

(No Model.)

B. CADE.
CAR BRAKE.

No. 249,584.

Patented Nov. 15, 1881.

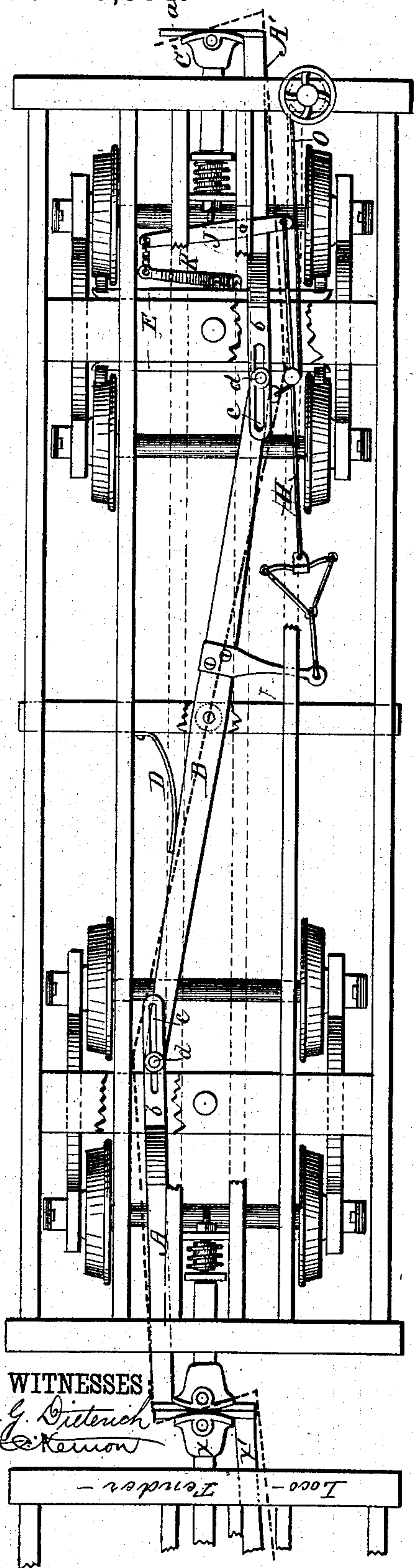
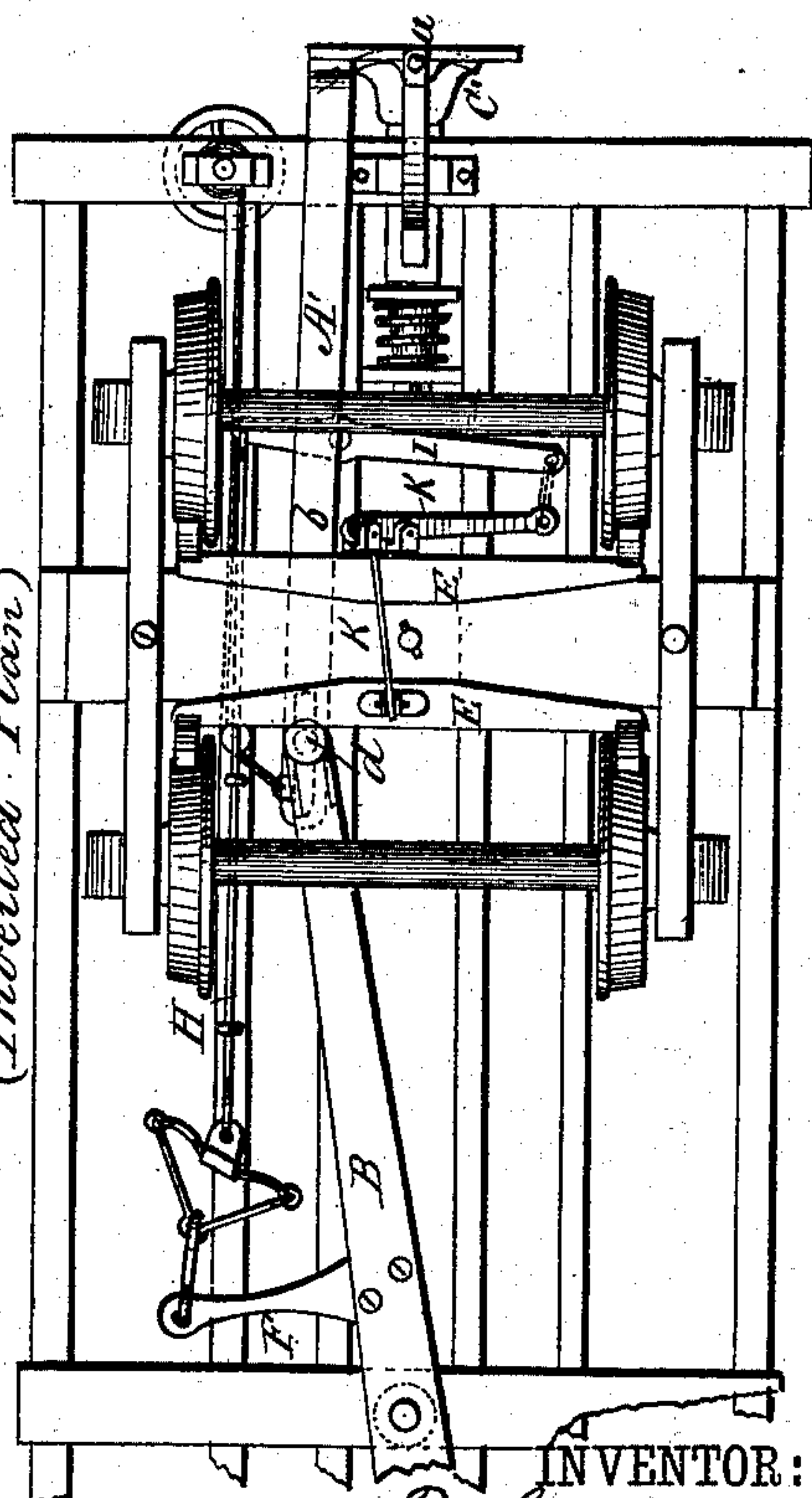


Fig. 2.
(Inverted Plan)

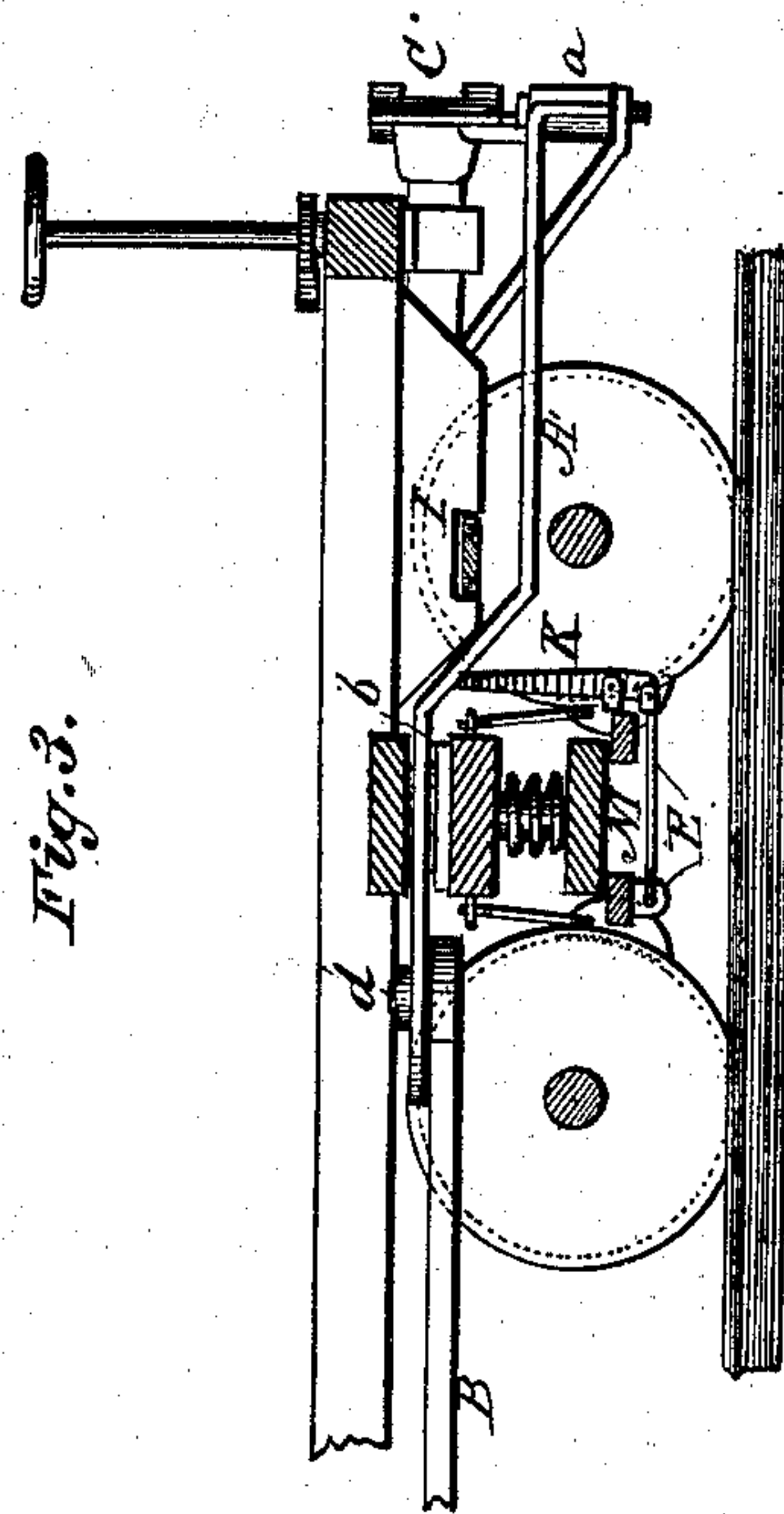


INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

BAYLUS CADE, OF ALDERSON, WEST VIRGINIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 249,584, dated November 15, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, BAYLUS CADE, of Alderson, in the county of Monroe and State of West Virginia, have invented a new and Improved Car-Brake; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to provide an improved system of brakes for railway-cars.

The invention is more particularly an improvement in that class or system of brakes which are operated from the locomotive, so that the several cars of a train may be braked simultaneously. I apply a lever to each draw-head or buffer of a car in such manner that when thrown out of its normal position it will act on other levers connected with the brakes proper, and thereby operate the latter. The lever attached to the front draw-head of a car is operated by a corresponding lever on the contiguous car or the locomotive-tender, and the lever attached to the rear draw-head acts upon a lever similarly applied to the next rear car, and so on through a train of any number of cars. The first lever of the system is therefore that applied to the locomotive-tender, and it may be worked manually by the engineer or by means of steam-power applied through any suitable apparatus on the locomotive. I also provide each car with a hand-brake mechanism, which is so connected with the aforesaid system of levers that a brakeman on any car of the train may apply all the brakes simultaneously.

In accompanying drawings, forming part of this specification, Figure 1 is a plan view (portions being broken away) of the base-frame and trucks of a railroad-car provided with my improved braking apparatus. Fig. 2 is an inverted plan of a portion of the frame with a truck attached. Fig. 3 is a longitudinal section.

The three main levers of the system as applied to each car are indicated by letters A A' B. The main or longer lever B is pivoted centrally and horizontally to the middle of the bed-frame of the car, while the levers A A' are pivoted to the draw-heads C C', respectively. Said levers A A' are right angular in form, their heads or short arms *a* being pivoted vertically to and beneath the draw-heads C C'

and in the same plane with their faces, and the longer arms *b* extending back beneath the body of the car and connecting with the ends of the main lever by means of slot *c* and pin *d*, as shown. The several levers are held normally in the position shown in full lines, Fig. 1, by means of a spring, D, acting on the central one, B—that is to say, the lever B is nearly aligned with the longer arms of levers A and longitudinal axis of the car. The connection of this main system of levers with the brake-beams E is established by mechanism to be now described.

An arm, F, extends laterally from the main lever B at a point near its fulcrum. A rod, H, connects such arm with a lever, I, that is pivoted to the bed-frame of the car at a point near the truck. A second lever, K, is pivoted to the middle of one of the brake-beams E, and its shorter arm is connected with the other parallel brake-beam by means of a push-rod, M.

The operation of the brake system is as follows: If a car be coupled to the locomotive-tender, the face of one of its draw-heads and the broad arm or head *a* of the lever A, attached to such draw-head, will be respectively in contact with the draw-head *x* and lever *x'* of the tender, as shown in Fig. 1. It is obvious that if the lever of the tender draw-head be moved to the left, as shown in dotted lines, its shorter arm or broad head, acting on the corresponding portion of the lever A of the car draw-head, will throw the last-named lever in the opposite direction, and thereby shift the main lever B into a diagonal position, and the lever A' at the other end of the car will be thrown to the right, and thus caused to act on the similar lever of the next rear car, and so on through the whole train. When the main lever B is thus shifted its arm F, moving in the arc of a circle, exerts traction through rod H on the levers I K, and thereby forces the brake-beams E apart and causes the application of the brakes to the truck-wheels. In brief, the shifting of position of any lever of the main series A A' B will occasion the application of the brakes of all the following cars of a train.

The brake may be operated by a brakeman to produce the same effect by means of a chain or rope, O, which connects the lever B with

the winding-post of the brake-wheel, as shown in Fig. 1.

It will be perceived that the slot-connection of the lever B with levers A A' not only allows
5 the lateral movement of the same, as above described, but also permits the requisite reciprocating movement of the levers A along with the draw-heads, which movement is incident to the compression and expansion of the spring
10 due to variation in force applied for traction or in the braking operation, or when two cars come together with sufficient force to overcome the tension of the spring.

The lever on the tender may be operated in
15 various ways or by various means, but in any case it will be under the control of the engineer.

What I claim is—

1. The combination, with a draw-head, of the

right-angular lever pivoted to the front end of the same, the main lever pivoted centrally be- 20 neath the car, and a subordinate or second system of levers connected with the brake-beams, substantially as shown and described.

2. In combination with the draw-heads of a car, the levers A A', pivoted thereto, the main 25 lever B, that connects them, the rods, levers, and brake-beams, as shown and described.

3. The combination, with the sliding draw-heads and springs applied thereto, of pivoted levers A, A', and B, having a slot-and-pin con- 30 nection, as and for the purpose specified.

BAYLUS CADE.

Witnesses:

AMOS W. HART,
SOLON C. KEMON.