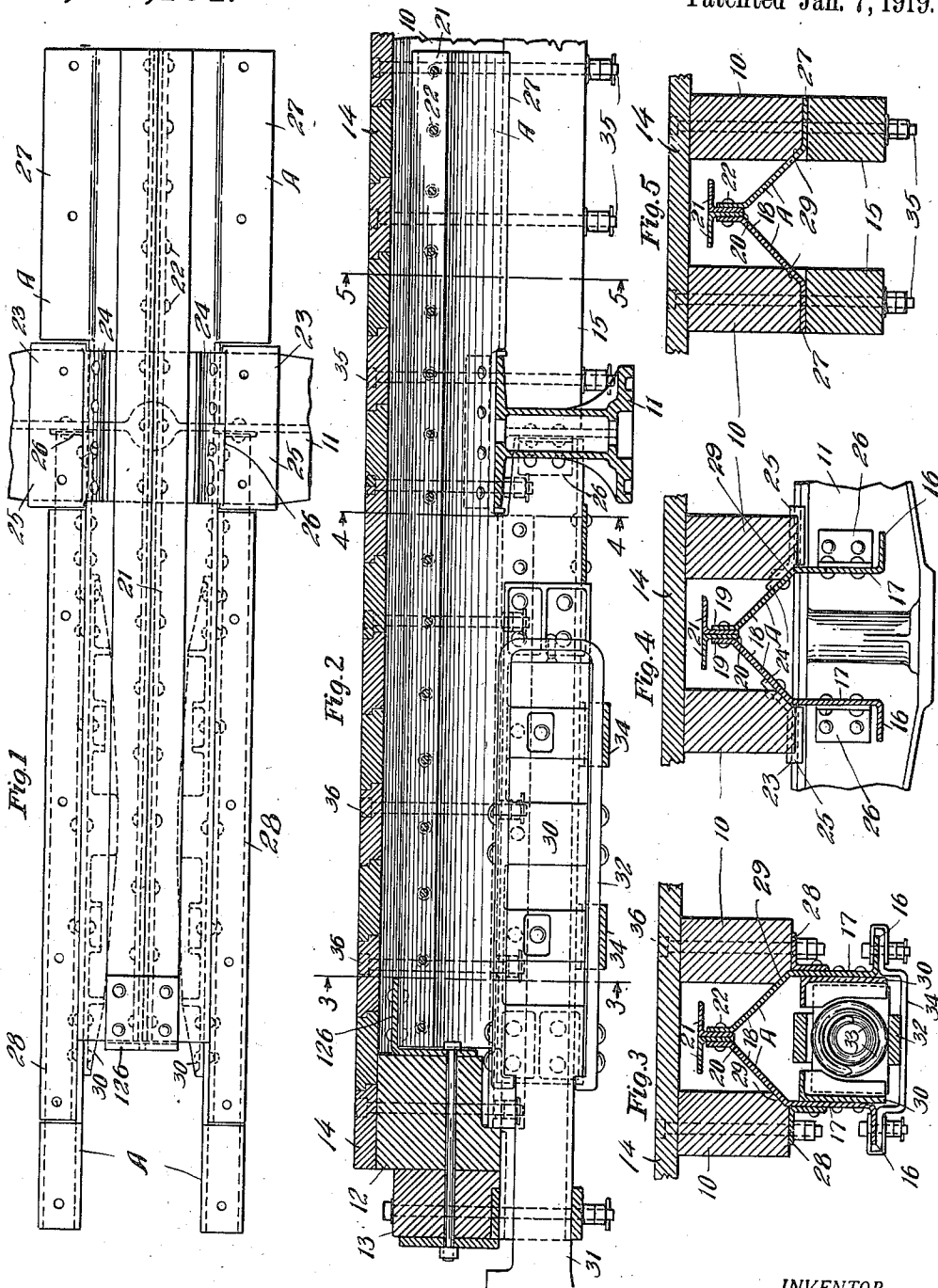


1,290,104.

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CAR-UNDERFRAME.

1,290,104.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES E. DATH, 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 Car-Underframes, 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.

This invention relates to improvements in car underframes.

One object of the invention is to provide a comparatively cheap reinforcement for car wood underframes so as to adapt the same for the heavier service required in modern practice.

Another and more specific object of the invention is to provide a draft arm structure for railroad cars which is composed of rolled plates and commercial shapes and so arranged as to effectively tie the wood center sills together against spreading and at the same time provide the requisite wider draft sill spacing for modern draft gear equipment.

In the drawing forming part of this specification, Figure 1 is a top plan view of the improved draft arm construction shown in conjunction with the car body bolster, all the sills and other wood members being removed. Fig. 2 is a longitudinal, central, vertical section from the end sill of the car to a point at the rear of the body bolster. And Figs. 3, 4 and 5 are vertical, transverse, sectional views taken respectively on the lines 3—3, 4—4 and 5—5 of Fig. 2 and looking in the direction of the arrows.

In said drawing, 10—10 denote the wood center sills of the car extending from end to end thereof and running over the top of the body bolster 11. At the end of the car, the same is shown as provided with a wood end sill 12, buffing block 13, and 14 denotes the wood floor of the car. At the rear of the bolster, the usual wood sub-sills 15 are shown, the same terminating against the rear face of the bolster 11.

As originally built, the car underframe also employed wood draft sills extending from the bolster to the end sill, but in my construction, the wood draft sills are omitted and the metal draft arm structure substituted therefor to provide the increased strength and wider sill spacing.

In carrying out my invention, I employ two longitudinally extending plates A—A. Each plate A is formed with a lower horizontal, outwardly turned flange 16, a vertical draft sill portion 17 extending from the end of the car as far as the body bolster, an upwardly and inwardly inclined portion 18 which extends from the rear side of the end sill 12 to a point considerably at the rear of the body bolster, and a vertical upper edge flange 19. Between the vertical flange portions 19 of the plates A—A are secured depending flanges 20—20 of a pair of oppositely arranged, longitudinally extending angle irons 21—21, all of which are securely riveted together as by the series of rivets 22—22. Where the plates A—A extend over the bolster 11, securing plates 23 are employed having an inwardly and upwardly extended flange 24 riveted to the adjacent inclined portion 18 of the plate A and a horizontally extending portion 25 having downturned end flanges fitting over and secured to the bolster 11. The inner ends of the vertical draft sill portion 17 are secured to the bolster 11 by suitable angle plates 26—26, shown most clearly in Figs. 1 and 4. The draft arm structure as an entirety is also secured at its front end to the end sill 12 by a right-angled plate 126, as clearly shown in Fig. 2.

At the rear of the bolster, portions of the plates A—A are extended outwardly and horizontally, as indicated at 27 and are secured between the center and sub-sills as clearly indicated in Fig. 5.

Extending from the bolster to the end sill are reinforcing angle irons 28—28 each having a horizontal flange secured to the under side of the corresponding center sill and the vertical flange riveted to the adjacent portion of the plate A. It will be noted from an inspection of Figs. 3 and 4, that the center sills are cut away or beveled along their inner lower edges, as indicated at 29—29, against which the lower portions of the inclined sections 18 fit, this feature serving two purposes, one the solid bracing of the center sills and, two, permitting the wider spacing of the draft sill portions 17—17 so as to accommodate modern types of draft rigging.

In the drawing, a well known type of tandem draft rigging is conventionally illustrated, the same including tandem side cast-

ings 30—30 secured to the draft sill portions 17; a draw bar 31; yoke 32; and springs 33, the parts being supported by suitable saddle plates 34—34 bolted to the lower flanges 16 of the plates A. The sub-sills 15 are secured to the center sills by long sill bolts 35 and the angle irons 28 are secured to the center sills by other shorter sill bolts 36.

10 From the preceding description, it will be seen that the draft arm reinforcement which I have provided may be cheaply manufactured from rolled plates and structural shapes and can be built up as a unitary structure before being applied to the car, thus cheapening manufacturing and assembling costs. Furthermore, with the ridge structure formed by the inclined portions 18—18 and the T-shaped top, the draft arm 20 presents great strength against both longitudinal and transverse or lateral strains so as to minimize tendency of the wood center sills to spread. By having the plates A—A secured to and abutting against the front and rear sides of the bolster, as hereinbefore described, the entire draft arm structure is well adapted to resist the buffing and pulling strains transmitted thereto by the gear under draft and buffing actions.

30 I claim:

1. In car underframing, the combination with wood center sills, end sill, bolster, and sub-sills terminating at the rear of the bolster, of a built-up draft arm including longitudinally extending plates having vertical lower portions beneath the center sills to form the draft sills between the bolster and end sill, said plates having upwardly and inwardly extending upper portions forming a longitudinal ridge between the center sills.

2. In car underframing, the combination with wood center sills, end sill, bolster, and sub-sills at the rear of the bolster, of a built-up draft arm, said draft arm including a pair of plates united along their upper edges, said plates being secured to the center sills and having lower vertical portions adapted to form draft sills in front of the bolster.

50 3. In car underframing, the combination with wood center sills, end sill, bolster, and sub-sills at the rear of the bolster, of a built-

up draft arm, said draft arm including a pair of plates, each plate having a lower vertical portion forming a draft sill and an upwardly and inwardly inclined upper portion, said upper inclined portions being secured together and extending over and to the rear of said bolster, said vertical draft sill portions terminating against the forward side of the bolster.

4. In car underframing, the combination with wood center sills beveled along their lower inner edges, end sill, bolster, and sub-sills at the rear of the bolster, of a pair of longitudinally extending plates, each having a vertical portion located forwardly of the bolster to form a draft sill, and an upwardly and inwardly inclined portion, said inclined portions extending from the end sill over the bolster to a point at the rear of the latter, said inclined portions of the plates fitting against the beveled surfaces of the center sills whereby to space the draft sill portions of said plates wider than the spacing between the center sills proper.

5. In car underframing, the combination with wood center sills, end sill, bolster, and sub-sills at the rear of the bolster, of a pair of reinforcing plates having upwardly and inwardly inclined portions united at their upper edges extending from the end sill over the bolster to a point at the rear of the latter, said plates having also depending vertical portions forward of the bolster to provide draft sills, and angle irons on the outer sides of said plates and having their flanges secured to the bottoms of the center sills and to the vertical draft sill portions of said plates.

6. As an article of manufacture, a draft arm structure comprising: two plates, each having a lower vertical portion and an upwardly and inwardly inclined upper portion; a pair of angle irons secured to the upper edges of said plates; and angle irons secured to the outer faces of said vertical portions of said plates, the lower edges of said vertical portions of the plates being flanged outwardly.

In witness that I claim the foregoing I have hereunto subscribed my name this 29th day of Dec., 1917.

CHARLES E. DATH.