Aug. 8, 1933. D. F. SPROUL 1,921,046

DRAFT GEAR

Filed July 30, 1931

Fig. 1

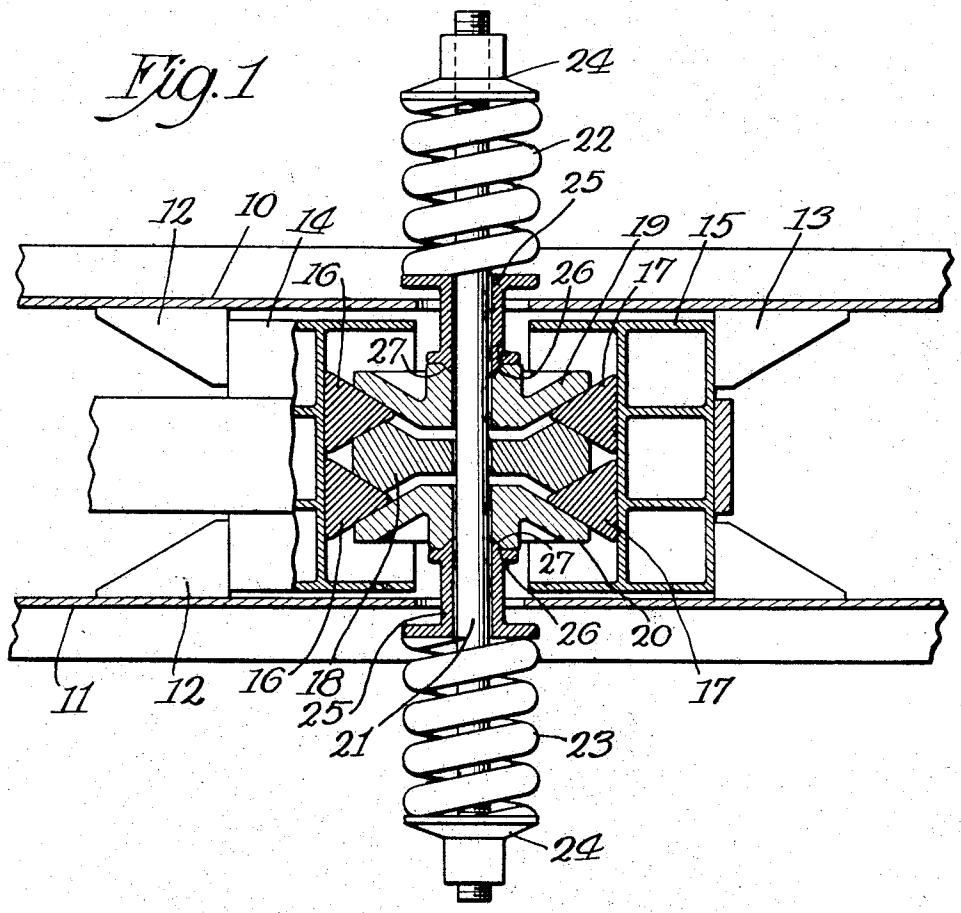


Fig. 2

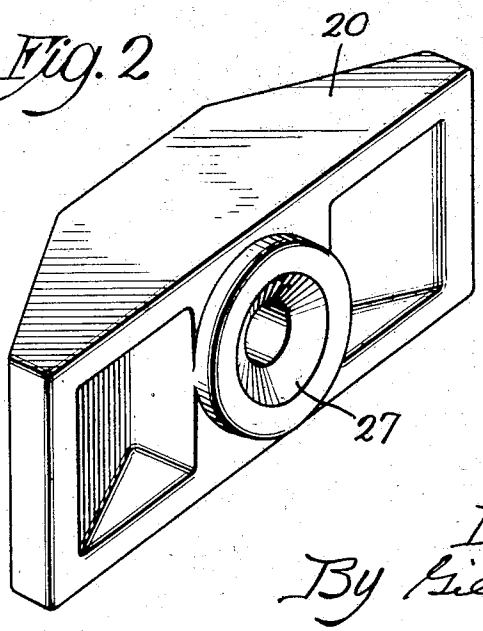
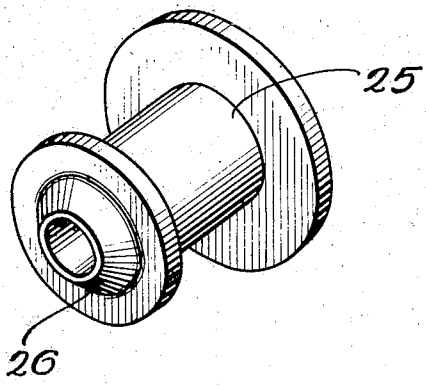


Fig. 3



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DRAFT GEAR

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6 Claims. (Cl. 213—38)

The invention relates particularly to that type of draft gear in which the spring resistance is mounted on a transverse rod; and its object is to maintain the alignment of the spring seats with the gear elements with which they directly cooperate.

A preferred embodiment of the invention is hereinafter described, and is illustrated in the accompanying drawing in which

Fig. 1 is a detail plan section of the draft sills of a railway car and of the draft gear applied thereto;

Figs. 2 and 3 are views in perspective of one of the draft gear elements and of the spring seat which cooperates therewith.

The draft sills of a car are represented at 10, 11, and carry draft and buffing lugs 12, 13, with which the followers 14, 15, cooperate.

The invention is disclosed in connection with the well known Cardwell draft gear, comprising the two chambered followers 14, 15; a pair of triangular wedge-blocks 16, 17, seated against the inner face of the end wall of each follower; a central wedge member 18, cooperating with the blocks of each pair 16, 17; a pair of outer wedge-blocks 19, 20, cooperating, respectively, with the outer faces of the triangular blocks; a transverse rod 21 extending through apertures in the members 18, 19 and 20, and the draft sills; springs 22, 23, sleeved upon the end portions of the rod outside of the sills, and each reacting between a nut 24 on the outer end of the rod and a spring seat 25 having bearing upon the members 19, 20.

Upon compression of the gear the wedge-blocks 16, 17, of each pair are spread apart by the wedging action of the central member 18, and the members 19, 20, are spread apart by the wedging action of the triangular blocks, against the resistance of the springs 22, 23. The members 19, 20, and the spring seats 25 slide outwardly upon the rod and, in order to provide freedom of action, have a loose fit thereupon.

In the exigencies of service the apertures of the members 19, 20, and the spring seats frequently get out of line, one of these cooperating members sliding frictionally along one side of the rod and the other along the other side thereof, with the result that the wear upon the rod is unevenly distributed, shoulders thereon are formed which interfere with the free action of the gear and tend to prevent complete release.

The object of the present invention is to maintain the apertures of these two elements in strict alignment, and to that end the bearing face of the spring seat 25 is provided with an annular boss 26, having the form of a truncated cone, and the bearing face of the member 20, with which the spring seat engages, is provided with a complementary recess 27. The members 20, 25, being always under pressure, the perfect alignment of their apertures is thereby maintained and smoothness of action, both on compression and release of the gear, is obtained. The bearing faces of the members 20 and 25 extend laterally beyond the boss 26 and recess 27, and are flat and normal to the axis of the rod 21. These flat faces cooperate with the boss and socket in insuring a true centering of the members.

The invention is not limited to the true conical form of the boss 26 and socket 27, it being important only that the boss taper toward the apex, whether its sides be straight or curved.

I claim as my invention—

1. In a draft gear, in combination, a pair of opposed followers, cooperating wedging elements interposed between the followers and including a pair of laterally movable members, a straining rod extending loosely through the last-named members, springs mounted on the outer end portions of the rod, seats carried by the rod for the outer ends of the springs, and spring seats for the inner ends of the springs and having sliding engagement with the rod and bearing on the laterally movable wedge members, the engaging faces of such elements comprising an annular tapering boss on one thereof and a complementary socket in the other whereby the apertures in the engaging elements are brought into alignment.

2. In a draft gear, in combination, a pair of opposed followers, cooperating wedging elements interposed between the followers and including a pair of laterally movable members, a straining rod extending loosely through the last-named members, springs mounted on the outer end portions of the rod, seats carried by the rod for the outer ends of the springs, and spring seats for the inner ends of the springs and having sliding engagement with the rod and bearing on the laterally movable wedge members, the engaging faces of such elements comprising a boss having the form of an annular truncated cone on one thereof and a complementary socket in the other whereby the apertures in the engaging elements are brought into alignment.

3. In a draft gear, in combination, a pair of opposed followers, cooperating wedging elements interposed between the followers and including a pair of laterally movable members, a straining rod extending loosely through the last-named

members, springs mounted on the outer end portions of the rod, seats carried by the rod for the outer ends of the springs, and spring seats for the inner ends of the springs and having sliding engagement with the rod and bearing on the laterally movable wedge members, the engaging faces of such elements comprising a boss having the form of an annular truncated cone formed on the spring seat and a complementary socket in the wedge element whereby the apertures in the engaging elements are brought into alignment.

4. In a draft gear, in combination, a pair of opposed followers, cooperating wedging elements interposed between the followers and including a pair of laterally movable members, a straining rod extending loosely through the last-named members, springs mounted on the outer end portions of the rod, seats carried by the rod for the outer ends of the springs, spring seats for the inner ends of the springs and having sliding engagement with the rod and bearing on the laterally movable wedge members, the engaging faces of such elements comprising an annular tapering boss on one thereof and a complementary socket in the other, and flat sections extending laterally from the boss and socket whereby the apertures in the engaging elements are brought into alignment.

5. A draft gear element comprising a tubular body faced at one end to form a seat for a spring, and having a radial flange adjacent its opposite end, and being tapered beyond such flange.

6. A draft gear element comprising a tubular body faced at one end to form a seat for a spring and having a radial flange adjacent its opposite end, the portion beyond the flange being of progressively decreasing diameter.

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