

No. 720,472.

PATENTED FEB. 10, 1903.

P. H. PETERSON.
HYDRAULIC DRAFT GEAR.
APPLICATION FILED JULY 22, 1902.

NO MODEL.

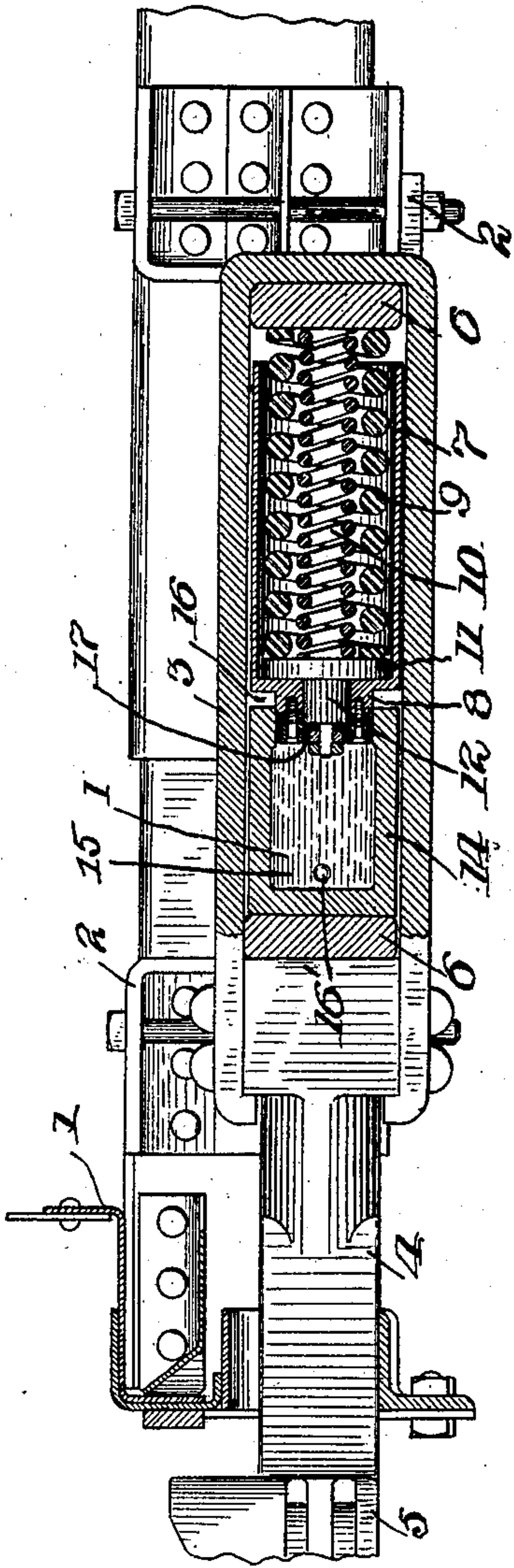


Fig. 1.

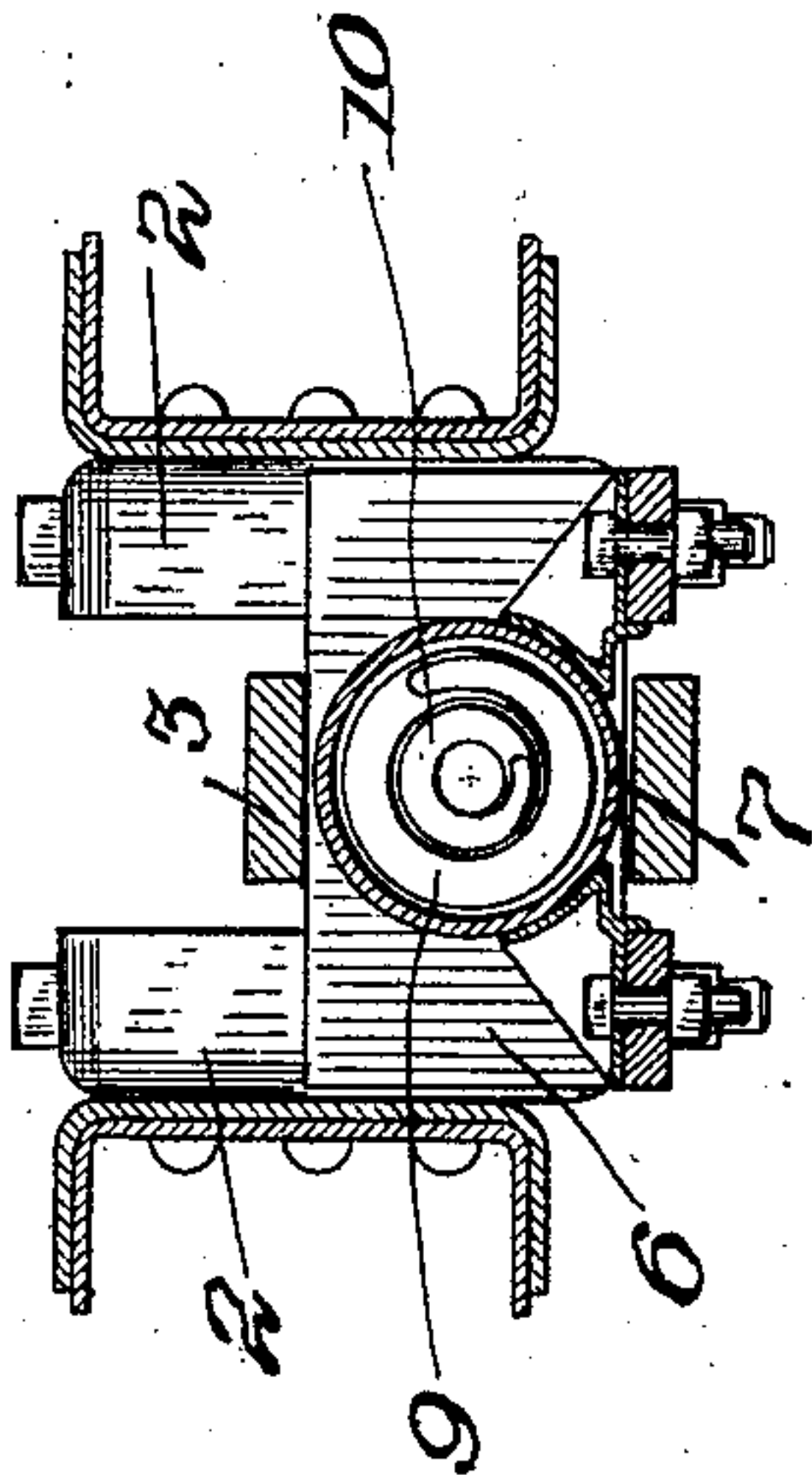


Fig. 3.

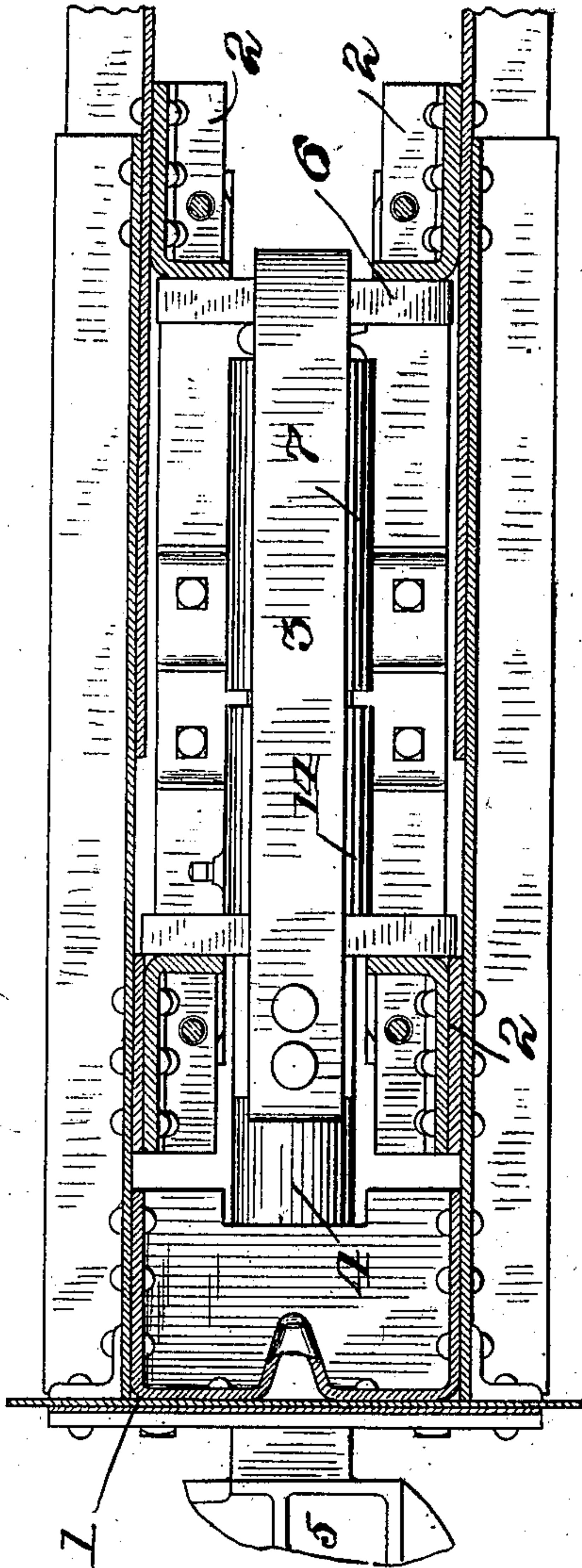


Fig. 2.

WITNESSES:

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HYDRAULIC DRAFT-GEAR.

SPECIFICATION forming part of Letters Patent No. 720,472, dated February 10, 1903.

Application filed July 22, 1902. Serial No. 116,527. (No model.)

To all whom it may concern:

Be it known that I, PARK H. PETERSON, a citizen of the United States of America, residing at Wilmerding, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Hydraulic Draft-Gears, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in hydraulic draft-gears, and has for its object to provide a draft-gear that will be constructed in such a manner as to take up all concussion and excess pressure caused by the buffing of the rolling-stock of a railroad.

Another object of my invention is to provide a hydraulic draft-gear whereby a preliminary and an auxiliary means is employed, said means consisting of a spring which is first actuated, and then the auxiliary or hydraulic means is employed to take up all pressure in excess of the preliminary resistance.

A still further object of my invention is to provide a draft-gear wherein the efficiency of operation and the comparative expense to manufacture is less than the draft-gears now in use.

Another object of my invention is to provide a draft-gear which will be extremely simple in construction, strong, durable, and one wherein all concussion caused by the buffing of the cars will meet a greater resistance.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a longitudinal vertical section through my improved draft-gear. Fig. 2 is a horizontal longitudinal section of the same. Fig. 3 is a cross-section taken through the cylinder which carries the spring.

In the drawings the reference numeral 1 indicates the ordinary steel car construction

now employed upon the rolling-stock of railroads, and the reference-numeral 2 indicates two yoke-supports for the yoke which carries the draw-bar and the preliminary and auxiliary resistance-cylinders. One of these yoke-supports is located forward, while the other is located in the rear, thus giving rigidity to the draw-bar yoke.

The reference-numeral 3 indicates the draw-bar yoke which carries the draw-bar 4, said draw-bar in turn carrying the coupler 5. This draw-bar yoke is shown more plainly in Fig. 2 of the drawings and carries the braces 6, said braces supporting and bracing the preliminary and auxiliary cylinders.

The reference-numeral 7 indicates the preliminary resisting-cylinder which carries the neck 8. This cylinder is hollow in form and carries therein the springs 9 and 10, the spring 9 being smaller in construction than the spring 10 and occupying the center of the last-named spring. The one end of said spring rests upon the brace 6 and is secured thereto, while the forward end of said spring is secured to the head 11, said head carrying the stub-shaft 12, which fits into the neck 8, carried by the cylinder 7. The neck of this cylinder is carried in an aperture formed in the end of the auxiliary resistance-cylinder, said cylinder being indicated by reference-numeral 14. This cylinder is filled with a fluid, as indicated at 15, said fluid being supplied to the cylinder 14 by means of the aperture 16'. It will be noted that between the preliminary and auxiliary cylinders there exists a space, as indicated at 16. Also a similar but much larger space exists between the brace 6 and the cylindrical casing 7.

The reference-numeral 17 indicates a stuffing-box formed in the head of the neck, said stuffing-box being of any ordinary construction; but, as shown in the drawings, I have employed a rubber gasket secured thereon by wood-screws.

The operation of my improved hydraulic draft-gear is as follows: Any pressure being exerted upon the draw-bar 4 will cause the tension of the spring to resist the same, and if the pressure is greater or in excess of the tension of the spring the cylindrical casing 7 will move rearwardly until the same abuts against

the brace 6, whereby the pressure known as the "preliminary" pressure has exerted the tension of the springs to their greatest capacity. If the pressure upon the draw-bar 4 is in excess of the preliminary resistance, the auxiliary cylinder 14 is acted upon by means of the neck of the cylindrical casing, compressing the fluid within said cylinder, thus providing hydraulic means for resisting the excess pressure. When this action takes place, the stub-shaft 12, carried by the head 11, will be acted upon, whereby the tension of the springs is again brought into play, these springs being only actuated when the cylinder 14 has closed up the space, as indicated by reference-numeral 16, when the fluid must have space, and thereby causes the head 11 to move rearwardly. It will be noted that this auxiliary resistance is only used when the preliminary resistance is in excess of the pressure exerted upon the draw-bar.

While I have shown the most practical embodiment of my invention, it will be obvious that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a draft-gear consisting of a yoke and a draw-bar, a preliminary and an auxiliary cylinder carried within said yoke, a coil-spring carried within said preliminary cylinder, hydraulic means carried within said auxiliary cylinder, and means whereby when the pressure is in excess of the preliminary resistance,

the springs will again be actuated, substantially as described.

2. In a draft-gear consisting of a yoke and a draw-bar, a preliminary and an auxiliary cylinder carried within said yoke, a coil-spring carried within said cylinder, hydraulic means carried within said auxiliary cylinder, a stub-shaft carrying an enlarged head mounted in said cylinder, said stub-shaft passing through a neck carried by the cylindrical casing, which contains the preliminary resistance, a stuffing-box carried by said neck, substantially as described.

3. In a draft-gear consisting of a yoke and a draw-bar, a preliminary and an auxiliary cylinder carried within said yoke, a coil-spring carried within said cylinder, one end of said spring being secured to a suitable brace carried within the yoke, a stub-shaft formed integral with the enlarged head mounted upon the other end of said spring, said stub-shaft passing through a neck carried by the cylindrical casing which contains the preliminary resistance, a stuffing-box carried by said neck, hydraulic means carried within the auxiliary cylinder to operate upon said stub-shaft when the preliminary resistance is in excess of the pressure exerted upon the draw-bar, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

PARK H. PETERSON.

Witnesses:

JOHN NOLAND,
E. E. POTTER.