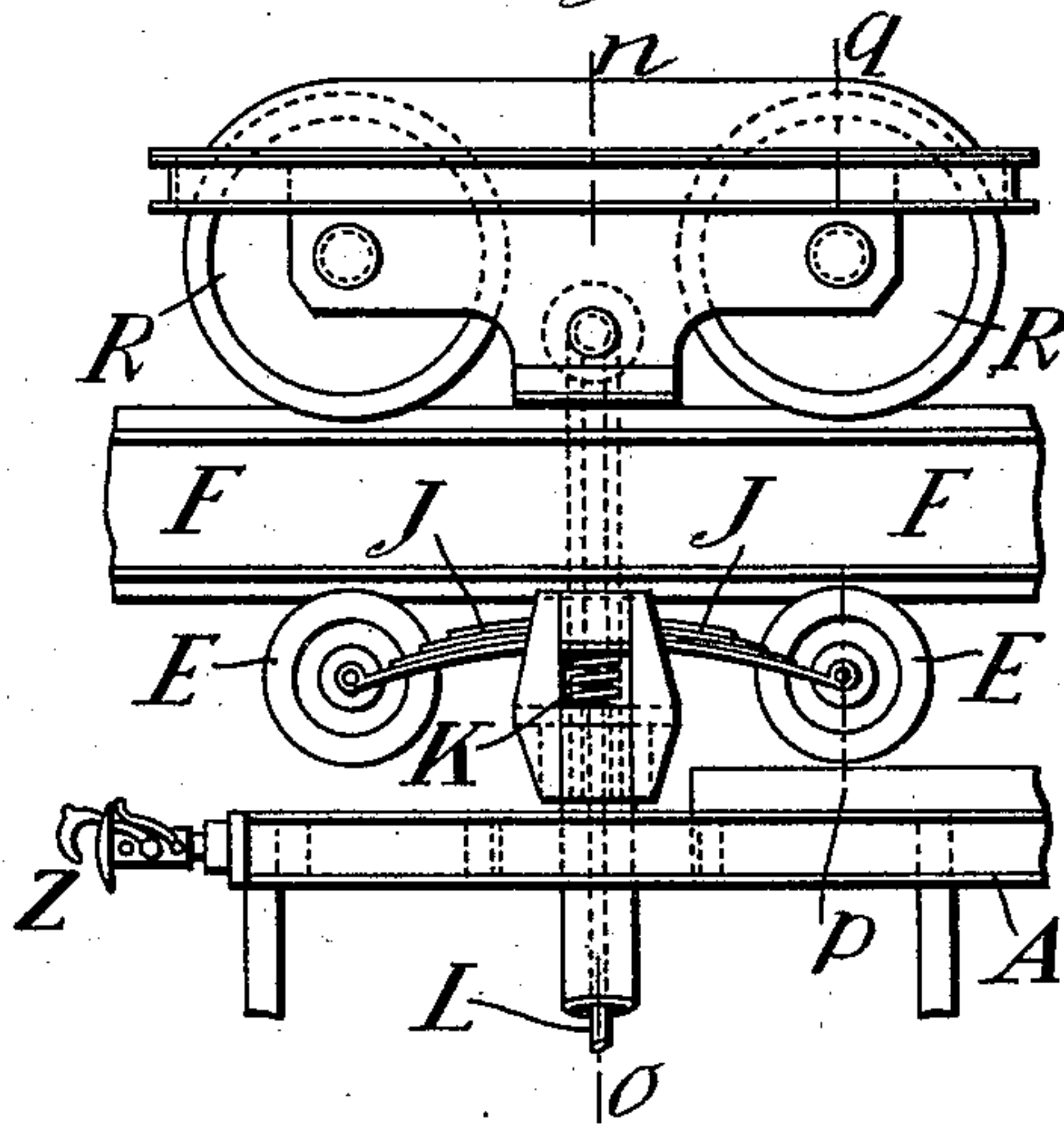


Fig. 3.



Witnesses.

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ELEVATED RAILWAY WITH SUSPENDED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 574,316, dated December 29, 1896.

Application filed October 3, 1896. Serial No. 607,768. (No model.)

To all whom it may concern:

Be it known that I, WILHELM FELDMANN, a subject of the Emperor of Germany, residing at Nuremberg, Bavaria, in the Empire of Germany, have invented certain new and useful Improvements in Elevated Railways with Suspended Vehicles, of which the following is a specification.

This invention relates to the construction of elevated railways with suspended vehicles in which guard-rollers are made to bear against the under side of the rail, such as are described in Langen's patents, Nos. 546,928 and 550,513, dated, respectively, September 24 and November 26, 1895.

The present invention relates to means whereby such guard-rollers, instead of being merely held up to the rail without exerting pressure thereon, as was heretofore the case, are pressed with slight spring-pressure against the rail, whereby, while such pressure does not prevent the necessary lateral motion of the rollers relatively to the rail which must occur when the carriage is deflected laterally by considerable force, it is sufficient to prevent or considerably reduce minor oscillations, such as are produced by the movement of persons within the vehicle and the like, and which, if occurring frequently, may be unpleasant to the passengers. In combination with the said arrangement there is also employed a spring-brake apparatus, as I will describe with reference to the accompanying drawings, in which—

Figures 1, 2, and 3 show one arrangement for the purpose, Fig. 1 being a vertical section on line *n o*, Fig. 3; Fig. 2, a section on line *p q*, and Fig. 3 a side view of so much of a vehicle as is required to explain the invention. Fig. 4 shows a section on line *l m*, Fig. 5, which shows a side view of another arrangement with the brake device alone.

In the constructions at Figs. 1, 2, and 3 the guard-rollers *E* are pressed against the under side of the rail *F* by means of the springs *J*, which in their turn are pressed upward by the helical springs *K*, so that by drawing downward the rod *L*, connected to the springs *K*, the pressure of the guard-rollers against the rails can be reduced. The upward pressure of the rollers being thus capable of regulation, the extent to which the oscillations

of the vehicle are controlled can also be regulated.

The guard-rollers *E* are here shown of the construction disclosed in Langen's application, Serial No. 550,836, filed May 27, 1895, where, instead of forming the bottom of the rail with a circular curvature on which the guard-roller slides laterally, as described in the previous patents, the bottom of the rail is narrow and the guard-roller is widened and formed with a concave curved surface, so as to enable it to slide laterally over the rail when the vehicle oscillates laterally. It will be seen, therefore, that although the guard-rollers are pressed to a certain extent against the rail the suspended vehicle is free to perform lateral oscillations produced by a certain force.

Between the springs *J* is placed a brake-block *M*, which, when the rod *L* is not pulled downward, is pressed by the springs *K* against the under side of the rail *F*. This pressing of the brake-block is independent of the adhesion-weight of the vehicle. The brake-power will be the greater the stronger the springs *K* are made. Preferably these springs are made so strong that when their action is not restricted the brake-block *M* will be pressed with such force against the rail that even under the most unfavorable conditions a sufficient brake action is obtained.

When no braking action is to take place, the rod *L* is pulled downward with such force that the brake-block *M* does not bear at all against the rail. The springs *J* are in this case made of such strength that on drawing the brake-block out of action the rollers *E* will still be pressed against the rail and will only be made to release the same on exerting a further pull upon the rod *L*.

The arrangement above described with reference to Figs. 1 to 3 may be applied with advantage not only to the motor-vehicles, but also to passenger-cars that are drawn along by locomotives. In the latter case, if the car is attached to the locomotive and is to be transported thereby, the rod *L* is so arranged as to be subject to a pull of the locomotive of such strength that the brake-block is drawn out of action, while the guard-rollers are still pressed upward with the desired light pressure. Should the pull on the rod *L* be less-

ened, an automatic application of the brake will take place, so that if the car is uncoupled from the locomotive or if the coupling between them should break a sufficiently powerful
5 brake action would at once take place.

Figs. 4 and 5 show the same arrangement of the brake for goods-vehicles. With these vehicles it is not necessary to reduce the lateral oscillations by pressing the guard-rollers
10 against the rails, and the guard-rollers can therefore be entirely dispensed with, and the running off the rails by the running-wheels R can be insured against by a suitable formation of the brake-block.

15 In Figs. 4 and 5 the brake-block M is pressed upward against the under side of the rail by means of the springs K. The withdrawal of the brake-block is effected by a pull on one of the rods L, which acts upon the brake-
20 block through the elbow-levers N. The connection of these vehicles with the locomotive-engine is just the same as described with reference to the passenger-vehicles, so that in the event of the breaking of a coupling or on
25 the locomotive becoming detached from the vehicles the brake is put in action automatically.

In the above arrangements the vehicles are otherwise constructed in any known manner

suitable for railways with suspended vehicles. 30
The running-wheels R support the body A of the vehicle by the bracket B.

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim— 35

In suspended vehicles of elevated railways, the combination of guard-rollers E pressed against the under side of the rail by means of springs, such as J, a brake-block M, also pressed against the under side of the rail by
40 springs K, which at the same time press the first-named springs J upward, the action of these parts being controlled by a rod L, in such manner that on exerting a certain pull upon the said rod, the brake-block is alone
45 removed from the rail, while on exerting a further pull the guard-rollers are also more or less relieved of the spring-pressure acting upon them, substantially as and for the purposes described. 50

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of September, A. D. 1896.

WILHELM FELDMANN.

Witnesses:

WALTER DIETZ,
CHRISTIAN MAÜL.