

(No Model.)

G. P. MERRILL.

TRACTION INCREASER FOR LOCOMOTIVES.

No. 316,380.

Patented Apr. 21, 1885.

Fig. 1.

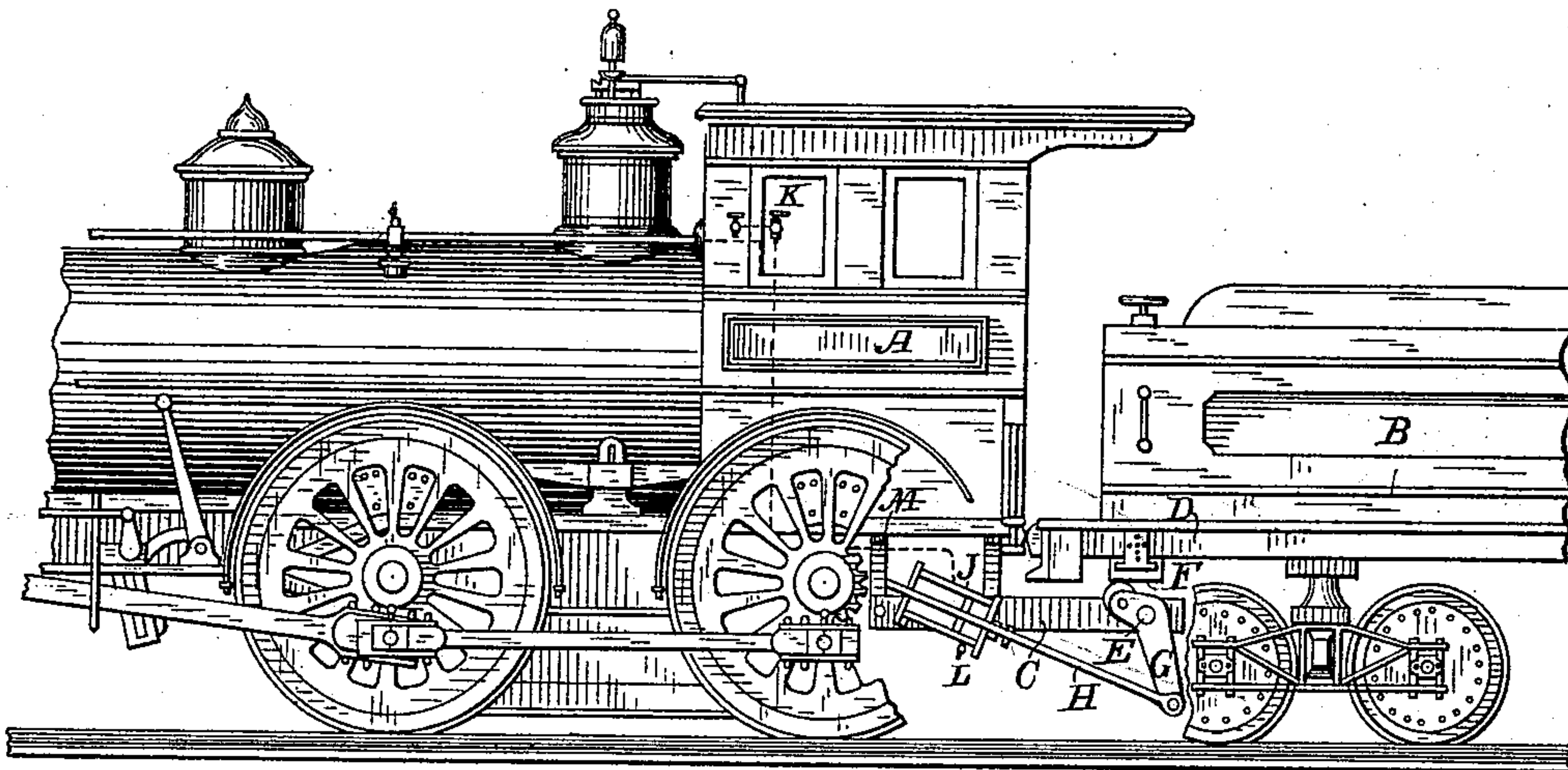


Fig. 2.

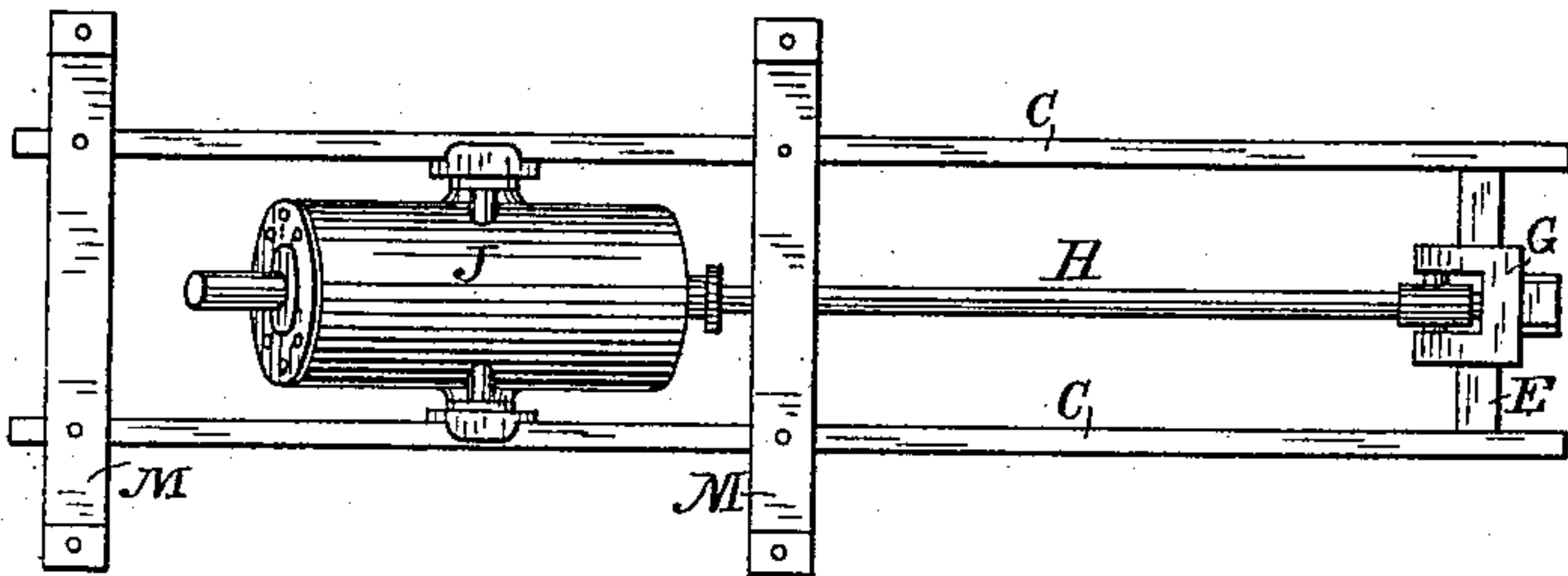
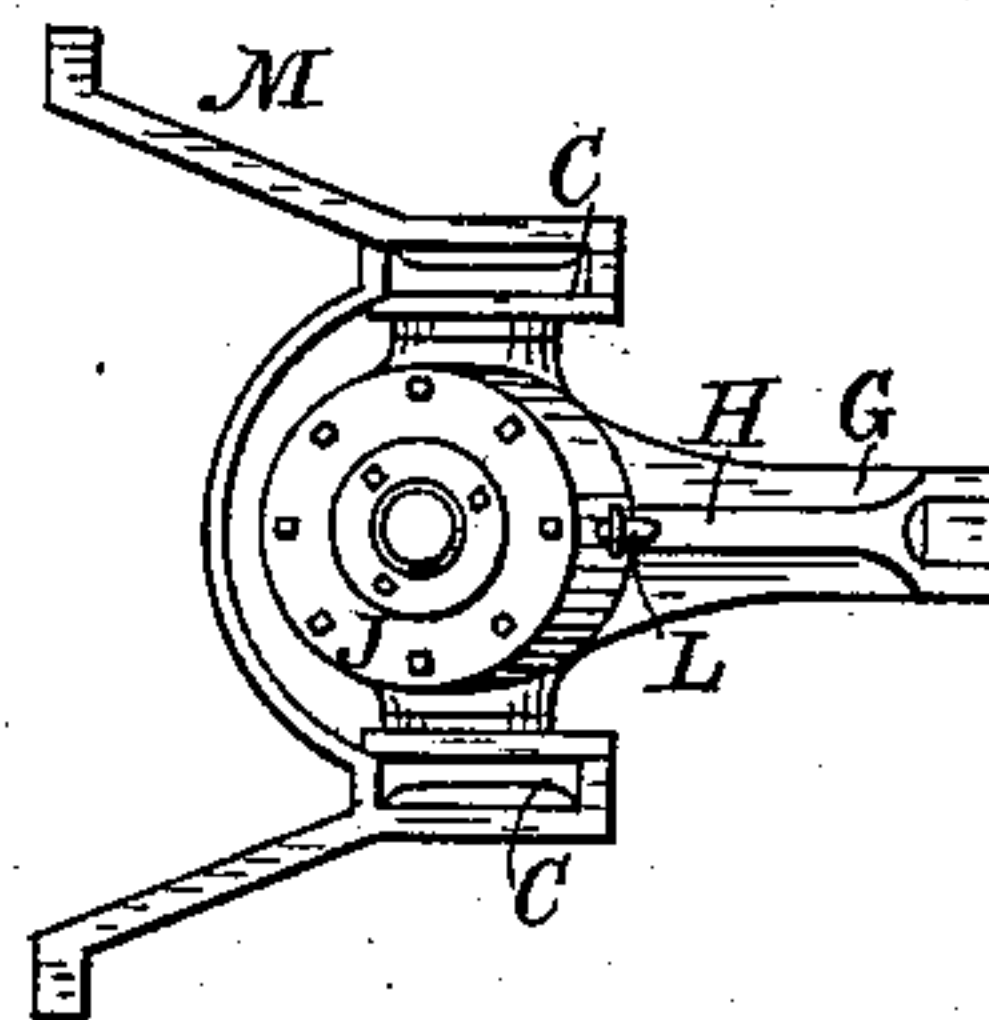


Fig. 3.



Witnesses

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GEORGE P. MERRILL, OF TOLEDO, OHIO.

TRACTION-INCREASER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 316,380, dated April 21, 1885.

Application filed February 11, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. MERRILL, a citizen of the United States, residing at Toledo, Ohio, have invented new and useful Improvements in Traction-Increasers, of which the following is a specification.

My invention relates to certain new and useful improvements in locomotive-engines.

The invention relates more particularly to that class of devices known as "traction-increasers." The devices of this kind as heretofore constructed are imperfect and unsatisfactory for many reasons, some requiring a special construction of the parts of the engine and tender with which they come in contact; some are very cumbersome and unnecessarily expensive, and others are so constructed as to exert an uneven strain upon those parts of the engine to which they are attached.

The object of my invention is to produce a device which shall be capable of being operated to increase the traction of the drive-wheels of a locomotive by transferring a portion of the weight of the tender thereto without exerting an unequal and consequently injurious strain upon the parts to which it is connected, and which shall be capable of being attached to any of the common forms of locomotives without making any changes in their construction.

With these objects in view my invention consists of a rigid frame of a construction adapting it to be attached to an ordinary cab and extend rearward beneath the tender a short distance, and carrying a lever at its rear end bearing against the under side of the tender, and a cylinder upon said frame adapted to operate the said lever to transfer a portion of the weight of the tender to the rigid projection, and therefore upon the drive-wheels, whereby their traction is increased, all these parts being of the construction substantially as hereinafter fully set forth.

In order that those skilled in the art to which my invention relates may know how to make and use my invention, I will now proceed to describe the same in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a locomotive with my improved traction-increaser in operative position. Fig. 2 is a plan view of the

operative parts of the device, and Fig. 3 is an end elevation of the same.

In the drawings, A and B represent, respectively, the cab of an ordinary locomotive and the tender.

The mechanism by which the shifting a part of the weight of the tender to the drive-wheels is accomplished is carried upon a frame consisting of the parallel bars C C and the cross-pieces M M and E. The bars C C are of a length to extend from a point a short distance in rear of the axle of the rear pair of drive-wheels a short distance beneath the tender.

M M are two cross-pieces, the functions of which are to secure the bars C C firmly together and also form a convenient means for securing the frame in position. To this latter end they project upward from the bars, and have their ends perforated for the passage of bolts, by which they are held in position.

At the rear end of the bars C C is mounted a cross-piece, E, which forms a fulcrum for the lever G, by which the tender is elevated. The lever is provided at its upper end with a roller which serves to lessen the friction caused by the rubbing against the bottom of the tender, and the tender is provided at this point with a block or plate, F, to take up the wear. The preferred means of operating the lever is by means of a cylinder, J, whose piston-rod is connected to the lower end of the lever G.

Steam is admitted to the cylinder through a pipe which connects it with the boiler of the locomotive, and this pipe passes through the cab, where it has a stop-cock placed at a convenient point to be manipulated by the engineer.

In the operation of the device the cock in the steam-pipe is opened, thus allowing the passage of the steam into the cylinder, the piston of which is thereby forced forward, and this movement is communicated to the lever through the medium of the piston-rod, and the lever operated to raise the tender and transfer a portion of its weight to the projection from the cab.

From the foregoing it will be apparent that my improved traction-increaser is so constructed that it may be attached and detached from an engine with ease; that no particular form of engine is required for its reception,

and that it is simple and economic in construction.

Having thus described my invention, what I claim is—

5 1. As a means of increasing the traction of the drive-wheels of a locomotive-engine, the detachable frame consisting of the rails and the cross-pieces by which they are connected and secured in place, the said frame extend-
10 ing from a point in rear of the axle of the rear pair of drive-wheels a short distance to a position in advance of the axle of the forward wheels of the tender, the lever pivoted to the frame, and the operating-cylinder, substan-
15 tially as described.

2. As a means for increasing the traction of the drive-wheels of a locomotive-engine, the rigid detachable frame situated beneath the cab in rear of the axle of the rear pair of drive-
20 wheels and extending a short distance beneath the tender, in combination with the tender

provided with the block E, the lever G, and the operating-cylinder.

3. As a means of increasing the traction of the drive-wheels of a locomotive, the rigid 25 detachable frame consisting of the parallel rails having the cross-pieces M, whose ends extend upward for attachment to the bottom of the cab, the said frame extending from a point in rear of the axle of the rear pair of 30 drive-wheels to a point in advance of the axle of the forward pair of wheels of the tender, the operating-cylinder connected with the boiler by a pipe, as described, and the lever, all substantially as set forth. 35

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

GEO. P. MERRILL.

Witnesses:

L. G. RICHARDSON,
R. FARMER.