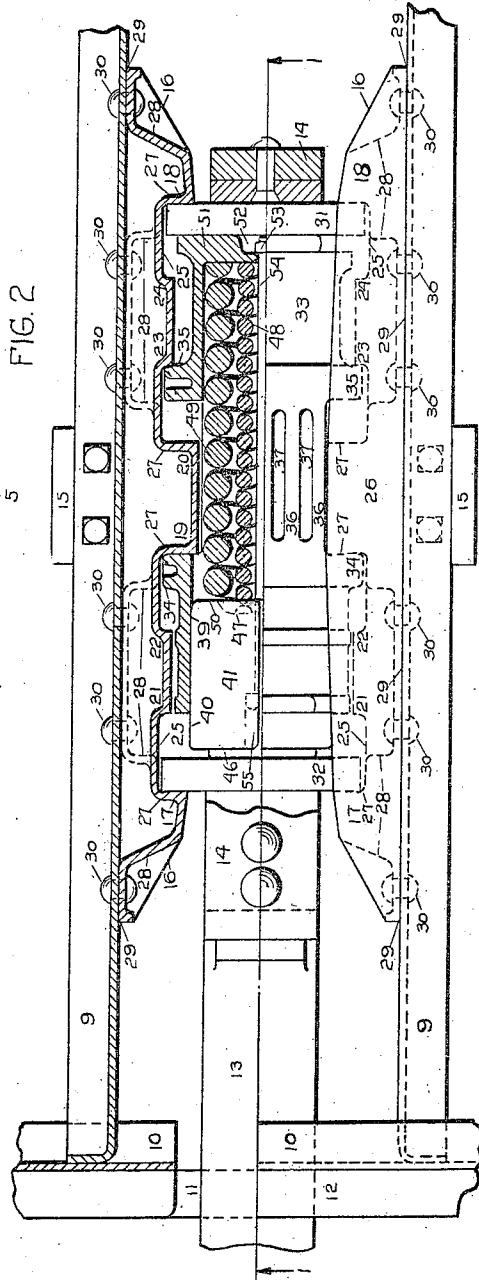
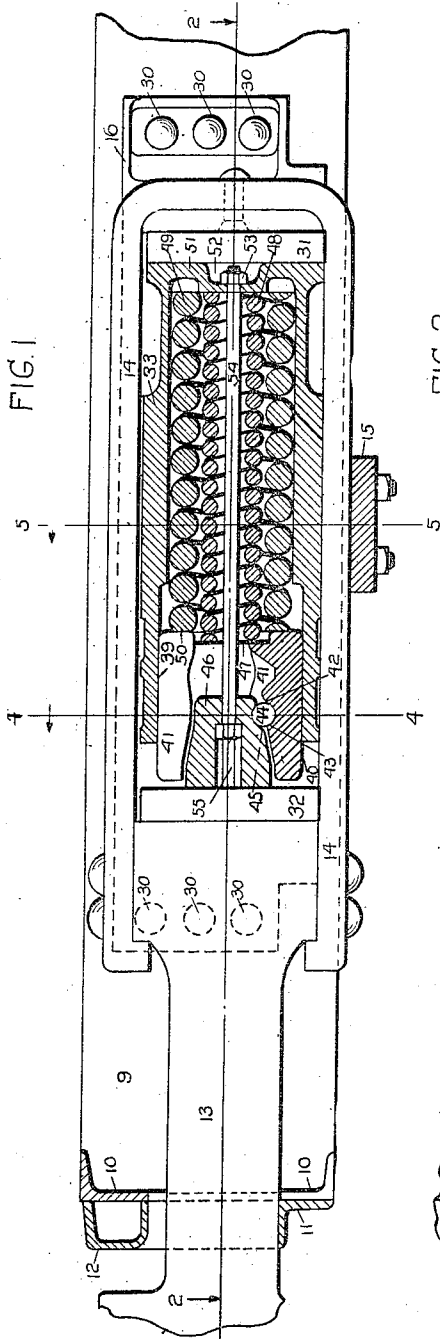


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 FRICTION DRAFT RIGGING FOR RAILWAY CARS.
 APPLICATION FILED DEC. 1, 1911.

1,060,698.

Patented May 6, 1913.

3 SHEETS—SHEET 1.



WITNESSES

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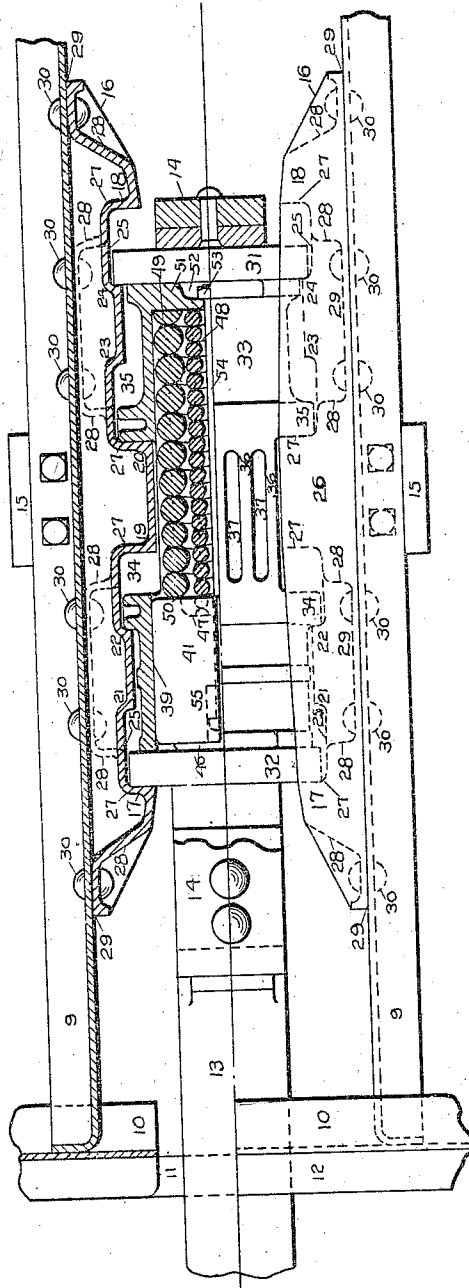
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FIG. 3



WITNESSES

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FIG. 7

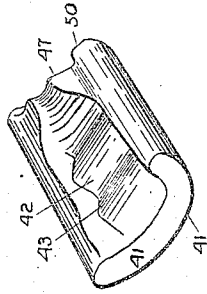


FIG. 8

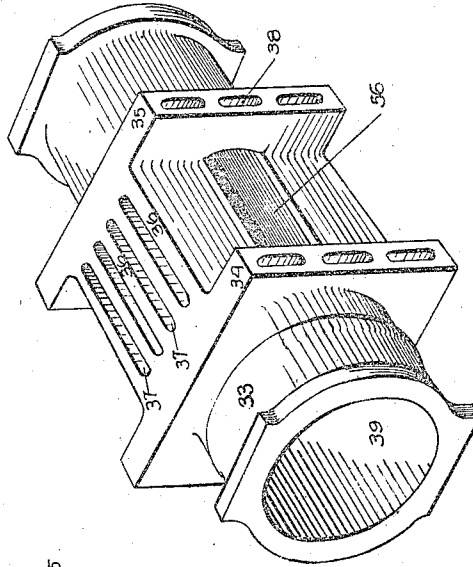


FIG. 6

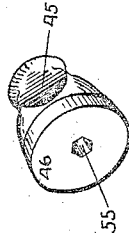


FIG. 4

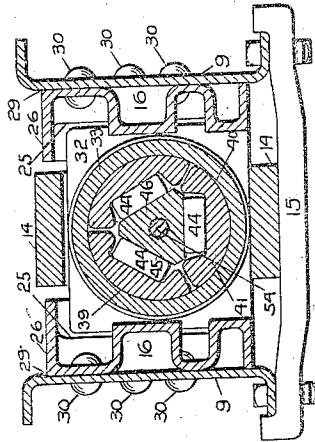
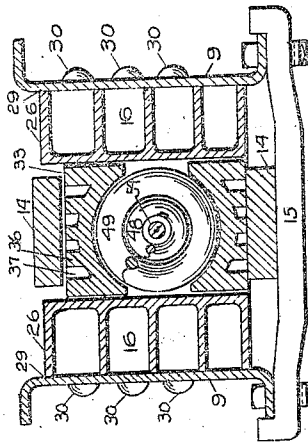


FIG. 5



WITNESSES

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FRICION DRAFT-RIGGING FOR RAILWAY-CARS.

1,060,698.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed December 1, 1911. Serial No. 663,309.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Friction Draft-Rigging for Railway-Cars, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in friction draft rigging for railway cars.

One of the objects of my invention is to provide a friction draft rigging that may be applied to railway cars, having side plates or stop castings arranged for spring draft gear or tandem spring draft rigging, and thus provide a friction draft rigging of high cushioning capacity to be substituted on railway cars for the lower capacitated spring draft rigging without necessitating any change in, or the removal of the side plates now in use in spring draft rigging.

Another object is to provide a friction draft rigging which will have a high shock absorbing capacity, and suitable for mounting in the present draft attachments.

Another object is to provide a friction draft rigging which may employ the said side plates or stop castings now widely used in tandem spring draft rigging, and thus be adapted to adequately distribute heavy shocks at different points to the center sills, and to provide a friction shell which may be of simple construction, and provided with shoulders for engagement with the limiting stops, which shoulders may be integral with the shell, and also a draft rigging in which all the parts of the shock absorbing mechanism may be held in assembled relation as a single structure, and thus facilitate installment and removal and interchangeability with a spring draft gear without any change of yoke or carrier plates.

My invention consists in the novel construction of parts and devices, and in the novel combination of parts and devices herein shown and described by which these objects are practically accomplished.

In the accompanying drawings forming a part of this specification Figure 1 is an elevation partly in central vertical section on line 1, 1 of Fig. 2. Fig. 2 is a plan view partly in horizontal section on line 2, 2 of

Fig. 1. Fig. 3 is a plan view partly in horizontal section showing the position of the friction draft rigging in full draft. Figs. 4 and 5 are cross sections on lines 4, 4 and 5, 5 respectively of Fig. 1. Fig. 6 is a perspective view of the wedge. Fig. 7 is a perspective view of one of the friction shoes. Fig. 8 is a perspective view of the friction cylinder.

In the drawings 9 represents the draft or center sills or members of the car frame to which the draft rigging is applied, 10 the end sill, 11 the carry iron, 12 the buffer plate, 13 the draw bar, 14 the draft yoke, 15 the carrier and tie plate—all these parts performing their usual functions and being preferably of standard car construction.

The numeral 16 designates the side plates or stop castings, preferably each a single casting, as at present widely used in connection with tandem spring draft rigging, the same each being provided with a multiplicity of stop shoulders, preferably with the usual front stop shoulder 17, the rear stop shoulder 18, the middle stop shoulders 19 and 20, the front intermediate limiting stop shoulders 21 and 22, the rear intermediate stop shoulders 23 and 24. The side plates or stop castings 16 are preferably also provided with an upper horizontally disposed longitudinal integral guide flange 25 for the adjacent follower members.

In preferable construction the main web 26 of the side plates or stop castings 16 is furnished with transverse right angle inwardly projecting convolutions 27 therein, having corners slightly rounded to form the main stops 17, 19, 20 and 18, and the intermediate stops 21, 22, 23 and 24, and a series of outwardly projecting right angle convolutions 28 forming the bearing faces 29, preferably four in number, which are in contact with the center or draft sill 9 of the car to which the side plate or stop casting 16 is attached, preferably by the rivets 30.

The rear follower 31 is within the draft yoke 14, and abuts against the stop shoulder 18 in normal position, and on rearward movement of the draw bar, and on forward movement of the draw bar the forward movement of the rear follower is limited by the rear limiting stop 24. 32 is the front follower, also within the draft yoke, and which when the gear is at rest or on forward movement of the draw bar abuts against the

front stop shoulders 17, and on rearward movement of the draw bar the movement of the follower 32 is limited by the front intermediate limiting stop shoulders 21.

- 5 The friction shell 33 is mounted between the draft sills 9 within the draft yoke 14, and intermediate the front and rear followers 32 and 31 respectively. The said friction shell is of cylindrical form or circular in cross section, and is exteriorly provided, intermediate its ends, with a multiplicity of, though preferably with two transverse, preferably integral, shoulders 34 and 35, 34 being the forward and 35 the rear shoulder, each preferably substantially rectangular in form, and extending around the cylinder. Said shoulders are preferably connected at the upper and lower portions of the cylinder or friction shell by suitable means, preferably the ribs 36, longitudinal of the cylinder, which are preferably integral with the cylindric portion of the friction shell and with the shoulders 34 and 35, and of a suitable number with intervening grooves 37. The said shoulders at their vertical edges are each preferably transversely hollow, as illustrated in Fig. 8 at points 38. The said shoulders 34 and 35 are adapted to fit between the upper and lower strap of the draft yoke 14, and the sides of the same are spaced apart so that the forward shoulder when the gear is at rest or in buffing movement of the same abuts against the middle stop shoulders 19 of the side plates 16, and the rear shoulder abuts against the rear intermediate stop shoulders 23, and on forward movement of the draw bar, as in pulling, the forward shoulder moves toward, and upon full draft abuts against the front intermediate limiting stop shoulder 22, and the rear shoulder moves toward, and upon full draft abuts against the middle stop shoulder 20.

The friction shell 33 has a cylindric friction face 39 extending longitudinally therein, and which is in sliding contact with the exterior faces 40 of the segmental friction shoes 41, which are preferably three in number. Each of the said friction shoes has a wedging inner face 42 and a stop shoulder 43 for the anti-friction roller 44, one of which is placed between each of the friction shoes and the corresponding wedge face 45 of the wedge 46, which is placed between the front follower 32 and the friction shoes 41. The said friction shoes 41 are provided each with segmental shoulders 47 against which the front end of the spring 48 rests. The spring 48 is preferably nested within the larger spring 49, the front end of which abuts against the peripheral shoulder 50 of the friction shoe 41.

The rear end of the friction shell 33 is closed by the wall 51, which is preferably integral with the said cylindrical shell, and

provided in its central portion with a recess 52 for the nut 53, threaded upon the connecting rod 54, the head of which connecting rod or bolt rests within the recess 55 of the wedge 46, the said connecting rod or bolt serving to keep the contained parts of the cylinder in assembled position.

The cylinder 33 is preferably provided at either side between the transverse, preferably integral shoulders 34 and 35, with openings or slots 56, thus permitting the use of springs of large diameter without encroaching upon the oppositely arranged middle stop shoulders 19 and 20.

I claim:—

1. In a railway draft rigging, tandem spring side plates, each having front and rear stop shoulders and intermediate said shoulders a middle stop shoulder and a front and a rear limiting stop shoulder, in combination with a longitudinally movable friction shell, said shell having intermediate its ends a pair of transverse stop shoulders spaced apart and rigidly secured to the shell, one of the stop shoulders of said shell being adapted to co-act with the middle stop shoulders of the side plates in pulling movement and with the rear limiting stop shoulders in buffing movement, the other of the stop shoulders of the shell being adapted to engage the front limiting stop shoulders of the side castings in pulling movement and the middle stop shoulders in buffing movement.

2. In a railway draft rigging, tandem spring side plates, each having front and rear stop shoulders and intermediate said shoulders a middle stop shoulder and a front and a rear limiting stop shoulder, in combination with a longitudinally movable friction shell, said shell having intermediate its ends a pair of transverse stop shoulders spaced apart and rigidly secured to the shell, one of the stop shoulders of said shell being adapted to co-act with the middle stop shoulders of the side plates in pulling movement and with the rear limiting stop shoulders in buffing movement, the other of the stop shoulders of the shell being adapted to engage the front limiting stop shoulders of the side castings in pulling movement and the middle stop shoulders in buffing movement, the said stop shoulders of the friction shell being connected by ribs extending longitudinally of said shell.

3. In a railway draft rigging, tandem spring side plates, each having front and rear stop shoulders and intermediate said shoulders a middle stop shoulder and a front and a rear limiting stop shoulder, in combination with a longitudinally movable friction shell, said shell having intermediate its ends a pair of transverse stop shoulders spaced apart and rigidly secured to the shell, one of the stop shoulders of said shell being

adapted to co-act with the middle stop
shoulders of the side plates in pulling move-
ment and with the rear limiting stop
shoulders in buffing movement, the other of
5 the stop shoulders of the shell being adapted
to engage the front limiting stop shoulders
of the side castings in pulling movement and
the middle stop shoulders in buffing move-
ment, the said stop shoulders of the friction
10 shell being connected by ribs extending lon-
gitudinally of said shell, and integral with
the said shoulders and the shell.

4. In a railway draft rigging, tandem
spring side plates, each having front and
15 rear stop shoulders and intermediate said
shoulders a middle stop shoulder and a front
and a rear limiting stop shoulder, in combi-
nation with a longitudinally movable fric-
tion shell, said shell having intermediate its

ends a pair of transverse stop shoulders 20
spaced apart and rigidly secured to the shell,
one of the stop shoulders of said shell being
adapted to co-act with the middle stop
shoulders of the side plates in pulling move-
ment and with the rear limiting stop 25
shoulders in buffing movement, the other of
the stop shoulders of the shell being adapted
to engage the front limiting stop shoulders
of the side castings in pulling movement
and the middle stop shoulders in buffing 30
movement, the shell being further provided
along its sides and between the stop shoulders
with longitudinal openings.

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Witnesses:

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