D. M. ELDER.

Railway Car Brake.

No. 99,545. Patented Feb. 8, 1870.

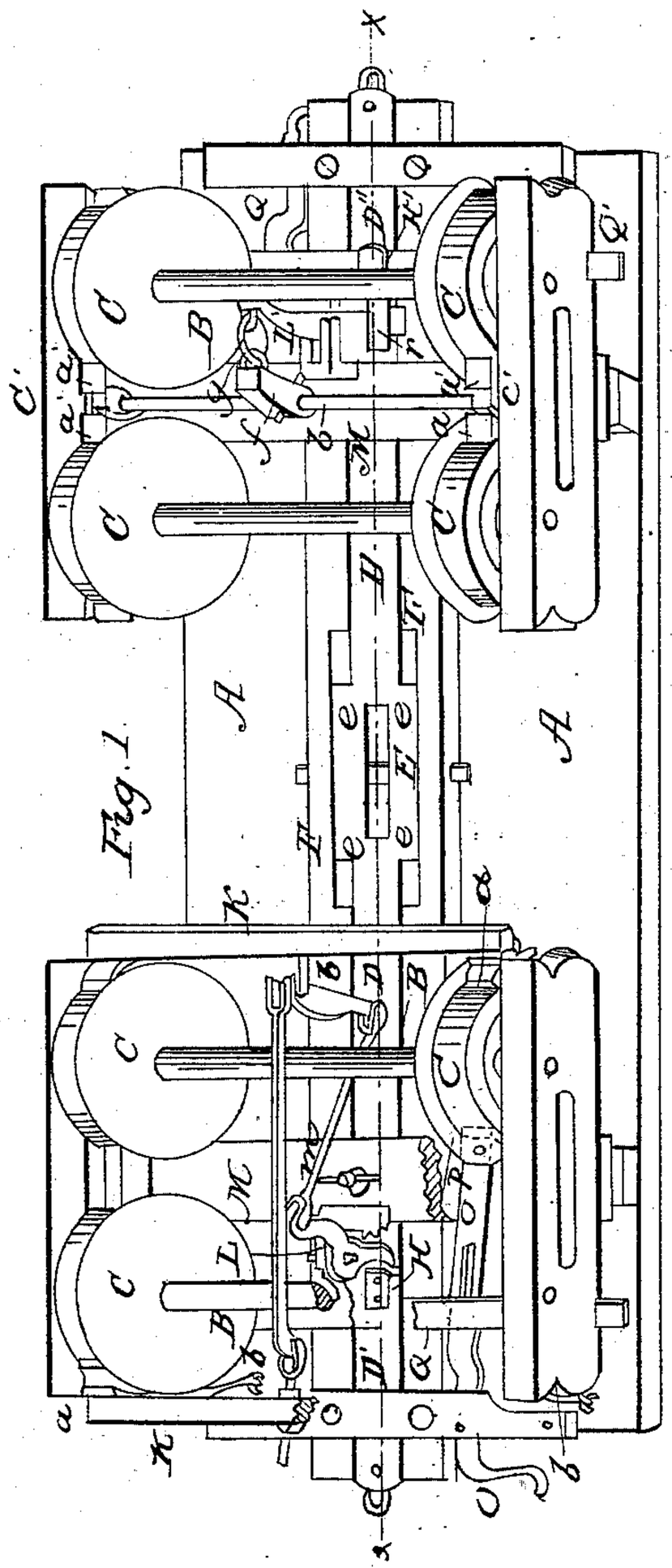

Fig. 1

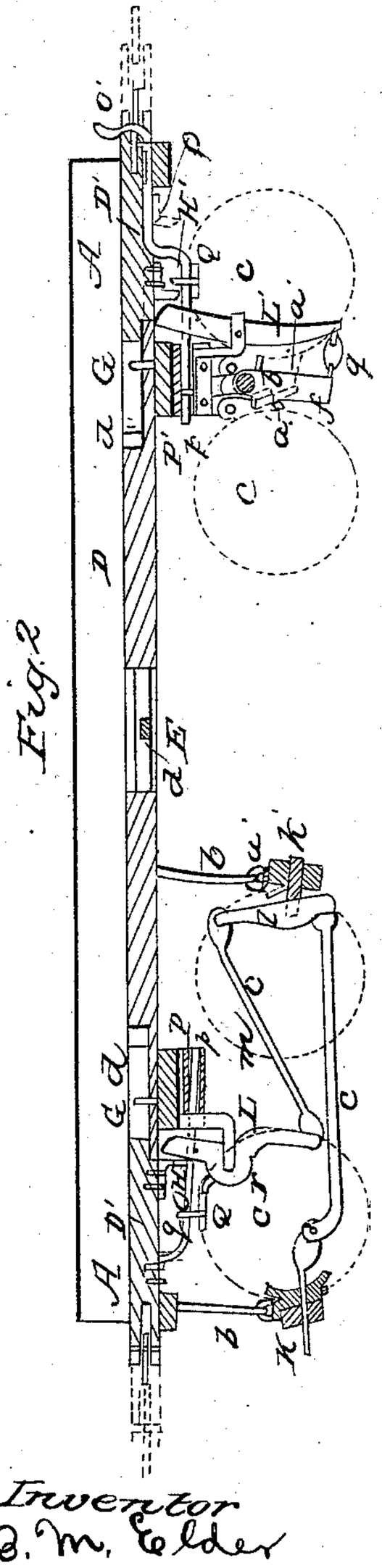

Fig. 2

Witnesses
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DANIEL M. ELDER, OF MONMOUTH, ILLINOIS.

Letters Patent No. 99,545, *dated February* 8, 1870.

IMPROVED RAILWAY-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, DANIEL M. ELDER, of Monmouth, county of Warren, State of Illinois, have invented a new and improved Self-Applying Car-Brake; and I do hereby declare that the following is a full and exact description thereof, reference being had to accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of a machine, embodying my invention.

Figure 2 is a perspective view of the levers *g* and *s*, sliding bar *n*, projections *t t*, and fulcrum T, all operating in connection with A 1.

Figure 3, a side view of A 1, operating on the lever *g*.

The nature of my invention consists in the construction and operation of connecting slotted draw-bars or rods, working longitudinally beneath the cars, whose extremities act as buffers, and being provided with couplings, form a continuous connection throughout the train, so arranged to act on levers connected with the brakes as that the engineer can apply or release the brakes throughout the entire train, from the engine, thereby lessening the danger of accident and expense of brakemen, as will hereafter more fully appear.

In the accompanying drawings—

Figure 1 is an isometrical view of the bottom of a car.

Figure 2 is a longitudinal sectional view, on the line *x–x* of fig. 1.

A represents the floor of a car.

B, the axles.

C, the wheels.

D D′ D″, the connecting draw-bar or rod, consisting of three pieces, rabbeted at the extremities, where they meet.

D′ D″, the two end pieces, are provided with any convenient coupling-device at their outer extremities. Slots *d* are cut, near their inner extremities, through the rabbeted ends.

The middle piece D is cut with a slot, *d′*, or provided with shoulders *e e*.

A bolt, E, passes transversely through the slot *d′*, and the fixed longitudinal bars F, to which it is secured. The fixed bars F are rabbeted to fit the shoulders *e* of the movable draw-bar D.

The draw-bar D is also provided with upright bolts G, secured to its rabbeted ends, and which pass up through the slots *d* of bars D′ D″.

Knee-shaped projections or studs, H H′, are secured to the under sides of bars D′ D″.

Two methods of operation are shown: one method is suitable to brakes working between the wheels, and the other to brakes applied to their outer sides.

In the latter case, the brake-shoes *a* are secured to brake-beams K K′, which are hung from the bottom of the car by swing-rods *b*.

These brake-beams are connected by a rod, *c*, pivoted in proper bearings, secured to the beam K and to a lever, *l*, pivoted in bearings secured to the other beam K′.

Another connecting-rod, *m*, is pivoted to the other end of lever *l*, and to the lower end of lever L, which is hung in proper bearings, secured to the transom M.

By the other method, the brakes *a′ a′* are supended between the wheels.

Between these brakes *a′ a′*, are oval-shaped blocks or cams *c′*, which are attached to the pivoted rod *b′* at each end.

To the centre of this rod *b′*, is secured a lever, *f*, connected by a solid link, *g*, to a lever, L′, which is hung in proper bearings, secured to transom M′.

O O′ are levers, having their fulcra at *p p′*, in slots cut in the bolsters P P′, or other convenient part of the car-frame. These levers are also slotted, to receive the pins *q q′*, which are secured to sliding bars Q Q′.

The sliding bars Q Q′ are provided with slotted projections *r*, which operate to throw the levers connected with the brakes out of and into position, so that the brakes can be adjusted, as desired, either to be acted upon by the connecting draw-bars, or worked independently by other means.

The operation of my invention is as follows:

When the train is in motion, the connecting draw-bars or rods throughout the train will be drawn outward, as shown by the dotted lines in fig. 2, to the full extent of the slots *d d′*, or until held by the bolts G or E, or shoulders *e e*, as each, or either, or their equivalent device, is resorted to for the purpose.

When it is desired to stop the train, the steam being shut off, the train will be forced against the engine, and the bars D′ and D″ will be pushed in, when the knee-shaped projections or studs H H′ will come in contact with and press against the upper end of the levers L L′, thereby applying the brakes to the first car, which, in turn, will cause a like action to all the brakes in the train, causing it to stop within a very short distance. The amount of pressure on the brakes can easily be regulated by the engineer, through the motive-power of the engine.

When it is desired to release the brakes from the action of the draw-bars, it can be done by altering the position of levers O O′, thereby throwing the levers L L′ clear of the knee-shaped projections on draw-bars D′ D″.

I claim, as my invention—

1. The levers O O′ and sliding bars Q Q′, provided with slotted projections *r*, or their equivalent, com-

bined and operated substantially as and for the purpose set forth.

2. The arrangement of rabbeted draw-bars D′ D″, having slots *d* and draw-bar D, having slot *d′* or shoulders *e*, with bolts G, bolt E, and bars F, the whole constructed and operating substantially as and for the purpose specified.

3. The combination of lever O and sliding bar Q with levers L *l*, rods *b* and *m*, stud H, brake-beams K K′, and brakes *a*, substantially as and for the purpose specified.

4. The combination of lever O′ and sliding bar Q′ with levers L′ and *f*, link *g*, rod *b′*, cams *c′*, brakes *a′*, and stud H′, substantially as and for the purpose specified.

5. The combination of draw-bars D D′ D″, studs H H′, and levers L L′, with levers O O′ and sliding bars Q Q′, substantially as and for the purpose specified.

DANIEL M. ELDER.

Witnesses:

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