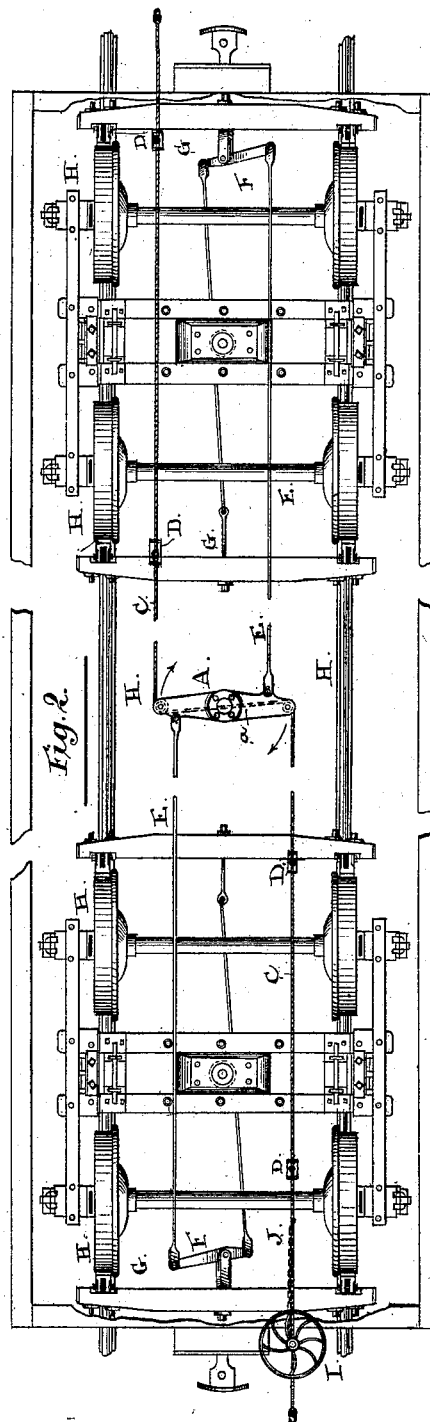
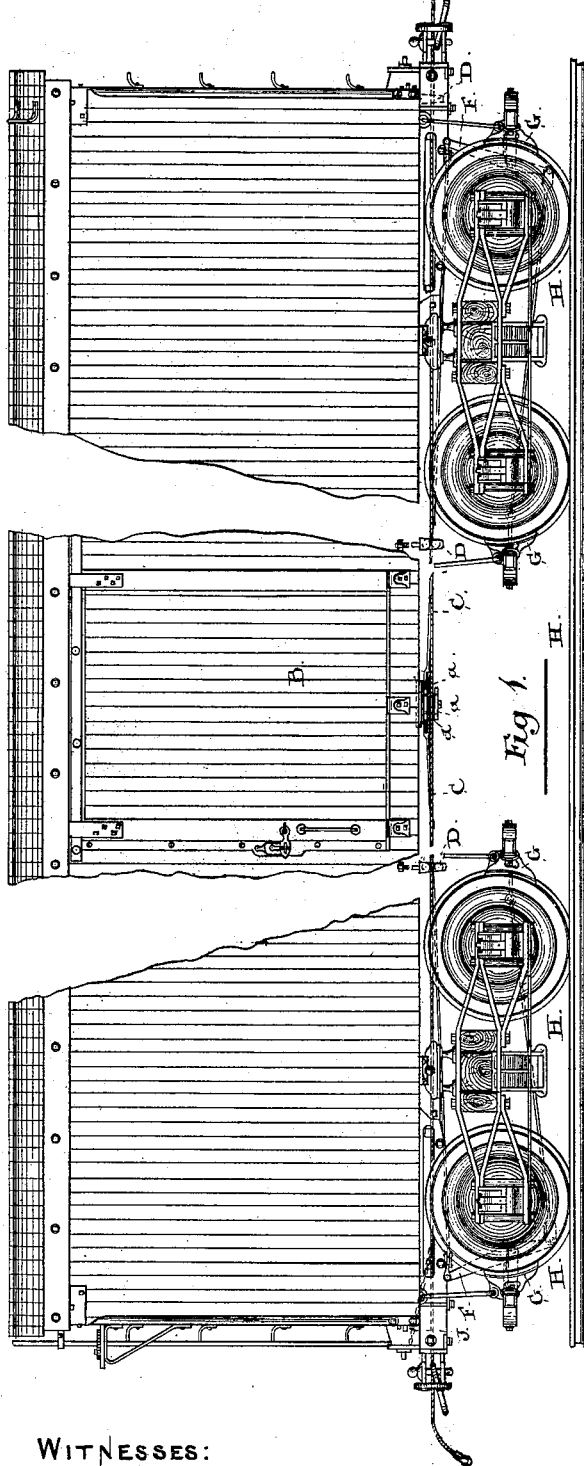


G. SMITH.
Car-Brake.

No. 221,195.

Patented Nov. 4, 1879.



WITNESSES:

John G. Ridout.

J. M. Gray

INVENTOR:

George Smith
by Ridout & Kirk
Attys

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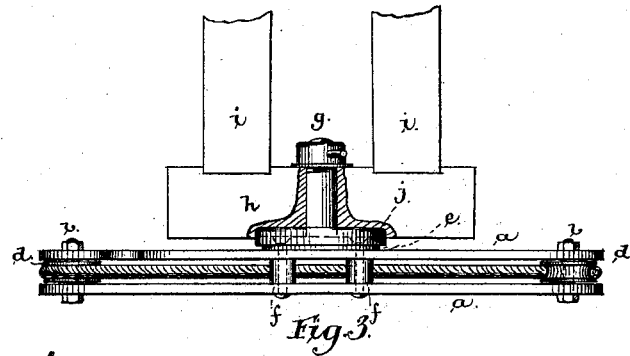


Fig. 3.

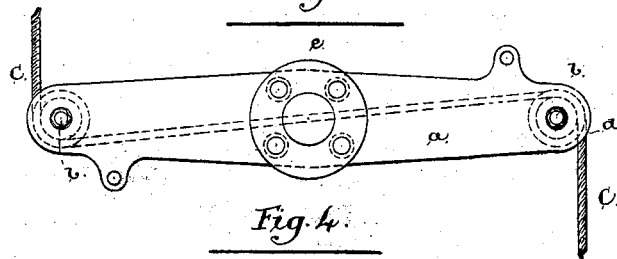


Fig. 4.

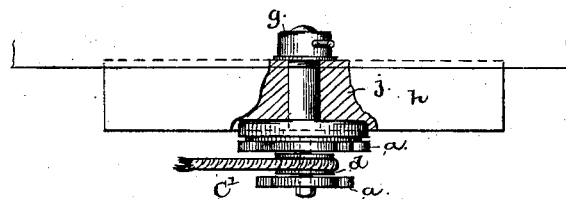


Fig. 5.

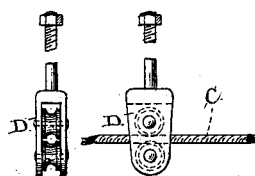


Fig. 6.



Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE SMITH, OF STRATFORD, ONTARIO, CANADA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **221,195**, dated November 4, 1879; application filed June 16, 1879.

To all whom it may concern:

Be it known that I, GEORGE SMITH, of the town of Stratford, in the county of Perth and Province of Ontario, Canada, surgeon, have invented certain new and useful Improvements in Car-Brakes, which improvements are fully set forth in the following specification and accompanying drawings.

The object of the invention is to provide a simple and cheap appliance by which all the brakes in a railway-train can be applied simultaneously from any given point in the train; and it consists of a lever specially constructed for the purpose, and pivoted, as hereinafter explained, to the bottom of each car, the brake-rods of which are attached to it, a rope or chain carried around friction-rollers in the lever, so that said chain will pass freely in order that one lever shall not turn on its pivot till all the levers in the train have been acted upon by the tension applied to the rope referred to, as hereinafter explained.

Figure 1 is a side elevation of a car with my brake apparatus attached. Fig. 2 is a plan of the same. Figs. 3, 4, 5, 6, and 7 are details of the apparatus.

It will, of course, be understood that I do not confine myself to the exact dimensions shown, or to the precise location of the various parts indicated, as the drawings are intended merely to exhibit the invention in a practical form, which, no doubt, could be modified and altered considerably without affecting the principle involved in the invention.

In Figs. 1 and 2, A is a lever pivoted to the bottom of the car B, as shown. C is a wire rope passing through the lever A, as hereinafter explained, and supported in suitable brackets D fastened to the bottom of the car. The brake-rods E are attached at one end to the lever A, and at the other to the brake-lever F. These rods and levers are of the ordinary kind, and may be connected to either one or both trucks, as desired.

On reference to Fig. 2, it will be understood that in order to apply the brakes G it is merely necessary to draw upon the rope C from either end of the car, which action will of course turn the lever A upon its pivot in the direc-

tion indicated by arrows, drawing at the same time upon the rods E, and thus applying the brakes G, as required.

It will be observed that the lever A is constructed so that the rope C can pass freely through the two plates *a* which form it, the pulleys *d* reducing the friction to a minimum, and, consequently, the rope C must be made taut its whole length before the levers are to any extent turned upon their pivots.

When the tension on the rope C is removed the brakes G will, of course, fall from the wheels H, being suspended in the usual manner. Springs may be used to accelerate the action, but I do not think that they will be found necessary.

As before said, the rope C may be acted upon from any chosen point in the train by automatic mechanism specially arranged for the purpose of applying all the brakes simultaneously, or the brakes of each car may be applied by the ordinary brake-wheel I, which, as shown, I connect to the rope C by a chain, J. This chain must, of course, be sufficiently slack to permit the free movement of the rope C.

Although I do not confine myself to the exact construction of the various parts shown, it will be well for the purpose of this specification to describe them.

Figs. 3, 4, and 5 exhibit an approved form and manner of connecting the lever A to the car. This lever is made by bolting together two wrought-iron plates, *a*, about five-eighths of an inch in thickness. The end bolts *b* connecting them form pivots for the friction-pulleys *d*, around which the rope C is carried. The center plate, *e*, is bolted or riveted to the plates *a*. Ferrules *f* on the rivets are fitted in, as shown, so as to keep the plates *a* the required distance apart.

The bolt or pin *g*, which is attached to or forms part of the center plate, *e*, passes through and is bolted to a block, *h*, spiked or otherwise secured to the stringers *i* of the car. To form a bearing for the plate *e*, I place a cupped plate, *j*, between it and the block H.

In Fig. 6 I show a bracket with friction-rollers, which I think will be found suitable

for carrying the rope C, and in Fig. 7 I show a suitable clip for connecting the wire rope C between the cars.

What I claim as my invention is—

A lever, A, made as described, and pivoted in the manner specified to the car B, in combination with the rope C supported by the

brackets D, substantially as and for the purpose specified.

Dated 29th day of May, A. D. 1879.

GEO. SMITH.

Witnesses:

JAMES P. WOODS,
M. MCFARLANE.