(No Model.)

W. B. GUERNSEY.

LOCOMOTIVE BRAKE.

No. 259,006. Patented June 6, 1882.

Fig 1.

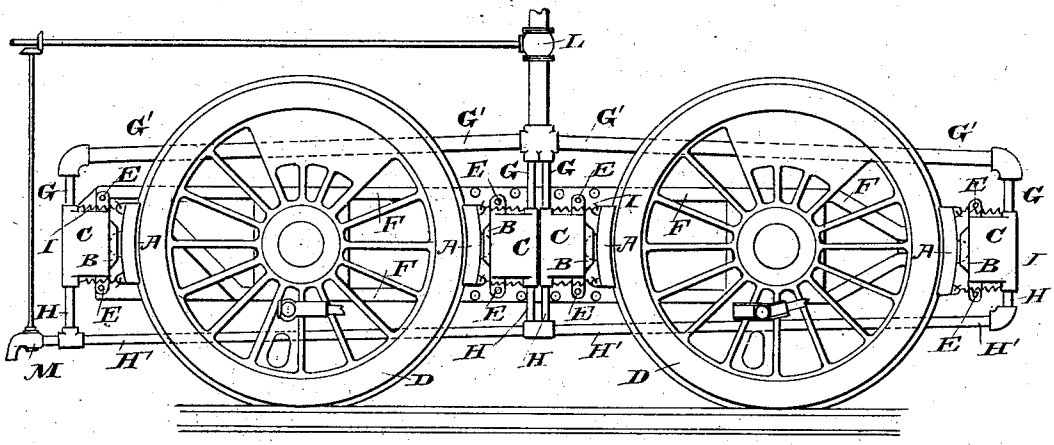


Fig 2.

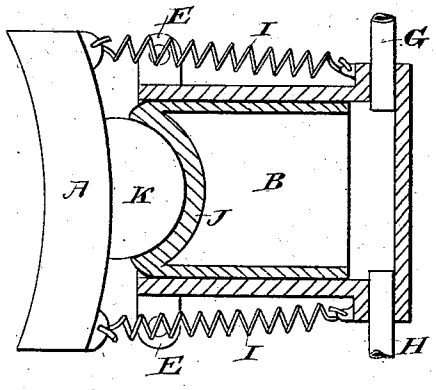
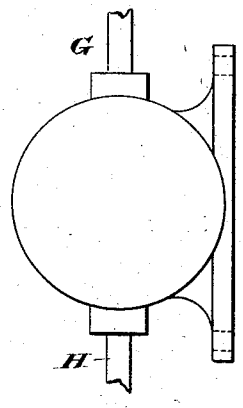


Fig 3.



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UNITED STATES PATENT OFFICE.

WILLIAM B. GUERNSEY, OF NORWICH, N. Y., ASSIGNOR OF ONE-THIRD TO THE TORREY AUTOMATIC BRAKE COMPANY, OF NEW YORK.

LOCOMOTIVE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 259,006, dated June 6, 1882.

Application filed March 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. GUERNSEY, a citizen of the United States, residing at Norwich, in the county of Chenango and State of New York, have invented a new and useful Improvement in Locomotive-Brakes, of which the following is a specification.

The subject of my invention is a brake in which the shoes are actuated independently each by its own steam-piston and retracted by springs. The invention thus permits the application of the particular brakes independently to the frame of a locomotive by simply bolting the cylinders carrying the piston and shoe to a suitable running-gear frame and connecting steam-pipes therewith for pressure and exhaust.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of the running-gear of a locomotive, showing two driving-wheels with my improved brake applied. Fig. 2 is a longitudinal section on a larger scale of one of the brake-cylinders and pistons, showing the shoe and retracting-springs in elevation. Fig. 3 is a rear end view of the cylinder.

A A represent brake-shoes; B B, pistons to which they are attached; C C, cylinders carrying the said pistons, and fixed to the locomotive-frame in suitable positions to cause the shoes to act on the drivers D D. The cylinders C are preferably cast with attaching-plates, as shown in Fig. 3, adapting them to be bolted to the frame F of the locomotive running-gear, as shown in Fig. 1.

G G represent pipes for admitting steam or other fluid to the cylinders C for applying the brakes, and H H exhaust-pipes for discharging the fluid therefrom when the brakes are to be released.

I I represent retracting-springs, secured at one end to the back of the shoe and at the other end to the base of the cylinder, as shown at Fig. 2, so that the entire connected device may be applied or removed bodily.

I prefer to form the piston B in the hollow cylindrical shape shown in Fig. 2, open at its inner end to the interior of the cylinder, and with a head, J, formed with a cavity to fit the hemispherical boss or protuberance K on the back of the shoe A, thus constituting a universal joint for said shoe and permitting it to adjust itself independently to the tread of the driving-wheel D.

L is a cock or valve for admitting the steam-pressure through branch pipes G′ G′ to any number of the brake-cylinders which may be used in one connected system, and M a cock or valve for opening or closing the exhaust-pipe H, which in like manner communicates with the several cylinders C through branch pipes H′.

In the present illustration I have shown four of the cylinders and their shoes A, arranged to act horizontally on two driving-wheels, D D, so that the pressure will be equal on the opposite sides of said wheels.

The exhaust-pipe H is inclined downward toward its discharge-cock M, as shown, so that water of condensation may freely pass off.

In operation I prefer to connect the inlet-cock L and exhaust M in such a manner that one will be opened and the other closed by a simultaneous movement, and the inlet L may be opened slightly before the closure of the exhaust M, so that the pressure of steam will effectually eject any water of condensation which may accumulate, especially in cold weather. The exhaust H stands open when the brakes are not in use.

The apparatus may, by suitable appliances, be used equally well with air or hydraulic pressure.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A brake consisting of a pressure-cylinder, a piston contained therein, and a shoe supported and actuated through the medium of said piston, substantially as described.

2. The combination, with a cylinder and contained piston and a shoe supported and actuated by connection with the said piston, of springs attached at their respective ends to the cylinder and the shoe for the purpose of retracting the latter when relieved of pressure.

3. In a brake consisting of a pressure-cyl-

inder, a piston contained therein, and a shoe supported and actuated by said piston, an attaching-plate formed with or secured to the pressure-cylinder to permit the bolting of such brakes independently to the frame of a locomotive or car, substantially as described.

4. The combination of a system of brake-shoes, A A, pistons B B, one for each shoe, acting directly thereon, constituting the support and attachment for said shoes, cylinders C C, in which said pistons work, and pipes G G′, for applying pressure simultaneously to the said cylinders C, substantially as described.

5. The combination of the piston B, shoes A, and universal joint-bearings J K between them, substantially as described.

6. The combination, with the cylinders C, pistons B, and shoes A, of the supply-pipes G, exhaust-pipes H, and inlet cocks or valves L, and discharge-cocks M, connected to be operated by a single movement, substantially as described.

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Witnesses:
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