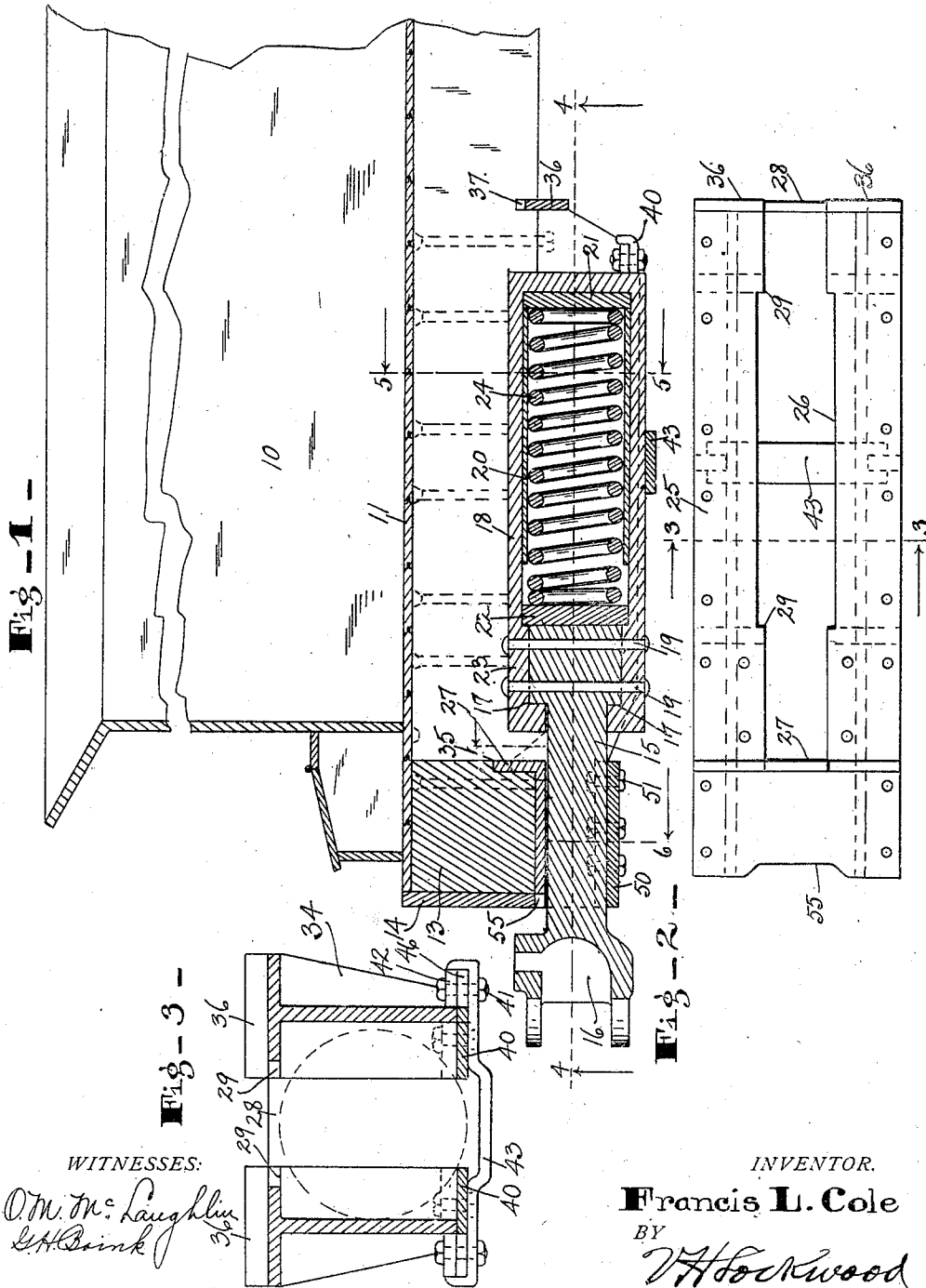


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DRAW BAR CONSTRUCTION.
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1,047,916.

Patented Dec. 24, 1912.

2 SHEETS-SHEET 1.



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DRAW-BAR CONSTRUCTION.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCIS L. COLE, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain useful Draw-Bar Construction; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved draw bar construction for railway cars, wherein the draw bar will be readily removable and at the same time cannot be pulled out of place and there will be a very strong connection between the draw bar and associated parts for increasing the durability thereof. It will also discontinue the use of draft timbers, as it can be directly applied to the beams.

The nature of the invention will be understood from the accompanying drawings and the following description and claim.

In the drawings Figure 1 is a central vertical section through the rear end of a locomotive tender, parts being broken away. Fig. 2 is a plan view of the draw bar frame by itself. Fig. 3 is a transverse section on the line 3—3 of Fig. 2. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1, looking upward. Fig. 5 is a vertical transverse section on the line 5—5 of Fig. 1. Fig. 6 is a vertical section on the line 6—6 of Fig. 1. Fig. 7 is a horizontal section on the line 7—7 of Fig. 5.

While the invention is here shown in connection with a locomotive tender, it is not limited to such use, but is the same for any car.

In the drawings herein shown which are for the purpose of illustrating the general nature of the invention, 10 represents a part of the locomotive tender and 11 the flooring.

12 are longitudinal beams in the central portion of the tender and there is a cross beam 13 at the end of the car. The latter beam is faced by the plate 14.

15 is a draw bar with a coupling 16 at one end and the inner end is laterally widened to provide equal shoulders 17. The inner end of the draw bar is secured within a loop frame 18, as shown in Fig. 1, by rivets 19, the forward end of said frame 18 having in-turned ends which overlap the shoulders 17 of the draw bar. The sides of this looped frame 18 are open and within said

looped frame a spring barrel 20 is located, the inner end of the spring barrel being secured to a follower 21 and the outer end thereof being normally spaced some distance away from a follower 22 which lies against the inner end of the draw bar. Shoulders 23 are provided in said frame 18 flush with the inner end of the draw bar and against which the follower normally abuts. Within said spring barrel there is a spiral spring 24.

The draw bar frame is peculiarly constructed, the top 25 being like a horizontally disposed plate, as shown in Fig. 2, with a longitudinally extending opening 26 extending from an upwardly extending transverse flange 27, to a transverse plate 28 at the inner end. The middle portion of the opening 26 in the top of said draw bar frame is widened, as shown in Fig. 2, thus leaving shoulders 29 against which the followers 21 and 22 abut. The width of the contracted ends of the opening 26 is slightly greater than the width of the loop frame 18, as shown in Fig. 4, where the rear vertical end of said loop frame appears. The followers 21 and 22 also abut against inwardly extending ribs 30 from the side walls 31 of said draw bar frame, as appears in Fig. 4, whereby said ribs 30 serve as stops to limit the movements of the followers. The draw bar frame is rigidly secured to the beams 12 and 13 by bolts 33 through the top plate 25 of said frame, see Figs. 1, 4 and 5. The sides 31 and top plate 25 of said draw bar frame are reinforced by the triangular ribs 34 on the outside of the walls 31 and which are shown in Figs. 4 and 5. In order to more securely mount the draw bar frame the flange 27 projects up into a recess at 35 in the rear wall of the cross beam 13, as shown in Fig. 4. Likewise through the inner end there is a pair of flanges 36 extending upwardly from the top plate 25 of the draw bar casting into corresponding recesses 37 in the longitudinal beams 12, as shown in Fig. 1.

The draw bar frame which has just been described is cast integral, and to the same there is added a longitudinally extending bottom plate 40 under each side portion of the draw bar frame and said plates are secured to the draw bar frame by bolts 41, as appears in Figs. 4, 5 and 7. These bolts pass through horizontally flanged plates 42 integral with the draw bar frame and adja-

cent the vertical ribs 34 thereof and through the ends of the plates 40 and the extreme ends of said plates 40 are turned upward, as shown in Fig. 1. A strap 43 extends under said plates 40 near the middle and under the lower part of the loop frame 18 and said strap 43 is secured by said bolts 41 through the flange 42 and its ends are upturned, as shown in Fig. 5. The strap 43 has its ends bent to extend past the projection 46 from the plate 40 and the lateral extension 42.

The central portion of the draw bar is supported by a cross plate 50 which at each end is secured by bolts 51 to laterally extending flanges 52 from the lower edges of the forward portion of the draw bar frame, as appears more fully in Fig. 6.

While I have shown and described details in the construction of the draw bar frame, the invention is not necessarily limited to some of said details.

In operation when the draw bar is bumped the follower 22 will be forced inwardly against the spring and the thrust will be resisted by the pair of ribs 30 and inner pair of shoulders 29, the follower 22 being pushed inwardly by the draw bar. The inward movement of the draw bar is stopped by the plate 14 on the beam 13 and does not strike the draw bar frame and for that purpose the front edge of the upper part of the draw bar frame at 55 is cut away somewhat. The pull on the draw bar causes the contraction of the spring, the looped frame 18 moving the rear follower 21 and the barrel from the position shown in Fig. 4. Such pulling strain comes on the outer pair of ribs 30 and the shoulders 29 of the draw bar frame as the spring presses against the follower 22 and it against said ribs and shoulders. Dislocation of the draw bar frame by reason of the pull or strain on the draw bar is resisted by the flange 27 behind the beam 12 as well as the bolts 33. The end of the flange 27 is braced by triangular braces, see Fig. 1. There is a central upward extension of the flange 27 which lies between the two longitudinal beams 12, as appears in the upper part of Fig. 6, and with that coöperat-

ing with the bolts 33 lateral displacement of the forward end of the draw bar is prevented.

One important feature of my invention is the removability of the draw bar. This is accomplished by removing the bottom plates or straps 50, 43 and 40, and then the draw bar construction can be taken out downwardly. A new bar construction would then be substituted or the old one repaired and replaced. This is all done without changing the draw bar frame which remains secured in place.

I claim as my invention:

A car having an end beam, a draw bar frame with the forward portion under said beam and having an upwardly extending plate abutting against the rear surface of said beam and having longitudinal openings in the upper and lower sides of said frame to the rear of said beam, a draw bar in said frame with an intermediate reduced portion under the end beam and with upward and downward extending shoulders on its inner end, a yoke secured to said draw bar and lying in said frame and projecting through the upper and lower openings in said frame and with the forward ends turned to overlap said shoulders, and a carrier plate secured to said frame for supporting said draw bar so that the upper shoulder and adjacent end of the yoke will project appreciably above the lower part of the end beam and the upper surface of the draw bar frame and the abutment plate on said draw bar is in the path of the outward movement of said shoulder and yoke and said carrier plate is in the path of the outward movement of the shoulder and yoke on the lower side of the draw bar so as to resist the withdrawal of the draw bar.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

FRANCIS L. COLE.

Witnesses:

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