(122.)

C. H. LATHROP.

Improvement in Railroad Car Brakes.

No. 122,264. Patented Dec. 26, 1871.

Fig. 1

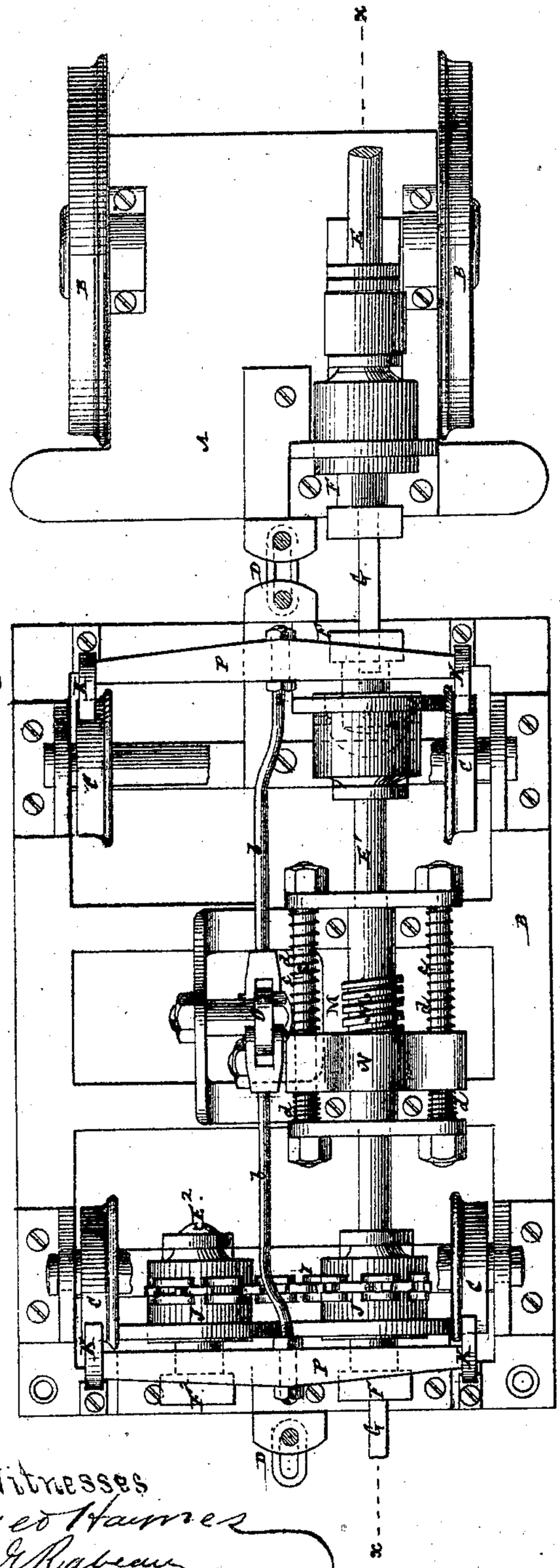
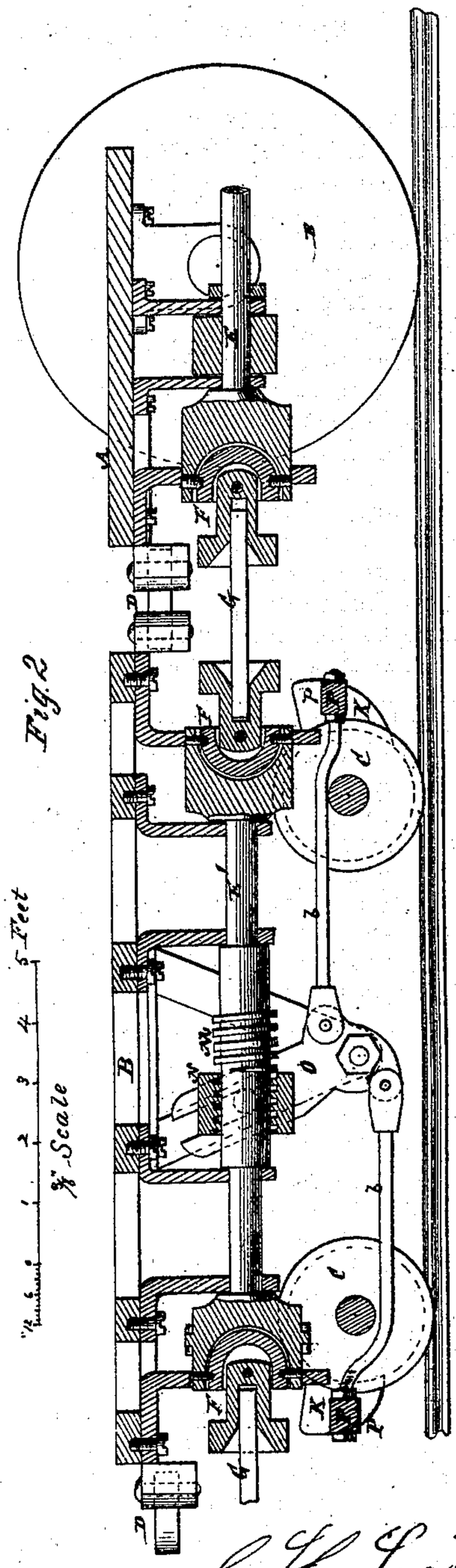


Fig. 2



Witnesses
Fred Haynes
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122,264

UNITED STATES PATENT OFFICE.

CHANCY H. LATHROP, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN RAILWAY CAR-BRAKES.

Specification forming part of Letters Patent No. 122,264, dated December 26, 1871.

To all whom it may concern:

Be it known that I, CHANCY H. LATHROP, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Brakes for Steam-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents an inverted plan of the rear end of a locomotive-engine and lower portion of its tender or next-adjacent vehicle coupled to it with my improvement applied thereto. Fig. 2 is a longitudinal vertical section of the same at the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

Referring to the accompanying drawing, A represents the rear portion of the lower frame of a locomotive-engine, and B B its one pair of wheels, which should be connected by one and the same axle, although not here so represented. B is the bed or lower frame of the tender, and C C its wheels. D D are the usual link-couplings with which, and buffers, the several vehicles of the train may be provided as ordinarily. E represents the primary section of a driving-brake shaft. Said shaft section is arranged to lie in direction of the length of the train on one side of its center, and forms a portion of a continuous line of shafting, arranged in sections, to run throughout the length of the train or any number of its cars, and of which E′ is the section carried by the tender, the several cars being similarly provided with a like shaft section to E′. Fitted to the ends of these shaft sections E′ and to the outer end of the primary section E, are universal couplings, F F, which may be constructed in any suitable manner so that they have a ball-and-socket motion, and serve to receive within them short detachable end bars or shaft connections G, made square or angular in their transverse section, so as to turn in common with the shaft sections E E′, but not restrained longitudinally by the couplings which they fit. In this way, or by these means, I am enabled to build up a continuous line of shafting throughout the train in a rapid manner by simply slipping a loose end bar, G, into the one coupling F, and running or guiding it into the opposite coupling of the adjacent car or vehicle. A like facility is afforded for breaking the connection when taking off a car or cars; and the continuous line of shafting when established throughout the train, in no way restricts the free movement of the cars as provided for by their link couplings D D, inasmuch as the universal couplings F F, and the loose fit of the longitudinal bars G, as represented in Fig. 2 of the drawing, does not tie or bind the cars together in any direction. By means of this continuous line of shafting, as formed by the independent shaft sections E E′, universal couplings F F, and loose end bars or shaft-connections G, power applied to the primary shaft section E is communicated throughout the whole line of shafting, and, by suitable mechanism connected therewith, transferred to the brakes. The necessary power to work such shafting may be communicated by means of friction-wheels or bevel-gear direct from the locomotive, but it is preferred to employ a separate, small, and independent engine for such purpose, so as to give complete control over said brake-shaft or shafting at all times, both when the locomotive is running and when it is at rest. A reversible or double-rotary engine bolted to the under side of the locomotive-frame would be an advantageous device or arrangement for the purpose.

To provide for reversing the position of the locomotive and tender relatively to the end of the car, or train of cars or trucks with which the tender connects, a counter or supplementary-shaft section, E^2, having a universal coupling, F^2, for reception of an end bar or shaft-connection, G, is fitted to the rear end of the tender on the oppesite side of its longitudinal center to the shaft section E^1, and power communicated by a pitched chain, I, and pulleys J J, or otherwise, from the last-named section to the shaft section E^2, so that provision is made for establishing connection with the line of shafting throughout the cars when said shafting occupies either a right or left-handed position, according to the end of the car or train with which the tender connects. Such supplementary shaft section E^2, however, is only necessary on the tender, as the cars do not need to be reversed. The brake-rubbers or shoes K K are forced toward or from the wheels to which they respectively belong according to the direction in which the continuous line or shafting E E^1 throughout the train is made to rotate. The intermediate means for thus putting on or off the

brakes may be as follows: Each shaft section E^1 is formed with a screw, M, on it. This screw, accordingly as it is rotated to the right or to the left, moves a sliding nut or cross-bar, N, toward the one or other end of the vehicle, and in so doing sets in motion a lever, O, with which it is connected, and which is attached by rods *b b* to the beams P P that carry the brake-shoes. The nut or cross-bar N slides on and is guided by stationary rods *c c*, which have springs *d d* on them to keep the nut up to the screw after it has been worked off the latter, and to retain it in position for re-establishing hold of the screw on it again by reversing the rotation of the screw. After the screw M has worked the nut N to the full extent of its movement in either direction, the continued rotation of the shaft E^1 in the same direction has no further effect as regards releasing or applying the brakes; but on reversing the motion of the screw then the brakes are moved again off or on, as the case may be.

What is here claimed, and desired to be secured by Letters Patent, is—

The supplementary shaft section E^2 with its universal coupling F^2, in combination with the shaft section E^1 from which it derives its motion, when said shaft sections are arranged in relation with each other and the vehicle to which they are applied, substantially as specified.

C. H. LATHROP.

Witnesses:
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