J. F. O'CONNOR.

FRICTION DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED MAY 11, 1908.

909,446. Patented Jan. 12, 1909.

2 SHEETS—SHEET 1.

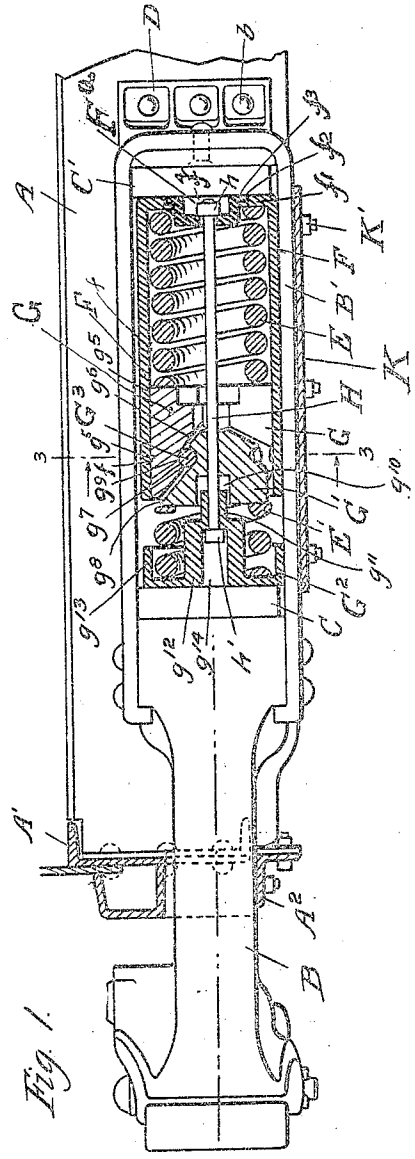


Fig. 1.

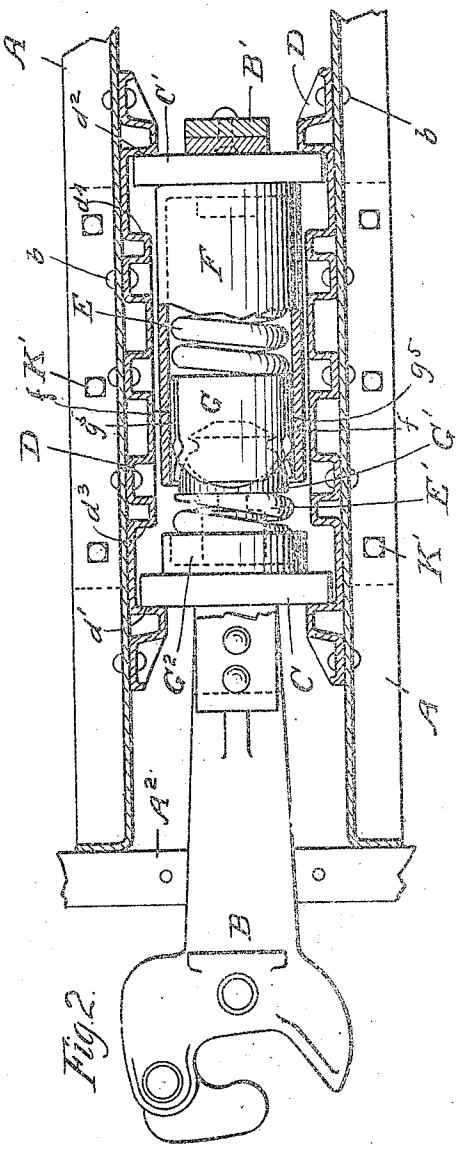


Fig. 2.

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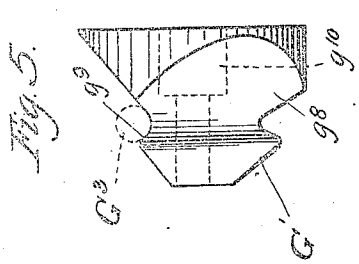


Fig. 5.

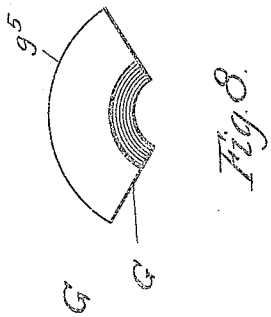


Fig. 8.

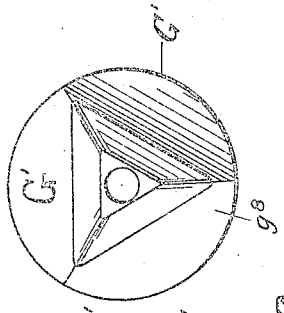


Fig. 4.

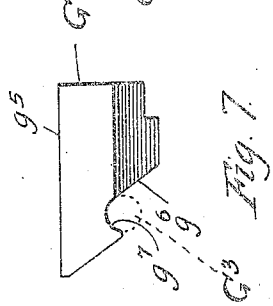


Fig. 7.

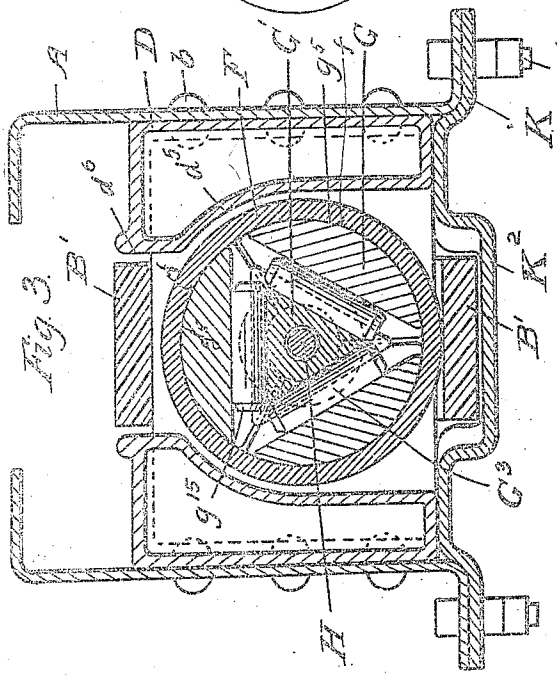


Fig. 3.

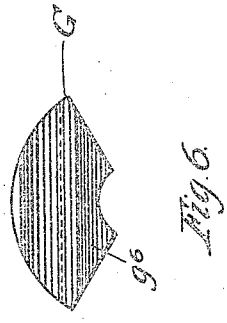


Fig. 6.

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UNITED STATES PATENT OFFICE.

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FRICTION DRAFT-RIGGING FOR RAILWAY-CARS.

No. 909,446. Specification of Letters Patent. Patented Jan. 12, 1909.

Application filed May 11, 1908. Serial No. 432,017.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Friction Draft - Rigging for Railway-Cars, of which the following is a specification.

My invention relates to improvements in friction draft rigging for railway cars.

My invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a side elevation partly in central vertical longitudinal section of a friction draft rigging embodying my invention. Fig. 2 is a plan view partly in horizontal section. Fig. 3 is a cross section on line 3—3 of Fig. 1. Fig. 4 is a detail end view of the wedge and friction blocks. Fig. 5 is a detail elevation of the wedge. Fig. 6 is a detail front view of one of the friction blocks. Fig. 7 is a detail side elevation of same and Fig. 8 is a detail rear elevation of same.

In the drawing, A represents the center sills or frame members of the car to which the draft rigging is applied, A^1 the front or end sill and A^2 the carry-iron.

B is the draw-bar, B^1 the draw-bar yoke, C C^1 the followers, D D the stop castings or draft lug members, E the spring, E^1 a preliminary compression spring, F a longitudinally movable friction shell inclosing the spring E, G the segmental friction blocks, preferably three in number, G^1 a pyramidal wedge, preferably three faced, G^2 a preliminary compression follower, G^3 anti-friction rollers interposed between the wedging faces of the friction blocks G and wedge G^1 and H a connecting rod between the preliminary compression follower and the friction shell G.

By combining with the friction shell a series of at least three anti-friction rollers and a pyramidal wedge having at least three faces and a corresponding number of friction blocks, the difficulty or objection incident to the use of a pair of anti-friction rollers and a two faced wedge and a single pair of friction blocks and the consequent tendency of the wedge pressure to distort the friction shell and to accentuate the wear upon diametrically opposite portions of the shell and friction blocks, and to fail to properly release with certainty and reliability is entirely overcome.

The stop castings or draft lug members D are rigidly and firmly secured to the draft sills or frame members A A of the car by rivets *b* and are furnished with stops or shoulders d^1 d^1 for the followers C C^1 to abut against and also with intermediate stops d^3 d^4 to limit the movement of the followers and consequent compression of the springs.

The friction shell F is preferably cylindrical in form and has an interior cylindrical friction face *f*. The friction shell F is also preferably furnished at its rear end with an integral annular flange f^1 having an annular recess f^2 to receive the flange f^3 of the recessed cap F^2 which closes the rear end of the friction shell F, and to which one end of the connecting rod H is secured by the threaded nut *h*, which fits in the recess f^4 of the cap F^2.

The segmental friction blocks G have exterior cylindric friction faces g^5 in sliding frictional engagement with the interior friction face *f* of the friction shell F. The segmental friction blocks G are preferably three in number and each is furnished with an inclined or wedging face g^6 having a shoulder g^7 to retain in place the anti-friction roller G^3 which is interposed between the segmental friction block G and the wedge G^1. The wedge G^1 is pyramidal and corresponds in the number of its wedging faces g^8 to the number of segmental friction blocks G. As illustrated in the drawing, the pyramidal wedge G^1 has three inclined or wedging faces g^8, this being the preferred construction. Each of the inclined or wedging faces g^8 of the wedge G^1 is furnished with a shoulder g^9 to retain the anti-friction rollers G^3 in place. The pyramidal wedge G^1 is further provided at its front end with a recess g^{10} to receive the shouldered end or guide g^{11} of the preliminary compression block or follower G^2. The preliminary compression spring E^1 is interposed between the pyramidal wedge G^1 and the preliminary compression block or follower G^2 so that this preliminary compression spring may properly cushion light blows or shocks without bringing the frictional resistance mechanism into action. The preliminary compression follower G^2 is furnished with a stop shoulder g^{11} which engages the end of the pyramidal wedge G^1 and thus limits the compres-

sion of the preliminary compression spring E^1. The preliminary compression spring E^1 surrounds the hollow stem portion g^{12} of the preliminary compression follower or block G^2. The preliminary compression follower or block G^2 is further provided with a rim or flange g^{13}, the end of which may abut against the front end of the friction shell F and thus serve to limit the inward movement which may be imparted to the pyramidal wedge G^1 through the preliminary compression block G^2. The head h^1 of the connecting bolt or rod H fits in the central recess g^{14} of the preliminary compression follower or block G^2. The stop castings or draft lug members D are preferably furnished on their inner faces with curved guide walls d^5 for the friction shell F and with guide members d^6 for the upper limb or member of the draft yoke B^1.

K is a tie plate extending between the draft sills A A and removably secured thereto by bolts K^1. The tie plate K is provided with a central longitudinal depressed portion K^2 to receive and guide the lower member of the draft yoke B^1. The anti-friction rollers G^3 have conical or beveled ends g^{15}, which fit together at the meeting ends of two adjacent angularly placed rollers. The beveled projecting ends of the rollers G^3 thus cause the rollers to hold each other centrally in place.

The connecting rod H with its threaded nut h serves not only as a means for holding the spring and frictional cushioning devices of the draft rigging all connected together and in assembled position, but it also serves to hold the springs under an initial tension and as a means for adjustment of the spring frictional resistance mechanism to take up wear.

As in my invention the triangular coöperative arrangement of the rollers causes them, in connection with the pyramidal wedge and the co-acting faces of the friction blocks, to automatically retain said rollers in their central position about the wedge, it is unnecessary to provide the friction shell and friction blocks with means for preventing the latter from turning in the friction shell. The friction blocks being thus left free to turn in the friction shell, thus enables the wear to take place uniformly over the entire interior cylindric friction face of the shell.

I claim:—

1. In a friction draft rigging, the combination with the draw-bar, draft rigging, draft lugs and followers, of a longitudinally movable friction shell having an internal cylindric friction face, a spring therein, a series of friction blocks having external cylindric friction faces and interior wedging faces, a pyramidal wedge having a series of inclined faces, a series of angularly disposed anti-friction rollers interposed between the wedging faces of said segmental friction blocks and said pyramidal wedge, substantially as specified.

2. In a friction draft rigging, the combination with the draw-bar, draft rigging, draft lugs and followers, of a longitudinally movable friction shell having an internal cylindric friction face, a spring therein, a series of friction blocks having external cylindric friction faces and interior wedging faces, a pyramidal wedge, a series of angularly disposed anti-friction rollers interposed between the wedging faces of said segmental friction blocks and said pyramidal wedge, said anti-friction rollers having beveled meeting ends and coöperating to maintain each other in place, substantially as specified.

JOHN F. O'CONNOR.

Witnesses;
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