

S. M. LEE.

Car Brake.

No. 63,909.

Patented Apr. 16, 1867.

Fig. 3.

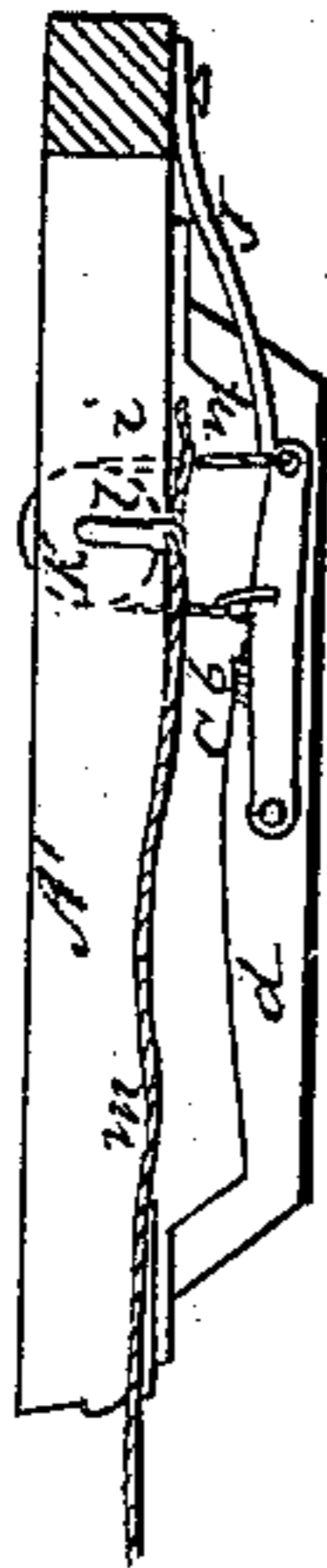


Fig. 2.

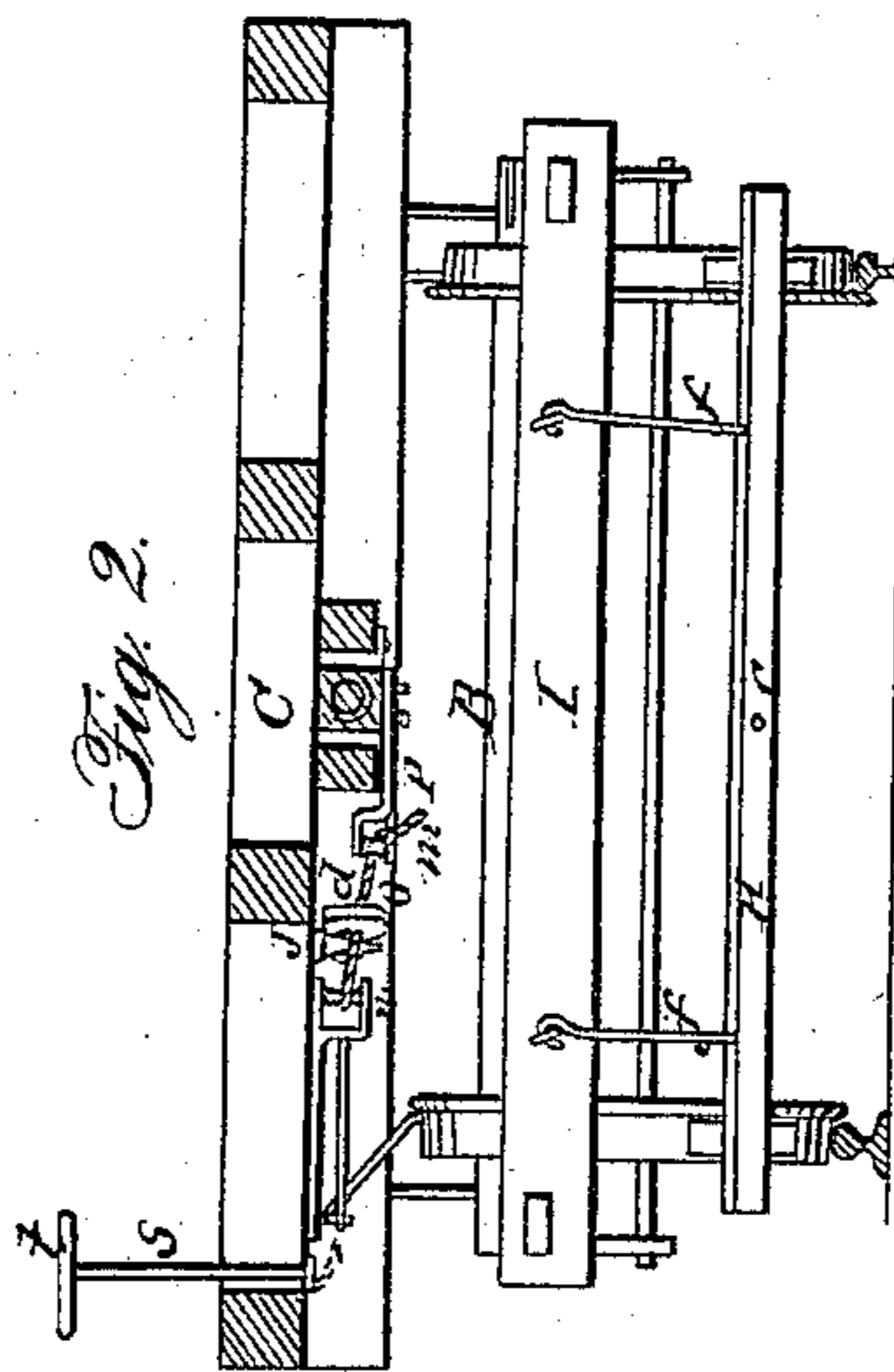
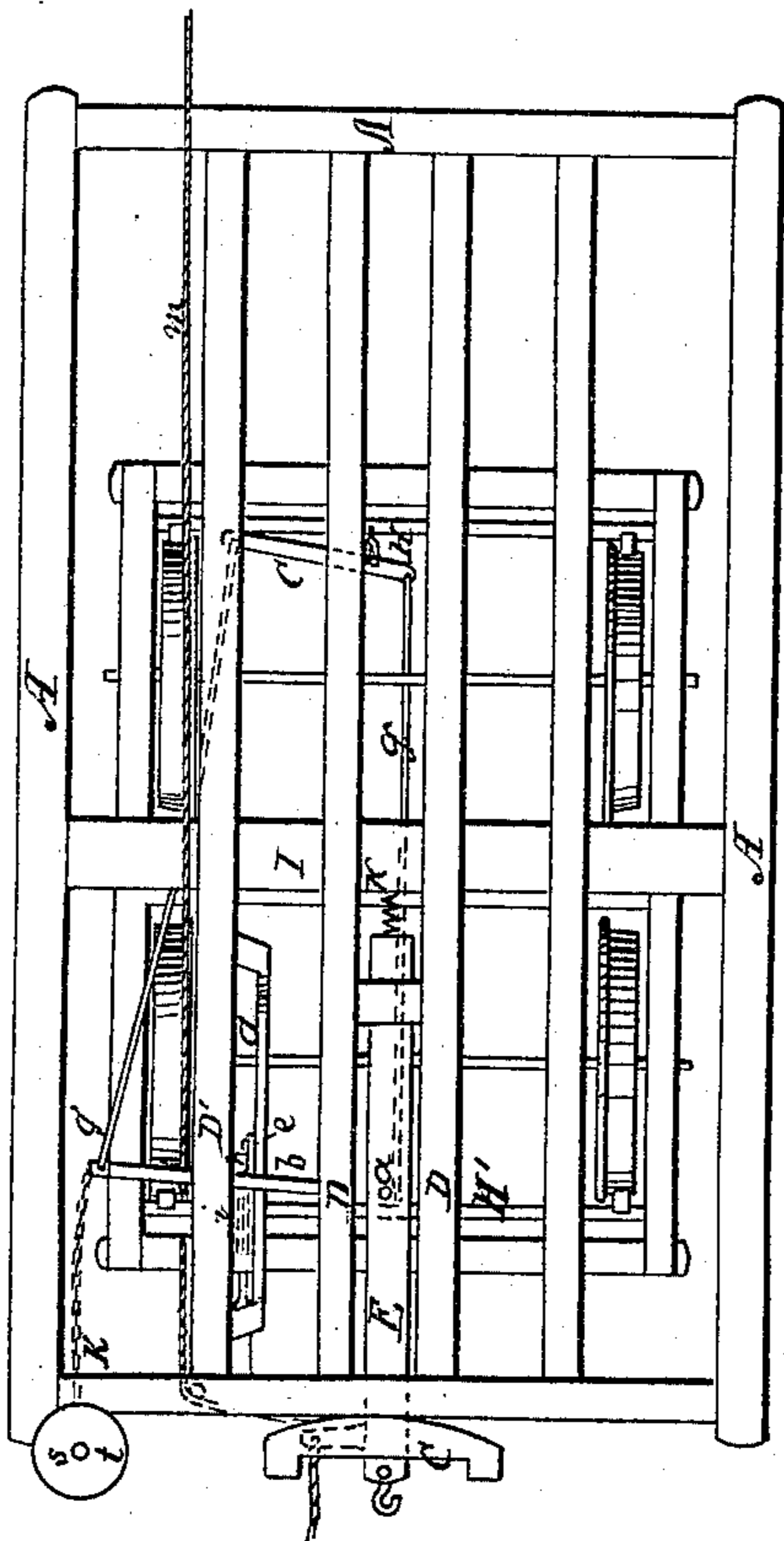


Fig. 1.



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Fig. 5.

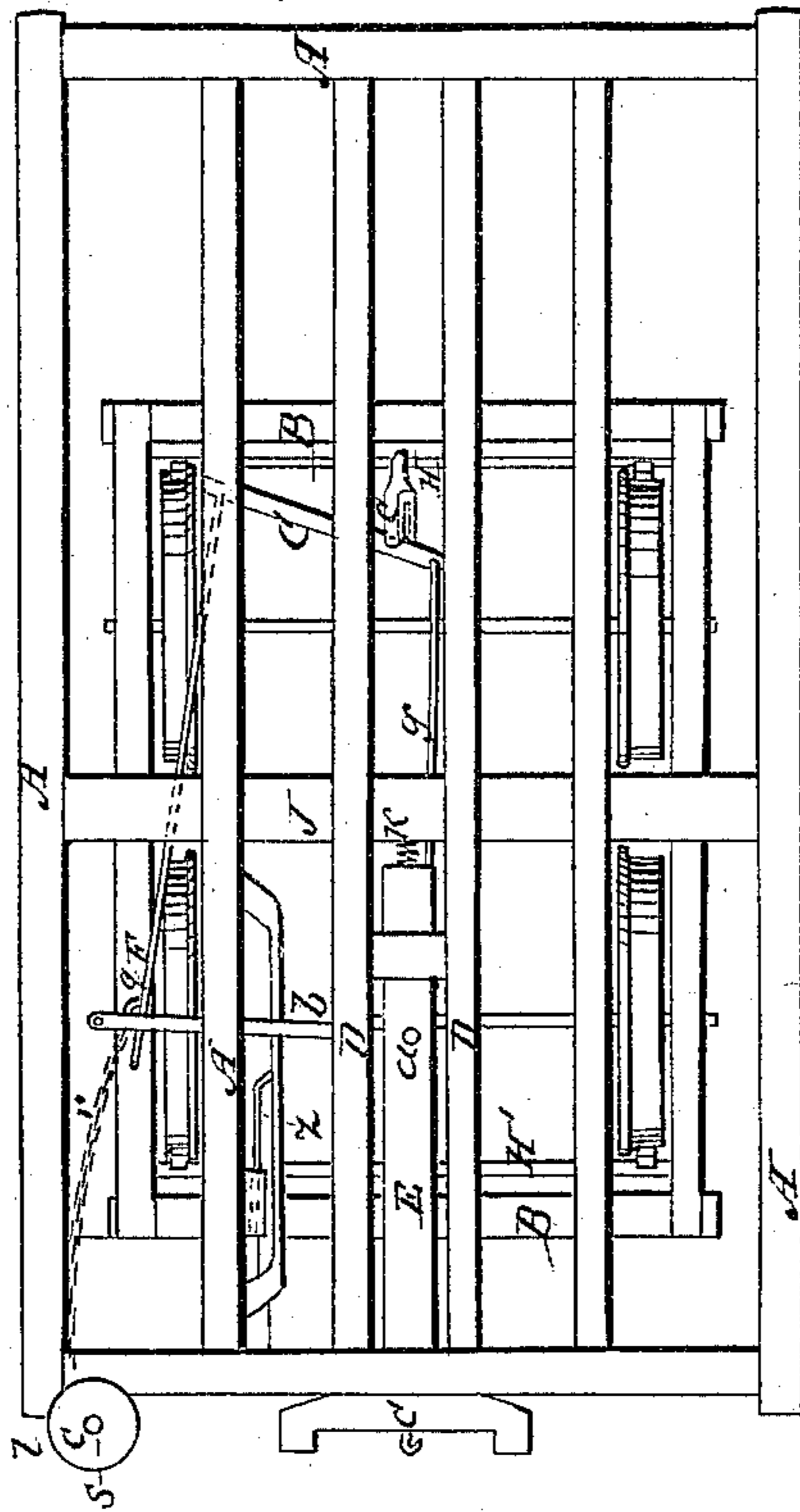
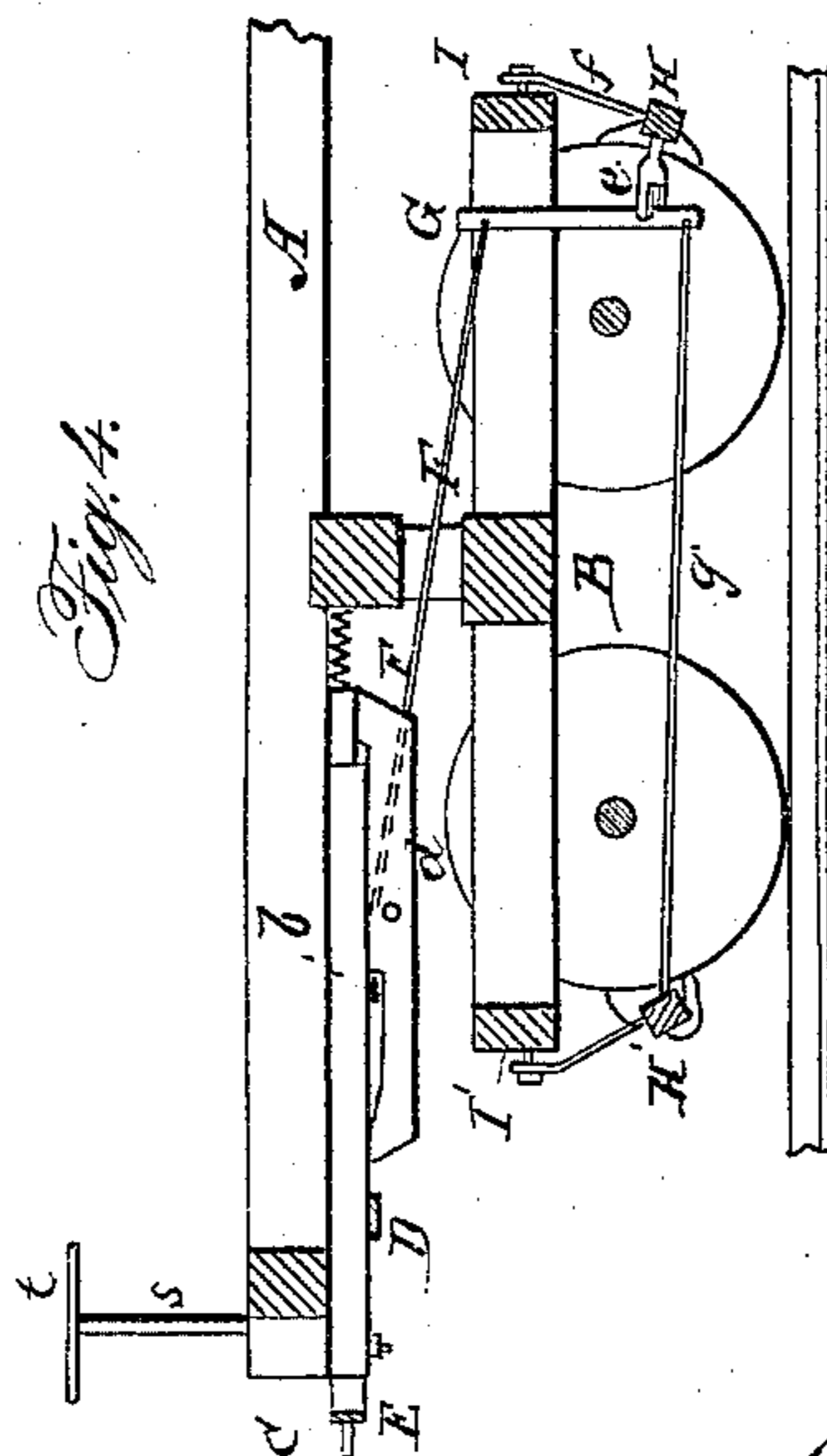


Fig. 4.



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United States Patent Office.

SAMUEL M. LEE, OF NEW LONDON, IOWA.

Letters Patent No. 63,909, dated April 16, 1867.

IMPROVED CAR-BRAKE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL M. LEE, of New London, in the county of Henry, and State of Iowa, have invented a new and useful improvement in Self-Acting Railroad Car-Brakes; and I do hereby declare the following to be a full and exact description of the same, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a plan of my invention with the brakes in working order.

Figure 2 is an end view of the same.

Figure 3 is a detached view of the means of detaching the braking device from the connecting-bar.

Figure 4 is a longitudinal vertical section in the line *x x*, fig. 1; and

Figure 5 is a plan view showing the self-braking device detached, and the brakes operated in the usual manner.

Similar letters indicate corresponding parts in the several figures.

The nature of my invention consists in a novel construction of self-acting brakes, by means of which the brake can be detached, so as not to operate when backing, by the engineer from the locomotive, and will set itself again when she starts forward; also in so connecting the braking device to a common brake-rod and wheel that the self-acting brake may at any time be detached, and the braking be done by hand, as now in common use.

In the drawings, A represents the frame of a car, resting on the truck B. The bumper C is attached to the frame A, and below its centre, between two pieces D D, is the sliding-bar E, supported by cross-pieces at the under side of the beams D. Pivoted at *a* to the under side of the sliding-bar E is a lever, *b*, having its fulcrum on a shoulder, *c*, on the suspended iron bar *d*, and having at its free end a hole, into which the bent end of the rod F is hooked. This rod F connects with one end of the lever G, which has its fulcrum in the forked piece *e* on the brake-bar H, which is suspended by rods *f* from the end beam I of the truck B. The other end of the lever G is connected to the forward brake-bar H', which is suspended from the end beam I' of the truck by means of the rod *g*. Pivoted to the side of the suspended bar *d* is the lever *h*, which has one end of a chain, *i*, attached to its centre, the other end being fastened to its free end, which latter is kept in a horizontal position by means of the bent spring *j*. The chain *i* passes over a toothed wheel, *k*, placed on one side of the beam A', its shaft *l* passing through the beam, and being bent downward at its outer side. Attached to the shaft *l* is a rope or chain, *m*, which runs to both ends of the car, and connects with a similar rope or chain on the next car, passing over rollers *n* and *o*, the former being placed on the under side of the frame A, and the latter held in a forked piece, *p*, secured on the sliding-bar E. The rod F is provided near its upper bent part with a loop, *q*, to which is secured a chain, *r*, which is attached to the common brake-rod *s*, provided with a wheel, *t*, on the end of the frame A. The sliding-bar E is connected to the cross-beam J of the frame A by means of a spring, K.

The cars are coupled by means of links attached to the sliding-bars E. On slackening the speed of the train the cars, by their momentum, press each one on the one ahead of it, thereby forcing the sliding-bar E inwardly, by this means forcing the inner arm of the lever *b* inward also, and its outer arm outward. The outer arm of the lever *b*, being connected by the rod F to the outer arm of the lever G, the latter is forced outward likewise, thus pulling the two brake-bars H and H' towards each other, and on to the wheels. This brake would, however, be of no use unless some means are provided by which a train may be backed up without setting the brakes. I accomplish this by means of the rope or chain *m*, which may be operated either by steam, being wound up on a drum at the pleasure of the engineer, or operated as brakes are now commonly set, by means of a rod and wheel. When the train is to be backed the engineer pulls the rope or chain *m*, which elevates the bent part of the shaft *l*, thus rotating the wheel *k*, the teeth on which catch in the chain *i*, and the lever *h* is raised, elevating the lever *b* above the shoulder *c*, and allowing it to slide over the straight surface of the suspended bar *d* as soon as the cars are backed and the sliding-bar E moves inwardly. Thus the brake is not brought into play, but the engineer having released the rope or chain *m* immediately after beginning to back, the lever *h* is forced downward by the spring *j*, so that when the cars start forward again, and the sliding-bar E is pulled out, the lever *b* follows it, and slips by its own weight and action again behind the shoulder *c*

on the suspended piece *d*, thus rendering the brake again operative. In making up trains and removing cars from one track to another at stations it would, however, be troublesome to use the self-acting brake; and for this reason I provide means to disconnect the self-acting brake device and connect the brakes to the common rod and wheel. I accomplish this by simply lifting the bent part of the rod *F* out of the opening in the lever *b* in which it is held. The brakes can now only be operated by means of the rod *s* and wheel *t*, which wind up the chain *r* in the common manner. When the train is made up, or the car placed where it is desired, by merely re-connecting the rod *F* to the lever *b* the self-acting brake device will again be operative. This connection or disconnection may be performed by the operator at the side of the car, or from its platform. The forked piece *p* bearing the roller *o* is attached to the sliding-bar *E*, so that it will take up the slack of the rope or chain *m* as it moves away from the roller *n*, when the sliding-bar *E* slides either in or out, and by this means the rope or chain will never be allowed to run foul, as it can neither hang down in bights, nor be stretched so as to operate the lever *h* without the will of the engineer.

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

1. The device for disconnecting the self-acting brake when backing the train, consisting of the rope or chain *m*, bent shaft *l*, chain *i*, lever *h*, suspended bar *d*, provided with a shoulder *c*, and lever *b*, to which the brakes are attached, or their equivalents, substantially as described.

2. The rod *F*, with hook-shaped end, to which the chain *r* is attached for the purpose of disconnecting the self-acting brake device and attaching the brakes to the common brake-rod and wheel, in combination with the above, substantially as described.

3. The combination of the sliding-bar *E* of the above-described self-acting brake device, forked arm *p*, and rollers *n o*, with the rope or chain *m*, substantially as and for the purposes described.

The above specification of my improvement in self-acting railroad car-brakes signed this 8th day of March, 1867.

SAMUEL M. LEE.

Witnesses:

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ALEX. A. C. KLAUCKE.