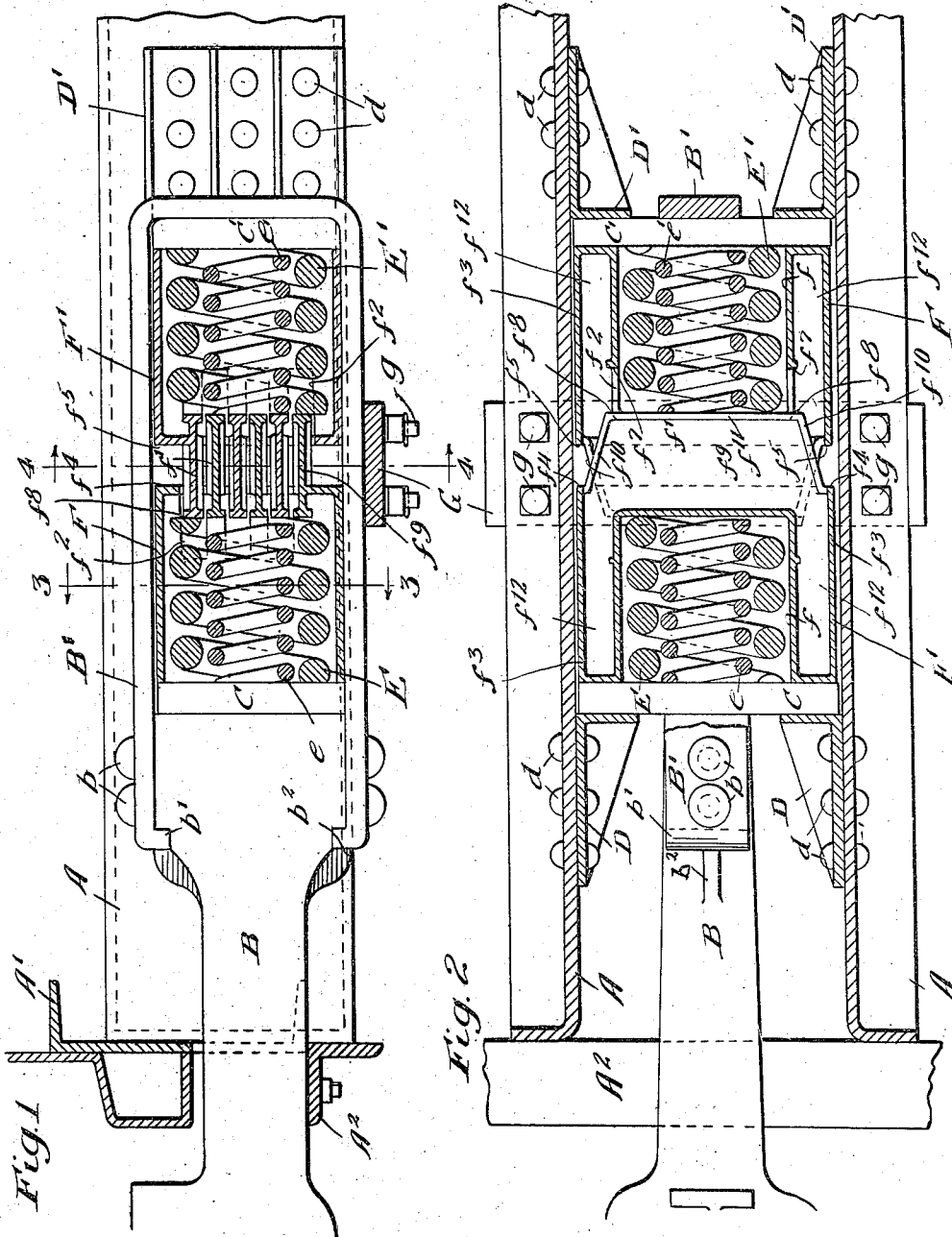


J. F. O'CONNOR.
TANDEM SPRING DRAFT RIGGING FOR RAILWAY CARS.
APPLICATION FILED APR. 26, 1909.

1,044,075.

Patented Nov. 12, 1912.

2 SHEETS—SHEET 1.



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Fig. 3

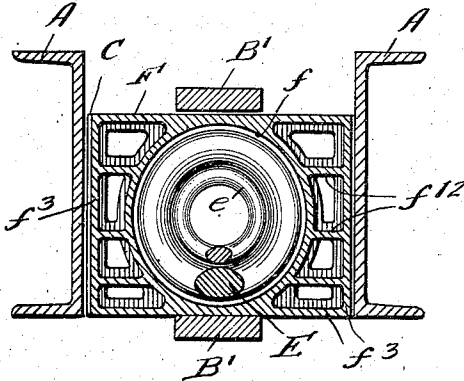


Fig. 5

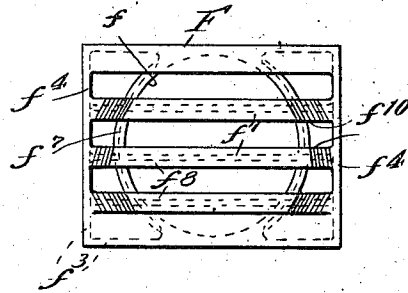


Fig. 4

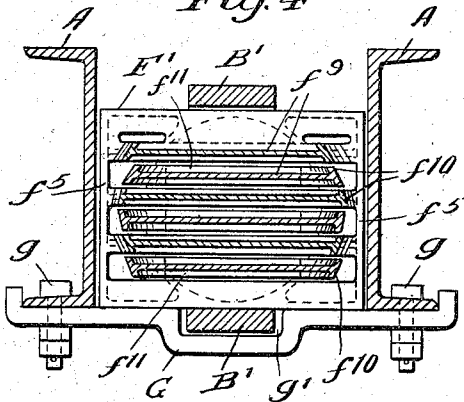


Fig. 6

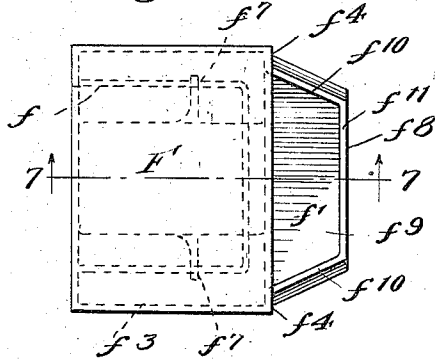
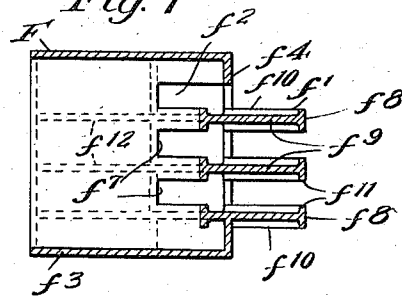


Fig. 7



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UNITED STATES PATENT OFFICE.

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TANDEM-SPRING DRAFT-RIGGING FOR RAILWAY-CARS.

1,044,075.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed April 26, 1909. Serial No. 492,166.

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 strong, simple, efficient and durable construction, composed of few parts, capable of being cheaply manufactured, in which both springs will be simultaneously compressed under both pulling and buffing strains, in which the movement of the followers will be limited to prevent the springs being compressed solid and thereby set or injured, and which at the same time will be capable of withstanding extremely heavy and sudden shocks or blows without injury.

My invention consists in the means I employ to practically accomplish this object or result as herein shown and described, and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a side elevation, partly in central, longitudinal section of a tandem spring draft rigging embodying my invention. Fig. 2 is a plan view partly in horizontal section. Figs. 3 and 4 are vertical sections on lines 3—3 and 4—4 of Fig. 1 respectively. Fig. 5 is a detail end elevation of one of the two reciprocating spring cases. Fig. 6 is a detail plan view of the same and Fig. 7 is a detail section on line 7—7 of Fig. 6.

In the accompanying drawing A A are the center sills or other frame members of the car upon which the draft rigging is mounted, A¹ the front or end sill and A² the carry-iron.

B is the coupler draw-bar and B¹ the draft yoke secured to the draw-bar in any suitable manner, as by rivets b and inter-fitting gibs or shoulders b¹ b² on the draft yoke and draw-bar.

C C¹ are the front and rear followers extending transversely through the draft yoke and abutting respectively against the front and rear draft members D D¹ which are

secured to the draft sills A A of the car by 55 rivets d or other suitable means.

E, e, E¹, e¹ are tandem arranged springs, the spring E bearing at its front end against the front follower C and the spring E¹ bearing at its rear end against the rear follower C¹.

F F¹ are a pair of reciprocating spring cases arranged between the followers C C¹ and each furnished with a cylindric chamber f to receive the spring which it surrounds, and with a series of alternating spring pusher blades f¹ and slots f², the blades on the one case F alternating with the blades on the other and fitting in the slots of the other member. The two reciprocating spring cases or boxes F F¹ are preferably exactly similar or identical in construction, both being preferably made from the same pattern and simply reversely arranged so that the spring pusher blades on the one will alternate and intermesh with those on the other. The alternating spring pusher blades f¹ on the two spring cases F F¹ are at the meeting ends of said cases F F¹, and the blades f¹ on the one case F bear against the front ends of the springs E¹ in the other case F¹. Each of the spring cases F has, in addition to its inner cylindric wall f, substantially fitting the spring, an outer rectangular wall f³, the upright sides of which fit between the draft sills A A, while the horizontal or upper and lower sides of this outer rectangular wall fit the inner faces of the draft yoke B¹. The two adjacent or meeting ends of the reciprocating spring cases F F¹ have abutment shoulders f⁴ f⁵ and the ends f⁶ of the blades f¹ on the one member abut against shoulders f⁷ at the ends of the slots f² on the other member, thus limiting the reciprocating movement of the cases F F¹ and of the followers C C¹ and thereby preventing the springs E E¹ from being compressed completely solid or injured.

The alternating pusher blades f¹ on the reciprocating spring cases F F¹ preferably extend horizontally substantially across the case so that the end face of each blade intersects and bears against the end of the spring E or E¹ at two points, one on each side of its center, so that the plurality of blades together afford an extended and flat seat for the end of the spring to bear against. As

the pusher blades f^1 are wide, extending substantially entirely across the box or case F or F^1 , and at the same time comparatively short in length longitudinally of the draw-bar, they are extremely strong and adapted to successfully withstand sudden and extremely heavy shocks or blows. To add further strength to the horizontal pusher blades f^1 , they are each preferably made of an I cross section, or with a central web f^9 and with flanges f^{10} at each side edge, as will be readily understood from Fig. 4 of the drawing. To further strengthen and stiffen the pusher blades f^1 and at the same time give them a more extended end bearing face against the spring, they are each furnished at their outer extremities with a flange f^{11} . The short wide alternating pusher blades f^1 on the meeting ends of the reciprocating spring cases F F^1 are thus made of an extremely strong and rigid construction, so that they are not liable to be broken or injured.

The outer rectangular wall f^3 and inner cylindrical wall f are joined together by horizontal connecting webs f^{12} .

G is a removable tie-plate secured by bolts g to the draft sills or members A A of the car by which the draft rigging is supported and upon which it rides or reciprocates. This tie-plate is furnished with a central guide-channel g^1 to receive the lower member of the draft yoke B^1 .

I claim.

1. In a draft rigging, the combination of a draw-bar, draft yoke, front and rear stops,

front and rear followers, and a pair of tandem arranged springs, with a pair of reciprocating spring cases entirely surrounding said springs and provided at their meeting ends with short, wide pusher blades each extending across the end of the adjacent spring from side to side and against which the meeting ends of the springs bear, the pusher blades of one of said cases alternating with those of the other, said spring cases having stop shoulders at their meeting ends to limit the reciprocating movement of the followers, and each of said spring cases also having stop shoulders against which the extremities of said pusher blades are adapted to engage as a further means of limiting the compression of the springs, substantially as specified.

2. In a draft rigging, the combination with a draw-bar, draft yoke, draft lugs, tandem arranged springs and followers, of a pair of reciprocating spring cases having cylindrical inner walls and rectangular outer walls, and provided at their meeting ends each with a series of short, wide pusher blades each extending across and engaging the end of the spring in the adjacent case on both sides of the center, said pusher blades being of I form in cross section, narrower at their spring engaging ends than at their junction with the said cases, substantially as specified.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."