No. 745,425. PATENTED DEC. 1, 1903.

M. E. DAYTON.

DRAW GEAR AND BUFFING APPARATUS.

APPLICATION FILED SEPT. 30, 1903

NO MODEL. 2 SHEETS—SHEET 1.

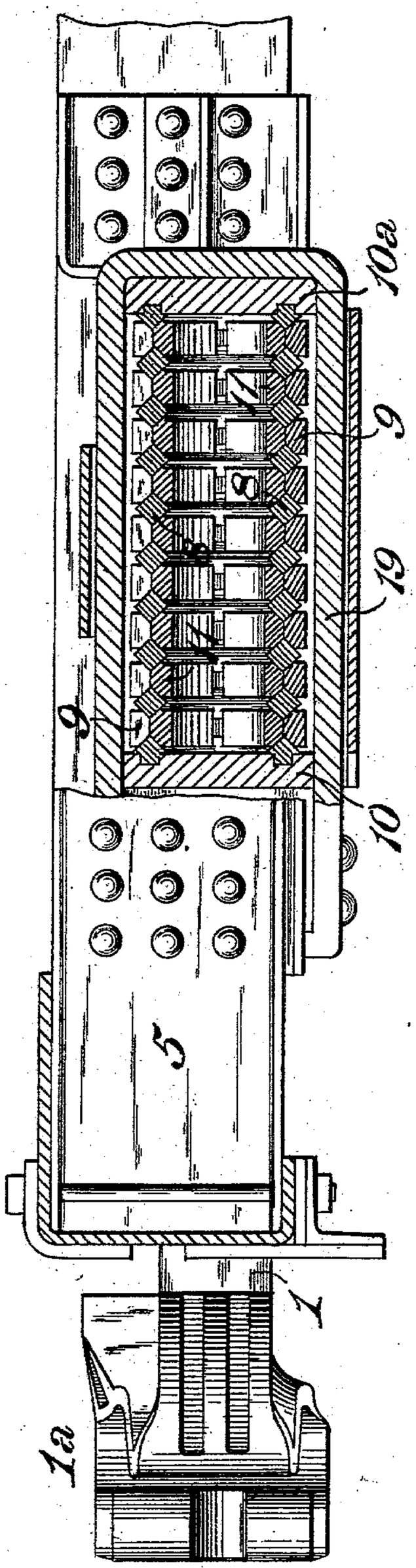

FIG. 1.

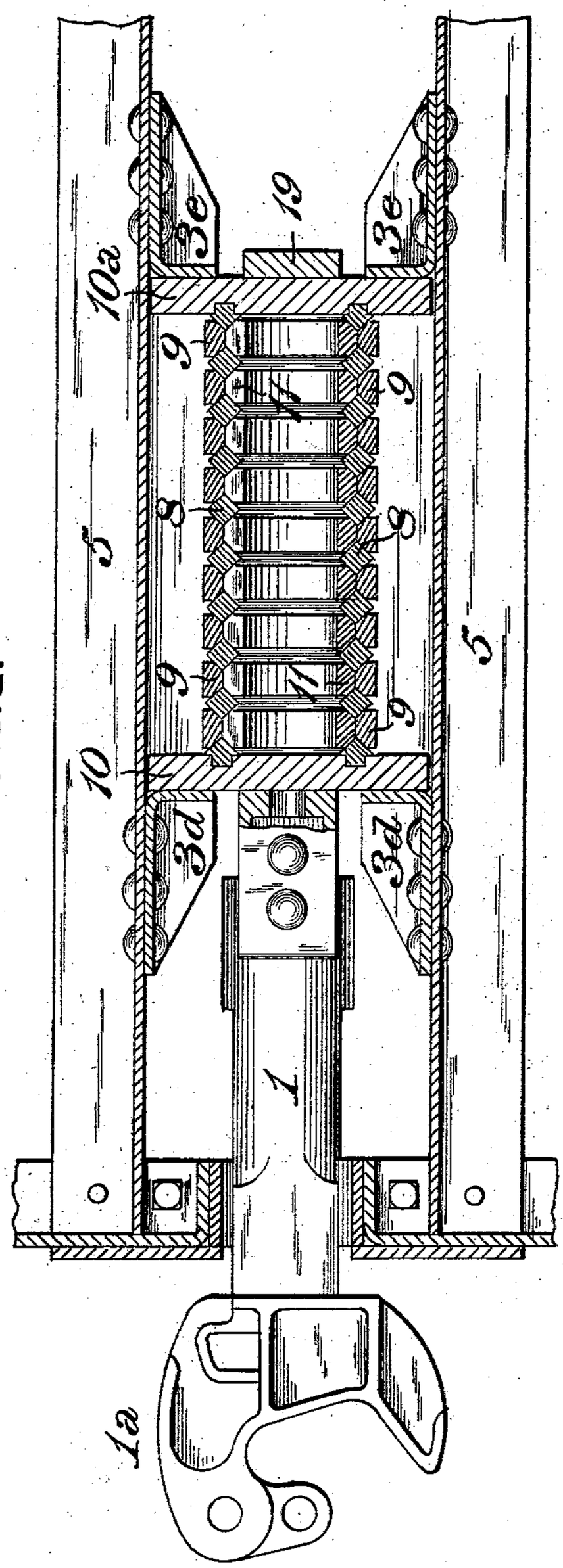

FIG. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 3.

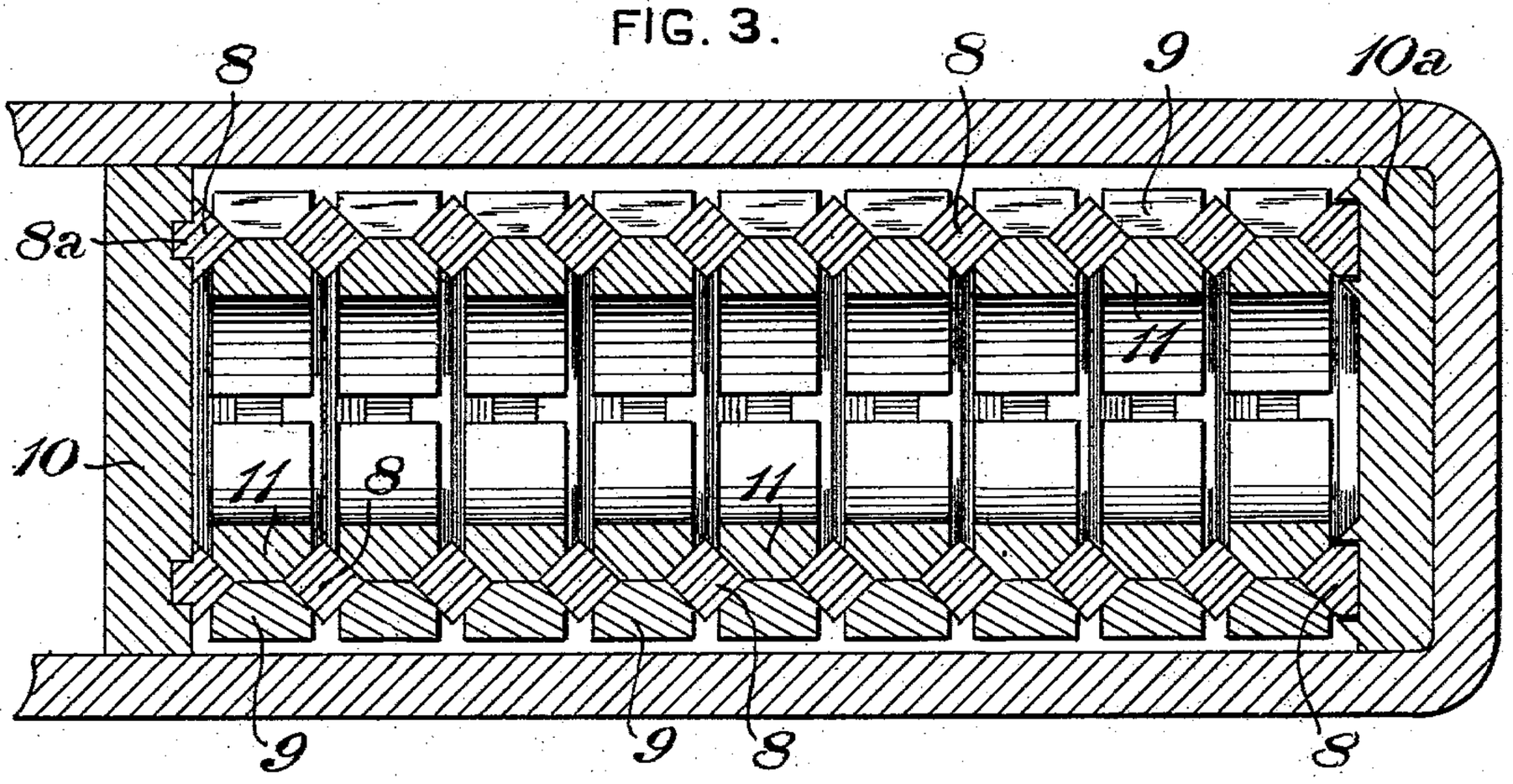


FIG. 4.

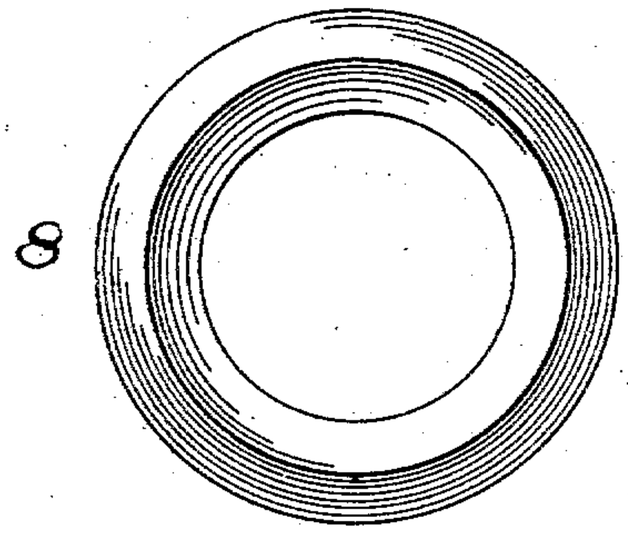


FIG. 5.

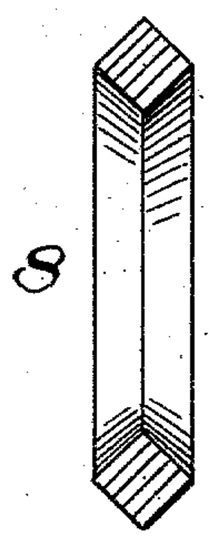


FIG. 6.

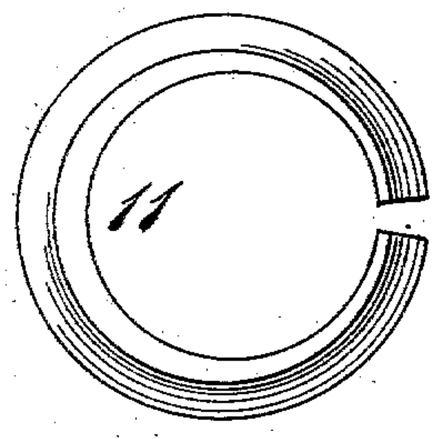


FIG. 7.

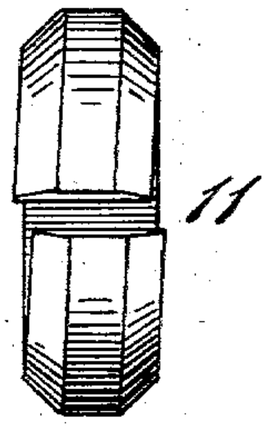


FIG. 8.

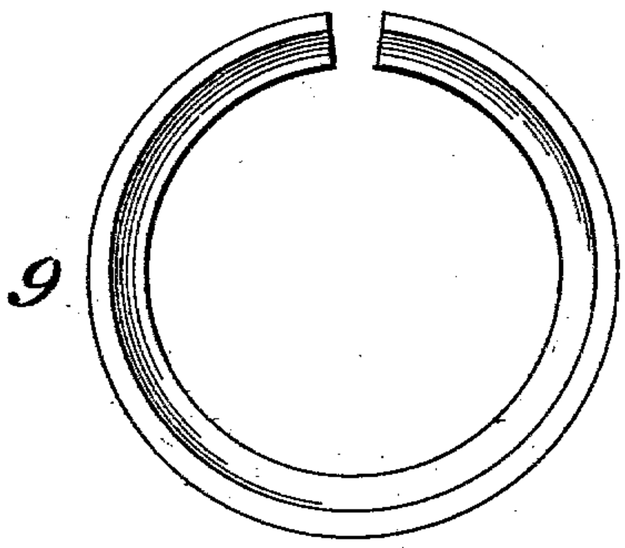
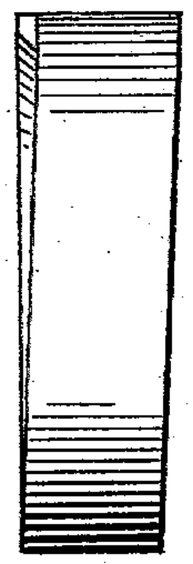


FIG. 9.



WITNESSES

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S. R. Bell.

INVENTOR

Melville E. Dayton,

by Andrew Pell,

Att'y

No. 745,425. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

MELVILLE E. DAYTON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE WESTINGHOUSE AIR BRAKE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

DRAW-GEAR AND BUFFING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 745,425, dated December 1, 1903.

Application filed September 30, 1903. Serial No. 175,121. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE E. DAYTON, of Washington, in the District of Columbia, have invented a certain new and useful Improvement in Draw-Gear and Buffing Apparatus, of which improvement the following is a specification.

My invention more particularly relates to appliances of the class generally known as "friction draft-gear," which are interposed between the coupler and the frame of a railroad-car for the purpose of transmitting strains of draft and buffing from the former to the latter and opposing and reducing said strains in transmission by frictional resistance.

The object of my invention is to provide an appliance of this class which shall be of simple and inexpensive construction, of ready applicability in car-frame constructions of the present standard types, and in which a large amount of frictional resistance surface may be presented within a comparatively small compass.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a vertical longitudinal central section through a draw-gear and buffing apparatus, illustrating an application of my invention; Fig. 2, a horizontal section through the same; Fig. 3, a section similar to that of Fig. 1, but on an enlarged scale, through the draw-bar strap, frictional elements, and followers; Fig. 4, a view in diametral elevation of one of the non-resilient wedge-rings; Fig. 5, a transverse section through the same; Fig. 6, a view in diametral elevation of one of the inner spring-rings; Fig. 7, a view in side elevation of the same; Fig. 8, a view in diametral elevation of one of the outer spring-rings, and Fig. 9 a view in side elevation of the same.

My invention is herein exemplified as applied in connection with a draw-bar 1 of a railroad-car, which draw-bar is provided at its outer end with a coupler-head 1^a and connected at and adjoining its inner end to a draft strap or yoke 19, of the ordinary construction, the draw-bar and draft-strap abutting, respectively, against front and rear followers 10 and 10^a, between which is interposed a system of frictional elements, hereinafter described, and which in turn bear on front draw-bar stops 3^d and rear draw-bar stops 3^e, secured to the center sills 5.

In the practice of my invention I provide means for opposing resistance to the movements of the followers 10 10^a one toward the other, resultant upon strains of draft and buffing applied to the draw-bar, by interposing between them a system of frictional elements comprising a plurality of outer open or split rings 9, a plurality of inner open or split rings 11, and a plurality of annular wedges or wedge-rings 8, said wedge-rings being interposed between the inner and outer spring-rings and having inclined outer frictional faces which abut against corresponding faces on the outer spring-rings and inclined inner frictional faces which abut against corresponding faces on the inner spring-rings. The end wedge-rings, which abut directly against the followers 10 10^a, are preferably held in position thereon, as by projections 8^a formed on their outer faces, which engage corresponding recesses in the adjoining faces of the followers, or, if preferred, they may be fitted in annular grooves in the followers, as shown at the right-hand end of Fig. 3, or otherwise. It will thus be seen that the frictional faces of each of the end wedge-rings act upon those of one inner and one outer spring-ring, and the frictional faces of each of the intermediate wedge-rings act upon those of two inner and two outer spring-rings. Both frictional and spring resistance are exerted by the system of elements above described when pressure is imparted to either of the followers 10 10^a, such pressure acting through the wedge-rings 8 upon the open spring-rings, expanding the outer open spring-rings 9 and compressing the inner open spring-rings 11, in which operations a high degree of frictional resistance is developed by the relative movement of the contacting frictional surfaces of the spring-rings and wedge-rings under the applied pressure.

The open spring-rings 9 11 are preferably

formed as sections of a helix or with a helical twist or camber, as shown in Figs. 7 and 9, in order that they may initially exert spring resistance only, by which the minor strains incident to ordinary train operation may be opposed and their resultants transmitted to the car-frame through the rings and followers without materially involving the exertion of frictional resistance, which is necessary, and is provided for, to counteract shocks and strains of greater force.

It will be obvious that by the provision of double sets of spring-rings, coincidently acted upon by interposed wedge-rings, as above set forth, the resistant capacity of a draft and buffing appliance of any desired and determined dimensions is materially increased above that which would be due to the employment of a single set of spring-rings, as in constructions heretofore known in the art. It will also be seen that such increase of capacity is attained without necessitating structural complication or the use of parts which are difficult or expensive to form or finish and that the appliance is applicable with as full readiness and freedom from interference with adjacent members of the car-frame as are presented in any of the various draft-gears which are now known in practice.

I claim as my invention and desire to secure by Letters Patent—

1. A friction device comprising two open or split resilient rings, one within the other, and an interposed annular wedge or wedge-ring, said rings having inclined, abutting, frictional surfaces.

2. The combination of an outer open or split resilient ring, an inner open or split resilient ring, an interposed annular wedge or wedge-ring, said rings being provided with inclined abutting frictional surfaces, and means for applying pressure and relative movement to the wedge-ring, thereby generating both spring and frictional resistance in and by the resultant expansion of the outer ring and compression of the inner ring.

3. The combination of two followers capable of relative motion toward and from each other, and an interposed friction device comprising an outer open or split resilient ring, an inner open or split resilient ring, and an intermediate annular wedge or wedge-ring, said rings being provided with inclined abutting surfaces, which are adapted to be moved in frictional contact in and by the movement of one follower toward the other.

4. In a draft and buffing apparatus, the combination of draft-sills, front and rear draw-bar stops fixed thereto, followers which normally abut against the draw-bar stops and are capable of relative movement toward and from each other, a draw-bar and connected draft-strap abutting on the outer faces of the followers, and a friction device interposed between the followers and comprising a plurality of outer open or split resilient rings, a plurality of inner open or split resilient rings, and a plurality of annular wedges or wedge-rings interposed between the inner and outer resilient rings, and provided with inclined frictional surfaces arranged to abut against similar surfaces on the inner and outer resilient rings, and the outer and inner rings having less aggregate width than the distance between the followers when the latter are in contact with their stops.

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Witnesses:

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C. A. NEALE.