No. 849,561. PATENTED APR. 9, 1907.

J. F. O'CONNOR.

FRICTION DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED DEC. 19, 1906.

2 SHEETS—SHEET 1.

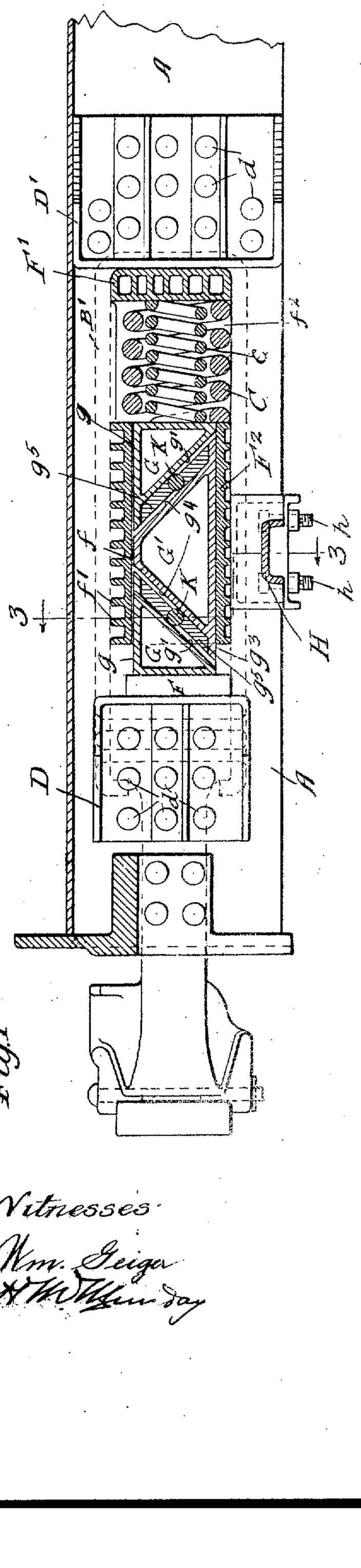

Fig. 1

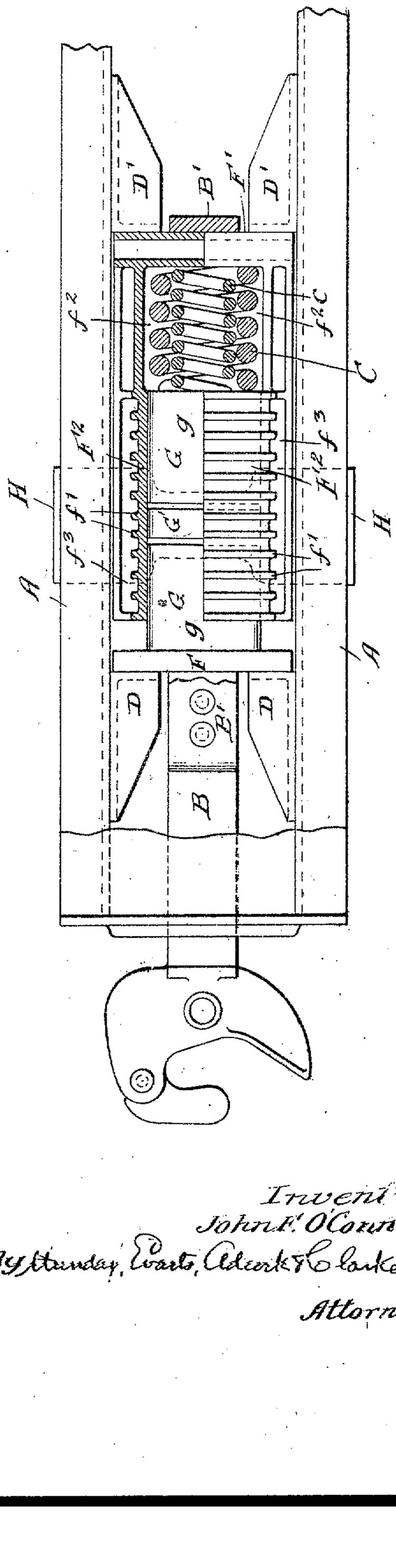

Fig. 2

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Fig. 3

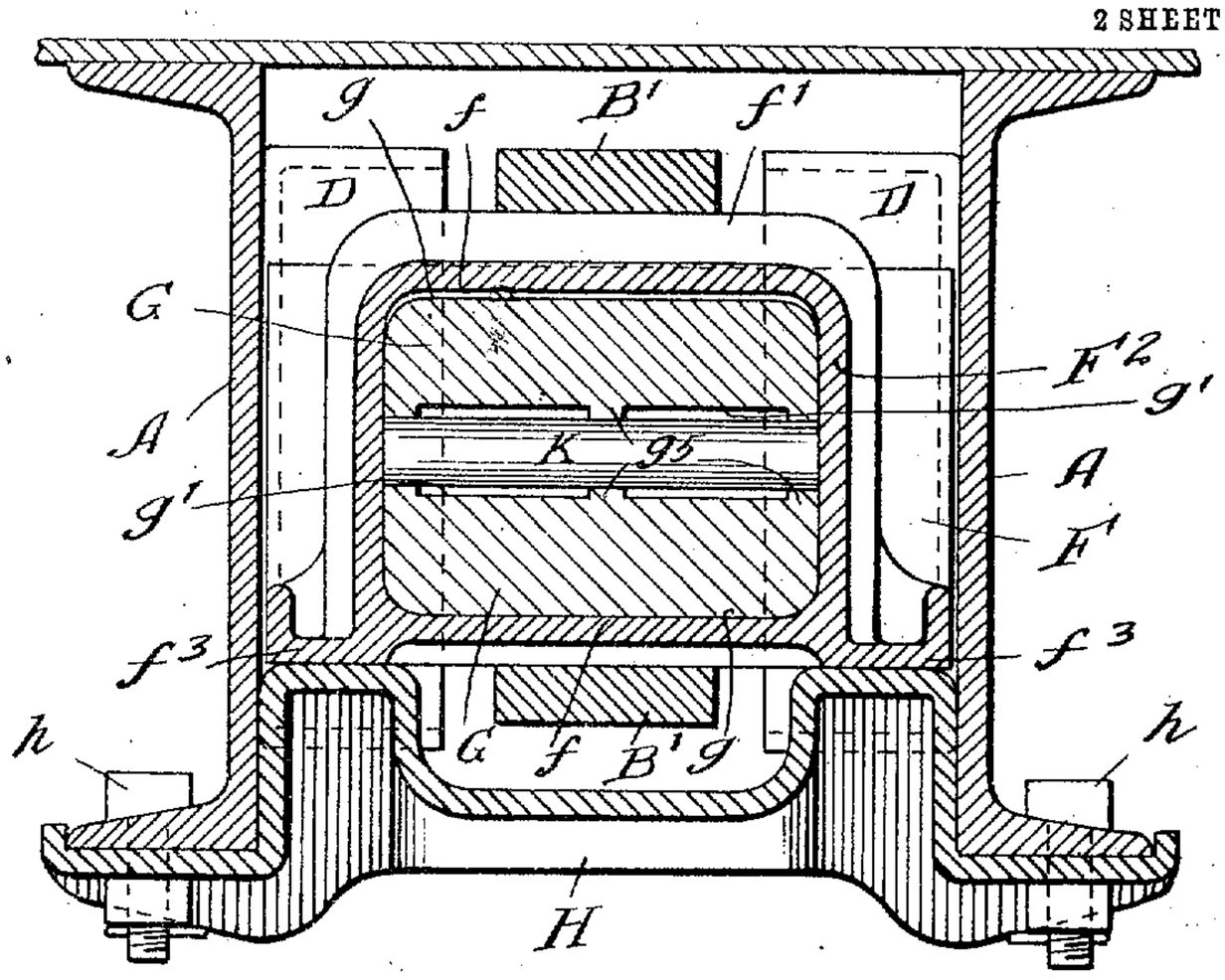


Fig. 4

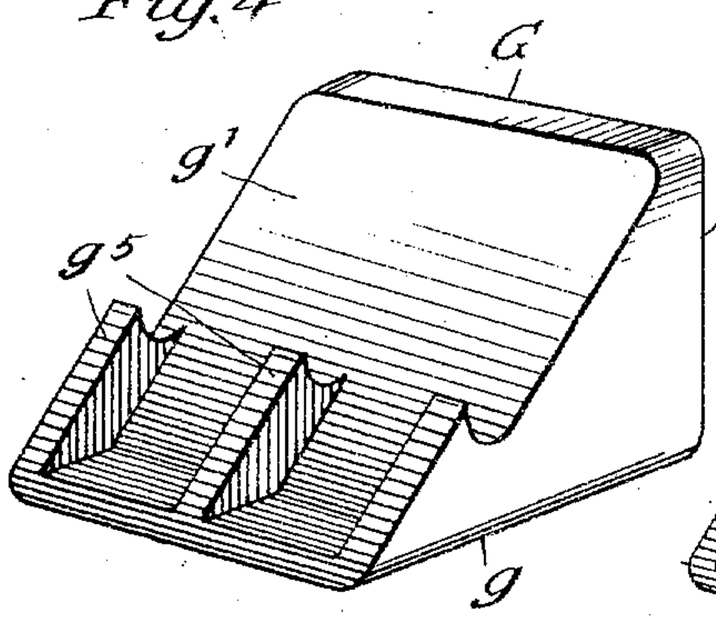


Fig. 5

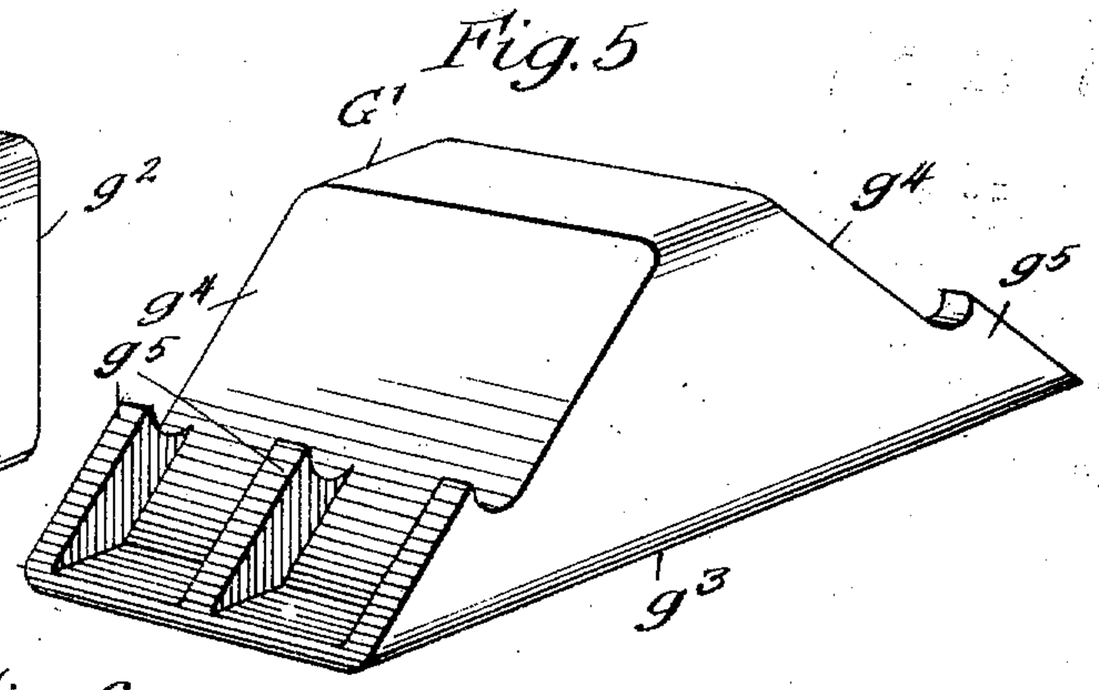
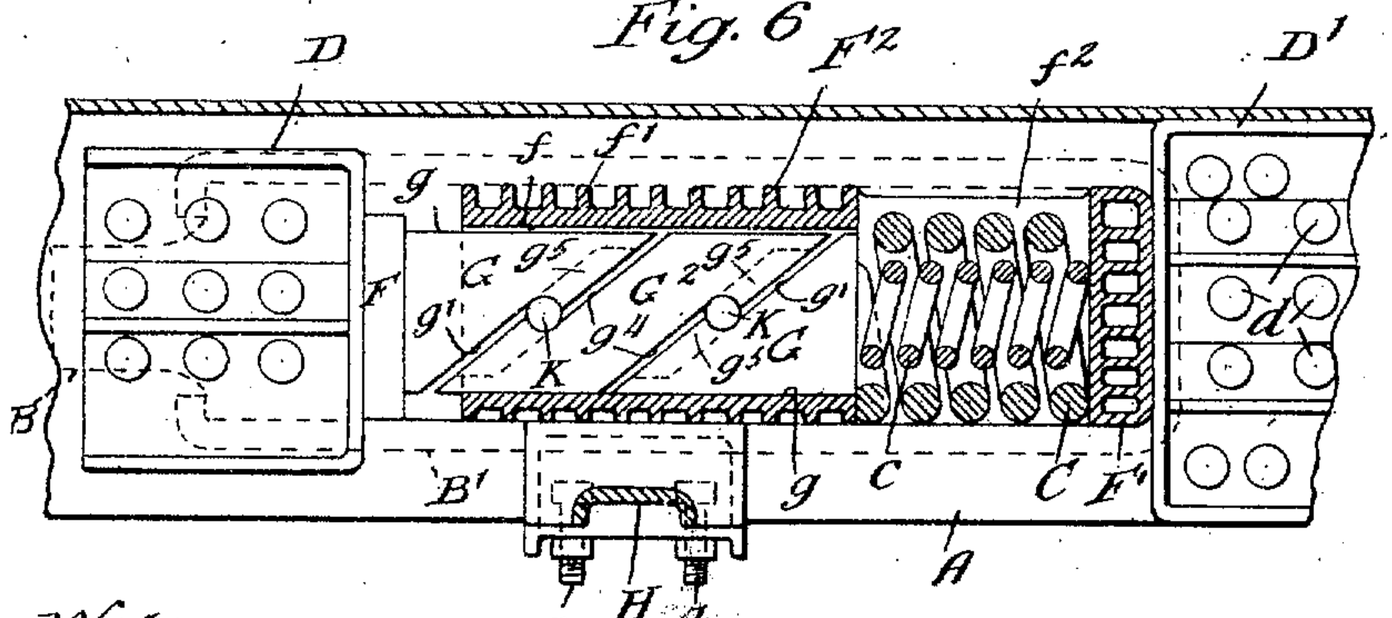


Fig. 6



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UNITED STATES PATENT OFFICE.

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FRICTION DRAFT-RIGGING FOR RAILWAY-CARS.

No. 849,561. Specification of Letters Patent. Patented April 9, 1907.

Application filed December 19, 1906. Serial No. 348,549.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Friction Draft-Rigging for Railway-Cars, of which the following is a specification.

My invention relates to friction draft-rigging for railway-cars.

In the practical use of friction draft-gear difficulty or objection has been experienced owing to the tendency of the spreader or load-distributing mechanism to stick or to be uncertain or irregular in action and violent in movement when motion begins, thus greatly reducing the effective cushioning effect or absorption of work by the friction-surfaces.

The object of my invention is to provide a practical means for overcoming this objection or difficulty and for enabling the friction devices to uniformly and reliably exert or produce a positive predetermined resistance or cushioning effect, while at the same time making the draft-rigging of a simple, strong, efficient, and durable construction.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists, in connection with the draw-bar and its yoke and the coöperating stationary stops on the car frame or sills, of a direct-acting spring arranged longitudinally of the draw-bar, a longitudinally-movable friction shell or case, and a pair of coöperating friction-blocks having friction-faces in sliding frictional engagement with the friction-shell and one bearing against the spring and the other against the draw-bar, and an intermediate friction-block having a friction-face in sliding frictional engagement with the friction-shell, and inclined wedging spreader-faces coöperating with inclined or wedging spreader-faces on said first-mentioned friction-blocks, and antifriction-rollers interposed between the adjacent or meeting spreader-faces of the friction-blocks to prevent the friction-blocks from sticking and to cause the same to properly and uniformly act.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation, partly in vertical longitudinal section, of a friction draft-rigging embodying my invention. Fig. 2 is a plan view, partly in horizontal section. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of one of the terminal friction-blocks. Fig. 5 is a detail perspective view of the intermediate friction-block, and Fig. 6 is a longitudinal sectional view illustrating a modification.

In the drawings, A represents the frame-pieces of the car to which the draft-rigging is applied, the same being, as illustrated in the drawings, metal center sills.

B is the draw-bar; B′, its yoke; C *c*, longitudinally-arranged direct-acting draft-rigging springs, and D D′ the stationary stops of the draft-rigging, which are secured to the center sills or car-framework, preferably by rivets *d*.

F F′ are the front and rear followers, adapted to alternately engage the stops D D and D′ D′ and coöperate with the draw-bar and its yoke and the draft-rigging spring.

F^2 is a longitudinally-movable friction shell or case, preferably made integral with the rear follower and having inside parallel friction-faces *f* and exterior strengthening-ribs *f′* surrounding the friction-block-inclosing portion of the shell. The friction shell or case F^2 is cut away at its top and bottom walls adjacent to the spring, and thus furnished with openings f^2, through one of which the spring C may be inserted or removed. The shell F^2 is provided on each side at its bottom with a laterally-projecting guide or flange f^3 to engage the removable bottom or tie plate H, which is secured by bolts *h* to the center sills or other stationary frame-pieces to which the draft-rigging is applied.

G G are a pair of terminal friction-blocks having friction-faces *g g* in sliding frictional engagement with and parallel to the coöperating friction-face *f* of the friction-shell F^2 and having inclined or wedging spreader-faces *g′* and square end faces g^2 for engagement with the front follower and the front end of the spring C, respectively. G′ is the intermediate friction-block, the same having a friction-face g^3, parallel to and in sliding frictional engagement with the lower friction-

face *f* of the friction-shell F. This intermediate friction-block G′ is also provided with two inclined or wedging spreader-faces g^4 g^4, coöperating with he inclined or wedging spreader-faces *g′* of the terminal friction-blocks G G.

K K are antifriction devices, preferably rollers, interposed between the inclined or spreader faces on the intermediate friction-block G′, and the terminal friction-blocks G G are each furnished with coöperating saddles or shoulders g^5 for maintaining the rollers K K in position.

In the modification illustrated in Fig. 6 the intermediate friction-block G^2 has its inclined or wedging spreader-faces parallel to each other instead of at an angle to each other, and the coöperating terminal friction-blocks tend to impart a slight tilting movement to the intermediate friction-block, and thus force both of its sliding friction-faces into frictional engagement with the coöperating friction-face of the friction-shell F. In this modified construction owing to this slight tilting movement of the intermediate friction-block the wear upon the friction-faces of the intermediate friction-block tends to throw them slightly out of parallelism with each other, although this action is not objectionable, as the spreader movement of the friction-blocks is very slight and as the rocking or tilting movement of the intermediate block is consequently also very slight.

I claim—

1. In a friction draft-rigging, the combination with the draw-bar and its yoke, of a direct-acting spring, followers, stops for the followers, a longitudinally-movable friction-shell, a pair of terminal sliding friction-blocks having inclined or wedging spreader-faces and an intermediate sliding friction-block having two inclined or wedging spreader-faces and antifriction-roller interposed between the terminal friction-blocks and intermediate friction-block, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

2. In a friction draft-rigging, the combination with the draw-bar and its yoke, of a direct-acting spring, followers, stops for the followers, a longitudinally-movable friction-shell, a pair of terminal sliding friction-blocks having inclined or wedging spreader-faces and an intermediate sliding friction-block having two inclined or wedging spreader-faces and antifriction-roller interposed between the terminal friction-blocks and intermediate friction-block, said terminal friction-blocks and said intermediate friction-block having coöperating saddles or shoulders to keep the antifriction devices in place, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

3. In a friction draft-rigging, the combination with the draw-bar and a direct-acting spring in line with the draw-bar and a friction-shell, of a pair of terminal friction-blocks and an intermediate friction-block and antifriction-rollers interposed between said intermediate block and said terminal friction-blocks, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

4. In a friction draft-rigging, the combination with the draw-bar and a direct-acting spring in line with the draw-bar and a friction-shell, of a pair of terminal friction-blocks and an intermediate friction-block and antifriction-rollers interposed between said intermediate block and said terminal friction-blocks, said intermediate and terminal friction-blocks having coöperating shoulders to engage the rollers, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

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