

(No Model.)

3 Sheets—Sheet 1.

C. LUYERS.

BRAKE FOR RAILWAY ROLLING STOCK.

No. 537,984.

Fig. 1. Patented Apr. 23, 1895.

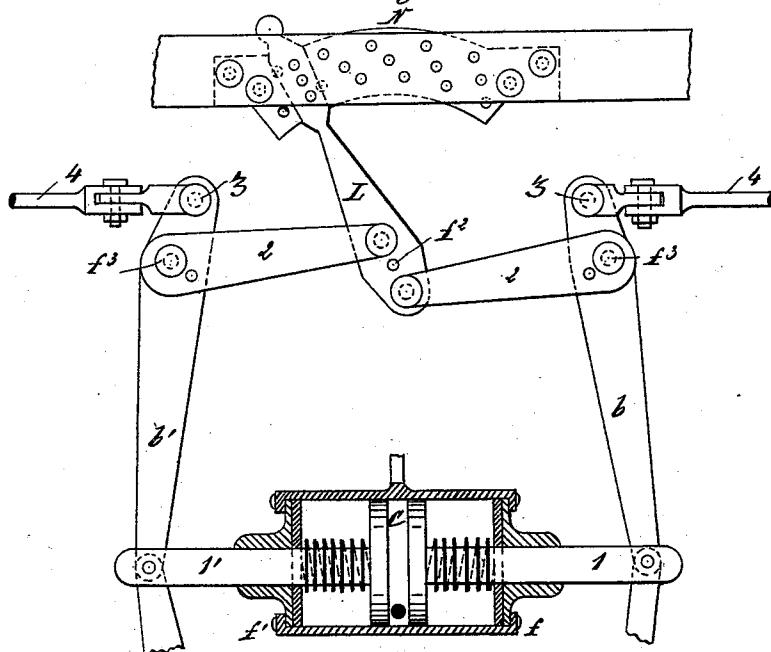
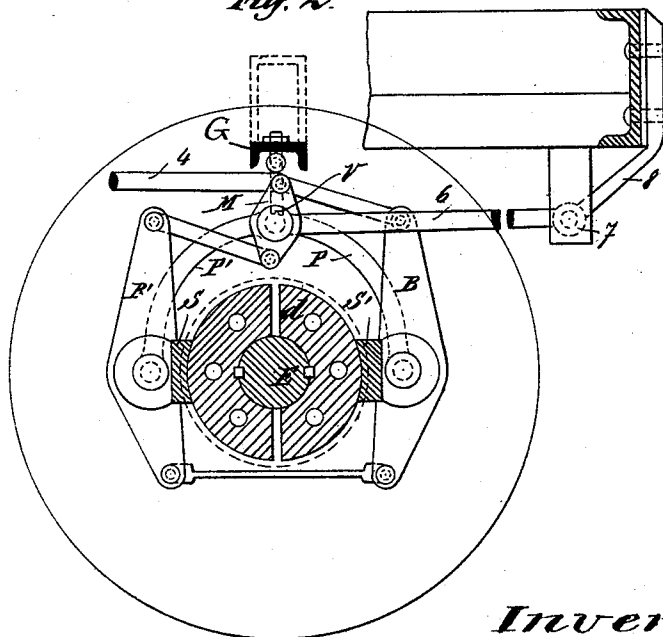


Fig. 2.



Witnesses

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Inventor:

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3 Sheets—Sheet 2.

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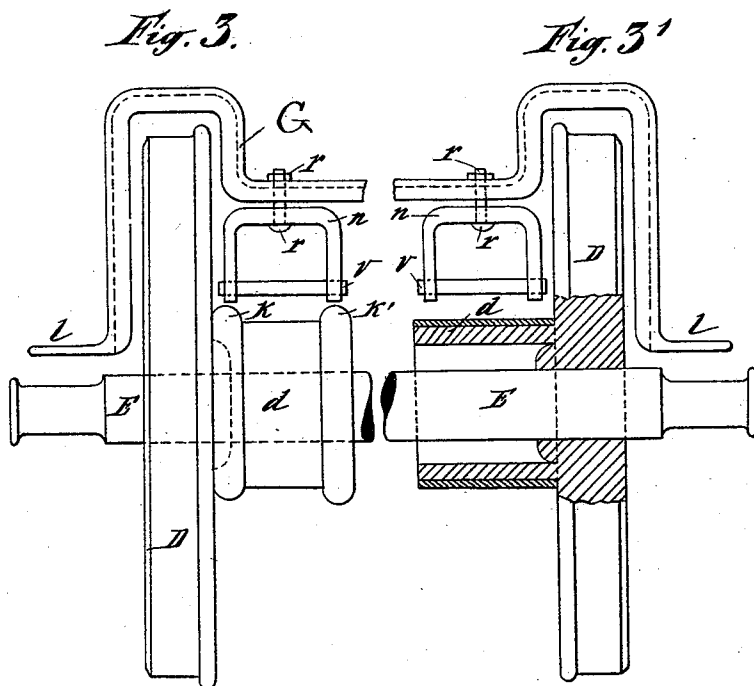
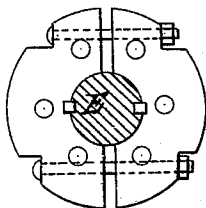


Fig. 4.



Witnesses

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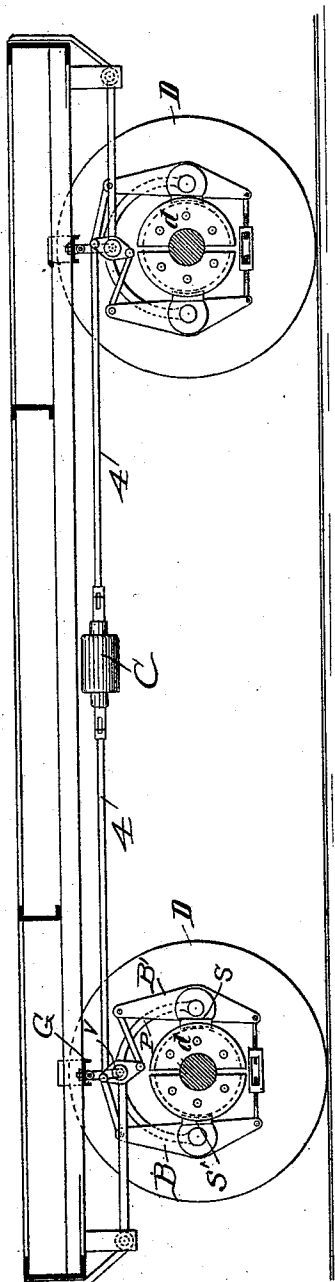
his Attorneys

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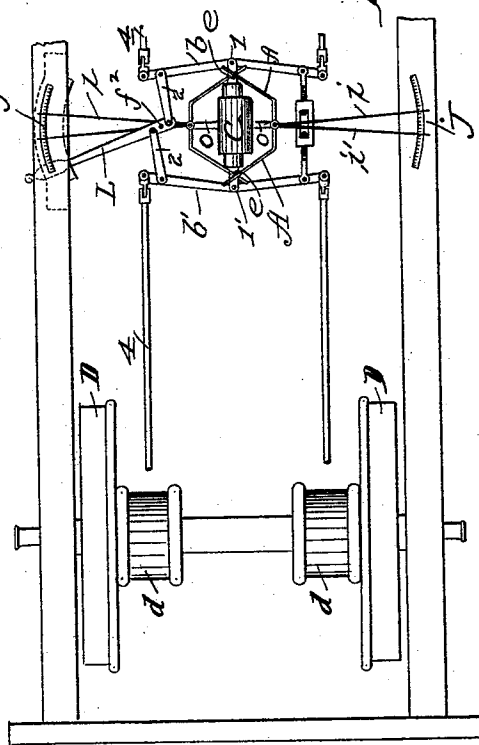
Patented Apr. 23, 1895.

Fig. 5.

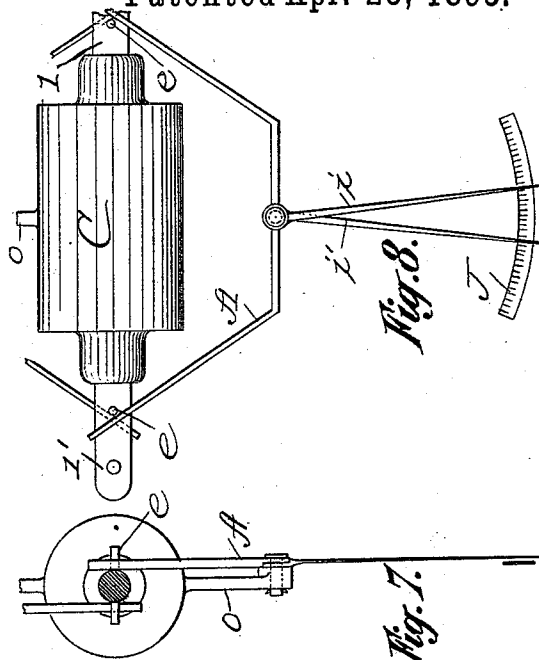


Witness:
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M. L. Davidson

Fig. 6.



Inventor:
Charles Luyers,
by Richard D. Adams



UNITED STATES PATENT OFFICE.

CHARLES LUYERS, OF BRUSSELS, BELGIUM.

BRAKE FOR RAILWAY ROLLING-STOCK.

SPECIFICATION forming part of Letters Patent No. 537,984, dated April 23, 1895.

Application filed March 12, 1894. Serial No. 503,288. (No model.) Patented in Belgium August 31, 1893, No. 80,734; in France August 31, 1893, No. 219,370; in England August 31, 1893, No. 16,406; in Luxemburg August 31, 1893, No. 1,884; in Spain August 31, 1893, No. 2,749/14,911; in Portugal August 31, 1893, No. 1,943, and in Italy September 19, 1893, No. 22.

To all whom it may concern:

Be it known that I, CHARLES LUYERS, engineer, of Brussels, in the Kingdom of Belgium, have invented new and useful Improvements in Brakes for Railway Rolling-Stock, (for which no patent has been obtained in any country except on the 31st of August, 1893, the following patents were obtained: in Belgium, No. 80,734; in France, No. 219,370; in England, No. 16,406; in Luxemburg, No. 1,884; in Spain, No. 2,749/14,911; in Portugal, No. 1,943, and on the 19th of September, 1893, in Italy, No. 22,) of which the following is a specification.

According to this invention the brake blocks of railway rolling stock are applied to friction drums fixed on the running axles, the friction and wear of the wheel tires being thus avoided and the hardening of the tires being rendered unnecessary thus effecting a saving in the expense of re-turning the tires after wear.

The accompanying drawings illustrate brake apparatus according constructed to my invention.

Figure 1 is a part plan; Fig. 2, a front elevation partly in section. Fig. 3 is a side elevation; Fig. 4, a front view of the friction drum which is keyed and bolted in halves on the axle E with holes through it for cooling. Fig. 5 is a side view with parts in section of the invention as applied to a car. Fig. 6 is a plan view of part of Fig. 5, and Figs. 7 and 8 are enlarged detailed views.

The brake cylinder C has two pistons urged toward each other by springs surrounding the piston rods 1 1'. Each of these rods is jointed to two levers *b b'* the fulcras of which are connected by links 2 2' to a lever L on opposite sides of its fulcrum.

From the pin 3 of the short arm of each lever *b* a rod 4 extends to a double crank M the arms of which are linked to a pair of levers B B' carrying the brake blocks S' S.

As the brake pistons are separated by air pressure between them or otherwise, the arms 3 and rod 4 are drawn toward L and the double crank M is partly turned so as to press the brake blocks against the drum *d*.

In order to compensate wear, the lever L is

turned more or less and pinned to a bar N thus drawing nearer together the fulcras of the levers *b* and consequently drawing the rods 4 so as to bring the brake blocks nearer the drum *d*. The double crank M is mounted on a pin V from which bent arms *p p'* extend down to carry the fulcras of the levers B B'.

The pin V is itself on a bracket *n* swiveling on a bolt *r* which is held on bar G that crosses the carriage and has its ends *l* resting on the axle boxes. Thus the crank M and the brake levers and blocks do not partake of the vertical oscillations of the carriage body but remain always coincident with the axle. In order to steady the pin V it is tied by a link 6 to a pin 7 bracketed from and tied by link 8 to the under frame.

The brake drum *d* may be attached to the running wheel D. It has collars K K' between which there is surface for the brake blocks considerably wider than the wheel tire to which they are usually applied.

In Figs. 6 and 8 arms *o* extend laterally from the cylinder C to which are pivoted the levers A, A of angular form each having its arm arranged to be pressed by the pins *e* on the piston rods 1 1' each time the same are moved out so that the index fingers *i, i'* connected to and operated by the levers will be moved over the scales J, J and indicate how far the brake blocks have been moved before being properly seated against the brake disk. After the brake blocks wear the index fingers will move to a greater extent over the dial and instead of standing at zero when the brakes are set they will for instance, stand at 10 thus showing that more movement of the brake block is necessary before being seated and that it has worn and showing that the lever L must be adjusted to take up this wear.

Having thus described my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination with the axle and friction drum, the pivoted brake blocks, the levers *b b'* having their opposite ends connected respectively with the brake blocks and with the operating power, and the adjustable pivots for said levers *b* and a hand lever interposed between the levers *b b'* and connected to

the pivots thereof for adjusting them to take up wear, substantially as described.

2. In combination the axle, the friction drum, the pivoted brake blocks, levers *b b'* 5 having their upper ends connected with said brake blocks and their lower ends connected with the source of power, the links 2 having their outer ends forming the fulera for the levers *b b'* and the lever *L* to which the links 10 are connected directly and on opposite sides of the fulcrum thereof for operating said links 2 to adjust the fulera to take up wear, substantially as described.

3. In combination with the axle and drums 15 thereon, the bar *g* having its outer ends supported by the axle boxes, the loops *n* swiveled to and suspended from said bar over the drums, the arms extending from said loops to each side of the drums the brake 20 blocks pivotally suspended from said arms, and means for operating said brake blocks, substantially as described.

4. In combination with the axle and wheels the brake blocks, the supporting bar secured 25 to the axle boxes transversely over the wheels,

the supports for the brake block levers extending from the said bar, the means for operating the brakes and the connections between the said means and the brake block levers said connections being suspended from the supporting bar, substantially as described. 30

5. In combination in a braking apparatus, the cylinder, the pistons, the brake shoes, the connections from the pistons to the brake shoes, means for adjusting the said connections 35 to take up wear, the index levers connected to the pistons and the scales over which the indexes move to indicate the wear on the brake shoes, substantially as described.

6. In combination in a braking apparatus, 40 the brake shoes, connections thereto for operating the same, means for adjusting the said connections and an indicator connected to the moving parts to indicate the amount of wear of the brake shoes, substantially as 45 described.

CHARLES LUYERS.

Witnesses:

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GREGORY PHELAN.