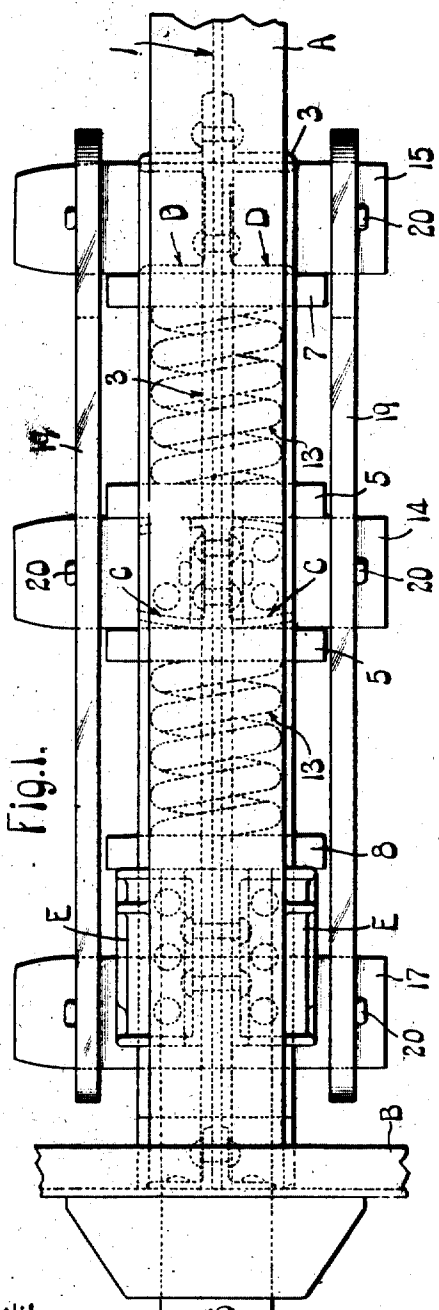
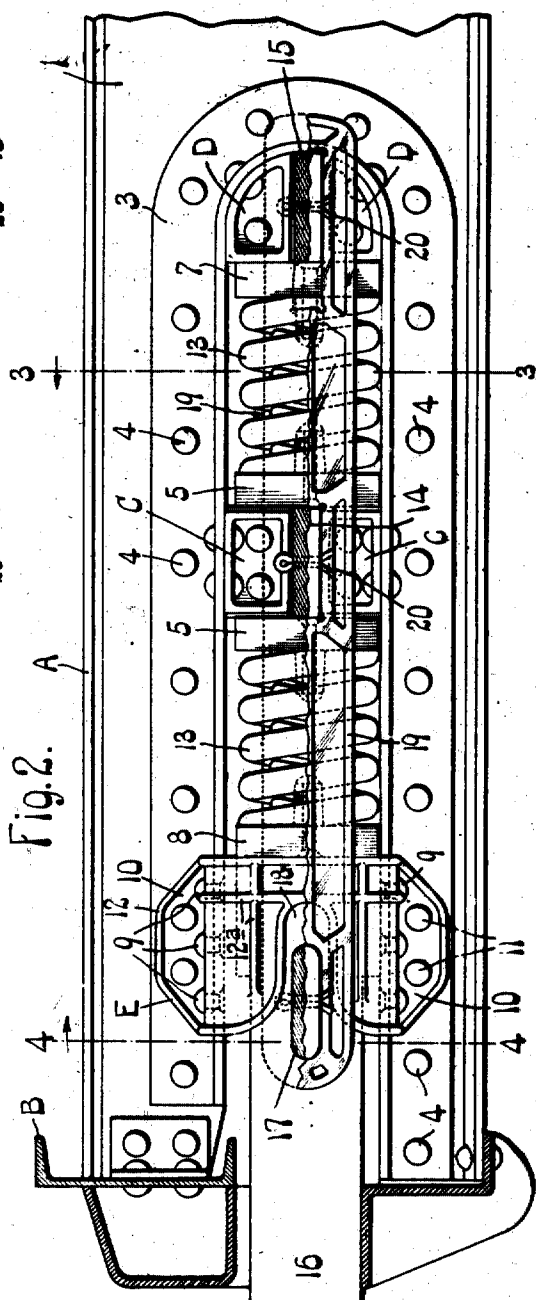


1,001,262.

Patented Aug. 22, 1911.
3 SHEETS-SHEET 1.



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TANDEM SPRING DRAFT RIGGING.
APPLICATION FILED DEC. 4, 1908.

Patented Aug. 22, 1911.

3 SHEETS—SHEET 2.

Fig. 4.

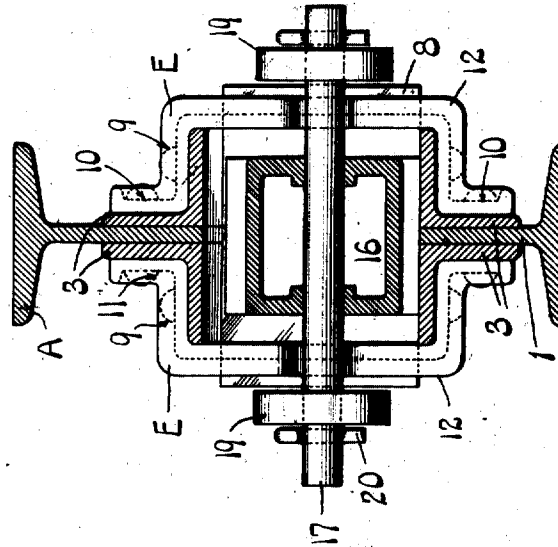
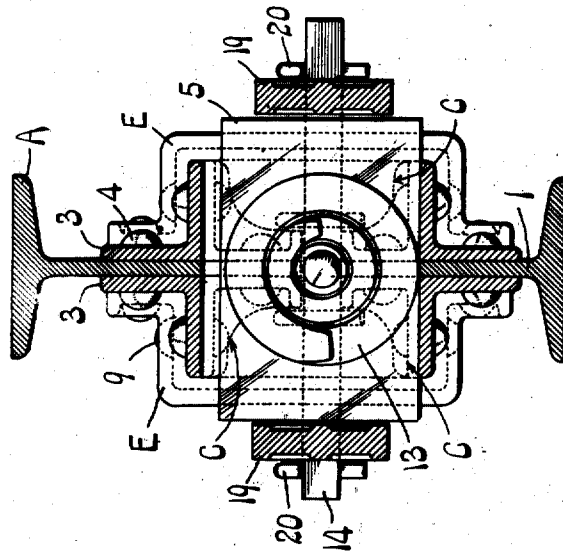


Fig. 3.



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3 SHEETS—SHEET 3.

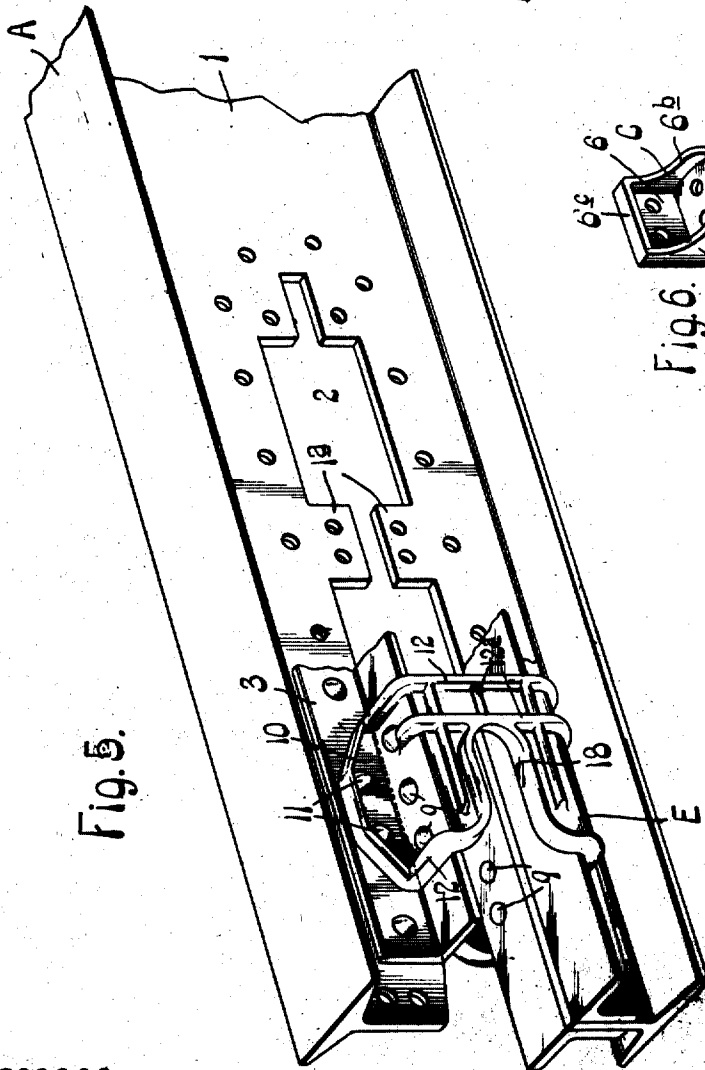


Fig. 5.

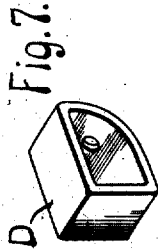


Fig. 7.

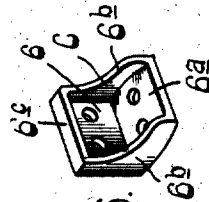


Fig. 6.

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UNITED STATES PATENT OFFICE.

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TANDEM-SPRING DRAFT-RIGGING.

1,001,262.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed December 4, 1908. Serial No. 465,942.

To all whom it may concern:

Be it known that I, ROBERT E. FRAME, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Tandem-Spring Draft-Rigging, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a tandem spring draft rigging constructed in accordance with my invention; Fig. 2 is a view of said draft rigging, partly in side elevation, and partly in vertical section; Fig. 3 is a vertical sectional view taken approximately on the line 3—3 of Fig. 2; Fig. 4 is a vertical sectional view taken approximately on the line 4—4 of Fig. 2; Fig. 5 is a perspective view of a portion of the center sill with most of the draft rigging members removed; Fig. 6 is a perspective view of one of the intermediate stop members; and Fig. 7 is a perspective view of one of the rear end stops.

This invention relates to draft riggings for railway cars, and particularly to tandem-spring draft riggings.

The main object of my invention is to provide a tandem spring draft rigging of improved construction for a car underframe having a center sill which consists of a single member that extends from end sill to end sill.

Another object of my invention is to provide a tandem spring draft rigging of simple construction that will effectively absorb buffing and pulling shocks.

Referring to the drawings which illustrate the preferred form of my invention, A designates the center sill of a car underframe, said center sill consisting of a single member that extends from one end sill B of the underframe to the other end sill, not shown. The member A herein shown consists of a rolled I-beam but it will, of course, be obvious that said member could be a built-up structure or a rolled flanged member of any desired shape in cross section, without departing from the spirit of my invention. The vertical web 1 of the center sill A is provided with a longitudinally extending slot 2, as shown in Fig. 5, so as to receive the tandem arranged springs and the

followers of the draft rigging, and the stops which cooperate with said followers are connected directly to said center sill. I prefer to reinforce that portion of the vertical web of the center sill in which the slot 2 is formed, and in the construction herein shown, said reinforcing means consist of a pair of commercially rolled angles 3 arranged on opposite sides of the web 1 and bent into approximately U-shape so that they will partially surround the slot 2 in the center sill, the vertical legs of said angles being connected to the web of the center sill by fastening devices 4 and the horizontal legs of said angles projecting laterally from said web so as to form a supporting surface for the followers and also projections to which the follower stops can be connected.

The intermediate stop with which the intermediate followers 5 cooperate, consists of four members C of the shape shown in Fig. 6, said members being arranged in pairs on opposite sides of the vertical web 1 of the center sill above and below the slot 2 and projecting laterally from the web 1, as shown in Fig. 2, and also in dotted lines in Fig. 3. Each of the members C preferably consists of a casting having a vertical wall 6, a horizontal wall 6^a arranged at right angles thereto, and side flanges or gussets 6^b that tie said walls together, the inner ends of said side flanges being connected together by a cross web 6^c, thus producing a very strong hollow member that is substantially box-shaped. The inner vertically disposed walls 6 of the members C are connected to portions 1^a of the web 1 of the center sill that project into the slot 2 in said web, and the horizontally disposed walls 6^a of the members C are connected to the laterally projecting flanges of the angles 3 on the center sill. The rear end stop with which the rear end follower 7 cooperates also consists of two pairs of members D arranged on opposite sides of the vertical web of the center sill above and below the slot 2 therein and connected to portions of said web and to the reinforcing devices 3 in practically the same manner as the members C which form the intermediate stop. The members D are substantially box-shaped castings that conform to the curved portions of the follower supports or reinforcing devices 3 inside of which they are arranged, as shown in Fig. 2.

The stops which cooperate with the front 11

end followers 8 consist of two cast metal members E arranged on opposite sides of the center sill and embracing the laterally projecting flanges of the angles 3 to which they are connected by fastening devices 9, said members E also having vertical flanges 10 that are connected to the vertical legs of the angles 3 and to the vertical web of the center sill by means of fastening devices 11 that extend transversely through all of said parts. Preferably, the members E are provided with edge flanges 12 and ribs 12^a for strengthening same.

The inner faces of the laterally projecting flanges of the reinforcing devices 3 on the center sill form a wide and flat bearing surface on which the followers slide, each pair of followers cooperating with a pair of springs 13 arranged between them, as shown in Fig. 2.

A horizontally disposed bar 14 is arranged between the intermediate followers 5, and a horizontally disposed bar 15 is arranged at the rear of the rear end follower, as shown in Fig. 2, the pairs of members C and D, which form the intermediate stop and the rear end stop, respectively, being so disposed that the bars 14 and 15 can pass transversely through the slot 2 in the center sill. The shank 16 of the draw-bar extends into the slot 2 of the center sill and butts against the front end follower 8, and said shank is provided with a horizontally disposed bar 17 that projects laterally through slots 18 in the front stop members E, the front ends of said slots 18 being open, as shown in Fig. 2, so as to permit the draw-bar to move forwardly. The transversely extending bars 14, 15 and 17 are connected together by means of a pair of links 19 having openings through which said bars project, and said bars are prevented from moving laterally relatively to said links by means of cotter keys 20. The openings in the links 19, through which the bars 14 and 17 project, conform to the cross sectional shape of said bars so that said bars will move simultaneously with the draw-bar but the openings in the links 19, through which the rear bar 15 projects, are elongated, as shown in Figs. 1 and 2, so that the links can move rearwardly under buffing shocks without imparting movement to the rear bar 15.

When the draw-bar moves forwardly the bars 14 and 15 will engage the followers 5 and 7, respectively, located in front of same and thus compress the springs 13 that are interposed between said followers and the followers with which they cooperate, the front stops E and the intermediate stop members C, of course, forming abutments for the front follower 8 and the intermediate follower 5 of the rear set of springs. Under buffing shocks the draw-bar will move rearwardly and thus move the front follower 8

so as to compress the front set of springs, and the links 19 will impart rearward movement to the bar 14 so as to compress the rear set of springs, the elongated slots in the links 19, through which the bar 15 projects, permitting said bar to remain at rest when the links move rearwardly.

From the foregoing it will be seen that the entire draft rigging is carried directly by the single center sill member A and that the members 3 on the vertical web of the center sill form a wide bearing surface for the followers. The stops with which the followers cooperate, are connected to the center sill in such a manner that they are not liable to be displaced or sheared off, and said stop members are so shaped that they are capable of standing great crushing strains without liability of breaking.

While I have herein stated that the center sill is provided with a pair of angles bent into approximately U-shape so as to reinforce the vertical web of the center sill and also provide a supporting surface for the followers, I do not wish it to be understood that my broad idea is limited to this exact construction for any suitable kind of members could be connected to the center sill to form a support for the followers and an attaching means for the stops without departing from the spirit of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, devices connected to said web and provided with flanges that project laterally from said web, and a stop formed by a plurality of pairs of approximately hollow box-shaped cast members arranged in said slot and connected to the laterally projecting flanges on said devices; substantially as described.

2. In a tandem spring draft rigging, a single center sill having a vertically disposed web in which a longitudinally extending slot is formed, a draw-bar, links connected to said draw-bar and extending parallel to the center sill on opposite sides of the web thereof, a pair of devices connected to said links and passing transversely through the slot in the web of the center sill, a spring and a pair of followers arranged between said devices, a second spring and a pair of followers arranged between one of said devices and the end of the draw-bar, and an intermediate stop and end stops connected to the center sill and cooperating with said followers; substantially as described.

3. In a tandem spring draft rigging, a single center sill having a vertical web in which a longitudinally extending slot is formed, members connected to the vertical

web of said sill adjacent the upper and lower
edges thereof and provided with laterally
projecting flanges, an intermediate stop and
end stops consisting of members that are
5 connected to said laterally projecting flanges
and to the vertical web of the center sill,
springs and cooperating followers arranged
between the intermediate stop and the end
stops, a draw-bar having a shank that pro-
10 jects into the slot in the center sill and butts
against the front follower, a bar extending
transversely through the shank of the draw-
bar and also passing through open-ended

slots in the front stop, and bars cooperating
with the intermediate followers and the end 15
followers for transmitting the movements of
the draw-bar thereto; substantially as de-
scribed.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses, 20
this first day of December 1908.

ROBERT E. FRAME.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.