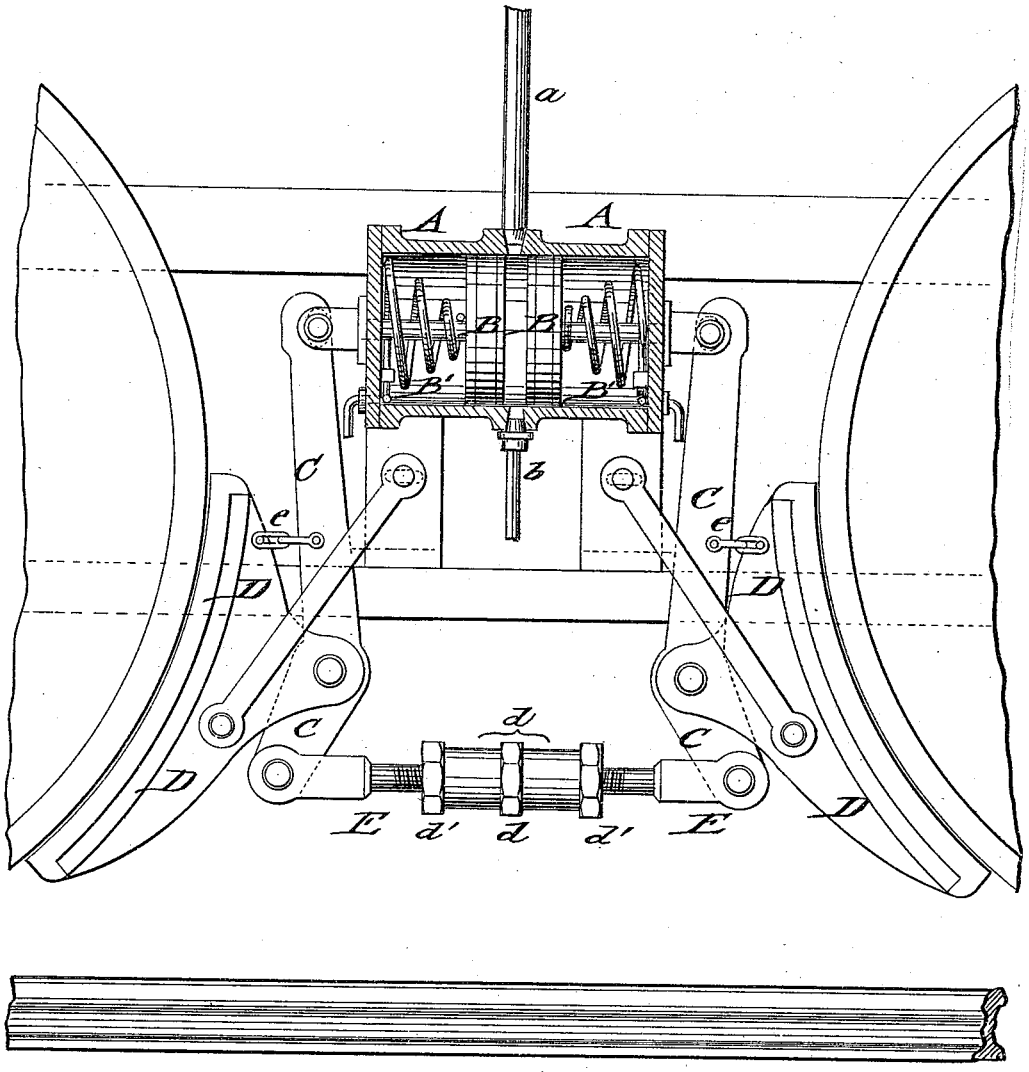
T. J. SHELLHORN.

LOCOMOTIVE AND CAR STEAM BRAKES.

No. 181,869. Patented Sept. 5, 1876.



WITNESSES:

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THOMAS J. SHELLHORN, OF MARQUETTE, MICHIGAN.

IMPROVEMENT IN LOCOMOTIVE AND CAR STEAM-BRAKES.

Specification forming part of Letters Patent No. **181,869**, dated September 5, 1876; application filed February 28, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. SHELLHORN, of Marquette, in the county of Marquette and State of Michigan, have invented a new and Improved Locomotive and Car Brake, of which the following is a specification:

The accompanying drawing represents a sectional side elevation of my improved brake mechanism as applied to the driving-wheels of a locomotive.

The object of my invention is to so improve the brake mechanism of driving-wheels of locomotives and of other revolving wheels that the friction is applied and discontinued in a perfectly reliable manner, and the strain thrown upon the tops instead of upon the sides of the axle-boxes. The brake may be readily adjusted to different weights of locomotives and cars, so as to work smoothly and perfectly.

The invention will first be described in connection with drawing, and then pointed out in the claim.

In the drawing, A represents a steam-cylinder, that is placed midway between the driving-wheels of a locomotive or the wheels of a car-truck. The steam or other elastic fluid is admitted to the cylinder by a pipe, *a*, entering midway between the cylinder-heads, and acting simultaneously upon two pistons, B, that are arranged symmetrically in the cylinder, and acted upon by volute springs B′ of considerable power. The steam-pipe *a* is carried up the boiler-head to the steam-dome, and the admission and exhaust of steam controlled by a threeway cock, or any other mechanism equally adapted for this purpose.

The regulation of the exact pressure may be effected by means of a pressure or pop valve, that is attached to the steam-pipe *a*.

A drip-valve, *b*, is arranged at the bottom of the cylinder A. The piston-rods are pivoted at their outer ends to brake-levers C, which force the brake-heads and shoes D against the driving-wheels, the leverage being obtained by the fulcrum-rods E, that are pivoted to the lower ends of the brake-levers, and connected by a sleeve or nut, *d*, with interior right-and-left-hand screw-threads, for the purpose of adjusting the levers C from time to time, as required, by the gradual wear of the shoes, and also for providing for the distances between the driving and other wheels in different locomotives and cars. The right-and-left-hand sleeve or nut *d* is held in stationary position by jam-nuts *d′*.

The brake-heads D are fulcrumed at some distance above the fulcrum-rods to the brake-levers, and further connected to the same at their upper ends by pivoted clearance-links *e e*. The links *e e* are intended for the purpose of carrying back the brake-heads or shoes, with the brake-levers, out of the line of friction with the wheels when the brakes are released.

The release of the brakes is effected jointly by the exhaustion of pressure in cylinder, the action of the volute springs upon the pistons, and the gravitation of the brake-heads.

The brake-levers C are not made straight, but with an obtuse angle, and formed by the heel or part below the fulcrum of the brake-head with the upper part. By this means the strain of the wheels is thrown upon the top of the axle-boxes instead of upon the sides, as is the case in all other driving-brakes.

The brake mechanism may be operated either by steam, plastic fluid, or other power, by means of the cylinder and pistons or other mechanical appliances, as I do not claim the use of a steam-cylinder for brakes.

The adjustability of the fulcrum-rods forms a useful and important advantage over all other brakes, as thereby the adaptability of the apparatus to different heights of locomotives is obtained simply by shortening or lengthening the fulcrum-rods.

The clearance-links discontinue friction simultaneously with the release of the brake, and avoid thereby a considerable difficulty experienced with the brakes in common use.

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

In locomotive and car brakes, the combination of the brake-levers, the fulcrumed brake-heads, and pivoted clearance-links at their upper ends, for the purpose set forth.

THOMAS J. SHELLHORN.

Witnesses:

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