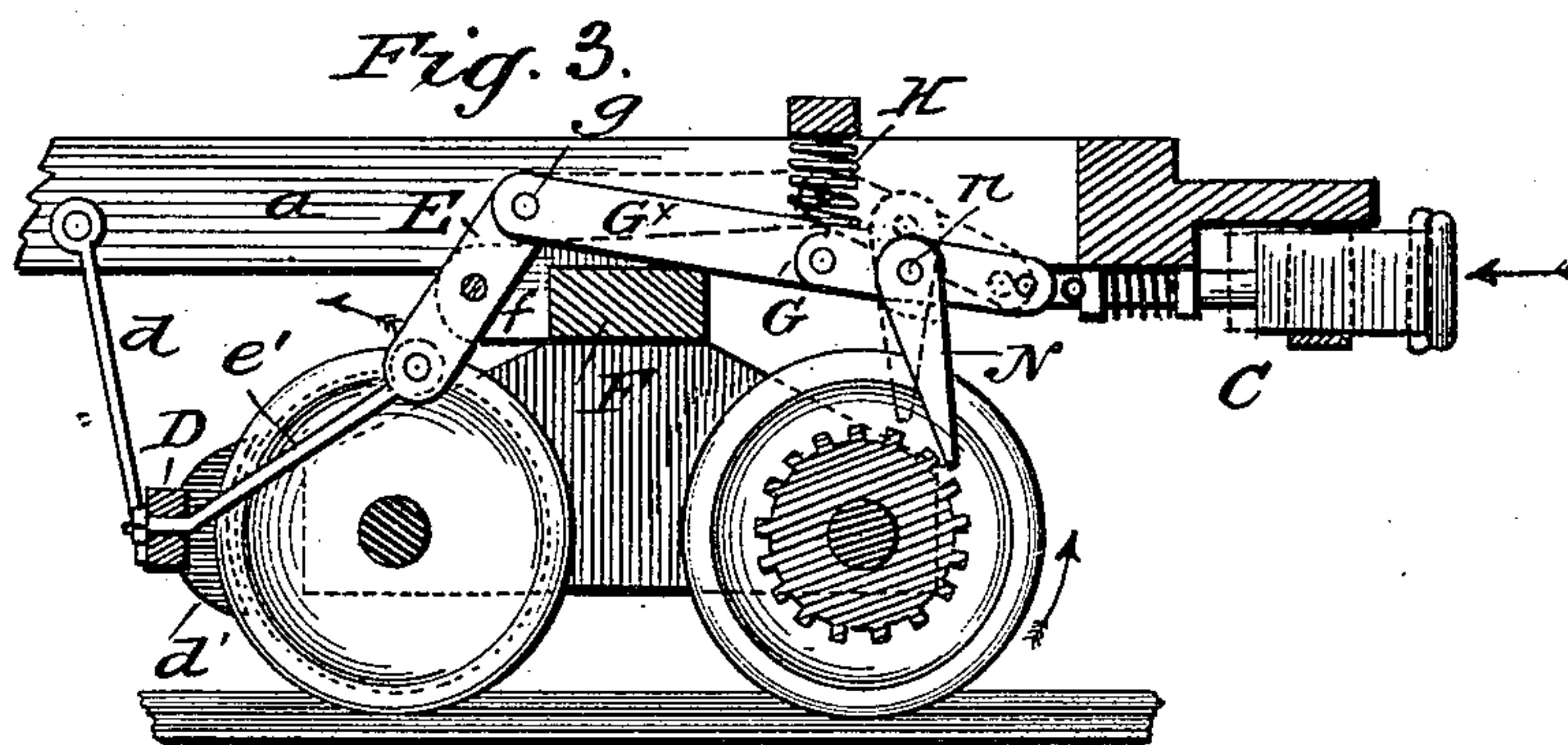
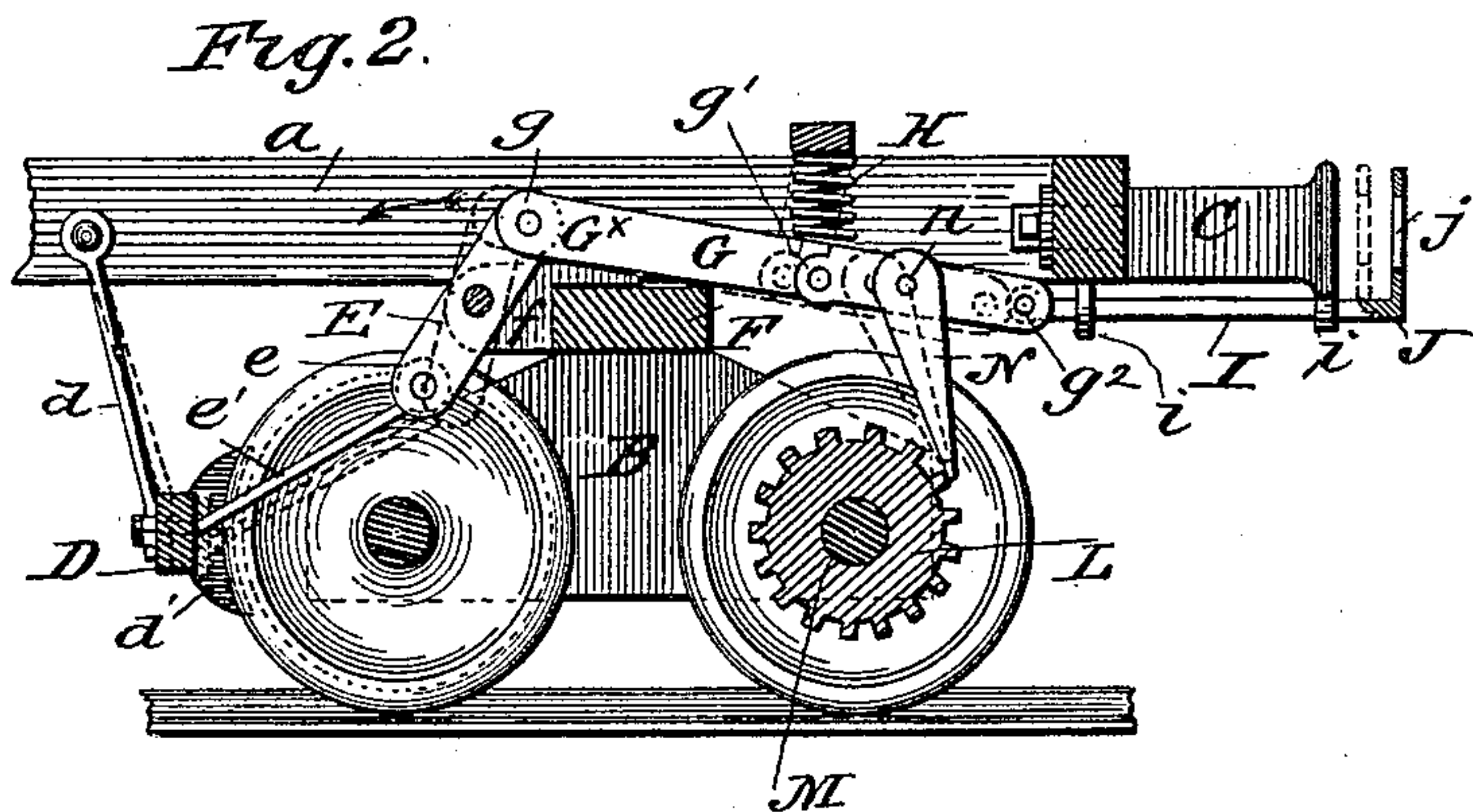
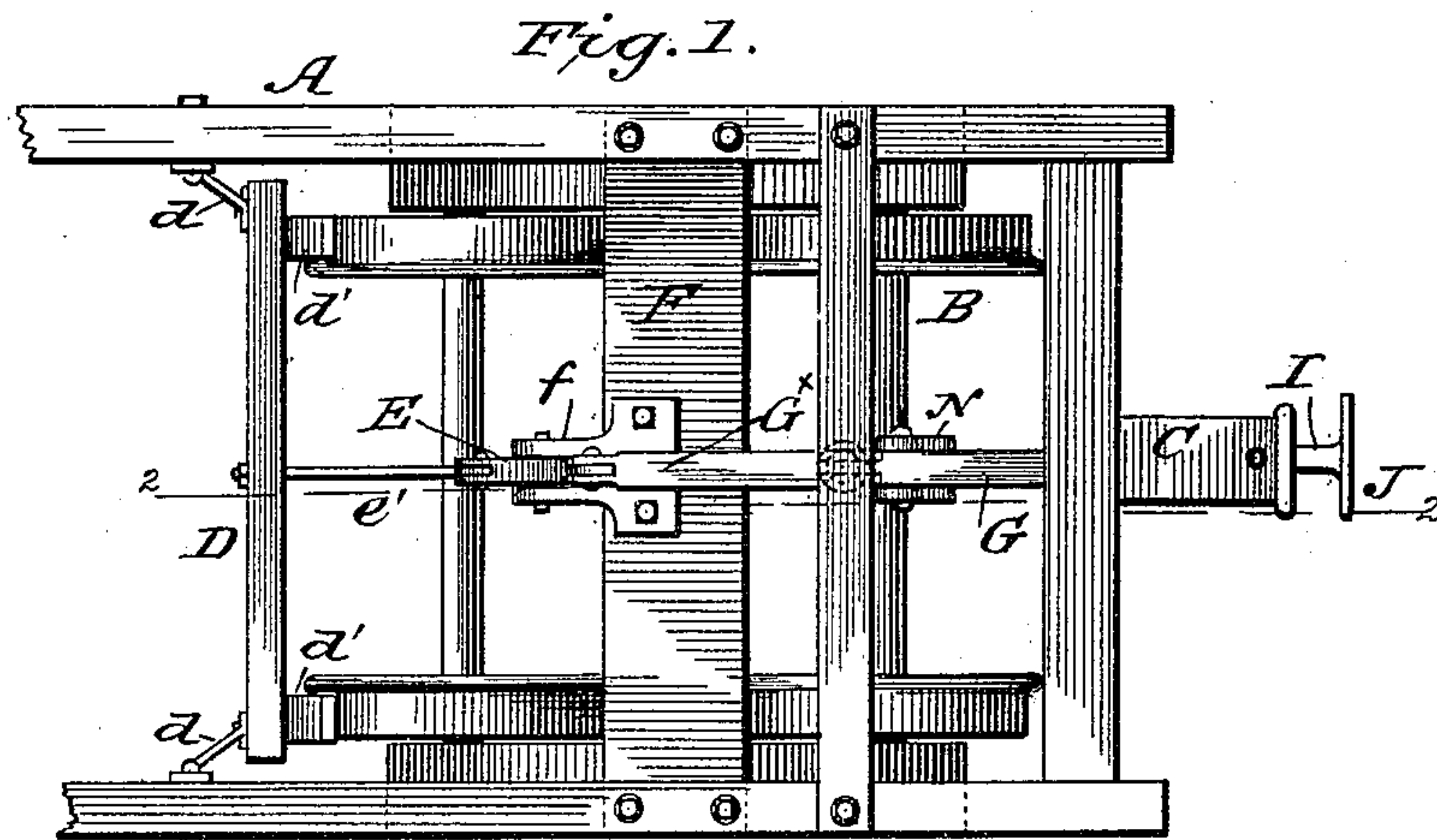


(No Model.)

W. T. RICKMAN.
AUTOMATIC CAR BRAKE.

No. 471,022.

Patented Mar. 15, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM TURNER RICKMAN, OF FERN BANK, ALABAMA.

AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 471,022, dated March 15, 1892.

Application filed June 30, 1891. Serial No. 398,087. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TURNER RICKMAN, residing at Fern Bank, in the county of Lamar and State of Alabama, have invented certain new and useful Improvements in Automatic Car-Brakes, of which the following is a specification.

My invention relates to that class of car-brakes in which the brake mechanism is put in operative position by the pressure of the preceding car on the draw-bar; and it has for its object to provide a brake mechanism of this character which will be cheap and simple in construction, effective and positive in its operation.

It has also for its object to provide certain details of mechanism arranged to be operated by the car-axle which will serve to automatically throw the brake mechanism out of operative position when the car is backed and which will be shifted so as to allow for the automatic operation of said brake mechanism when the car is again moved in a forward direction.

With these objects in view my invention consists in certain details of mechanism and the novel arrangement and combination of parts, all of which will hereinafter be fully described in the annexed specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of my improved car-brake. Fig. 2 is a vertical longitudinal section on the line 2 2, Fig. 1; and Fig. 3 is a longitudinal section showing the brake mechanism connected with the ordinary draw-bar.

In the accompanying drawings, A indicates the truck-frame, B the truck, and C the draw-head, all of the ordinary construction.

D indicates the brake-bar, which is suspended by the swinging rods or bars *d* from the side beams *a a* of the truck-frame, and which are provided with the usual brake-shoes *d' d'*, as shown.

E indicates a lever, pivoted in a bearing *f*, projected rearward from the cross-beam F, which lever has its lower end *e* connected by the rod or chain *e'* with the brake bar D, while its upper end has a pivotal connection at *g* with an operating-bar G, centrally jointed, as at *g'*, being held in its normal or extended

position by means of the spring H, the forward end of such lever G being pivotally connected at *g*² with a buffer-arm I, held to move in bearings *i i* on the lower face of the draw-head, the front end of said arm having an upwardly-extending buffer-plate J, centrally apertured at *j* to admit of the passing of the ordinary coupling-link, said arm being held to its outermost position by the spring H, as clearly shown in Fig. 1 of the drawings. By this construction it will be observed that when the preceding car slacks its speed and back-pressure is applied to the buffer-plate J the arm I will be forced rearward and the lever E swung in the direction indicated by the arrow, which causes its lower end to pull on the rod or chain *e'* and draw the brake-bar in against the truck-wheels.

As it is necessary that the brakes be not applied when backing the car, I provide means which when the arm I is pushed rearward when backing will instantly serve to throw the brake mechanism out of operation and hold it so during the back movement of the car.

By reference to Fig. 2 it will be seen that just in advance of the jointed connection *g'* I pivot to the bar G a gravity pawl or latch N, which normally hangs in front of and on a toothed wheel L, fixedly held on the forward drive-axle M, which pawl N, when the wheel travels forward, is swung on its pivot *n*. When, however, the car is backed and the axle M revolves in a reverse direction, the toothed wheel will engage the lower end of the said pawl, lift it and carry it rearward, which pawl as it is lifted will bend the bar G (see dotted lines in Fig. 3) and cause the rear member G^x to be drawn forward, thereby pulling the upper end of lever E with it and forcing the brake-bar out of operative position. It will also be seen that when the pawl has been lifted over the top of the toothed wheel it will be held at such point so long as the car is being backed and the bar G remains in its bent position; but so soon as the car is again drawn forward and the bar G straightened out the pawl will be engaged by the toothed wheel and be carried forward over the front face of such wheel, thereby setting the brake mechanism in position to automatically brake the car when back-pressure is ap

plied by the slacking of the speed of the preceding car.

While I prefer to use the buffer-bar I, it being readily adapted for use in connection
5 with any of the ordinary draw-heads, it is manifest that it may be dispensed with and the jointed bar G connected direct to the draw-bar, as shown in Fig. 3.

Having thus described my invention, what
10 I claim, and desire to secure by Letters Patent, is—

1. The combination, with the brake mechanism operated by back-pressure from the preceding car, of a toothed wheel on the axle,
15 a pawl N, pivoted to the brake-operating bar and arranged to be engaged by the said tooth-wheel when the car is backed to automatically release the brake mechanism, and means for holding said pawl and brake mechanism out
20 of operation during the said back movement of the car, substantially as and for the purpose described.

2. The combination, with the brake mechanism consisting of the brake-bar, the pivoted lever E, and the jointed lever G, connected
25 with the lever E, and operated to apply the brake by back-pressure from the preceding car, of the axle M, the toothed wheel L, and the pawl N, all arranged substantially as and for the purpose described. 30

3. An improved car-brake mechanism consisting of the spring-actuated buffer-arm I, the pivoted lever E, the jointed arm G, pivotally connected at its ends to the lever E and arm I, the brake-bar connected with lever E, the axle, the toothed wheel, the gravity-pawl pivoted at its upper end to the jointed arm G, and the spring H, all arranged substantially as shown, and for the purpose described. 35

WILLIAM TURNER RICKMAN.

Witnesses:

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SOLON C. KEMON.