

(No Model.)

M. B. MILLS.

CAR BRAKE.

No. 387,434.

Patented Aug. 7, 1888.

Fig. 1.

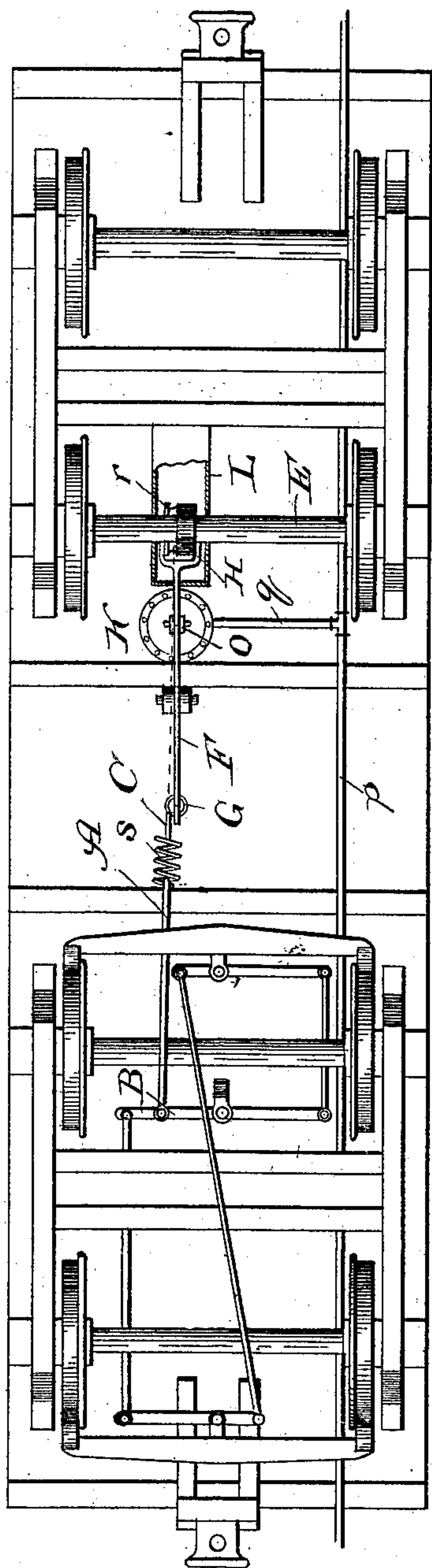
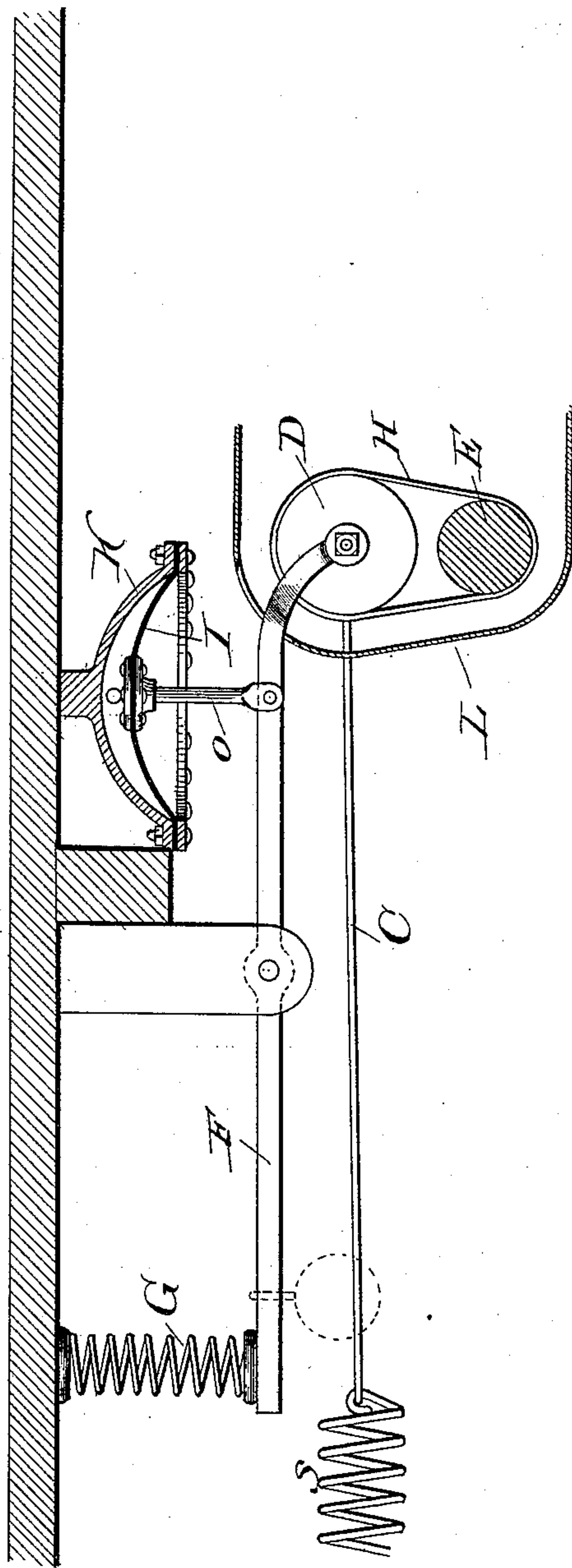


Fig. 2.



Witnesses:

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 387,434, dated August 7, 1888.

Application filed April 9, 1888. Serial No. 270,106. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER B. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Brakes, of which the following is a specification.

My invention relates to an improvement in the class of car-brakes employing means upon the car for the purpose of releasing the brakes and setting them at will with a controllable pressure of any desired degree, and which means (involving a pulley or drum actuated at will to wind upon it by the rotation of an axle of the rolling-gear a chain connecting the brake-lever with the drum or pulley) shall be actuated to set the brakes by a continually-increasing pressure produced by the rotation of the wheels of the car.

The object of my improvement is to provide means whereby the principle of construction above set forth shall be rendered practically operative.

In the drawings, Figure 1 is a bottom plan view of a railroad-car provided with my improved brake-operating attachment; and Fig. 2, an enlarged broken longitudinal section of the car, showing my improvement in side elevation, partly broken.

The brake-lever mechanism employed is that commonly used on cars, and is clearly illustrated in Fig. 1 of the drawings, though I do not herein describe it in detail, as it is old and well known.

The brake-rod A, which is connected at one end with the lever B of the brake-lever mechanism, has attached to its opposite end, preferably through an intervening stiff coiled spring, s, a chain or cable, C, which is secured at its opposite end to the grooved portion r of the periphery of a drum, D. The drum, which may be formed of metal or any other suitable material, is supported adjacent to, but out of contact with, one of the axles E at one bifurcated end of a lever, F, pivotally supported between its extremities from the bottom of the car and connected at its end opposite that provided with the drum with a spring, G, extending against it from the bottom of the car, (though a weight, shown by dotted lines, might be employed instead) and tending to raise the bifurca-

ted end of the lever, and with it the drum. An endless band or belt, H, of about the width of the drum at the side of the grooved portion thereof—say six inches—and formed, preferably, of leather, though other material may be used, surrounds the drum and axle E, and is rendered taut by the pressure of the spring G or weight, whereby rotation of the axle turns the drum and winds upon it the chain or cable to set the brakes by the resultant pull on the rod A and brake-lever mechanism with which the rod is connected. The normal condition, however, of the brakes is "off," and maintained so by disconnecting, practically, the drum and axle, which is effected by rendering slack the band H. This I accomplish by means of air-pressure mechanism, preferably such as that shown, comprising a diaphragm, I, covering a bowl-shaped air-receiver, K, secured to the bottom of the car, and communicating through a branch pipe, q, with the air-conduit p, through which the air-pressure supply is controlled in the usual manner from the locomotive, and the diaphragm is connected with the lever F, as shown, through the medium of a link, o. To shield the band from access to it of rain, snow, dust, and injurious matter generally, I incase it in a suitable housing, L, secured preferably, as shown, to the truck-frame carrying the axle E. It will thus be seen that the tendency of the spring G or weight is to produce setting of the brakes by raising the end of the lever F carrying the drum, and thereby tightening the belt or band H around the axle and drum, which causes the rotation of the former when the car is in motion to turn the latter and wind up the cable or chain C. The normal condition of the brakes, however, which is off, as hereinbefore stated, is maintained against the action of the spring G or weight by air-pressure introduced against the inner side of the diaphragm I, which forces the end of the lever F carrying the drum downward sufficiently to slacken the belt or band, whereby the connection between the drum and axle is practically severed. When it is desired to set the brakes, the air or a required portion of it in the diaphragm device is allowed to escape to permit the spring G or weight to act.

The construction thus described affords a

brake-operating mechanism which is thoroughly reliable and effective and readily controlled.

Obviously the positions of the diaphragm device and spring or weight may be interchanged, when of course their functions would be reversed, air-pressure being then employed to set the brakes and the spring or weight to release them, and the force or gravity of the spring or weight need be only slight compared with the result they produce, as their only function is to tighten the belt or band H sufficiently to produce the required friction against the drum and axle in the construction, as shown, or to slacken it. If desired, the air-pressure mechanism would be employed at both ends of the lever and the spring G or weight dispensed with.

It should be stated that when the belt or band H is slackened, as described, the brake-shoes fall from the wheels by their own weight, and thus unwind the cable or chain from the drum.

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

1. In combination with the brakes of a car, a lever, F, fulcrumed below the car, a rotatory drum, D, supported on the lever adjacent

to and permanently out of contact with an axle of the rolling-gear, and connected by a cable or chain, C, with the brake-lever mechanism, a band or belt, H, surrounding the drum and axle, a spring, G, or weight on the lever near one end thereof, and a collapsible receiver supported on the car and having its movable portion connected with the lever near its opposite end and communicating with the air-pressure supply, substantially as described.

2. In combination with the brakes of a car, a lever, F, fulcrumed below the car, a rotatory drum, D, having a grooved portion, *r*, supported on the lever adjacent to and permanently out of contact with an axle, E, of the rolling-gear, and connected by a cable or chain, C, with the brake-lever mechanism, a band or belt, H, surrounding the drum and axle, a housing, L, for the band or belt, a spring, G, or weight on the lever near one end thereof, and a diaphragm device, I K, connected with the lever near its opposite end and communicating with the air-pressure supply, substantially as described.

MORTIMER B. MILLS.

In presence of—

J. W. DYRENFORTH,
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