

No. 812,867.

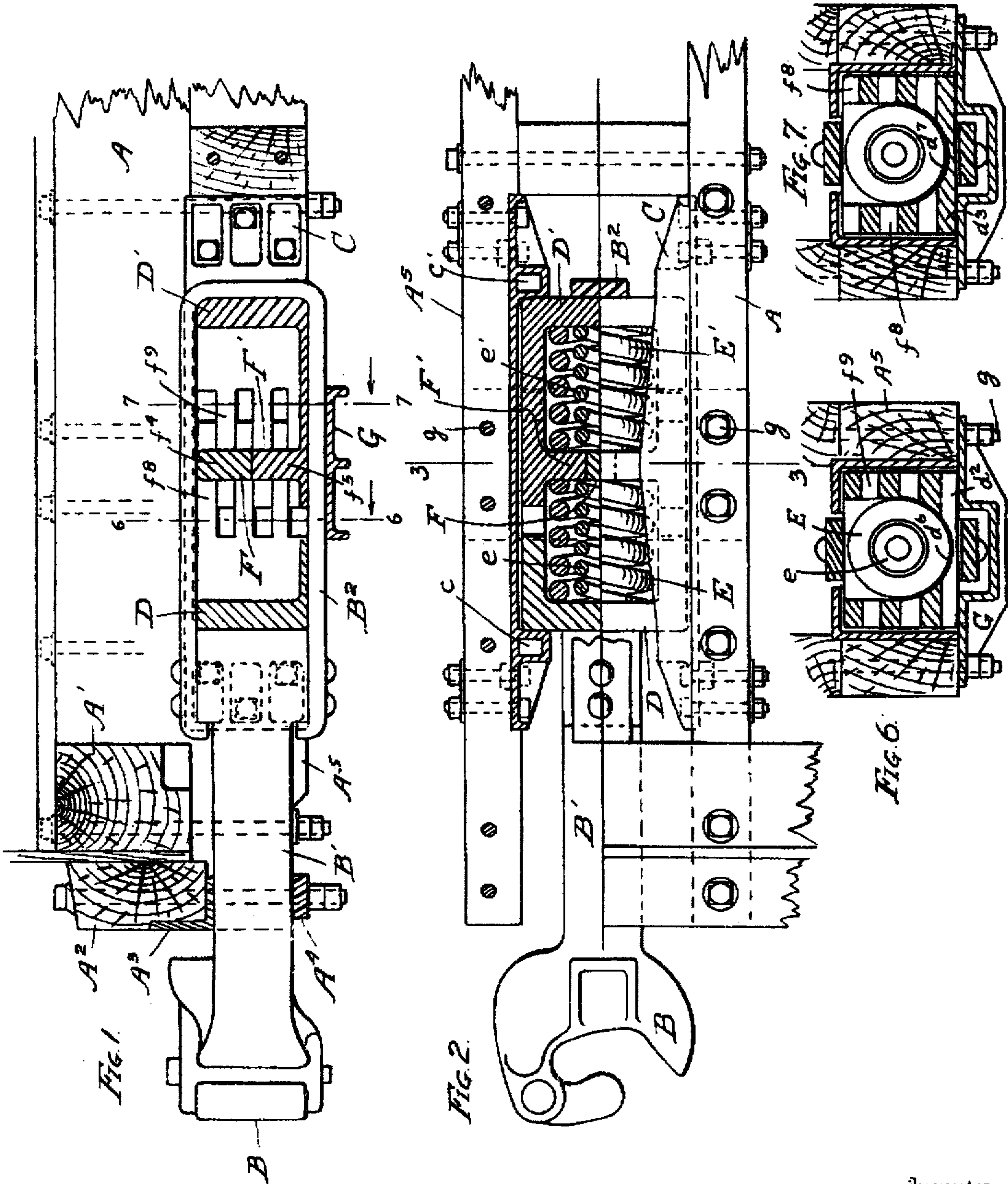
PATENTED FEB. 20, 1906.

J. F. O'CONNOR.

TANDEM SPRING DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED SEPT. 5, 1905.

2 SHEETS—SHEET 1.



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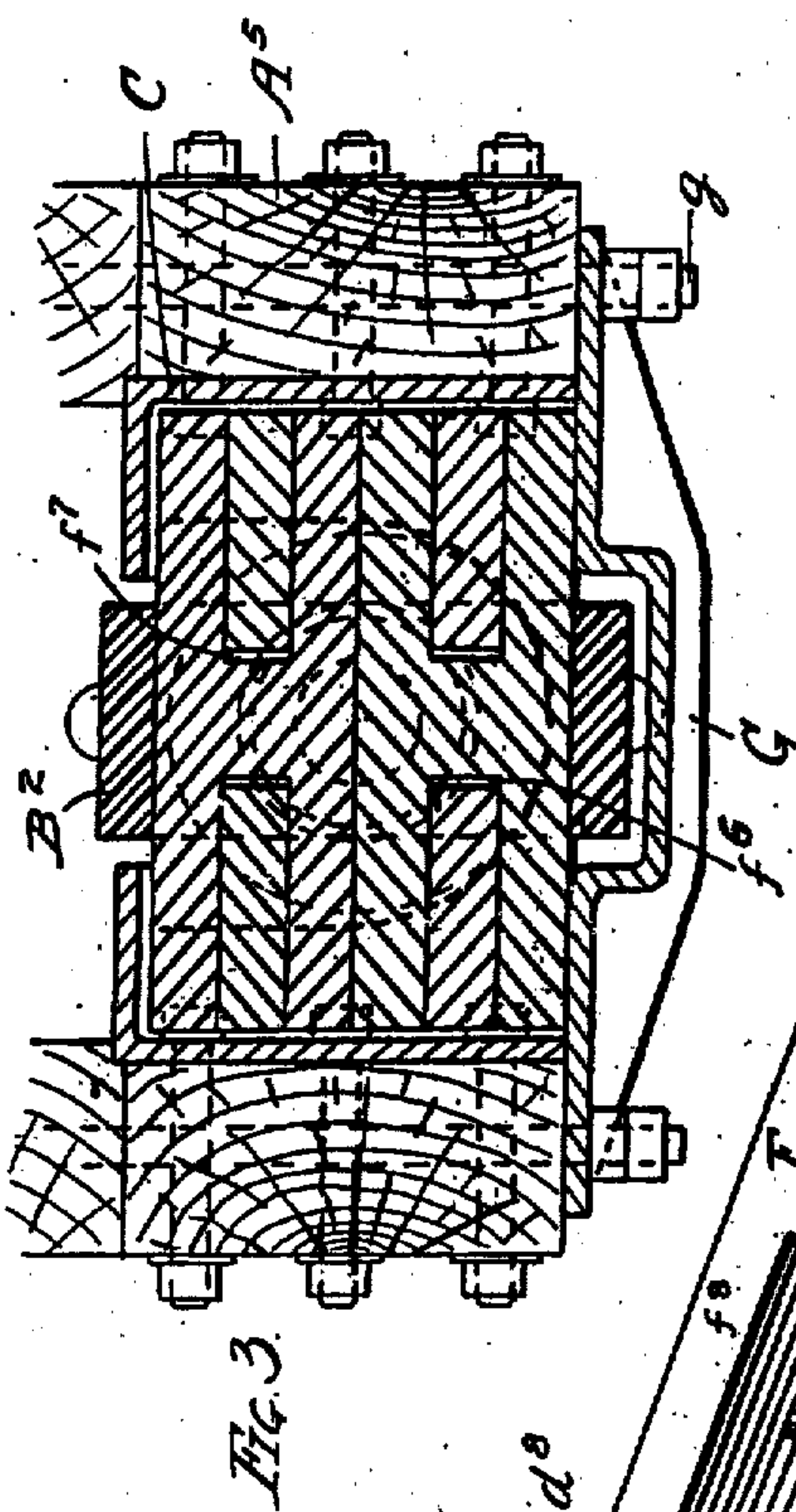


FIG. 3.

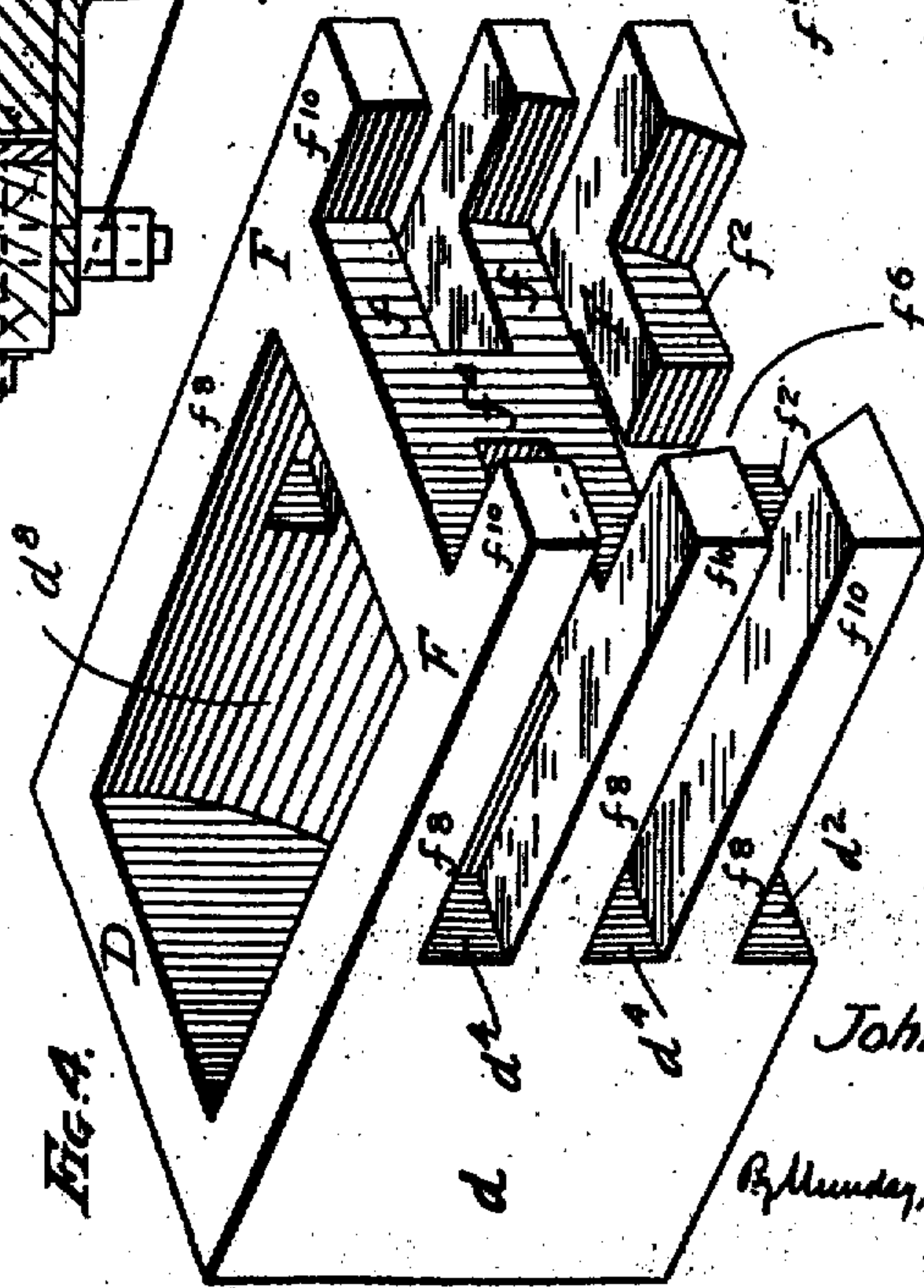


FIG. 4.

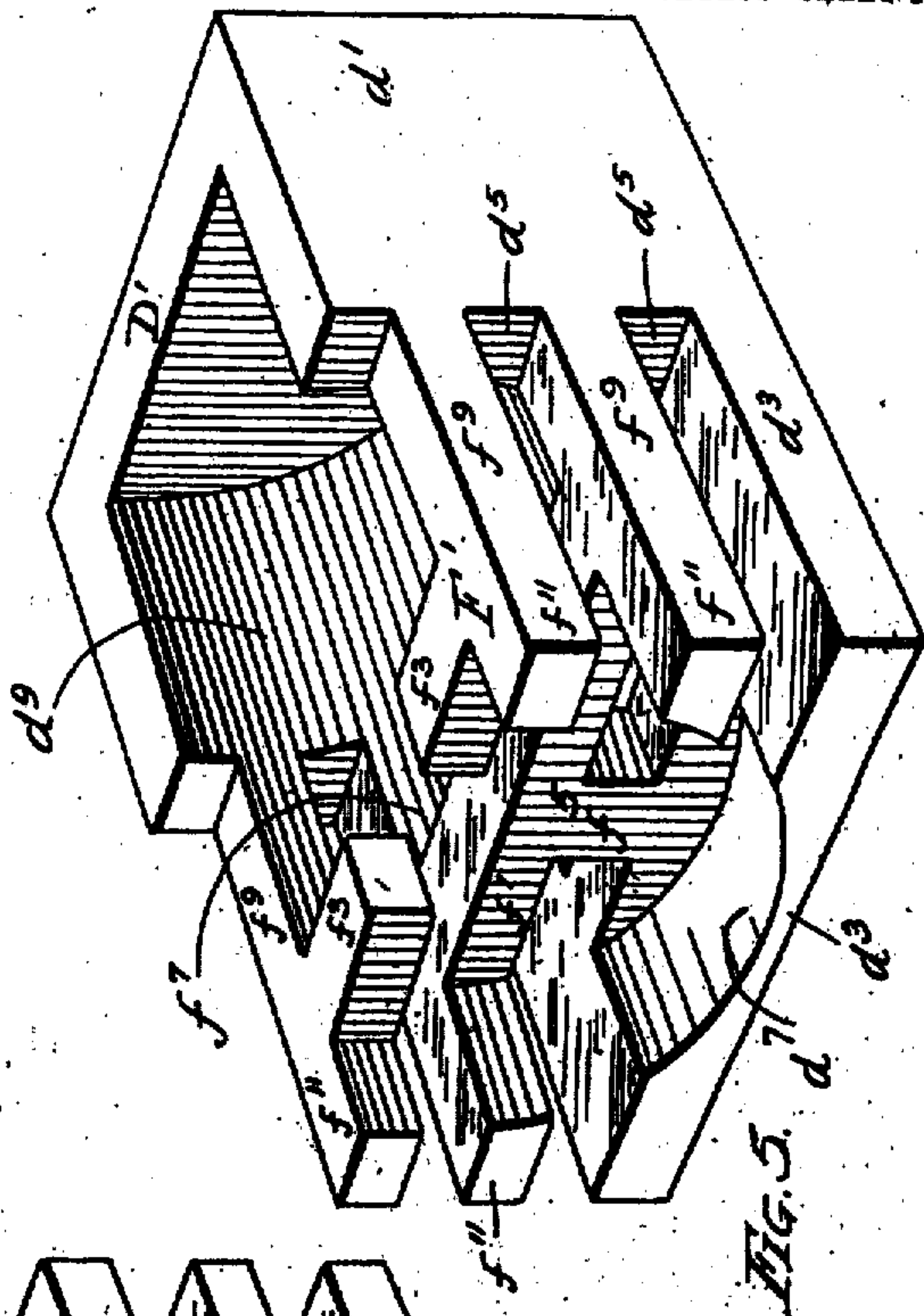


FIG. 5.

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TANDEM-SPRING DRAFT-RIGGING FOR RAILWAY-CARS.

No. 812,867.

Specification of Letters Patent.

Patented Feb. 20, 1906.

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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 Tandem-Spring Draft-Rigging for Railway-Cars, of which the following is a specification.

My invention relates to improvements in tandem-spring draft-rigging for railway-cars.

The object of my invention is to provide a tandem-spring draft-rigging of a simple, efficient, strong, and durable construction composed of few parts and capable of being cheaply manufactured, in which both springs will be compressed under both pulling and buffing strains, and in which the customary intermediate stops or shoulders on the side plates or stop-castings may be dispensed with, as well as the customary intermediate abutment-block on the draw-bar strap or yoke, and in which the total length of the draft-rigging may be materially reduced or made to aggregate simply the total length of the two tandem-springs and the thickness of three followers.

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 draw-bar strap or yoke, of side plates or stop-castings having each front and rear stops only and a pair of tandem-arranged springs, of front and rear followers, one bearing against the front end of the front spring and the other against the rear end of the rear spring and arranged to abut against the front and rear stops or shoulders on the side plates or stop-castings, respectively, and reciprocate, one with the draw-bar in pulling and the other with the draw-bar in buffing, and a pair of intermeshing or complementing skeleton intermediate followers between the adjacent ends of the two springs adapted to slide and telescope in respect to each other, one being integral with the rear follower and the other integral with the front follower. Each of these intermediate intermeshing skeleton followers preferably comprises a continuous H-shaped cross-bar and a slotted cross-bar. The two intermediate followers intermesh with and complement each other and fit flush together when the springs are not compressed, so that

they together occupy in this condition but the longitudinal space equaling the thickness of one follower, the two intermediate followers together constituting a substantially complete transverse wall or partition between the adjacent ends of the two tandem-springs, so that the total length of the draft-rigging and the space required therefor may be materially reduced, the abutment-block between the intermediate followers being dispensed with, as well as the thickness of one of the intermediate followers, owing to the fact that the intermediate followers telescope or shut flush together instead of simply fitting adjacent to each other. In my invention my intermeshing flush-fitting intermediate followers are connected, one with the rear follower and the other with the front follower, by a series of interfitting telescoping tongues integral with the front and rear followers, respectively, and with the intermediate follower connected thereto. In my invention both the front and rear follower are provided with an integral bottom plate or web which serves as supports for the springs, and in my invention also each of the intermediate followers is or may be provided with integral projecting legs or tongues, which may abut against shoulders on the upright integral sides of the opposing rear and front follower to limit the extent of compression of the springs.

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 central vertical section, of a tandem-spring draft-rigging embodying my invention, in this view the springs being omitted to better show the other parts. Figure 2 is a plan view, partly in horizontal section. Figure 3 is a vertical section on line 3 3 of Figure 2. Figure 4 is a detail perspective view showing the front follower and the intermediate skeleton H-shaped cross-bar and slotted cross-bar follower connected thereto and formed integrally therewith. Figure 5 is a detail perspective view of the rear follower and of the intermediate skeleton or H-shaped cross-bar and slotted cross-bar follower integrally connected thereto. Figures 6 and 7 are detail

cross-sections on lines 6 6 and 7 7 of Fig. 1, respectively.

In the drawings, A represents the center sills; A', the front or end sill; A², the buffer-block; A³, the buffer-plate; A⁴, the carry-iron, and A⁵ the draft-timbers or longitudinal frame-pieces of the car, to which the side plates or stop-castings of the draft-rigging are secured.

B is the coupler, B' the draw-bar, and B² the draw-bar strap or yoke, secured to the draw-bar in the usual manner.

C C are the side plates or stop-castings, each having a front stop c and a rear stop c' for the front and rear followers to abut against.

D is the front follower, and D' the rear follower, and E and E' are tandem-arranged springs, there being also preferably a small spring e within the spring E and a small spring e' within the spring E'.

F and F' are the two intermediate intermeshing flush-fitting skeleton followers, the one, F, integral with the front follower D and the other, F', integral with the rear follower D', the two intermediate followers sliding and telescoping together and constituting a substantially complete transverse wall or partition between the adjacent ends of the two springs E E' when the springs are in their extended or uncontracted position, as will be readily understood from Fig. 3 and from Figs. 1 and 2 of the drawings. Each of these intermeshing flush-fitting intermediate skeleton followers F F' comprises, preferably, a substantial H-shaped continuous cross-bar f f' and a slotted, broken, or non-continuous cross-bar f² f², the upright webs f¹ f¹ of the continuous H-shaped cross-bars f f' fitting in the slots or openings f³ f³ of the slotted or non-continuous cross-bars f² f². When the springs are not compressed, as illustrated in Fig. 2, it will thus be seen that the adjacent ends of both tandem-springs abut each directly against both of the intermeshing flush-fitting intermediate skeleton followers F F', as these two intermediate followers complement each other and telescope together and occupy but the thickness of the one. When the springs are compressed, however, the intermediate follower F, which is integral with the front follower D, bears against the front end of the rear spring E' and compresses it, while the other intermediate follower F', which is integral with the rear follower D', bears against the rear end of the front spring and compresses it. The cross-bars f f' of the intermediate follower F are connected integrally with the front follower D by integral tongues or legs f⁴, which interfit with the corresponding longitudinal tongues or legs f⁵ of the other intermediate follower F' and which project from the integral upright side walls d and d' of the front follower D and rear follower D', respectively. The front follower

D has an integral bottom plate or web d², and the rear follower D' a corresponding integral bottom plate or web d³, which serve to support the springs and to give additional strength to the several followers as a whole in their coöperative action or combination. The intermediate followers F F', preferably, are furnished with integral extensions f¹⁰ f¹¹ of the legs or tongues f⁴ f⁵, respectively, which may abut against shoulders d⁴ d⁵ on the upright side walls d d' of the front and rear followers D D', respectively, to limit the telescopic movement of the followers in respect to each other and the extent of compression of the springs. The series of extension-legs f¹⁰ f¹⁰ interfit and telescope with the series of extension-legs f¹¹ f¹¹. The bottom plates or webs d² d³ of the front and rear followers are preferably curved at d⁶ d⁷ to correspond substantially to the curvature of the springs resting thereon, and the upright side walls d d' of the front and rear followers D D' may be preferably curved or chambered into a substantially U-shaped form on the inside at d⁸ d⁹ to conform to the springs and permit the ready insertion and removal of the springs through the openings at the top. The followers D D', having the integral bottom plates d² d³, fit between the upper and lower webs of the draw-bar strap or yoke B² and reciprocate upon and are supported by the removable guide or tie plate G, secured to or beneath the side plates or stop-castings C by the bolts g.

I claim—

1. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, a front follower bearing against the front end of the front spring, a rear follower bearing against the rear end of the rear spring and two intermeshing, flush-fitting, telescoping skeleton intermediate followers, one integral with the front follower and the other integral with the rear follower, the two intermediate, flush-fitting followers both engaging the adjacent ends of each spring when the springs are not compressed, and sliding or telescoping in respect to each other to compress the springs, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

2. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, and integral interfitting longitudinally-extending

tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

3. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, and two interfitting sets of integral tongues, one set integral with one of said intermediate followers for connecting it with the front follower, and the other set integral with the other intermediate follower for connecting it with the rear follower, substantially as specified.

4. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, said intermeshing skeleton intermediate followers being integral one with the front follower, and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

5. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, said intermeshing skeleton intermediate followers having each an H-shaped continuous cross-bar and a slotted cross-bar, substantially as specified.

6. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, of front and rear followers, and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed, and to telescope or slide apart to compress the springs, whereby the adjacent ends of the two tandem springs are adapted to be brought close together or be separated a distance only equal to the necessary thickness of one follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

7. In a tandem-spring draft-rigging, the combination with tandem springs, front and

rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

8. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, one of said intermediate followers having extension-legs to limit the follower movement and the compression of the springs, substantially as specified.

9. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, said intermediate followers having interfitting extension-legs engaging shoulders on the front and rear followers to limit the movement and the compression of the springs, substantially as specified.

10. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, a plurality of integral tongue connections between one of said intermediate followers and the front follower and a plurality of integral tongue connections between the other intermediate follower and the rear follower, said tongue connections of the one intermediate follower interfitting and alternating with those of the other intermediate follower substantially as specified.

11. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, of a front follower having an integral bottom plate or web, a rear follower having an integral bottom plate or web and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed, and to telescope or slide apart to compress the springs, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

12. In a tandem-spring draft-rigging, the combination with tandem-arranged springs,

of a front follower having an integral bottom plate or web, a rear follower having an integral bottom plate or web and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed, and to telescope or slide apart to compress the springs, the ends of said integral bottom plates or webs on the front and rear followers abutting together to limit the compression of the springs, substantially as specified.

13. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers having integral bottom plates or webs and integral side walls, and two complementing or intermeshing skeleton intermediate followers integral one with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers with the front and rear followers, respectively, substantially as specified.

14. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers having integral bottom plates or webs and integral side walls, and two complementing or intermeshing skeleton inter-

mediate followers integral one with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers with the front and rear followers respectively, said intermediate followers having interfitting extension-legs, substantially as specified.

15. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, front and rear followers, and two interfitting telescoping H-shaped and slotted cross-bar intermediate followers, substantially as specified.

16. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, front and rear followers, and two interfitting telescoping H-shaped and slotted cross-bar intermediate followers, one of said intermediate followers being integral with the front follower and the other with the rear follower, substantially as specified.

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Witnesses:

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