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F. B. TOWNSEND.

TANDEM SPRING FRICTION DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED MAY 11, 1903.

NO MODEL.

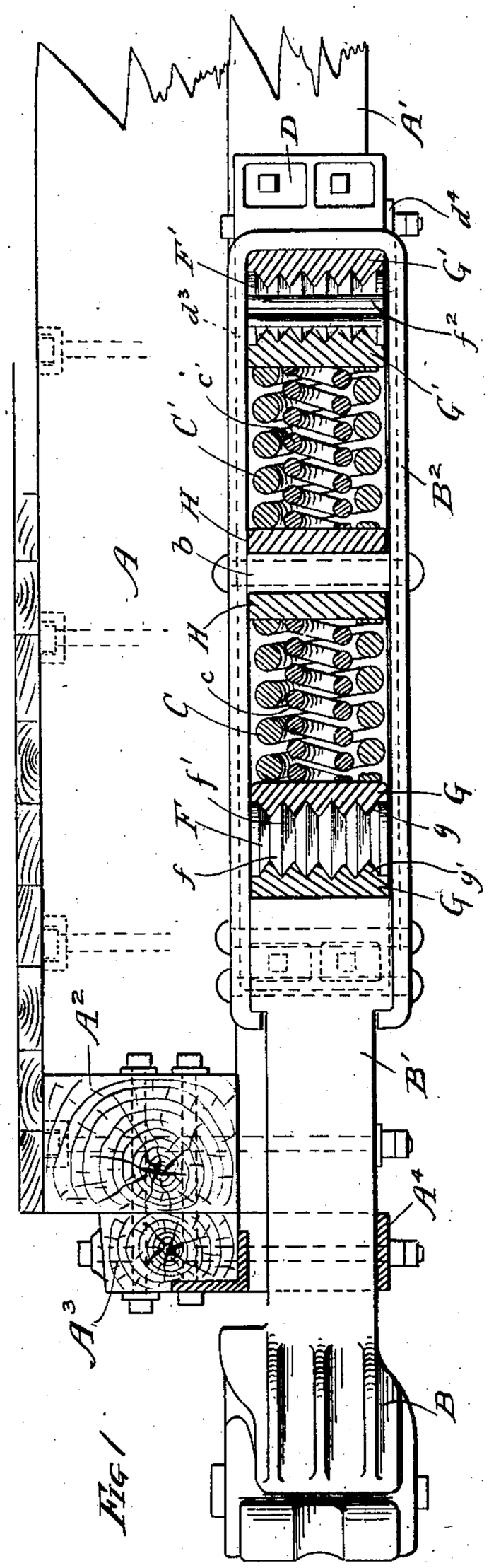

FIG 1

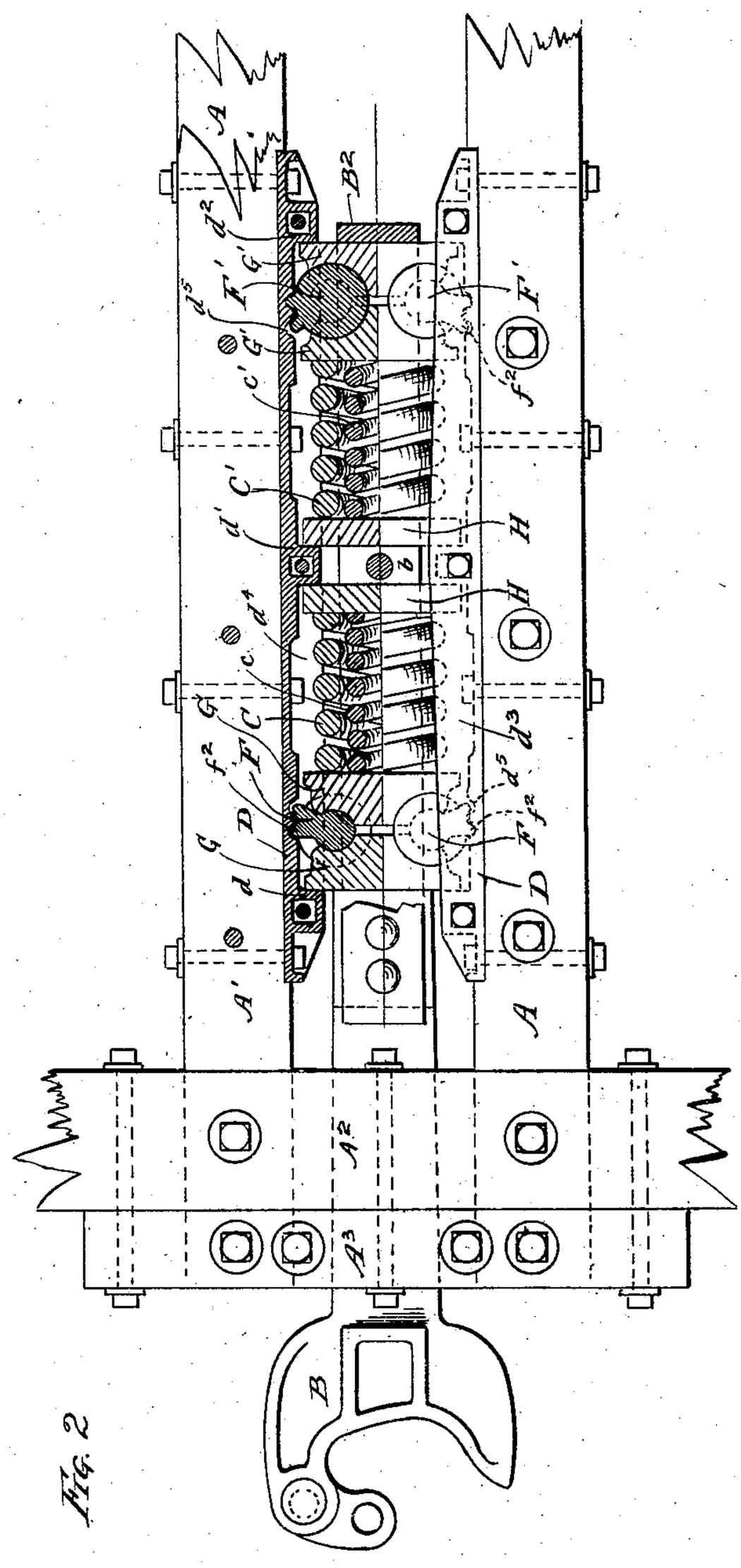

FIG. 2

WITNESSES:

A. H. D. Munday.

Wm. Geiger.

INVENTOR.

Frederick B. Townsend.

BY

Munday, Evarts & Adcock.

his ATTORNEYS

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UNITED STATES PATENT OFFICE.

FREDERICK B. TOWNSEND, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO W. H. MINER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TANDEM-SPRING FRICTION DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 734,012, dated July 21, 1903.

Application filed May 11, 1903. Serial No. 156,525. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. TOWNSEND, 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 Tandem-Spring 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 tandem-spring friction draft-rigging for railway-cars of a simple, strong, efficient, and durable construction in which the resistance of a pair of tandem springs in connection with a frictional resistance operates under both pulling and buffing strains.

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, a draw-bar extension, side plates or stop-castings, and springs arranged tandem and longitudinal of the draw-bar, of two rotatable friction-blocks, movable friction-blocks connected with and operated by the draw-bar or its extension and frictionally engaging said rotatable friction-blocks, and means for causing the rotatable friction-blocks to turn as the draw-bar moves back and forth.

It further consists in a pair of movable friction-blocks embraced by each pair of movable friction-blocks in connection with means to cause the rotatable friction-blocks to turn as the draw-bar moves, thus relieving the side plates or stop-castings from any lateral thrust or strain.

My invention 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 side elevation, partly in central longitudinal section, of a tandem-spring friction draft-rigging embodying my invention; and Fig. 2 is a plan view partly in horizontal section.

In said drawings, A represents the center sills, A′ the draft-timbers, A^2 the end sill, A^3 the buffing-block, and A^4 the carry-iron, of a railway-car.

B is the coupler; B′, the draw-bar; B^2, the draw-bar extension, the same being preferably in the form of a strap or yoke.

D D are the side plates or stop-castings, the same having shoulders or stops d, d', and d^2 for the followers or friction-blocks to abut against and upper guides d^3 and lower removable guides d^4 for the followers or friction-blocks to reciprocate in or between.

C C′ are tandem springs arranged longitudinally of the draw-bar and directly in line therewith.

F F and F′ F′ are two pair of rotatable friction-blocks, one before and one behind springs and arranged with their axes transverse to the draw-bar and preferably with their axes upright, as illustrated in the drawings.

G G and G′ G′ are two pair of movable friction-blocks, one pair in frictional engagement with each of said pair of rotatable friction-blocks F F and F′ F′. The rotatable friction-blocks F and F′ each have convex friction-surfaces f, preferably furnished with corrugations f' to increase their friction-surface, and the movable friction-blocks G and G′ each have concave friction-surfaces g, furnished with corresponding corrugations g' to fit the corrugated convex friction-surface of the rotatable friction-blocks F F′. To cause the rotatable friction-blocks to turn or partly rotate between the movable friction-blocks as the draw-bar moves back and forth, I provide the rotatable friction-blocks F F′ and the side plates or stop-castings D D with interengaging lugs or projections f^2 and notches or recesses d^5, the lugs or projections being preferably on the rotatable friction-blocks F F′ and the notches or recesses on the side plates or stop-castings D D, as illustrated in the drawings. The friction-blocks G G′ also serve as followers, and H H are a pair of intermediate followers which engage the middle stops d' d' on the stop-castings and which are actuated by the draw-bar through an abutment or block b, secured to the draw-bar extension B^2.

By use of a pair of small rotatable friction-blocks between each pair of movable friction-blocks the side or lateral thrust due to the friction of the rotatable friction-blocks against the movable friction-blocks compensates each other, and thus prevents the two movable friction-blocks from exerting a lateral thrust or spreading strain upon the stop-castings. This feature of my improvement may be used whether the draft-rigging is furnished with tandem or single springs.

The operation is as follows: Under buffing strains the rear pair of friction-blocks G' G' and the front follower H are held stationary by the rear and middle stops on the stop-castings and the front pair of friction-blocks G G and the rear follower H move with the draw-bar, thus compressing the tandem springs C C' and causing the front pair of friction-blocks G G to be pressed forcibly against the front pair of rotatable friction-blocks F F, each of which is caused to turn on its axis as it is moved back by the draw-bar and the pair of friction-blocks or followers G G, between which it is embraced, thus adding the frictional resistance due to the rotation of the front pair of rotatable friction-blocks F F to the direct resistance of the two tandem-arranged springs C C' in overcoming the buffing strains, and under pulling strains the operation is the same, excepting that in this case it is the front pair of friction-blocks G G and the front pair of rotatable friction-blocks F F and rear follower H which are held stationary by the front and middle stops on the stop-castings, while the rear pair of rotatable friction-blocks and the front follower H move with the draw-bar and compress the springs.

Supplemental small springs *c c'* inside the main springs C C' may preferably be employed.

I claim—

1. In a tandem-spring friction draft-rigging, the combination with a draw-bar, draw-bar extension and tandem springs of a pair of rotatable friction-blocks transverse to the draw-bar and two pair of rotatable friction-blocks in frictional engagement therewith, substantially as specified.

2. In a tandem-spring friction draft-rigging, the combination with a draw-bar, draw-bar extension, and tandem springs, of two rotatable friction-blocks transverse to the draw-bar and two movable friction-blocks, one in frictional engagement with each of said rotatable friction-blocks, substantially as specified.

3. In a tandem-spring friction draft-rigging, the combination with a draw-bar, draw-bar extension, and tandem springs, of a pair of rotatable friction-blocks transverse to the draw-bar and two pair of rotatable friction-blocks in frictional engagement therewith, and means for causing said rotatable friction-blocks to turn as the draw-bar moves, substantially as specified.

4. In a tandem-spring friction draft-rigging, the combination with a draw-bar, draw-bar extension and tandem springs, of two rotatable friction-blocks transverse to the draw-bar and two movable friction-blocks, one in frictional engagement with each of said rotatable friction-blocks, and means for causing said rotatable friction-blocks to turn as the draw-bar moves, substantially as specified.

5. In a friction draft-rigging, the combination with a draw-bar, tandem springs and a pair of side plates or stop-castings, of two rotatable friction-blocks arranged transverse to the draw-bar, a pair of movable friction-blocks and a pair of intermediate followers, substantially as specified.

6. In a friction draft-rigging, the combination with a draw-bar, tandem springs and a pair of side plates or stop-castings, of two rotatable friction-blocks arranged transverse to the draw-bar, a pair of movable friction-blocks and a pair of intermediate followers and interengaging devices on the rotatable friction-blocks and stationary stop-castings for causing the rotatable friction-blocks to turn, substantially as specified.

7. In a tandem-spring friction draft-rigging, the combination with a draw-bar, tandem springs and a pair of side plates or stop-castings of two rotatable friction-blocks arranged transverse to the draw-bar, and two pair of movable friction-blocks and interengaging devices on the rotatable friction-blocks and stationary stop-castings for causing the rotatable friction-blocks to turn, substantially as specified.

8. In a tandem-spring friction draft-rigging, the combination with a draw-bar, tandem springs and a pair of side plates or stop-castings, of two rotatable friction-blocks arranged transverse to the draw-bar, and two pair of movable friction-blocks and interengaging devices on the rotatable friction-blocks and stationary stop-castings for causing the rotatable friction-blocks to turn, and intermediate followers between the tandem springs, substantially as specified.

9. In a tandem-spring friction draft-rigging, the combination with a draw-bar, tandem springs, followers between the springs, and a pair of side plates or stop-castings of two rotatable friction-blocks arranged transverse to the draw-bar and a pair of movable friction-blocks and means for causing said rotatable friction-blocks to turn under movement of the draw-bar, substantially as specified.

10. In a tandem-spring friction draft-rigging, the combination with a draw-bar, tandem springs, followers between the springs and a pair of side plates or stop-castings, of two pair of rotatable friction-blocks arranged transverse to the draw-bar, and two pair of movable friction-blocks and means for causing said rotatable friction-blocks to turn under movement of the draw-bar, substantially as specified.

11. In a friction draft-rigging, the combination with a draw-bar, draw-bar extension, and spring, of a pair of rotatable friction-blocks

transverse to the draw-bar and a pair of movable friction-blocks in frictional engagement therewith, substantially as specified.

12. In a friction draft-rigging, the combination with a draw-bar, draw-bar extension and spring, of a pair of rotatable friction-blocks transverse to the draw-bar and a movable friction-block in frictional engagement with both of said rotatable friction-blocks, substantially as specified.

13. In a friction draft-rigging, the combination with a draw-bar, draw-bar extension, and spring, of a pair of rotatable friction-blocks transverse to the draw-bar and a movable friction-block in frictional engagement with both of said rotatable friction-blocks, and means for causing said rotatable friction-blocks to turn under movement of the draw-bar, substantially as specified.

14. In a friction draft-rigging, the combination with a draw-bar, draw-bar extension, and spring, of a pair of rotatable friction-blocks transverse to the draw-bar and a movable friction-block in frictional engagement with both of said rotatable friction-blocks, a pair of side plates or stop-castings and interengaging devices on said rotatable friction-blocks and stationary stop-castings for causing the rotatable friction-blocks to turn, substantially as specified.

FREDERICK B. TOWNSEND.

Witnesses:
EDMUND ADCOCK,
H. M. MUNDAY.