

(No Model.)

A. K. KLINE.  
Car Brake.

No. 234,294.

Patented Nov. 9, 1880.

Fig. 1.

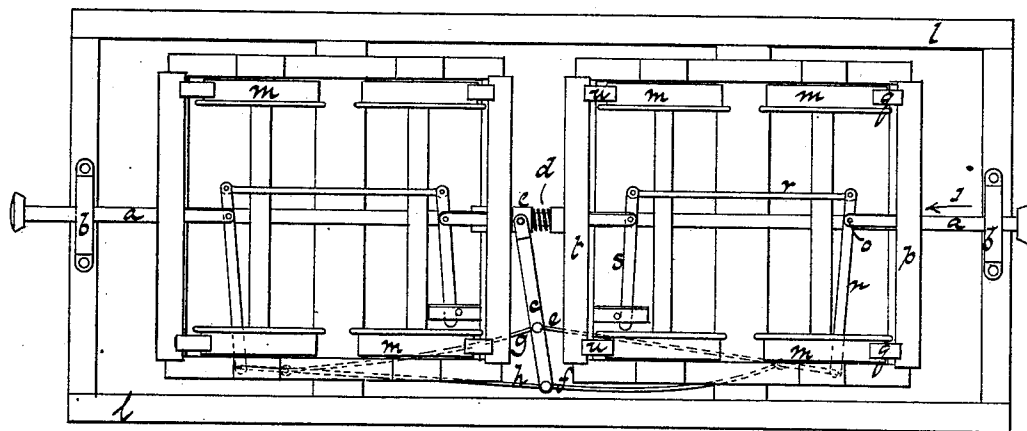
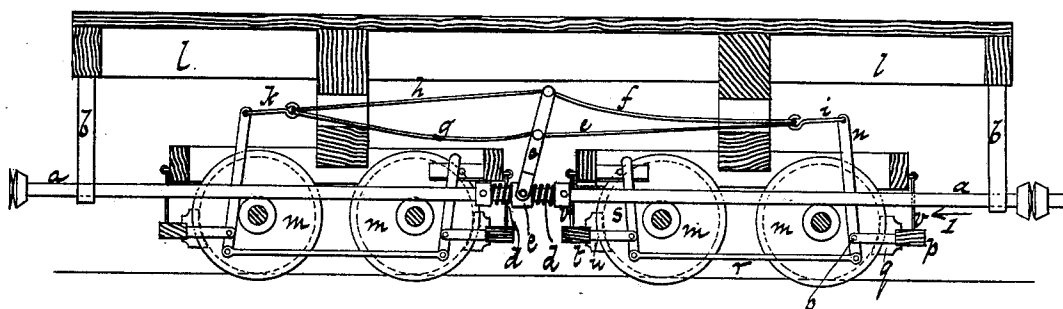


Fig. 2.



Witnesses.

Otto Shufeland.  
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his attys.

# UNITED STATES PATENT OFFICE.

AARON K. KLINE, OF SOMERVILLE, NEW JERSEY.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 234,294, dated November 9, 1880.

Application filed September 6, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, AARON K. KLINE, a citizen of the United States, residing at Somerville, in the county of Somerset and State of New Jersey, have invented new and useful Improvements in Car-Brakes, of which the following is a specification.

The nature of my invention relates to that class of car-brakes in which the brake-levers are operated by means of push-rods, which are extended out from the ends of the car, so as to be acted upon by like push-rods of an adjoining car, the said rods or bars thereby forming a continuous series of rods, which are under the control of the engineer at one end of the train.

My improvement consists, first, in an automatic car-brake, in the combination with the brake-levers of a single sliding push-rod extending from end to end of the car and terminating in bumper-heads at both of its ends, a swinging lever connected at or near the center of the push-bar, two chains or ropes connecting the upper free end of the lever with the two brake-levers at opposite sides thereof, and also two chains or ropes connecting the two brake-levers with the said swinging lever at a point intermediate of the free end and the fulcrum of the latter, the said brake-levers being operated by the movement of the push-rod in either direction, substantially as hereinafter described; second, in an automatic car-brake, in the combination with the brake-levers of a single sliding push-rod extending from end to end of the car and terminating in bumper-heads at both of its ends, a swinging lever connected with the center of the push-bar by a sliding connection between two springs, two chains or ropes connecting the upper free end of the lever with the two brake-levers at opposite sides thereof, and also two chains or ropes connecting the brake-levers with the said swinging lever at a point intermediate of the free end and the fulcrum of said lever, substantially as hereinafter described.

This invention is illustrated in the accompanying drawings, in which—

Figure 1 is an inverted plan view. Fig. 2 is a longitudinal central section.

Similar letters indicate corresponding parts. In the drawings, the letter *l* designates the

platform of a car running on wheels *m m*. The under side of the platform *l* is provided with a push-bar, *a a*, sliding longitudinally in bearings or guides *b b*. This push-bar is intended to abut with its end against the end of a corresponding push-bar on the car in front, and thus a continuous line is produced reaching to the locomotive. The locomotive is provided with a steam-piston or other arrangement, preferably under the engineer's control, which communicates motion to the push-bar *a a*, pressing it, for example, in the direction of the arrow 1, shown thereon.

To the push-bar *a a* is attached a lever, *c*. This lever *c* is preferably connected to the push-bar *a a* by a collar, *e*, which slides readily on said push-bar, and is held in place by springs *d d*, placed on each side of the collar *e*.

To one end of the lever *c* are attached chains or ropes *h f*, which connect with rods *k i*. At some distance from the end of the lever *c* are attached chains or ropes *g e*, which also connect with the rods *k i*.

When the push-bar *a* is pressed in the direction of the arrow 1 the motion of the lever *c* thereby produced produces tension of the chains *e h*, which is communicated to the rods *i k*. This motion of the rod *i* is transferred to a lever, *n*, having its fulcrum *o* on the swinging arm *p*, which carries the brake-heads *q*, which brake-heads are thus pressed against the wheels *m m*. To the other end of the lever *n* is fastened a rod or chain, *r*, by which the motion of said lever *n* is communicated to the lever *s*, and by it to the arm *t* and brake-heads *u*. The motion of the rod *k* is transferred to the brake-heads acting on the wheels at the opposite end of the car by a similar arrangement.

When the push-bar *a* is pressed in the direction opposite to that indicated by the arrow 1 the lever *c* communicates its motion to the chains *f g*, producing tension of the same, and a like result, as before, so that said brakes are under the engineer's control at whatever end of the train the locomotive is attached.

The arms *p t* swing freely to and fro in arms or rods *v*, depending from the body of the truck, as is usual in the arrangement of brakes.

The springs *d d* equalize the pressure on all the brakes in the train by their action on the

sliding collar *c*, said springs being made of nearly equal strength throughout the whole train. Said springs also prevent a too great strain from being brought on the chains *e f g* 5 *h*, thus removing all liability of breaking of these chains or any other part of the mechanism.

When the pressure on the push-bar *a* is released the brake-heads are allowed to swing 10 away from the wheels, leaving them free to revolve.

To insure contact of the ends of the push-bars *a*, I make their ends of a broad or flaring shape, as shown.

15 Instead of brake-heads I may employ shoes which can be pressed against the track by the lever *n* or other means, whereby the train is caused to stop.

In coal cars, the bottom of which swings 20 down to deposit the coal, the bar *a* would be in the way. In order to obviate this I make the bar *a* in two short sections, one at each end of the car, and connect these sections by a quadrangular frame, consisting of metal or 25 other stout rods, said frame being of about the same size as the platform of the car. This frame allows the coal to drop down within itself without hindering their passage. The lever *c* is attached to this frame, producing the 30 same result as before.

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

1. In an automatic car-brake, the combination, with the brake-levers, of a single sliding

push-rod extending from end to end of the 35 car, and terminating in bumper-heads at both of its ends, a swinging lever connected at or near the center of the push-bar, two chains or ropes connecting the upper free end of the lever with the brake-levers at opposite sides 40 thereof, and also two chains or ropes connecting the two brake-levers with the said swinging lever at a point intermediate of the free end and the fulcrum of the latter, the said 45 brake-levers being operated by the movement of the push-rod in either direction, substantially as described.

2. In an automatic car-brake, the combination, with the brake-levers, of a single sliding push-rod extending from end to end of the car, 50 and terminating in bumper-heads at both of its ends, a swinging lever connected with the center of the push-bar by a sliding connection between two springs, two chains or ropes connecting the upper free end of the lever with 55 the two brake-levers at opposite sides thereof, and also two chains or ropes connecting the brake-levers with the said swinging lever at a point intermediate of the free end and the fulcrum of said lever, substantially as de- 60 scribed.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

AARON K. KLINE.

Witnesses:

W. C. HAUFF,

J. HERMANN WAHLERS.