No. 826,171. PATENTED JULY 17, 1906.

G. I. KING.

FRICTION DRAFT GEAR.

APPLICATION FILED MAR. 10, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

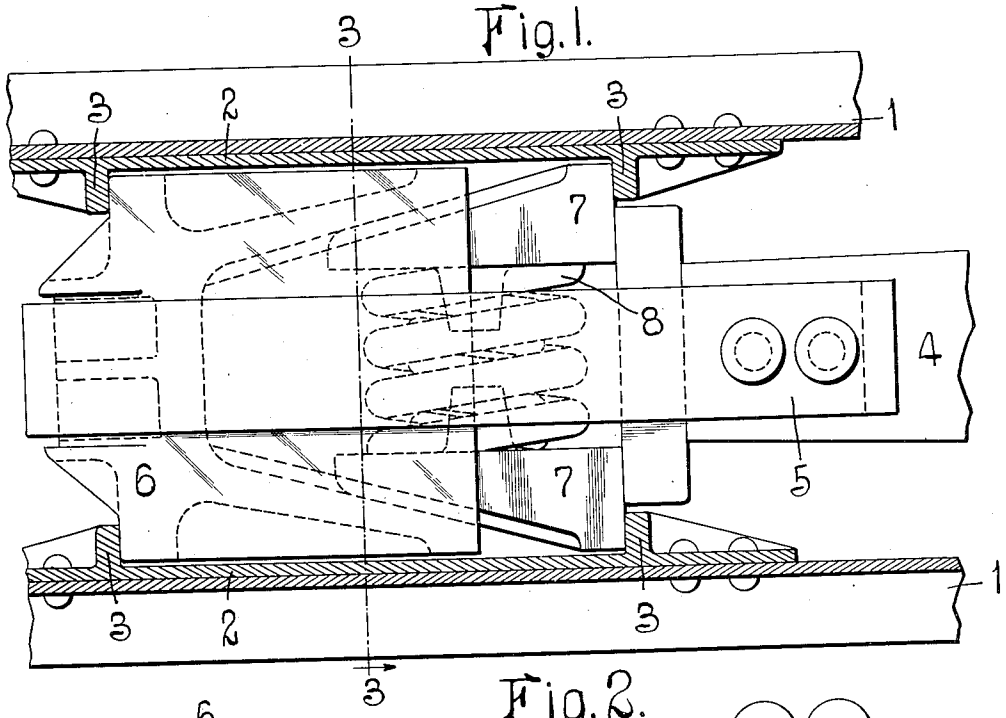


Fig. 2.

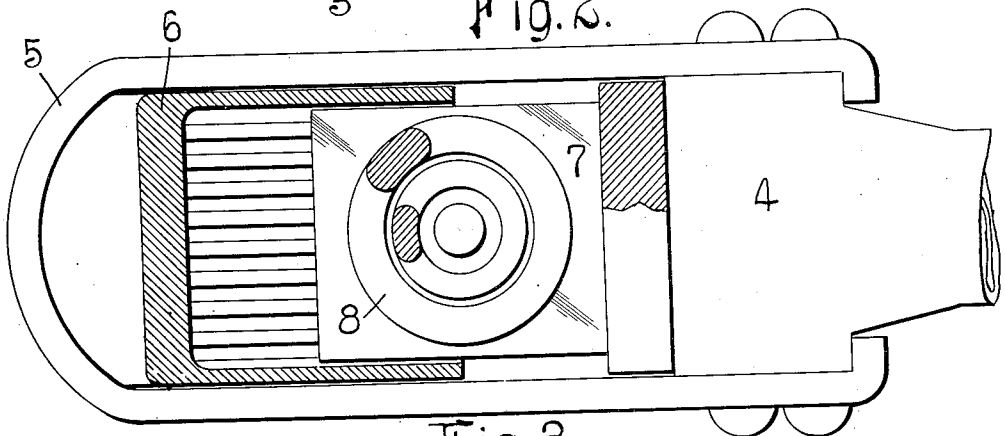
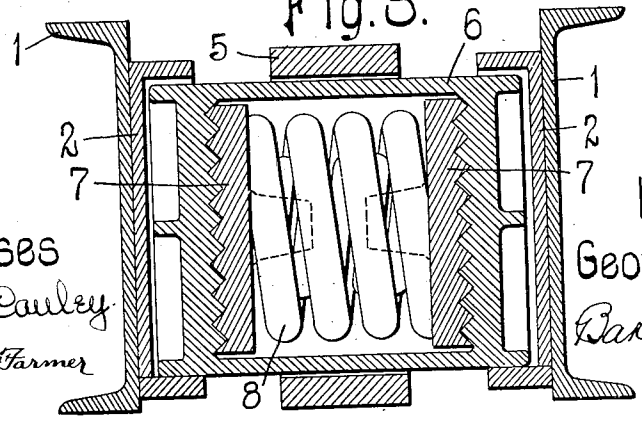


Fig. 3.



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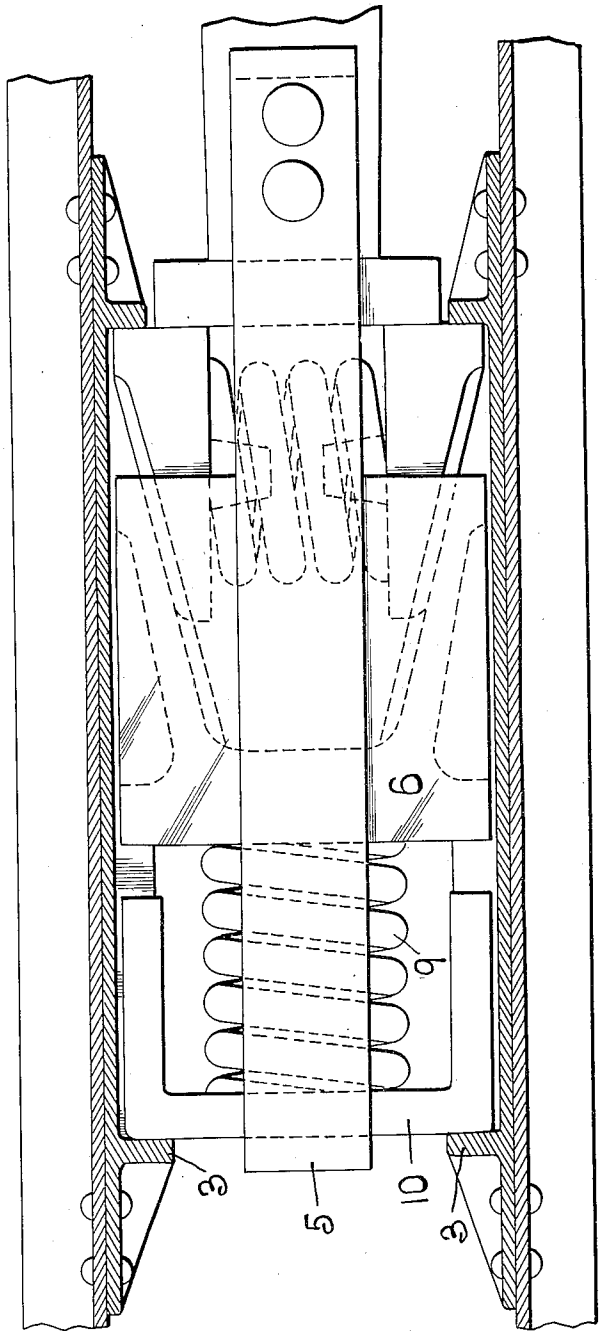
2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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FRICTION DRAFT-GEAR.

No. 826,171. Specification of Letters Patent. Patented July 17, 1906.

Application filed March 10, 1906. Serial No. 305,283.

To all whom it may concern:

Be it known that I, GEORGE I. KING, a citizen of the United States, residing at Middletown, Dauphin county, Pennsylvania, have invented a certain new and useful Improvement in Friction Draft-Gear, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improved friction draft-gear. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a cross-sectional view of the same; and Fig. 4 is a view similar to Fig. 1, showing a modified form of my invention.

This invention relates to a new and useful improvement in friction draft-gear, the object being to reduce the number of parts and simplify the construction, so that the device may be cheaply made, easily assembled, and readily repaired in the event of breakage or disarrangement of any of the parts.

In the drawings, 1 indicates the draft-sills of the car-frame, here shown in the form of channels, and 2 represents the cheek-plates secured to the draft-sills, said cheek-plates having abutments 3 at their ends with which coöperate the follower parts of the draft-rigging.

4 is the coupler-shank, and 5 is the yoke thereof.

6 is a friction-follower in the form of an open-ended box, the open end being presented forwardly, said box being embraced by a yoke affording a bearing therefor under pulling strains. This box is slidingly mounted between the cheek-plates, the inner side walls thereof being formed tapered and preferably corrugated, as shown, for the purpose of increasing the frictional area thereof.

7 represents longitudinally-movable friction-blocks having outer inclined faces which coöperate with the inclined faces of box 6. These friction-blocks 7 are substantially wedge-shaped, their forward ends under pulling strains abutting against forward abutments on the cheek-plates and said blocks under buffing strains being pushed by the rear end of the draw-bar and moved rearwardly along the friction-faces of the box 6, as is well understood.

8 is a spring or set of springs interposed between the blocks 7.

The operation of my improved friction draft-gear is apparent from the drawings, the box 6 under pulling strains moving forward and compressing the spring 8, the blocks 7 moving rearwardly under buffing strains and compressing said springs 8, the friction-faces between said moving parts coöperating to cushion shocks or jars and increase the resistance of the movement of the parts, thus enabling the use of lighter springs than is possible in a straight spring or tandem draft-gear or with equally heavy springs, affording greater resistance. By locating the block 7 only partially within the box 6, which is the normal position of the parts when at rest and in which position the springs 8 are expanded, it will be obvious that under pulling and buffing strains the box 6 is telescoped over the blocks 7 or the blocks 7 area telescoped within the box 6, such telescoping action increasing the frictional engaging area between the parts, so as to increase the frictional resistance as the buffing and pulling strains are increased. This increase of frictional resistance is assisted materially by compression of the springs 8, said springs becoming stiffer as the blocks 7 move in the box 6.

In Fig. 4 I have shown a slightly different form of my invention in which a compression-spring 9 and a member 10 are interposed between the end of the yoke 5 and the rear end of the box 6. This member 10 may be either in the form of an open yoke, as herein shown, or in the form of a sleeve which surrounds the spring 9. Under pulling strains the spring 9 will be first compressed and then the member 10 will be moved into engagement with the friction-follower 6 by the forward movement of the draw-bar. Under buffing strains the rearward movement of the draw-bar will cause the spring 9 to be first compressed and the friction-follower 6 will then come into engagement with the member 10, which normally engages the rear abutment 3.

While I have shown the spring 9 arranged back of the friction-gear in the modification shown in Fig. 4, it will be obvious that said spring could be arranged in front of the friction-gear immediately behind the draw-bar without departing from the scope of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a friction draft-gear, the combination with a friction-follower in the form of an

open-ended box, of friction-blocks coöperating therewith and normally arranged so as to be partly within said box, a draw-bar having a portion with which said friction-blocks contact, and cheek-plates provided with abutments which said blocks engage when the parts are in normal position, substantially as described.

2. In a friction draft-gear, the combination with a follower provided with a recess, cheek-plates provided with abutments of friction-blocks partly within said recess and engaging the abutments of the cheek-plates when the parts are in normal position, said blocks entering said recess under pulling and buffing strains; substantially as described.

3. In a friction draft-gear, the combination with a friction-follower having corrugated tapering walls connected together, of friction-blocks coöperating with said walls in such manner that under pulling and buffing strains the frictional area of contact increases as the pulling and buffing strains increase, a spring interposed between said blocks, and stationary abutments which said blocks engage when the parts are in normal position; substantially as described.

4. In a friction draft-gear, the combination with a friction-follower in the form of an open-ended box, friction-blocks coöperating therewith and normally arranged so as to be partly within said box, a coupler-shank provided with a yoke, and a spring interposed between the closed end of said yoke and the friction-follower; substantially as described.

5. In a friction draft-gear, the combination with a follower provided with a recess, of friction-blocks partly within said recess when the parts are in normal position, a draw-bar provided with a yoke, a spring interposed between said yoke and follower, and a member adapted to engage said follower after said spring has been compressed by the forward movement of the draw-bar yoke; substantially as described.

6. In a friction draft-gear, the combination with rigid follower-abutments, of a friction-follower compressing a plurality of blocks which normally engage the forward abutments, a coöperating friction-follower provided with a recess for receiving said blocks, a member normally engaging the rearward follower-abutments, a spring arranged between said member and the recessed follower, and a draw-bar provided with a yoke within which said member and said friction-followers are located; substantially as described.

7. In a friction draft-gear, the combination with friction members comprising a follower in the form of an open-ended box, blocks coöperating therewith and normally arranged so as to be partly within said box, means for actuating said friction members, and a spring arranged between said means and one of said friction members; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 5th day of March, 1906.

GEORGE I. KING.

Witnesses:
WM. A. CROLL.
A. MARSHALL.