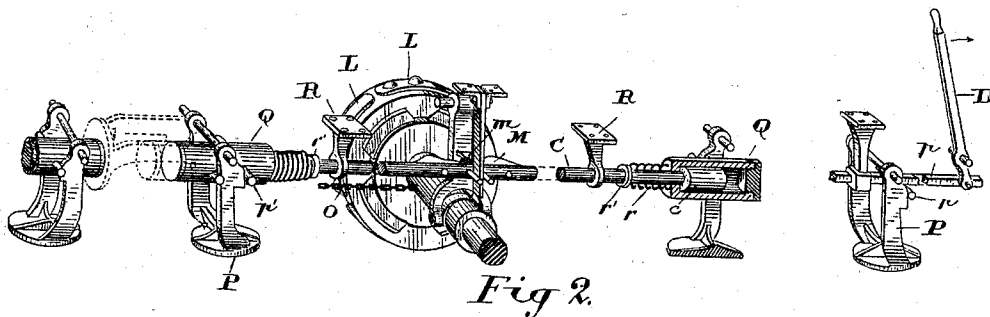
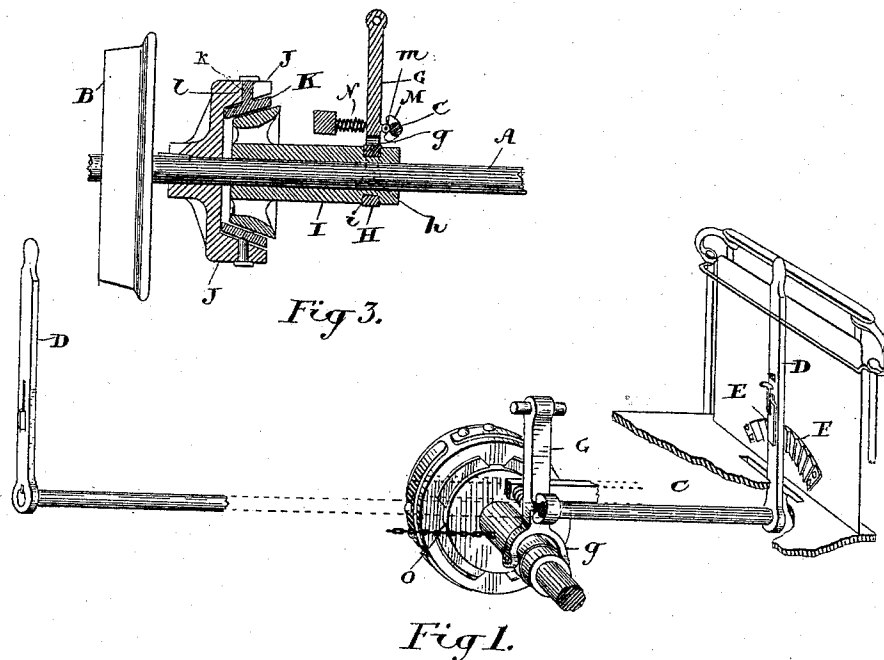


(No Model.)

A. CAMPBELL.
CAR BRAKE.

No. 497,119.

Patented May 9, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER CAMPBELL, OF HESPELER, CANADA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 497,119, dated May 9, 1893.

Application filed October 27, 1892. Serial No. 450,175. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER CAMPBELL, mechanic, of the village of Hespeler, in the county of Waterloo, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to improvements in car brakes and the object of the invention is—first—to provide a simple means by which the brakes may be put on without the brakeman having to exert the power for applying the brakes and at the same time to provide an auxiliary means for stopping the revolution of the car wheels and—secondly—to provide a means whereby, when the brakes are applied in a motor car or engine, the decrease in speed of the engine will serve to put on the brakes of all the train of cars following and it consists essentially—first—of securing on one or more of the axles of a car an internal friction clutch which is thrown into connection by a cam secured on a rod running throughout the length of the car and provided with handles for turning the rod and—secondly—of journaling in the bottom of the car a longitudinal rod provided with longitudinal adjustable bumpers at each end of the car on the said rod and swinging bumpers journaled in the bottom of the car so as to straddle the longitudinal adjustable bumpers, the swinging bumpers of the motor car or engine and on that end of each succeeding car farthest from the motor car or engine being arranged to be thrown against the longitudinal adjustable bumpers on that end of each succeeding car nearest to the motor car or engine so as to throw the friction clutch into connection and wind the brake-chain to put on the brakes as hereinafter more particularly explained.

Figure 1, is a perspective view showing my invention as applied to a single street car. Fig. 2, is a perspective view of my invention showing the manner in which it is applied to a train of cars. Fig. 3, is a cross section through the friction clutch and mechanism for operating the same.

In the drawings like letters of reference indicate corresponding parts in each figure.

A, is one of the axles of the car, B, the

wheels and, C, is a rod supported in bearings beneath the bottom of the car and extending from end to end of the same. In Fig. 1, this rod is shown with end levers, D, which have an adjustable plunger, E, secured in the same. The plunger, E, is designed to come in contact with a ratchet quadrant, F, secured on the dash-board of a car.

G, is an arm pivoted in bearings in the bottom of the car and having a forked end, *g*, which is connected to the collar, H, by the pins, *h*. The collar, H, is fitted into an annular groove, *i*, made in the sleeve of the internal member, I, of the friction clutch. J, is the outer member of the friction clutch, which is rigidly secured on the axle, A.

K, are sectional frictional blocks supported between the members, I, and, J, and held in position by the springs, L, which press against the projection, *k*, formed on the block, K, and projecting through the hole, *l*, in the member, J.

M, is a cam secured to or forming part of the rod, C.

m, is a friction roller journaled in the side of the arm, G, and, N, is a spring designed to press upon the other side of the arm, G, so as to restore it to its normal position.

O, is the chain which is connected to the brake shoe. As I do not claim anything in the manner in which the brake shoes are constructed and connected together I do not show them as any ordinary brake-shoes now in use will be readily actuated by my mechanism.

In order to operate the friction clutch so as to put on the brakes and wind up the chain upon the member, I, it is necessary to withdraw the plunger, E, and bring the lever, D, in the direction indicated by arrow and then replace the plunger, E, into one of the notches of the quadrant, F, so as to cause the cam, M, to press upon the roller, *m*, and thereby force the member, I, into clutch with the friction blocks, K, which will cause the member, I, to revolve with the axle and thereby wind up the chain and put on the brakes. Should the brakes not act promptly enough the lever may be brought around on the quadrant, so as to cause the member, I, to press the friction blocks, K, against the member, J, and thereby prevent the wheel itself from revolving.

ing. It will thus be seen that I provide a double means whereby the forward motion of the car may be prevented.

In Fig. 2, I show the form of the cam, M, slightly varied as in this figure it is secured on the rod longitudinally and operates upon the roller, *m*, secured in a perpendicular position on the side of the arm, G. As it is intended that this form is to be applied to a train of cars and that the putting on of the brakes may be controlled from the engine it will be seen that I provide a different manner of providing for putting on the brakes of each succeeding car after the brakes have been put on in the engine.

P, is a swinging bumper pivoted in the bottom of the frame of the car so as to straddle in the engine the rod, *p*, connected to the lever, D, and in the cars the longitudinal adjustable bumpers, Q. The rods, C, in this figure are supported by brackets, R, and have enlarged ends, *c*, which extend into the hollow bumper, Q, as shown.

r, is a spiral spring located between the inner ends of the bumpers and the collar, *r'*, secured on the rod, C.

The rod, *p*, in the engine has secured to it a laterally extending rod, *p'*, as has also the bumpers, Q. The rod, *p'*, extends out on each side of the rod, *p*, and bumpers, Q, respectively and are designed to come in contact with the projecting portion of the swinging bumpers, P. When the lever, D, is thrown in the direction indicated by arrow the rod, *p*, is thrown in the opposite direction so as to bring the laterally projecting rods, *p'*, against the projections of the bumper, P, thereby raising the bumper into the position shown by dotted lines. As the brake has been put on in the engine before the lever, D, is manipulated it will be seen that the bumper, Q, of the next succeeding car will come against the swinging bumper, P, and force the rod, C, backwardly, the spring, R, relieving the force of the blow. In so forcing the rod, C, backwardly the cam, M, will operate against the roller, *m*, so as to throw the friction clutch into gear in the manner hereinbefore described. The rod, C, will also operate so as to bring the laterally projecting rods, *p'*, against the projecting portion of the swinging bumper, P, at the opposite end of the car, thereby bringing the swinging bumper into the posi-

tion shown in dotted lines so that the rod in the next succeeding car will operate so as to throw its friction clutch into connection and thereby put on the brakes. This operation will take place in reference to the rod, C, upon each succeeding car and consequently all the brakes throughout the whole train will be successively put on.

From this description it will be seen that I provide a very simple and effective manner of putting on the brakes with as little unevenness of motion to the train as possible and at the same time provide an auxiliary means whereby the forward movement of the car may be still more effectively controlled than by the brakes alone.

What I claim as my invention is—

1. In a car brake, the combination with the brake shoe and chain of a friction clutch, a single rod provided at each end with an operating handle, a forked bracket engaging the clutch, and a cam carried by the rod, substantially as described.

2. The combination with the brake-shoes and chain, of the friction clutch, I, J, forked bracket, G, rod, C, having secured on it the cam, M, and spring, N, arranged as and for the purpose specified.

3. The combination with the brake-shoes and chain, of the friction clutch, I, J, internal spring friction blocks, K, forked bracket, G, rod, C, having secured on it the cam, M, and spring, N, arranged as and for the purpose specified.

4. The combination with the brake-shoes and chain, of the friction clutch, I, J, forked bracket, G, rod, C, having secured on it the cam, M, and lever, D, provided with an adjustable plunger, E, arranged to engage with the toothed quadrant, F, as and for the purpose specified.

5. The combination with the brake-shoes and chain, of the friction clutch, I, J, forked bracket, G, rod, C, having secured to it the cam, M, the lever, D, connected to the rod, *p*, having the laterally extending rods, *p'*, and the adjustable bumper, Q, and spiral spring, *r*, and collar, *r'*, arranged as and for the purpose specified.

ALEXANDER CAMPBELL.

Witnesses:

WILHELM MÜLLER,
WILLIAM HOPE.