M. V. ALDRICH & G. F. HUGGINS.

Car-Brakes.

No. 164,955. Patented June 29, 1875.

Fig. 1.

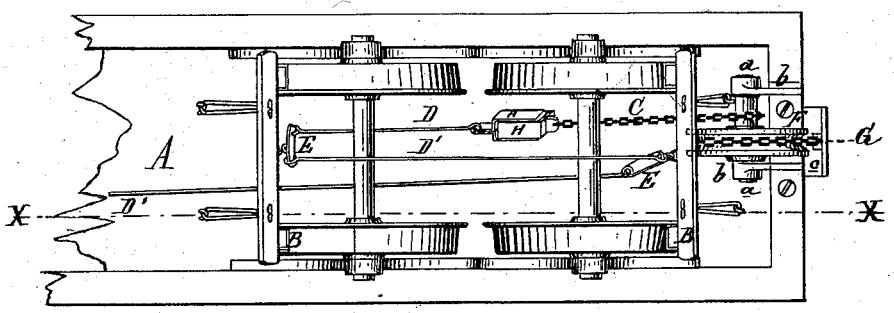


Fig. 2.

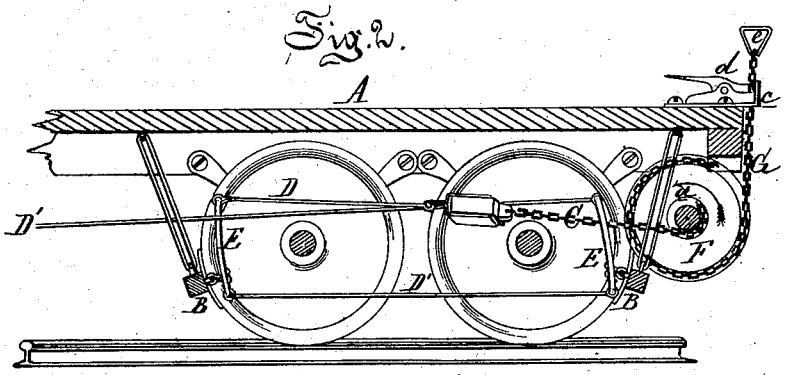
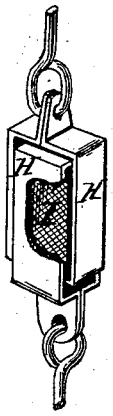


Fig. 3.



Attest:
Edward Barthel
George E. Upham

Inventors.
Martin V. Aldrich
Geo. F. Huggins

UNITED STATES PATENT OFFICE.

MARTIN V. ALDRICH AND GEORGE F. HUGGINS, OF EAST SAGINAW, MICH.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **164,955**, dated June 29, 1875; application filed June 16, 1875.

To all whom it may concern:

Be it known that we, MARTIN V. ALDRICH and GEORGE F. HUGGINS, of East Saginaw, in the county of Saginaw and State of Michigan, have invented an Improvement in Car-Brakes, of which the following is a specification:

The first part of our invention relates to an improvement in the method of operating or setting the hand-brakes of railway-cars; and has for its object to substitute for the brake-standard and hand-wheel now in use a simple and cheap device by means of which the brake-chains may be placed under a high tension by a single movement of the operating mechanism, as will be hereinafter pointed out in the specification.

The second part of our invention relates to a peculiar elastic link, to be inserted at any point in the brake-chain or brake-rod, to prevent the wheels from sliding upon the rails whenever the tension upon the brake-chains is sufficient to lock the wheels.

Figure 1 is a partial bottom plan of a flat car fitted with our improvements. Fig. 2 is a longitudinal vertical section of the same at *x x*. Fig. 3 is a perspective view of our elastic link.

In the drawing, A represents the platform of a gondola or flat car, under which the brakes B B are hung in the usual manner, and are operated by the brake-chain C, rods D D′, and levers E E, now in common use. *a* is a short shaft, journaled in hangers *b b* under the end of the platform, or under the front end of the car. F is a grooved pulley, keyed on the shaft *a*, to which the outer end of the brake-chain C is secured. G is the operating-chain, one end of which is secured in the groove of the pulley F, around which it is led to the rear, thence up through an opening in a casting, *c*, at the end of the platform, to which casting there is pivoted a wrought-iron lever chain-stopper, *d*. At the end of the chain a triangular gripe, *e*, may be secured.

To set the brakes, the brakeman takes the gripe and pulls up the chain G, thereby rotating the shaft *a*, and winding thereon the brake-chain C, the tension being maintained by the engagement of the stopper *d* with the operating-chain. To loosen the brakes, the dog is disengaged by the pressure of the foot on its lever.

The leverage or tensile strain exerted upon the brake-chain C is as half the diameter of the pulley F is to half the diameter of the shaft *a*, and it is evident that any required amount of pressure may be put on the brakes by a proper proportionment of the leverage.

In fitting our improvement to flat cars, the chain-stopper may be let into the end girt, so as to leave the entire platform flush, which is found very convenient in loading logs, timber, and other long and heavy objects.

This improvement may be readily applied to existing cars, by simply removing from them the brake-staff, brake-wheel, ratchet, and pawl, and connecting the brake-chains to the shaft *a* and its connections, which are placed thereon, as described, at a trifling expense.

As is well known, if the brakes be set tight enough to cause the wheels to slide on the track, flat spots will be worn in the treads, which endanger the safety of the wheels. To prevent the wheels from slipping under an excessive tension of the brake-chains, we insert at any point in the brake-chain the device shown in Fig. 4, which consists of two interlocked box-stirrups, H H, with a rectangular block, I, of vulcanized rubber, interposed between, and inclosed by, them.

Whenever the pressure of the brake-shoes upon the wheel is sufficient to lock the latter, one or the other of the shoes, and frequently both of them, have a tremulous vibration, which is transmitted, through the levers and connections, to the rubber block, which yields to the pressure, and expands again as soon as the pressure is in the least relaxed; but between the interval of relaxation of pressure and the expansion of the block, the wheel has an opportunity to rotate a little, so that the locking of the same is but of momentary duration.

What we claim as our invention is—

1. The shaft *a*, journal under the platform of a car, the pulley F, chain G, and a stop, in combination with the interlocked elastic stirrups H H, and the tension-chain of a car-brake, substantially as described.

2. The interlocked stirrups H H, inclosing an elastic block, I, in combination with the tension-chain of a car-brake, substantially as described.

MARTIN V. ALDRICH.
GEO. F. HUGGINS.

Witnesses:
JNO. G. JONES,
G. W. C. JOHNSTON.