No. 708,550. Patented Sept. 9, 1902.

J. J. HENNESSEY.

FRICTION DRAFT RIGGING FOR RAILWAY CARS.

(Application filed June 16, 1902.)

(No Model.) 2 Sheets—Sheet 1.

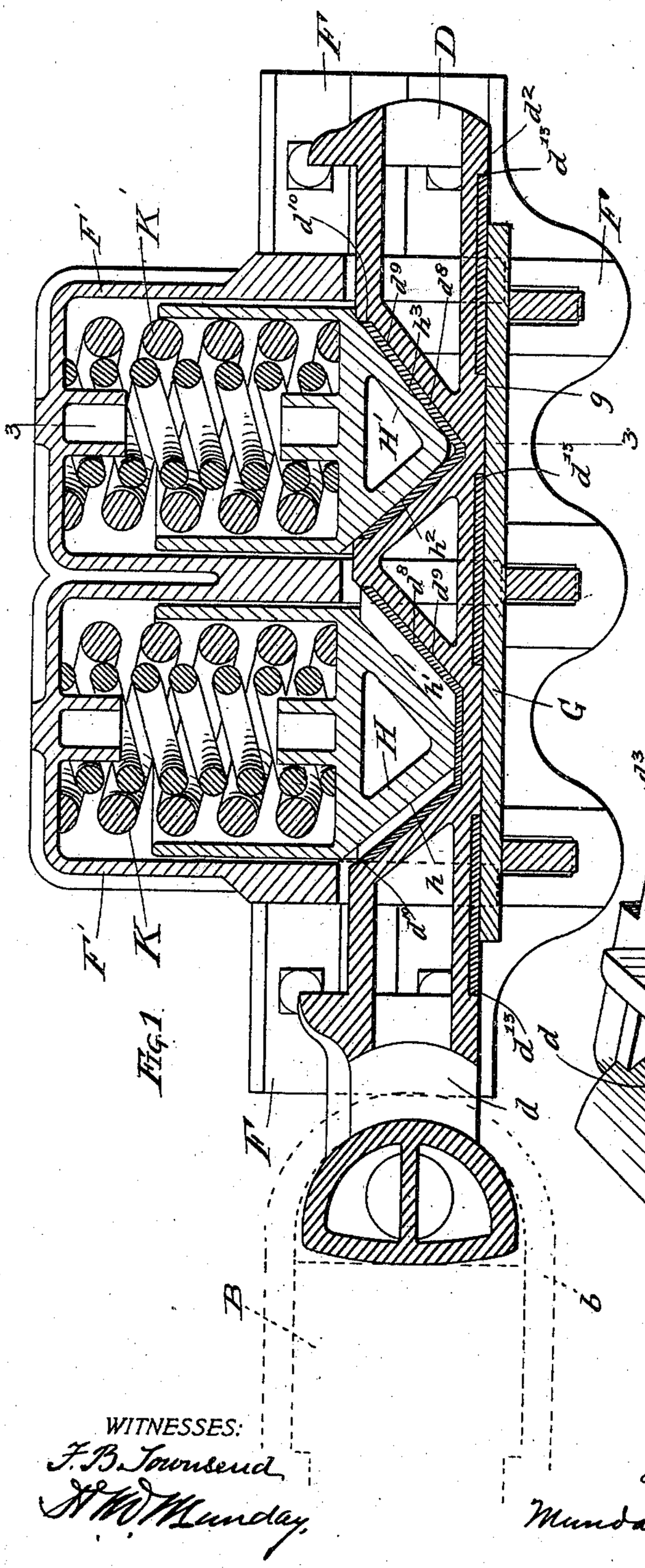

FIG. 1.

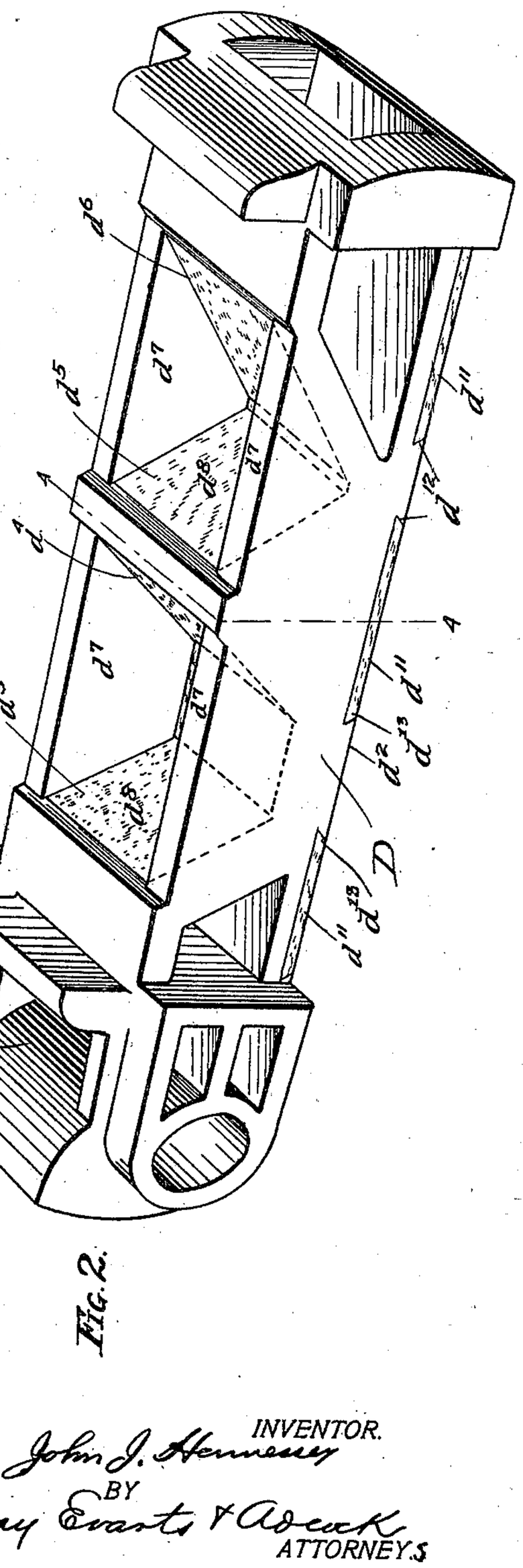

FIG. 2.

WITNESSES:
F. B. Townsend
W. W. Munday.

INVENTOR.
John J. Hennessey
BY
Munday Evarts & Adcock
ATTORNEYS

No. 708,550. Patented Sept. 9, 1902.

J. J. HENNESSEY.

FRICTION DRAFT RIGGING FOR RAILWAY CARS.

(Application filed June 16, 1902.)

(No Model.) 2 Sheets—Sheet 2.

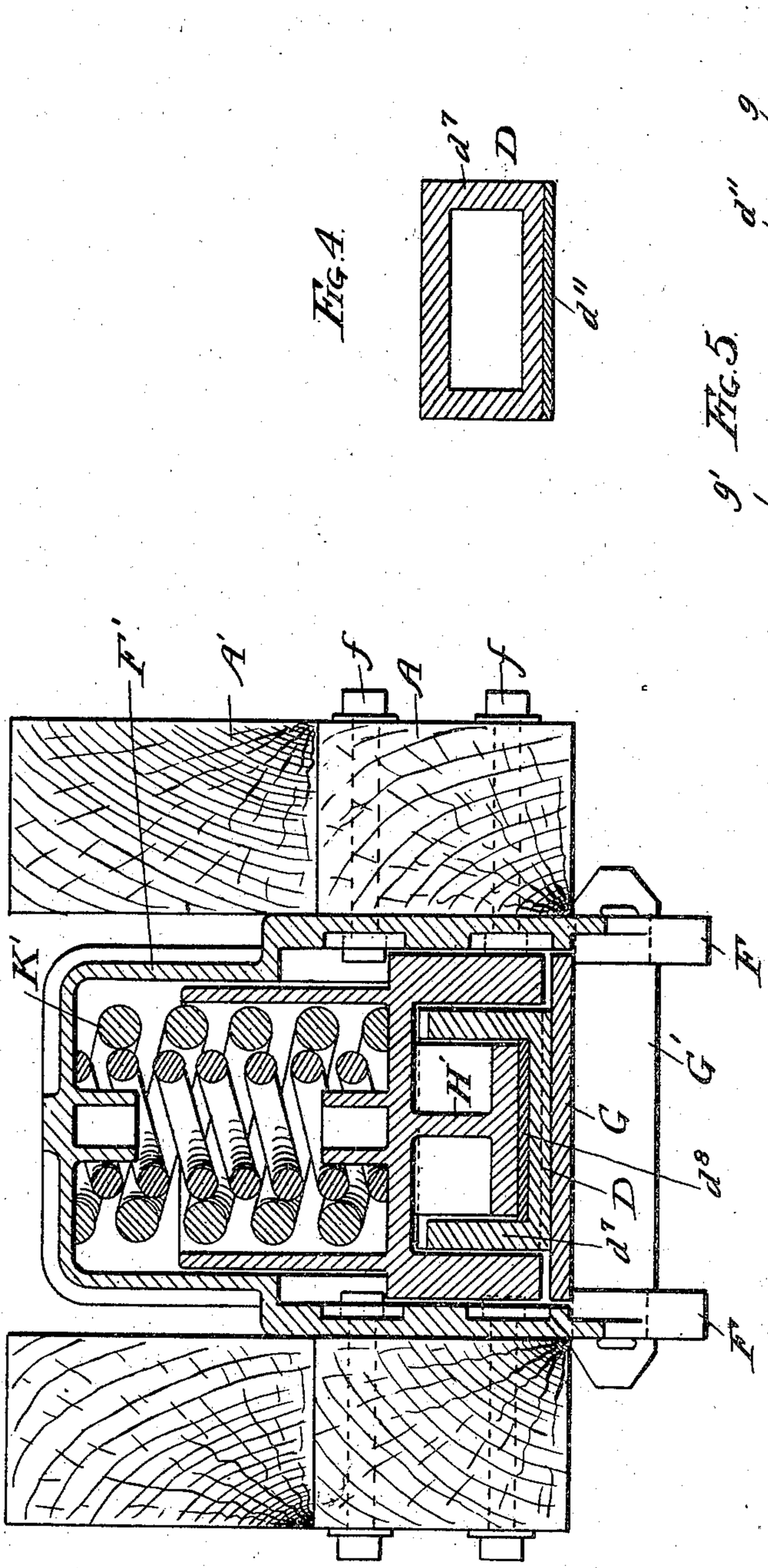

FIG. 3.

FIG. 4.

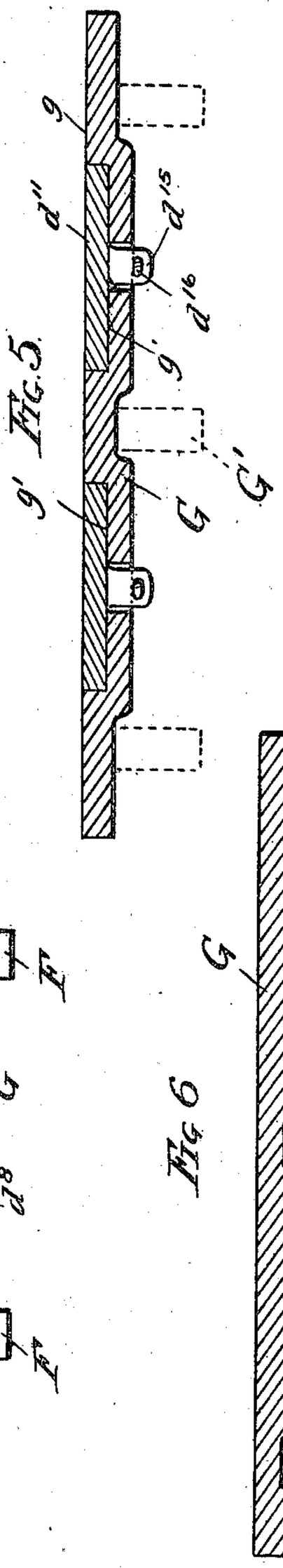

FIG. 5.

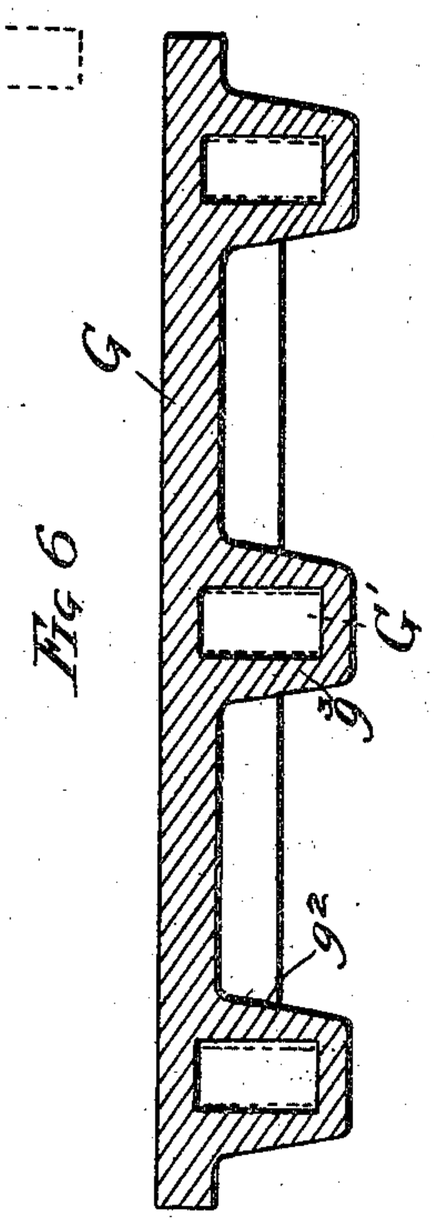

FIG 6

WITNESSES:
F. B. Townsend
A. W. Munday.

INVENTOR.
John J. Hennessey.
BY
Munday Evarts & Adcock
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN J. HENNESSEY, OF MILWAUKEE, WISCONSIN.

FRICTION DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 708,550, dated September 9, 1902.

Application filed June 16, 1902. Serial No. 111,874. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HENNESSEY, a citizen of the United States, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, 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.

The object of my invention is to provide a friction draft-rigging of a simple, strong, efficient, and durable construction which will operate to give a greater resistance under buffing than under pulling strains and which will also efficiently and properly cushion both light and heavy strains or blows.

My invention consists in the means herein shown and described to accomplish this result—that is to say, it consists in connection with the draw-bar and a draft-iron or extension in line therewith and a stationary friction-plate in sliding engagement with one of the faces of the draft-iron double-incline friction-faces on the draft-iron and a transversely-movable friction-block acted upon by a transversely-arranged spring and having double-incline friction-faces, the incline friction-faces for buffing being at a greater angle than the corresponding incline friction-faces for pulling, so that a greater resistance will be offered against buffing strains than against pulling strains.

It also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a central vertical longitudinal section of the friction draft-rigging embodying my invention. Fig. 2 is a perspective view of the draft-iron. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a detail cross-section of the draft-iron. Fig. 5 is a detail longitudinal section of the stationary friction-plate, showing a modified construction thereof. Fig. 6 is a detail longitudinal section of the stationary friction-plate, showing a still further modified construction thereof.

In the drawings like letters of reference indicate like parts in all the figures.

In the drawings, A represents the draft-timbers, and A′ the center sills, of a car, and B is the draw-bar of the coupler.

D is the sliding friction draw-bar extension or draft-iron, the same being directly in line with the draw-bar and connected thereto by a clip or yoke *b*, passing through an eye *d* in the draw-bar extension or draft-iron.

F F are the side plates or stop-castings, fitting between the draft-timbers or center sills and securely attached thereto by bolts *f*.

G is the stationary friction-plate directly behind the draw-bar and in the central line of draft, its friction-face *g* being in sliding frictional engagement with the straight friction-face d^2 of the draft-iron and in the central line of draft. The stationary friction-plate G is supported by cross-bars G′, extending through the side plates or stop-castings F F, and is securely anchored thereto by suitable interengaging notches on the plate G and side plates F F. The side plates F F are preferably in one piece and cast integrally together. The draw-bar extension or draft-iron D has on its opposite side from its straight friction-face d^2 two pairs of double-incline friction-faces d^3 d^4 and d^5 d^6, the inclines d^3 and d^5, which operate in buffing, being at a greater angle than the inclines d^4 d^6, which operate in pulling, so that the draft-rigging will exert a greater resistance under buffing strains than under pulling strains. The difference between the angles d^3 and d^4 is preferably about six degrees, and the same difference may preferably be used between the inclines d^5 and d^6, although this of course may be varied as desired or required for different conditions. In practice I prefer to make the incline d^3 about forty-six degrees, the incline d^4 about forty degrees, the incline d^5 about forty-two degrees, and the incline d^6 about thirty-six degrees, although these angles may all be varied without departing from the principle of my invention.

H H′ are a pair of transversely-movable friction-blocks, the former having double-incline friction-faces *h h′* and the latter having double-incline friction-faces h^2 h^3, corresponding, respectively, to and bearing against the double-incline friction-faces d^3 d^4 d^5 d^6 on the draft-iron D. The double inclines d^3 d^4, which coact with the block H, are also preferably

somewhat farther apart than the double inclines d^5 d^6, which coöperate with the other friction-block H', so that the extension or draft-iron D may thus have some longitudinal movement before the spring K, which acts against the friction-block H, comes into operation or has begun to be compressed. The transversely-arranged springs K K' act at one end against the friction-blocks H H' and at their upper or outer ends against the spring-seats or supporting-barrels F' F', which are preferably cast integral with the side plates or stop-castings F F. To give the draft-iron or extension D, having the double-incline friction-faces, strength and symmetry of form, it is provided with two longitudinal integral webs d^7 d^7, bridging each pair of inclines, and to give it proper friction wearing-surfaces and durability in respect to the friction-blocks H H', which are preferably of malleable iron or steel, like the draft-iron itself, I provide the draft-iron with inserted friction-plates d^8, of cast-iron or other suitable metal, the same fitting between the side webs d^7 and in the pocket formed thereby, the draft-iron being furnished with suitable recesses d^9 to receive the supplemental plate d^8 and the latter being secured by upsetting, as at d^{10}, the metal edges of the recesses. The stationary friction-plate G is preferably made of wrought-iron, and to give the draft-iron proper and durable friction wearing-surface against this wrought-iron stationary friction-plate I provide its under face with supplemental wearing-plates d^{11}, inserted in suitable dovetail recesses d^{12} in the lower side of the draft-iron and secured therein by upsetting, as at d^{13}, the edges of the recesses. If preferred, the supplemental wearing-plates d^{11} may be fitted in suitable recesses g' in the stationary friction-plate G, as illustrated in Fig. 5, instead of in the lower face of the draft-iron D, as illustrated in Figs. 1 and 2. In this latter construction the supplemental wearing-plates d^{11} may have holding-lugs d^{15} and keys d^{16} for securing the same to the stationary friction-plate G.

At Fig. 6 I have illustrated a further modification, in which the stationary friction-plate G is itself made of cast-iron instead of wrought-iron and provided with suitable strengthening-ribs g^2 and g^3, which construction renders it unnecessary to insert wearing-plates of different metal either in the draft-iron D or in the stationary friction-plate G.

I claim—

1. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction-plate in line with the draw-bar and in sliding frictional engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces, a transversely-arranged spring acting against said friction-block and centrally pressing said draft-iron against said stationary friction-plate, the incline friction-faces on the draft-iron and friction-block for resisting buffing strains being at a greater angle than those for resisting pulling strains, to cause the draft-rigging to exert a greater resistance in buffing than in pulling, substantially as specified.

2. In a railway draft-rigging, the combination with a draw-bar of a draft-iron in line therewith, a stationary friction-plate in line with the draw-bar and in sliding frictional engagement with one of the sides of the draft-iron, a plurality of double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a plurality of transversely-movable friction-blocks each having corresponding double-incline friction-faces and a plurality of transversely-arranged springs acting against said transversely-movable friction-blocks and centrally pressing said draft-iron against said stationary friction-plate, the incline friction-faces for buffing on the draft-iron and friction-blocks being at a greater angle than those for pulling, substantially as specified.

3. In a railway draft-rigging, the combination with a draw-bar of a draft-iron in line therewith, a stationary friction-plate in line with the draw-bar and in sliding frictional engagement with one of the sides of the draft-iron, a plurality of double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a plurality of transversely-movable friction-blocks each having corresponding double-incline friction-faces and a plurality of transversely-arranged springs acting against said transversely-movable friction-blocks and centrally pressing said draft-iron against said stationary friction-plate, the incline friction-faces for buffing on the draft-iron and friction-blocks being at a greater angle than those for pulling, the double inclines on one of said friction-blocks having a snug fit and on the other a loose fit with the corresponding double inclines on the draft-iron so that one of the springs may be partially compressed before the other comes into action, substantially as specified.

4. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction surface or plate in line with the draw-bar and in frictional sliding engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces, and a transversely-arranged spring acting against said friction-block and centrally pressing said draft-iron against said stationary friction surface or plate, said draft-iron and friction-block being of malleable iron, steel or other

suitable metal and having an interposed supplemental wearing-plate of different metal, substantially as specified.

5. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction surface or plate in line with the draw-bar and in frictional sliding engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces, and a transversely-arranged spring acting against said friction-block and centrally pressing it against said stationary friction surface or plate, said draft-iron being of malleable iron and the stationary friction-plate, of wrought-iron and having an interposed supplemental cast-iron wearing-plate, substantially as specified.

6. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction surface or plate in line with the draw-bar and in frictional sliding engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces, and a transversely-arranged spring acting against said friction-block and centrally pressing it against said stationary friction surface or plate, said draft-iron and stationary friction-plate having interengaging friction wearing-faces of different metals, substantially as specified.

7. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction-plate in line with the draw-bar and in sliding frictional engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces and a transversely-arranged spring acting against said friction-block and centrally pressing said draft-iron against said stationary friction-plate, said draft-iron having a pair of side webs d' bridging said double-incline friction-faces thereon, substantially as specified.

8. In a railway draft-rigging, the combination of a draw-bar with a draft-iron in line therewith, a stationary friction-plate in line with the draw-bar and in sliding frictional engagement with one of the sides of the draft-iron, double-incline friction-faces on the opposite side of the draft-iron from said stationary friction-plate, a transversely-movable friction-block having corresponding double-incline friction-faces and a transversely-arranged spring acting against said friction-block and centrally pressing said draft-iron against said stationary friction-plate, said draft-iron having a pair of side webs d' bridging said double-incline friction-faces thereon, said draft-iron being of malleable iron and having supplemental wearing-plates on its incline faces between said webs, substantially as specified.

JOHN J. HENNESSEY.

Witnesses:
CLARA A. WARNE,
RICHARD J. HENNESSEY.