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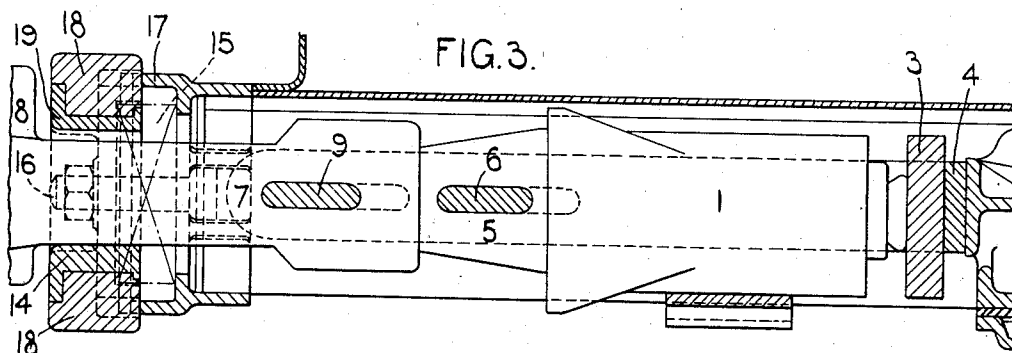
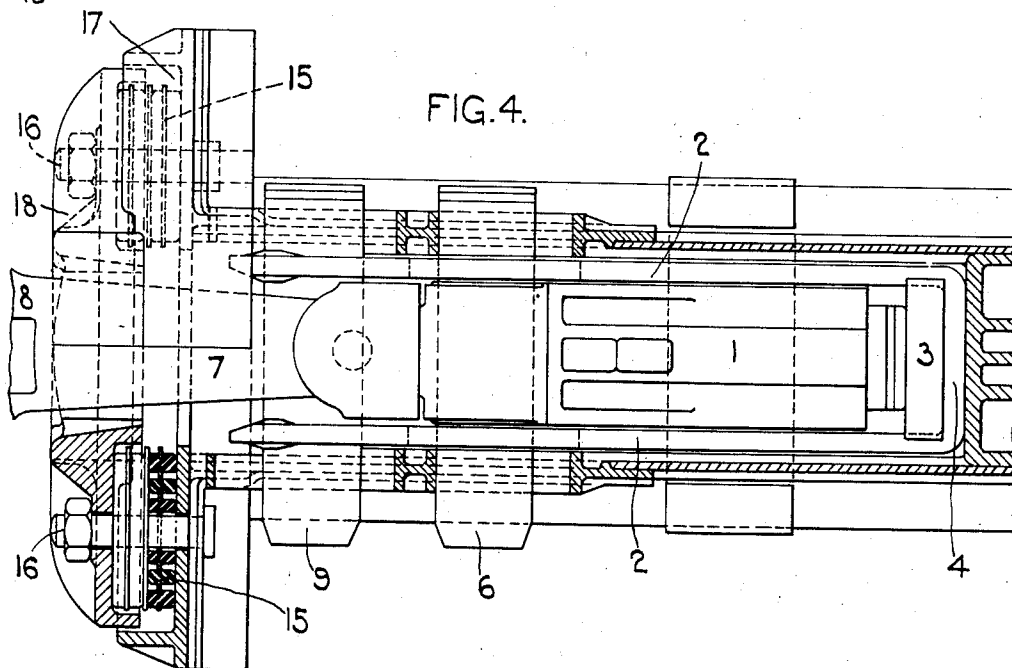
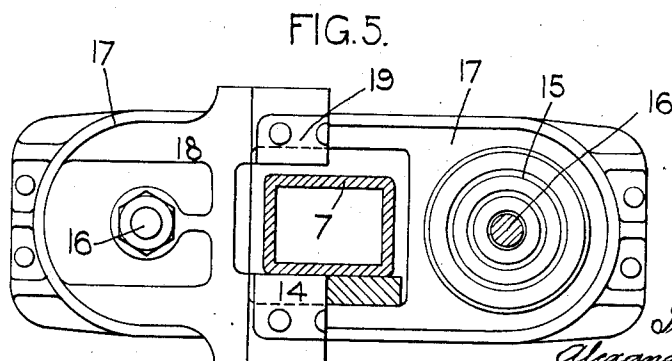
A. SPENCER

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BUFFER

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2 Sheets-Sheet 2



Inventor
Alexander Spencer
by Herbert W. Jencks
Attorney

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BUFFER

Alexander Spencer, London, England

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5 Claims. (Cl. 213—59)

This invention relates to central buffing and draw gear for railway and like vehicles and particularly to buffing and draw gear of the kind known as friction draft gear, that is to say of the kind in which buffing and tension shocks transmitted through the central coupler are absorbed and dissipated mainly by friction.

Draw gear of this kind usually comprises helical steel springs, wedge-shaped blocks, spring casing, follower plate and other parts enclosed within a coupler yoke located between longitudinal members of the underframe at the inner side of the headstock.

The general object of the invention is to remove from the friction gear the final stresses incident to intense buffing blows, thereby considerably enhancing the durability of the gear and freedom from the likelihood of fracture, while further and favorable objects will appear from the following description.

According to the present invention there is combined with the end sill, the coupler shank and the coupler head, a central buffer comprising a housing secured to the outer face of the end sill, an india-rubber spring therein, a compression plate surrounding the coupler shank mounted in said housing in engagement with said spring and projecting at the front face of the housing being normally free of said head but arranged for operation by said head on its inward movement under buffing stress.

The external buffer spring is preferably constituted by an india-rubber spring of the well-known type comprising concentric rings or frames of india-rubber moulded on to metal plates with the rings or frames encircling the coupler shank. The said spring is located within a casing fixed to or mounted on the headstock and the compression of the spring is effected by a compression plate having a part that projects through the front of the casing and against which the rear of the coupler head bears when moved inwardly upon buffing.

The external buffer comes into action to take the final buffing stresses, after operation of the friction draft gear to a certain extent, or may be compressed simultaneously with the operation of the friction draft gear.

Figs. 1 and 2 of the accompanying illustrative drawings show in sectional elevation and sectional plan, respectively, one construction of buffing and draw gear embodying the invention.

Figs. 3 and 4 are similar views to Figs. 1 and 2, respectively, illustrating another embodiment of the invention.

Fig. 5 is a sectional front view of the arrangement shown in Figs. 3 and 4.

In the construction shown in Figs. 1 and 2 friction draft gear of a well known type is indicated at 1 embraced by the yoke 2 and located as usual between a plate 3 bearing against the end 4 of the yoke, and a follower head 5 through which is passed a key 6 that extends through slots in the limbs of the yoke all as heretofore usual. The shank 7 of the coupler head 8 is also connected to the yoke in the usual manner by means of a key 9.

Fixed to the outer side of the vehicle headstock is a casing 10 within which is housed an india-rubber spring 11 through which the shank 7 extends. 12 indicates a compression plate in front of the spring 11 and through which the shank 7 also extends, the said plate having a part 13 that projects through the casing 10 behind the coupler head 8 in a position such that inward movement of the coupler head when buffing results in the plate 12 being moved inwardly and the india-rubber spring 11 thereby compressed.

In the example under notice the india-rubber spring 11 is of the before-mentioned well known type comprising units each consisting of concentric rings of india-rubber moulded on to both sides of a metal plate.

The forwardly projecting part 13 of the compression plate 12 is fitted with a part 14 which supports the weight of the coupler head and on which the shank 7 thereby slides.

The gear shown in Figs. 3, 4 and 5, is similar to that shown in Figs. 1 and 2 except that, instead of a single india-rubber spring 11 surrounding the coupler head shank 7, a pair of india-rubber springs 15 are provided, one spring being located at each side of the coupler head shank 7 in front of the headstock. The metal tread 14 which takes the weight of the coupler head and on which the shank 7 slides is also provided in this embodiment of the invention.

The said springs 15, which are of the before-mentioned type comprising concentric rings of india-rubber moulded on to metal plates, are mounted on bolts 16 within a suitable casting 17 bolted to the front of the vehicle headstock. A front compression member 18 for the springs 15 is mounted to slide on the bolts 16 and the said member 18 is so arranged as to be moved inwardly by inward movement of the coupler head 8 in order to compress the springs 15 when buffing. In the right hand half of Fig. 5 the member 18 is omitted for the sake of clearness.

To facilitate assembly of the parts the central

opening in the member 18 is made sufficiently large to enable the enlarged inner end of the shank 7 to be passed therethrough and after assembly the upper part of the said opening has a block 19 fixed therein to reduce the effective height of the opening.

The constructions described will serve to illustrate the invention as defined in the claims but variations may be made without departure from the invention.

What I claim is:—

1. The combination with an end sill, a coupler shank and a coupler head, of a central buffer comprising a housing secured to the outer face of the end sill, an india-rubber spring therein surrounding said shank, a compression plate also surrounding the coupler shank mounted in said housing in engagement with said spring and projecting at the front face of the housing being normally free of said head but arranged for operation by said head on its inward movement under buffing stress.

2. The combination with an end sill, a coupler shank and a coupler head, of a central buffer comprising a housing secured to the outer face of the end sill, an india-rubber spring therein surrounding said shank and an open centred compression plate also surrounding the coupler shank mounted in said housing in engagement with said spring and a flange to said plate projecting at the front face of the housing being normally free of said head but arranged for operation by the coupler head on inward movement under buffing stress.

3. The combination with an end sill, a coupler shank and a coupler head having a rear striking face, of a central buffer comprising a housing secured to the outer face of the end sill having an open front and an inwardly directed flange, an india-rubber spring in said housing surrounding said shank, and an open centred compression

plate also surrounding the coupler shank mounted in said housing in engagement with said spring and positioned by said inwardly directed flange and a flange on said compression plate projecting through said open front being normally free of said head but arranged for operation by the coupler head striking face on inward movement under buffing stress.

4. The combination with an end sill, a coupler shank and a coupler head having a rear striking face, of a central buffer comprising a housing secured to the outer face of the end sill having an open front and an inwardly directed flange surrounding said shank, an india-rubber spring consisting of a plurality of concentric frames of india-rubber carried by open centred metal plates in said housing surrounding the shank, and an open centred compression plate also surrounding the coupler shank and permitting it free lateral movement, said plate being mounted in said housing in engagement with said spring and positioned by said inwardly directed flange, and a flange on said compression plate projecting through said open front being normally free of said head but arranged for operation by the coupler head striking face on its inward movement under buffing stress.

5. In combination with an end sill, a coupler shank and a coupler head, of a central buffer comprising a housing secured to the outer surface of the end sill, an india-rubber cushioning means in said housing having portions thereof located on opposite sides of said shank, a compression plate surrounding the coupler shank mounted in said housing in engagement with said cushioning means and projecting at the front face of the housing, said plate being normally free of said head but arranged for operation by said head on its inward movement under buffing stresses.

ALEXANDER SPENCER.