

(No Model.)

A. A. ST. CLAIR.

CAR BRAKE.

No. 358,948.

Patented Mar. 8, 1887.

Fig. 1.

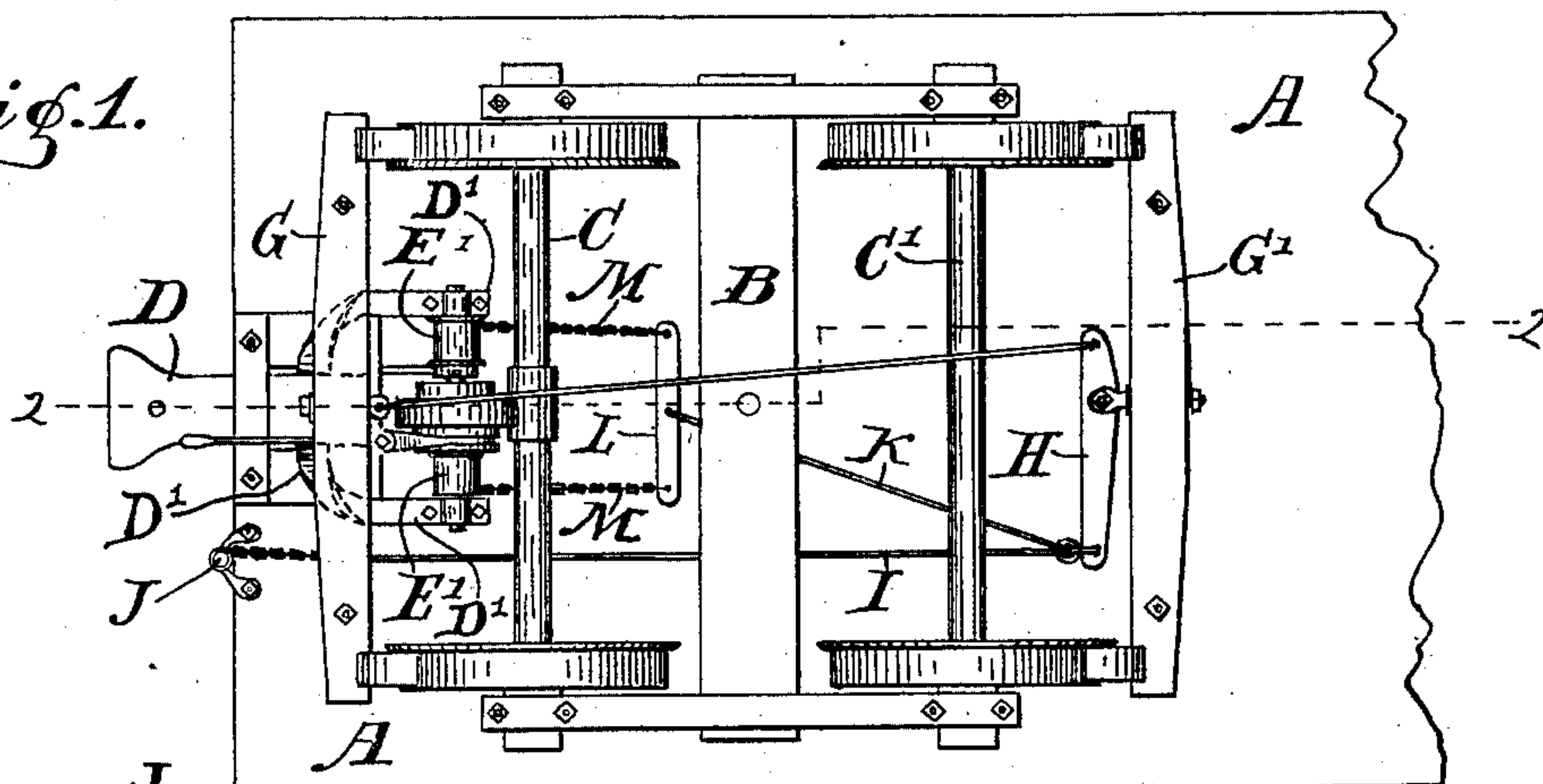


Fig. 2.

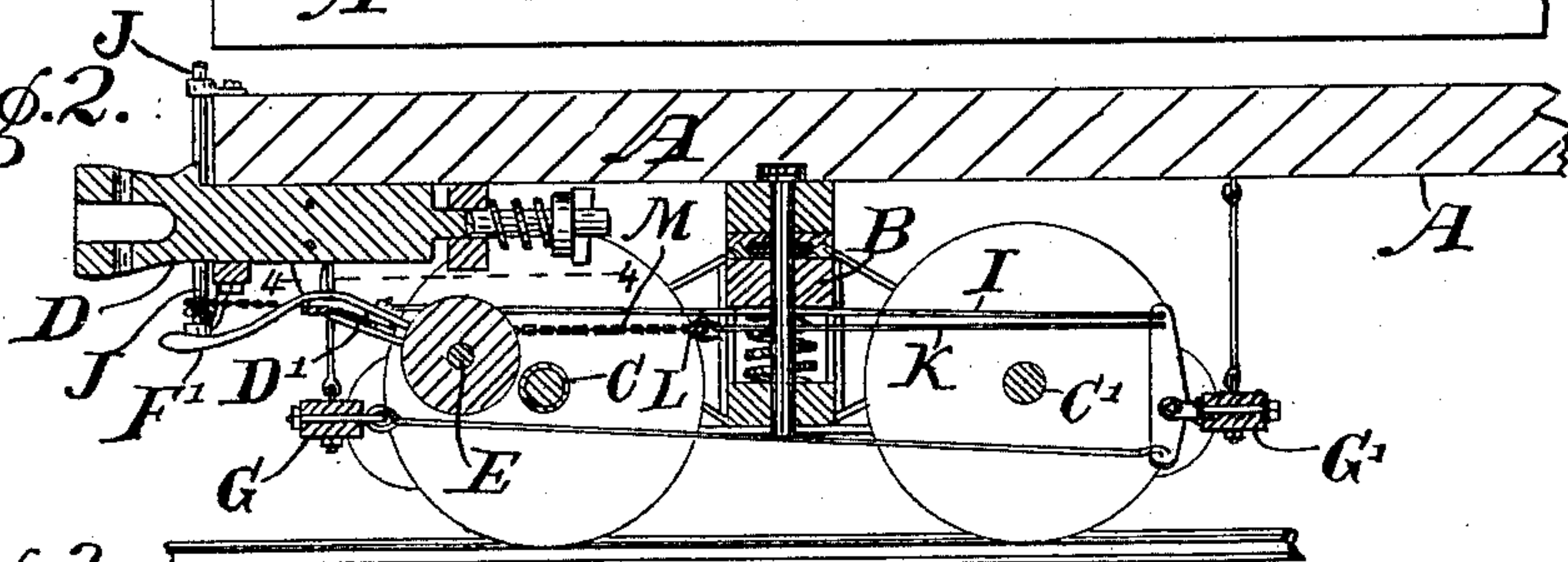


Fig. 3.

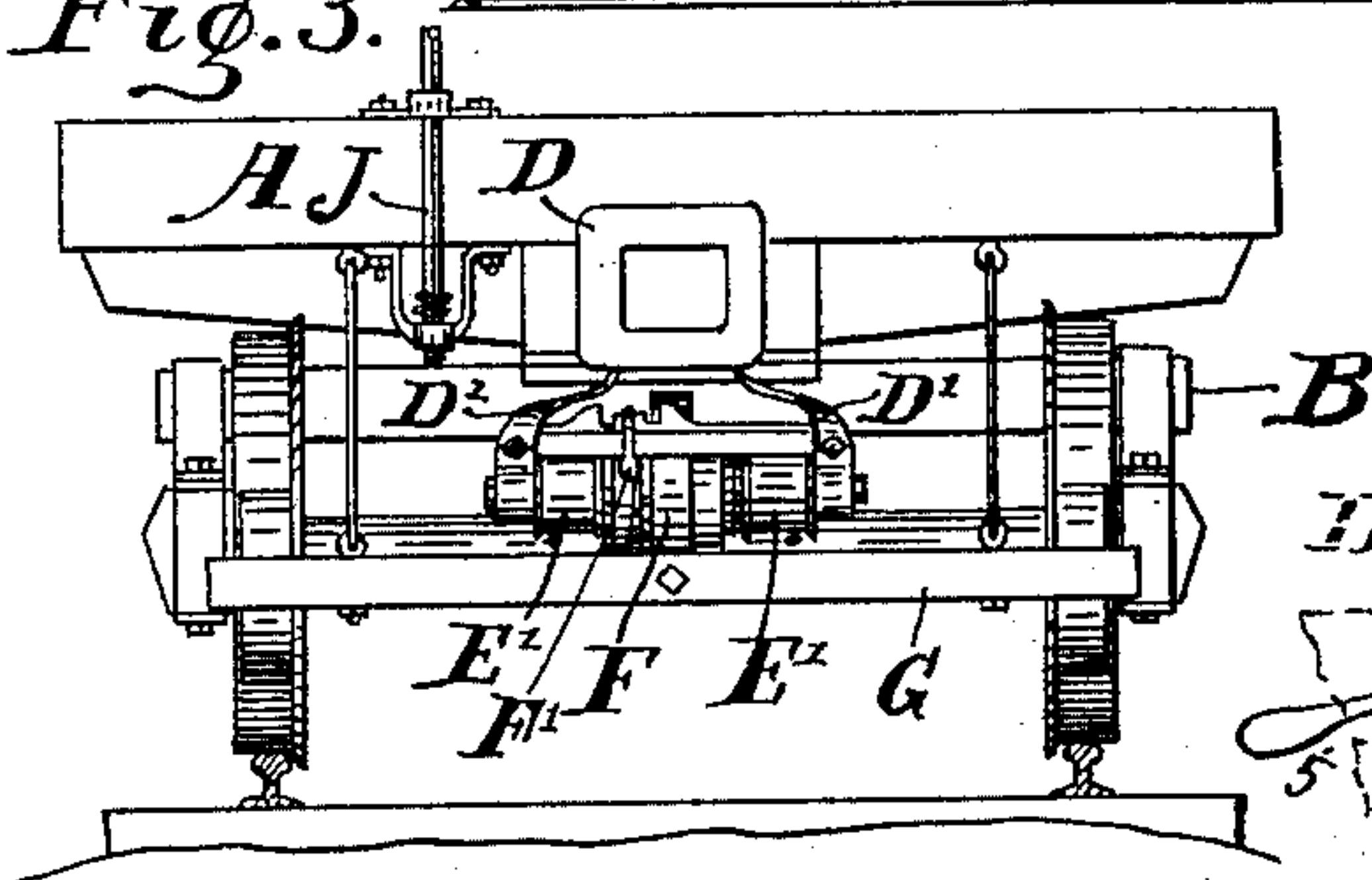


Fig. 4.

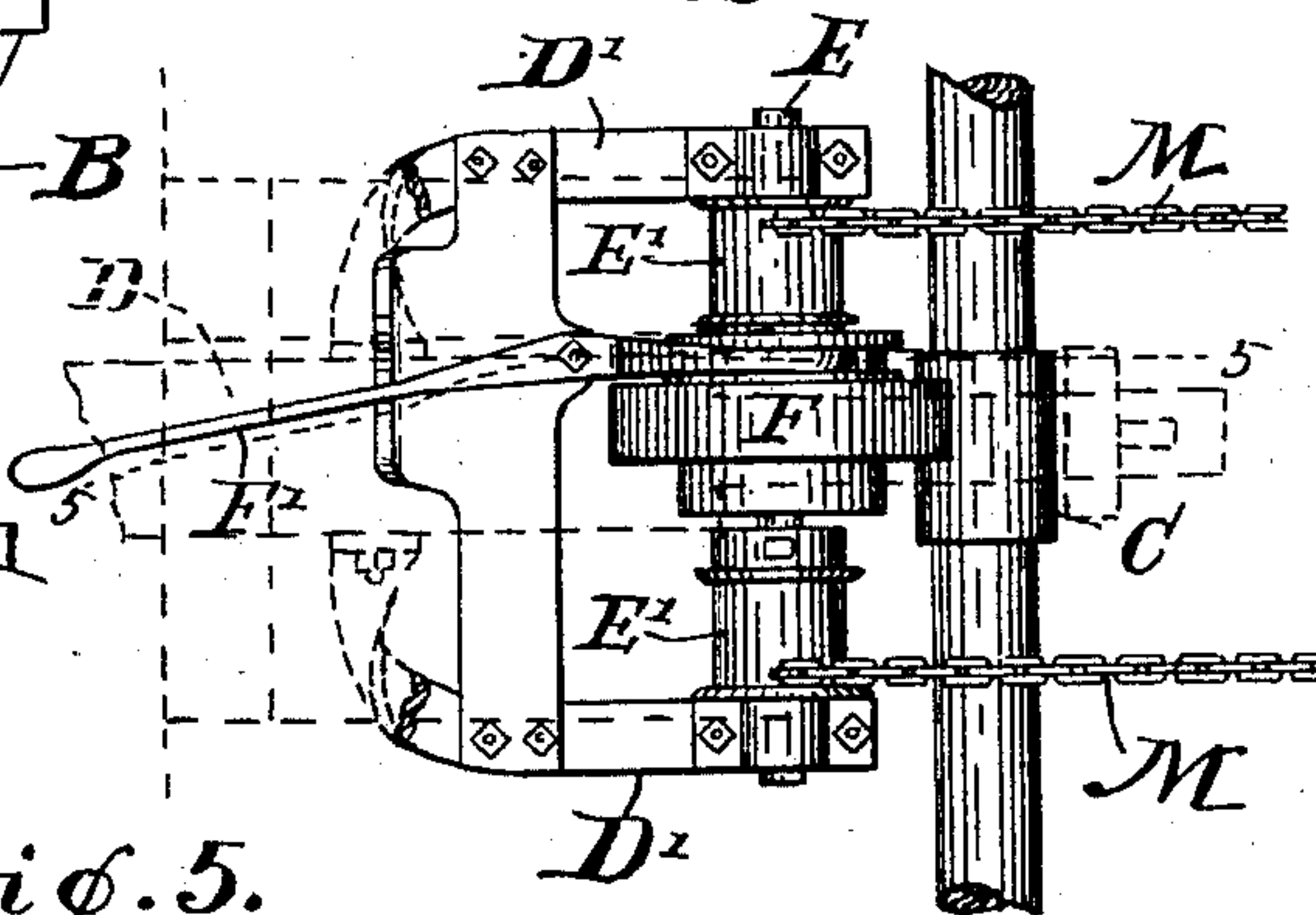
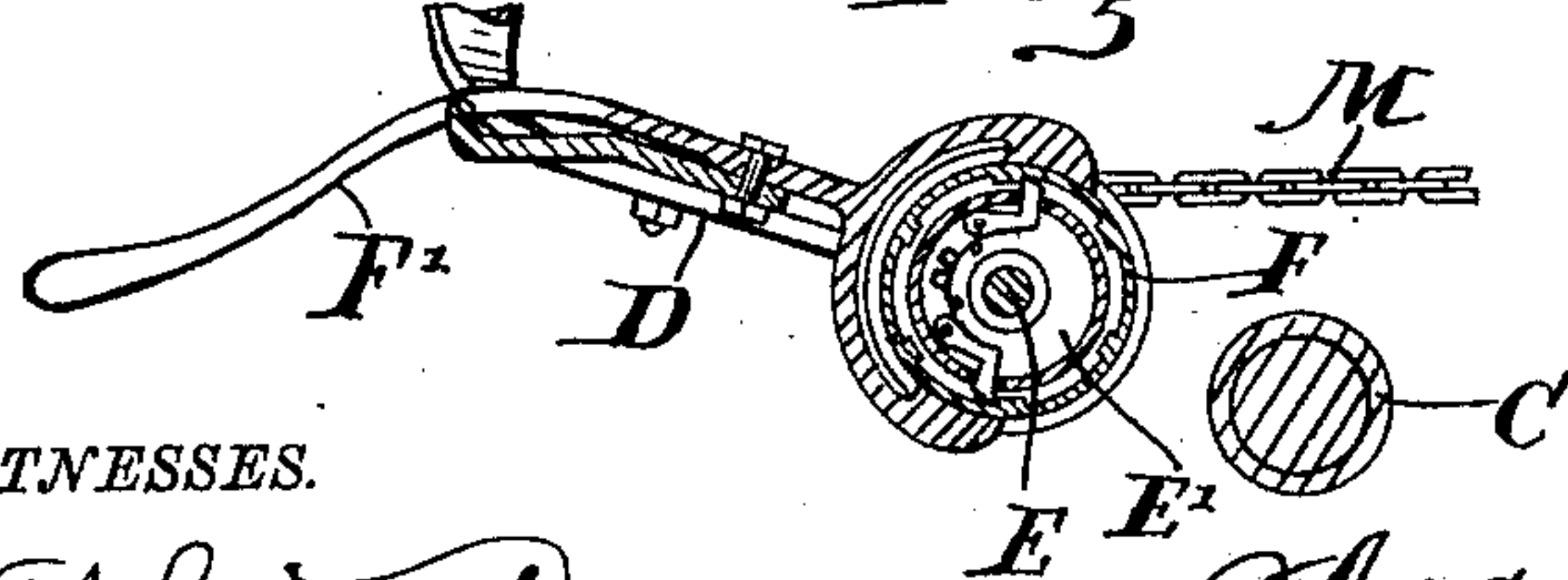


Fig. 5.



WITNESSES.

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PER

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# UNITED STATES PATENT OFFICE.

AUGUSTUS A. ST. CLAIR, OF VAN BUREN, SHELBY COUNTY, INDIANA,  
ASSIGNOR OF ONE-HALF TO THOMAS M. RICHARDSON, OF SAME PLACE.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 358,948, dated March 8, 1887.

Application filed December 16, 1886. Serial No. 221,766. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS A. ST. CLAIR, of the township of Van Buren, county of Shelby, and State of Indiana, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

The object of my said invention is to procure a car-brake which shall be operated directly from the axle of the car and set in operation by the backing of the draw-bars, as when the cars come together after the locomotive has been slowed up or stopped. This object is accomplished by providing a framework or housing secured to the draw-bar, in which a shaft shall be mounted having a drum or drums rigidly secured thereto, with chains running from said drums to the brake mechanism, and a friction-wheel, also mounted upon said shaft, which is adapted, when the draw-bar is backed up or pushed in, to come in contact with the axle of the car-wheels nearest it and be revolved, and thus revolve said shaft and the drums thereon and wind up the chains, as will be hereinafter more particularly described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is an under side plan of one end of a car provided with my said invention; Fig. 2, a longitudinal vertical section through the same on the dotted line 2 2; Fig. 3, an end elevation of the car; Fig. 4, a detail horizontal sectional view looking downwardly from the dotted line 4 4, the position of the draw-bar being indicated by dotted lines; and Fig. 5, a detail sectional view of the clutch on the dotted line 5 5.

In said drawings, the portions marked A represent the car-body; B, the bolster of the running-gear; C C', the axles; D, the draw-bar; E, a shaft mounted in the housing thereon; F, the friction-wheel, and G G' the brake-beams.

The car-body A, bolster B, axles C C', and other portions of the running-gear of the car are or may be all of the usual or any desired construction, and will not be further described herein except incidentally in describing the invention.

The draw-bar D is in itself also of the usual

form and operates in the ordinary manner. It has, however, secured thereto and extending down to nearly the level of the axle C the housing D', in which the shaft E is mounted. This housing should be of wrought metal of such a quality that it will spring somewhat, so that when the friction-wheel is forced into contact with the axle it may, if necessary, give way slightly, and thus avoid breakage of any of the parts, and at the same time, when the extraordinary pressure is removed, be capable of returning to its normal position. By observing the relative position of parts, as shown most plainly in Fig. 2, the operation under the circumstances just described will be clearly understood.

The shaft E is mounted in appropriate bearings in the housing D', and has the drums E' rigidly mounted thereon. The ends of these drums preferably have ratchet faces or pawls, forming clutch parts—one formed to engage with a corresponding clutch part in the hub of the friction-wheel F when the car is running in one direction, and the other formed to similarly engage with a clutch part on the other end of the hub of the friction-wheel when the car is running in the other direction. These clutch parts, as shown in Fig. 5, should be so constructed as to engage and operate when the car is running forward, but to slip past each other when the car is running backward, as otherwise the brakes would be set when backing, which would be a disadvantage. However, I do not desire to limit myself to any particular form of clutch, but may use any form desired. Chains, as before stated, are connected to the drums and to the brake mechanism, and thus, as said drums are revolved while the train is running in the previously-determined direction, said chains are wound up and the brakes set, as will be readily understood by an examination of the drawings, particularly Fig. 1.

The friction-wheel F, as before stated, is mounted on the shaft E between the drums thereon. It is loosely mounted on said shaft, and so, when it is not engaged with either of the drums by means of the clutch-faces, it will revolve loosely when brought into contact with the car-axle and the brakes will not be operated. A shifting-lever, F', is mounted upon the housing D and engages with this wheel,



and by means of this lever said wheel can be shifted to engage with either of the drums, or set between them, so as not to engage with either, at the pleasure of the operator. For this arrangement see particularly Fig. 4. The brake-beams G G' are constructed and arranged in substantially the ordinary manner. They carry the ordinary brake-shoes, and are connected and operated primarily, as usual, by rods or chains and levers. From the usual lever, H, a rod or chain, I, should run, as usual, to the winding-staff J, and a second rod or chain, K, runs to an equalizing-bar, L, to the ends of which the chains or ropes connected to the drums E' are attached. By this arrangement the brakes may be set in the ordinary manner by turning the winding-staff as well as by operating my invention, as will be readily understood. When the car is moving in one direction and it is desired that this device shall be in condition to operate the brakes, this friction-wheel, by means of its lever, is shifted so that the clutch portion on one end of its hub shall engage with the corresponding clutch portion on the proper one of the drums, and when the car is moving in the other direction it is shifted so that the clutch portion on the other end of its hub shall engage with the clutch portion on the other drum. When the parts are properly set and it is desired to stop the train, the engineer, by simply checking the speed of his locomotive, at once causes all the cars to run together, pushing in the draw-bars and bringing the friction-wheels in contact with the axles, thereby instantaneously setting the brakes on all the cars of the entire train, so far as they are provided with my invention, thus stopping said train much more quickly and easily than is possible where the brakes are to be set by hand, as in the latter case no more brakes can be set at once than there are men on the train, and there are usually five to ten or more cars in every freight-train to each man employed thereon, exclusive of the engineer and fireman. Similarly, when the train is running down a grade, the engineer can easily hold it back by slowing the locomotive somewhat, just enough to bring the cars slightly together, and the pressure on the brakes can at any time be instantaneously removed by pulling forward with the locomotive at a slightly greater speed than the train is running.

I am aware that automatic brakes have been

constructed to be operated from the draw-bar; but I am not aware that the particular construction herein shown and claimed has ever been known prior to this invention.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a railway-car, of the brake mechanism, the draw-bar, a frame-work or housing on said draw-bar, a shaft mounted in said housing, drums or winding-surfaces, and a friction-wheel on said draft, and chains or ropes connecting said winding-surfaces and said brake mechanism.

2. The combination of a brake mechanism, a draw-bar, a housing or frame-work on said draw-bar, a shaft mounted in said housing or frame-work, a loosely-mounted friction-wheel on said shaft having clutch portions on the ends of its hubs, corresponding clutch portions adjacent thereto, and a shifting-lever, by which said wheel may be moved and the clutch portions thereon thrown into engagement with either one or the other of said adjacent clutch portions, and connections from said shaft or drums thereon to the brake mechanism.

3. In a brake mechanism in which the parts are set in motion by contact between the friction-wheel and the axle, said contact being produced by a movement of the draw-bar, a frame-work or housing secured to said draw-bar and carrying said friction-wheel, said frame-work or housing being constructed of yielding or springing material, substantially as and for the purposes set forth.

4. The combination of a brake mechanism, a draw-bar, a housing or frame-work on said draw-bar, a shaft mounted on said housing, a loosely-mounted friction-wheel on said shaft having clutch portions in or upon its hubs, adjacent collars or drums rigidly secured to said shaft and having corresponding clutch portions, said clutch portions being so constructed as to engage when running in one direction, but to slip past each other when running in the other direction.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 9th day of December, A. D. 1886.

AUGUSTUS A. ST. CLAIR. [L. S.]

In presence of—

C. BRADFORD,

FRANK W. WOOD.