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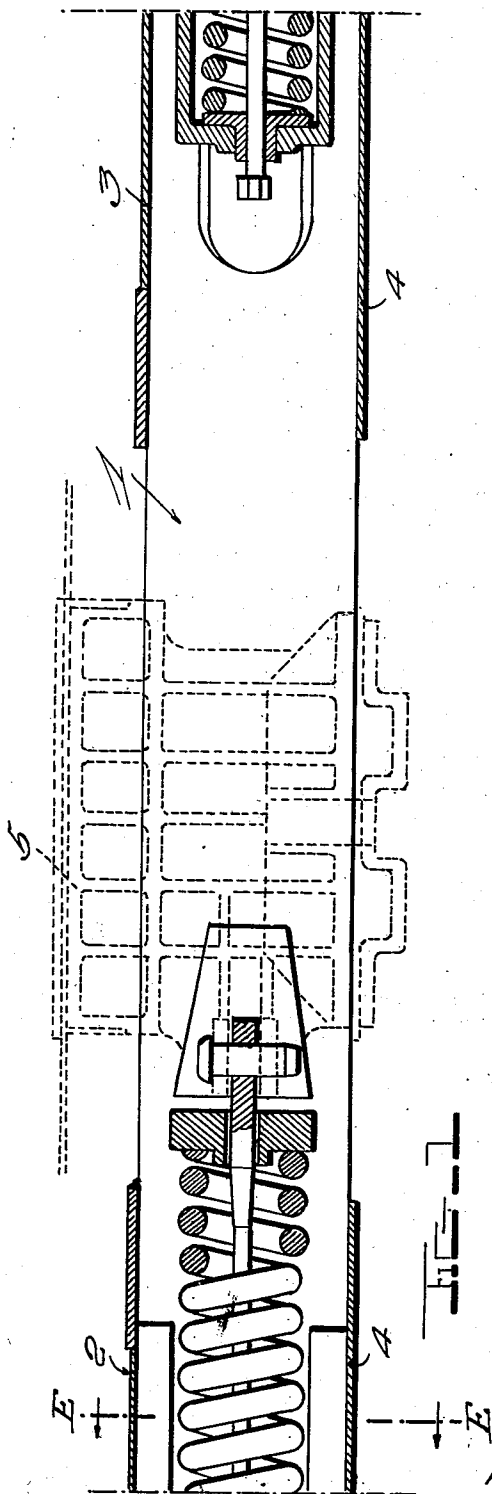
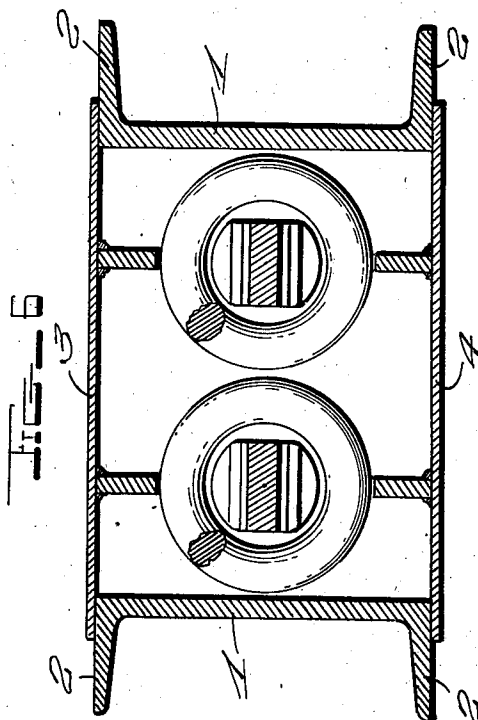
J. J. TATUM

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CENTER SILLS CONSTRUCTION FOR FREIGHT CARS

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2 Sheets-Sheet 1



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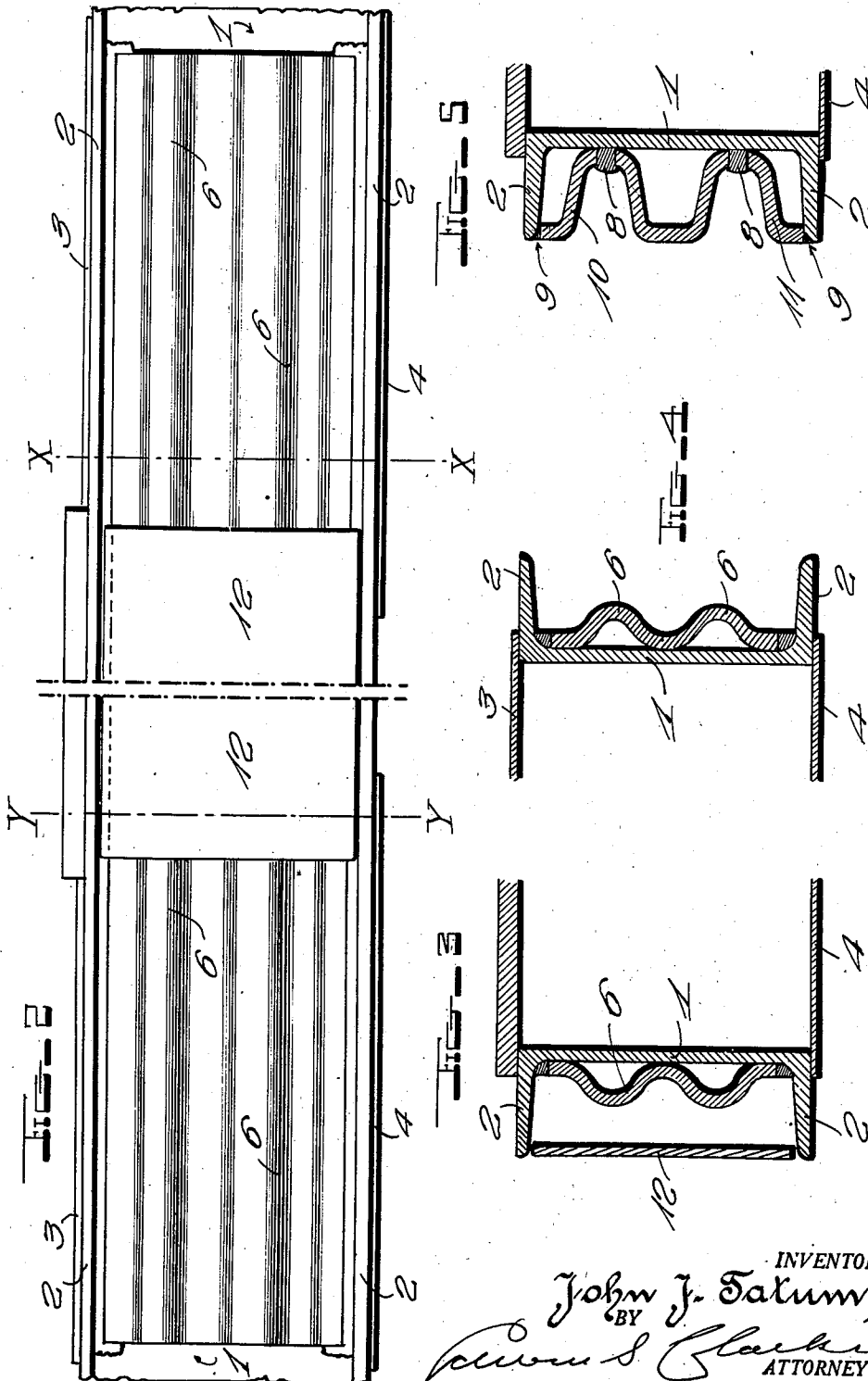
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CENTER SILLS CONSTRUCTION FOR FREIGHT CARS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,180,450

CENTER SILLS CONSTRUCTION FOR
FREIGHT CARS

John J. Tatum, Baltimore, Md.

Application August 8, 1938, Serial No. 223,732

1 Claim. (Cl. 105—416)

While I have for purposes of illustrating my invention shown a cushion and coupler gear for freight cars of the Duryea type, it will, of course, be understood that my invention may be applied to any shape of center sills construction of the conventional type of underframe where additional strength is needed.

The usual center sills construction embodies spaced rolled beams having webs and flanges extending from the side of the webs. It is customary to apply cover plates to the top or bottom of the sills, but these top and bottom plates cannot be utilized on that portion of the center sills construction which is designed to move in the bolster of the car in the draft and buffer actions of the cushion and coupling gear. Therefore, it is necessary to increase the strength of the center sills from end to end because of the weakness of the center sills construction in that portion of the center sills construction that is designed to slide in the bolster in the draft and buffing action of the cushion and coupler gear. In other words, the center sills construction is stronger in those zones which have the top and bottom plates.

The object of my invention is to provide means for reinforcing the center sill construction in that zone which moves in the draft and buffing actions of the gear in the bolster whereby the entire center sill construction may be lessened in weight and cost whereby the cost and weight of the car to which it is applied is reduced, and with this and other objects in view my invention consists of the parts and combination of parts hereinafter pointed out.

In the drawings:

Figure 1 is a vertical detail sectional view of a cushion and coupler gear for freight cars.

Figure 2 is a side elevation of a center sill.

Figure 3 is a vertical section on the line Y—Y, Figure 2.

Figure 4 is a section on the line X—X, Figure 2.

Figure 5 is a section similar to Fig. 3, showing a modified form of reinforcement.

Figure 6 is a section on the line E—E, Figure 1.

The center sills 1 are provided with top and bottom flanges 2, cover plates 3 and bottom plates 4. However, these bottom and top plates cannot extend the entire length of the center sill, but must be omitted from the center sill in that zone of the sill which moves in buffing and draft actions whereby the center sill is of less strength in that zone than in the remaining length thereof, and it is the object of my invention to strengthen

the center sills in this zone and to prevent the sill from buckling under heavy train service in switching yards and in train movement.

Broadly, my invention consists in strengthening the center sills construction in the zone thereof which moves in the body bolster 5, and I accomplish this by securing to the web and flanges of the sills serpentine shaped corrugated reinforcement 6, said reinforcement, as shown in Figures 3 and 4, being secured to the web and flanges of the sills. In this instance the reinforcement is secured by welding.

In Figure 5 the reinforcement 7 has deeper corrugations and is secured by means of plug, weld or rivets 8 to the web and by a weld 9 to the flange. The top of the corrugation 10 and the ends of the corrugation 11 are flattened whereby the reinforcement will not only function to reinforce the strength of the center sill in the bolster zone, but will also function as a guiding means for the center sills through the bolster. Therefore, when this type of reinforcement is used it is not necessary to use the side guiding plate 12 shown in Figure 3.

This reinforcement can be made of pressed shapes or it can be rolled to the desired shape and attached in its substantial manner mechanically to the outer face of the web of the center sills either by riveting, welding or bolting. This form of reinforcement can be applied to any shape of center sill on any kind of car that may be equipped with the Duryea cushion underframe, or the conventional type of underframe where additional strength is needed in the manner mentioned.

My method of reinforcement of cushion underframes makes it possible to use a lighter weight center sill section for the entire length of the car and can be readily applied to a location of such center sills where heaviest or greatest strains may centralize and provide the needed reinforcement at such point or location.

What I claim is:

A center sills construction for railroad cars embodying channeled beams each having a corrugated reinforcement disposed within the channel and secured to the web and flanges thereof, each reinforcement having a plurality of outwardly facing corrugations formed with flattened apex faces lying in the plane of the free edges of the beam and functioning as guides in the movement of the sill in a car bolster.

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