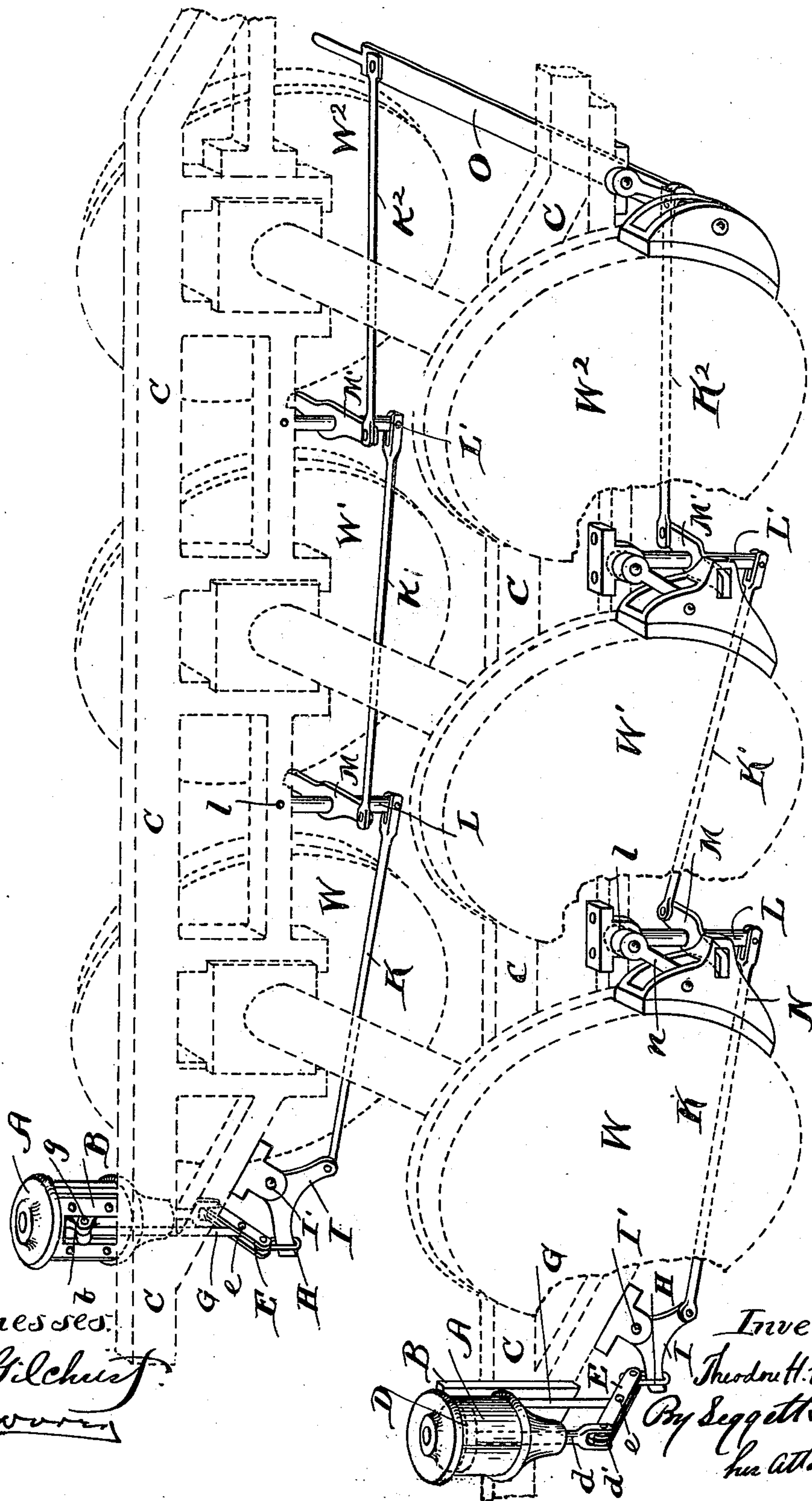


(No Model.)

T. H. HABERKORN.
BRAKE MECHANISM FOR LOCOMOTIVES.

No. 510,911.

Patented Dec. 19, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

THEODORE H. HABERKORN, OF FORT WAYNE, INDIANA.

BRAKE MECHANISM FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 510,911, dated December 19, 1893.

Application filed April 26, 1893. Serial No. 471,910. (No model.)

To all whom it may concern:

Be it known that I, THEODORE H. HABERKORN, of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Brake Mechanism for Locomotives; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in locomotive driving-wheel brake-mechanisms; and my invention consists more especially in certain features of construction and in combinations of parts whereby the braking power is vastly increased without increasing the initial power, that is, without enlarging the braking capacity of the driving-wheel braking-cylinder.

My invention also consists in the details of construction hereinafter described and pointed out in the claims.

The accompanying drawing exhibits a perspective of my improved braking mechanism, the brake-shoes or blocks of the braking mechanism of the wheels at one side of the locomotive being removed to more clearly show the construction, and the supporting-frame, wheels and axles being shown in dotted lines.

Separate braking mechanism is provided for the driving-wheels at each side of the locomotive. Said mechanisms are, however, alike in construction and a description of one will answer for both.

A braking-cylinder, A, is provided just rearward of the rear driving-wheel, said cylinder being preferably attached, in any suitable manner, to an upright bracket, B, suitably secured to the driving-wheel supporting-frame C that carries the journal-boxes. The piston-rod *d* of the piston D of the brake-cylinder is shown operatively connected, at its lower end, as at *d'*, with the one or outer end of a tilting-lever E that is arranged transversely of the supporting-frame and is fulcrumed, at its central portion, as at *e*, to a rod or bar, G, depending from the supporting-frame above and preferably pivoted at its upper end, as at *g*, to an inwardly-projecting lug or ear, *b*, of bracket B. The other or inner end of lever E is shown operatively connected, by means of a link, H, with the one end of a brake-rod

operating-lever, I, shown fulcrumed, as at I', to the supporting-frame. The other end of lever I is operatively connected with the brake-rod K that, at its opposite end, is operatively connected with the lower end of the first brake-lever, L, that is, the brake-lever of the rear driving-wheel W. Said brake-lever is shown fulcrumed at its upper end, as at *l*, to the supporting-frame. Upon the central portion of brake-lever L is shown mounted an equalizing-lever, M, upon the outer end whereof is mounted the brake-shoe or block, N, also hung by means of a link *n* from the supporting-frame. Equalizing-lever M is supported at its central portion, and, at its inner end, is operatively connected with the brake-rod K' of the second brake-lever L', that is, the brake-lever of the central or next forward driving-wheel, W'. An equalizing lever M' is shown mounted upon the second brake-lever in the same manner as that already described in connection with the first brake-lever, said second equalizing-lever having the brake-shoe or block for wheel W' operatively connected with the one end thereof and being shown operatively connected at its opposite end with a third brake-rod K² that, at its opposite end, is operatively connected with the tie or connecting-rod, bar or beam O of the brake-shoes or blocks of the forward or third pair of driving-wheels W².

By the construction hereinbefore described, it is obvious that if the power exerted by the first brake-rod were say ten thousand pounds, the power exerted at the central portion of the first equalizing-lever would be twice that or twenty thousand pounds, which would be divided between the first brake-shoe or block and the second brake-rod. Hence, the second brake-rod would exert a power of ten thousand pounds which at the central portion of the second equalizing-lever would be increased to twenty thousand pounds that, by means of said equalizing-lever, would be divided between the second brake-block or shoe and the third brake-rod. Thus, the braking-power at each brake-shoe or block is equal to the initial power, and hence the greatest economy is obtained.

By my improved construction it will also be observed that the brake-cylinders are brought as closely as practicable to the adja-

cent driving-wheels, which is desirable, because economy in the space occupied is thereby obtained.

What I claim is—

5 1. In brake-mechanism for locomotives, the combination of a brake-lever for one of the driving-wheels, and suitable means for operating said lever, an equalizing-lever mounted upon said brake-lever, brake-shoe or block
10 operatively connected with the equalizing-lever at one side of the brake-lever and the brake-rod of the brake of another wheel operatively connected with the equalizing-lever at the opposite side of the brake-lever, substantially as and for the purpose set forth.
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2. In brake-mechanism for locomotives, the combination with the brake-cylinder, piston and piston-rod of said cylinder, and brake-rod operating-lever, of a tilting-lever operatively

connected with the piston-rod and a link operatively connecting said tilting-lever with the brake-rod operating-lever, the arrangement of parts being substantially as and for the purpose set forth.

3. In brake-mechanism for locomotives, the combination of the supporting-frame; brake-rod operating-lever, I; brake-cylinder and piston and piston-rod of said cylinder; depending rod or bar, G; tilting-lever, E, and link, H, all arranged and connected substantially as and for the purpose set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 25th day of March, 1893.

THEODORE H. HABERKORN.

Witnesses:

C. W. KUHNE,

C. H. DORER.