

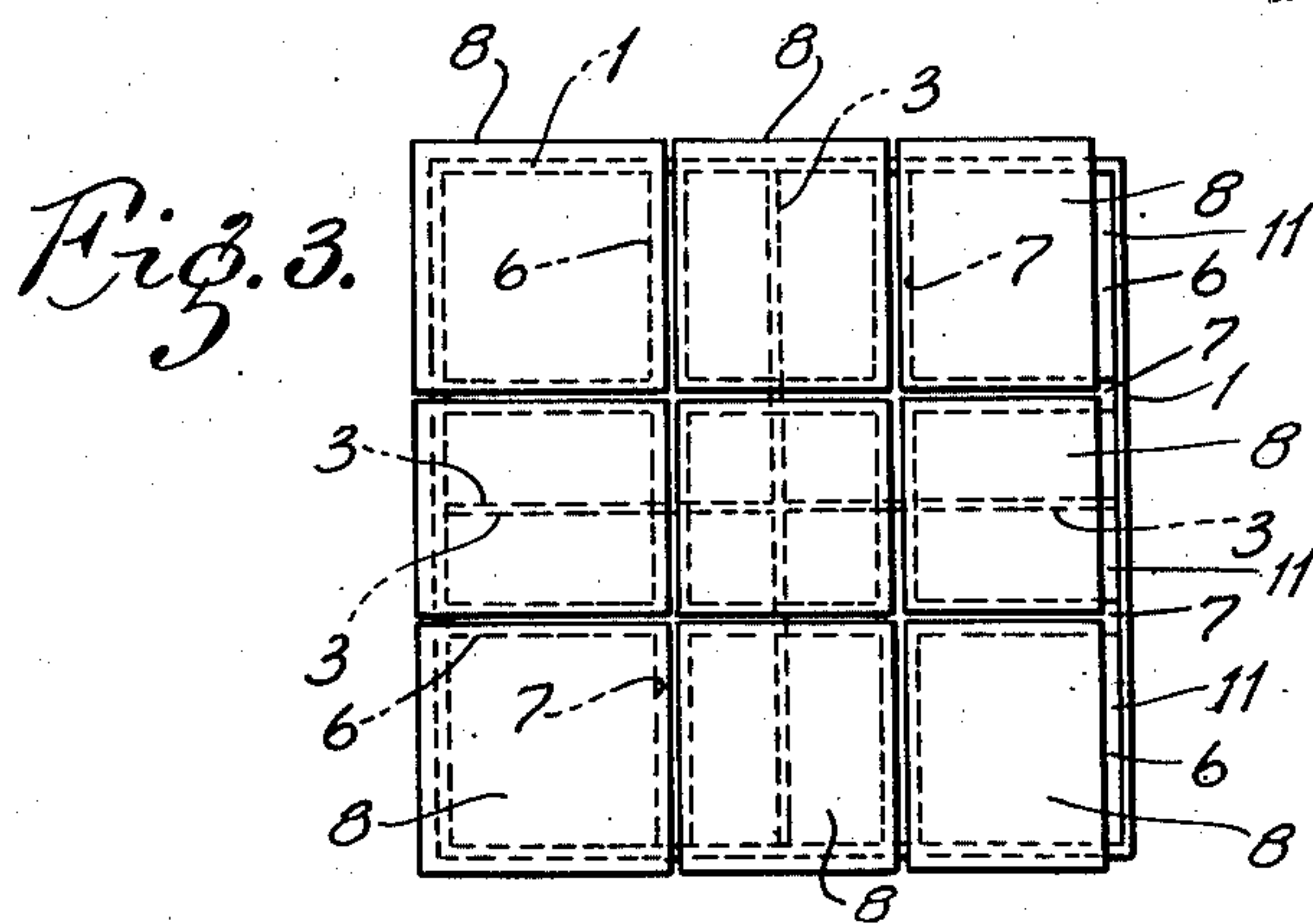
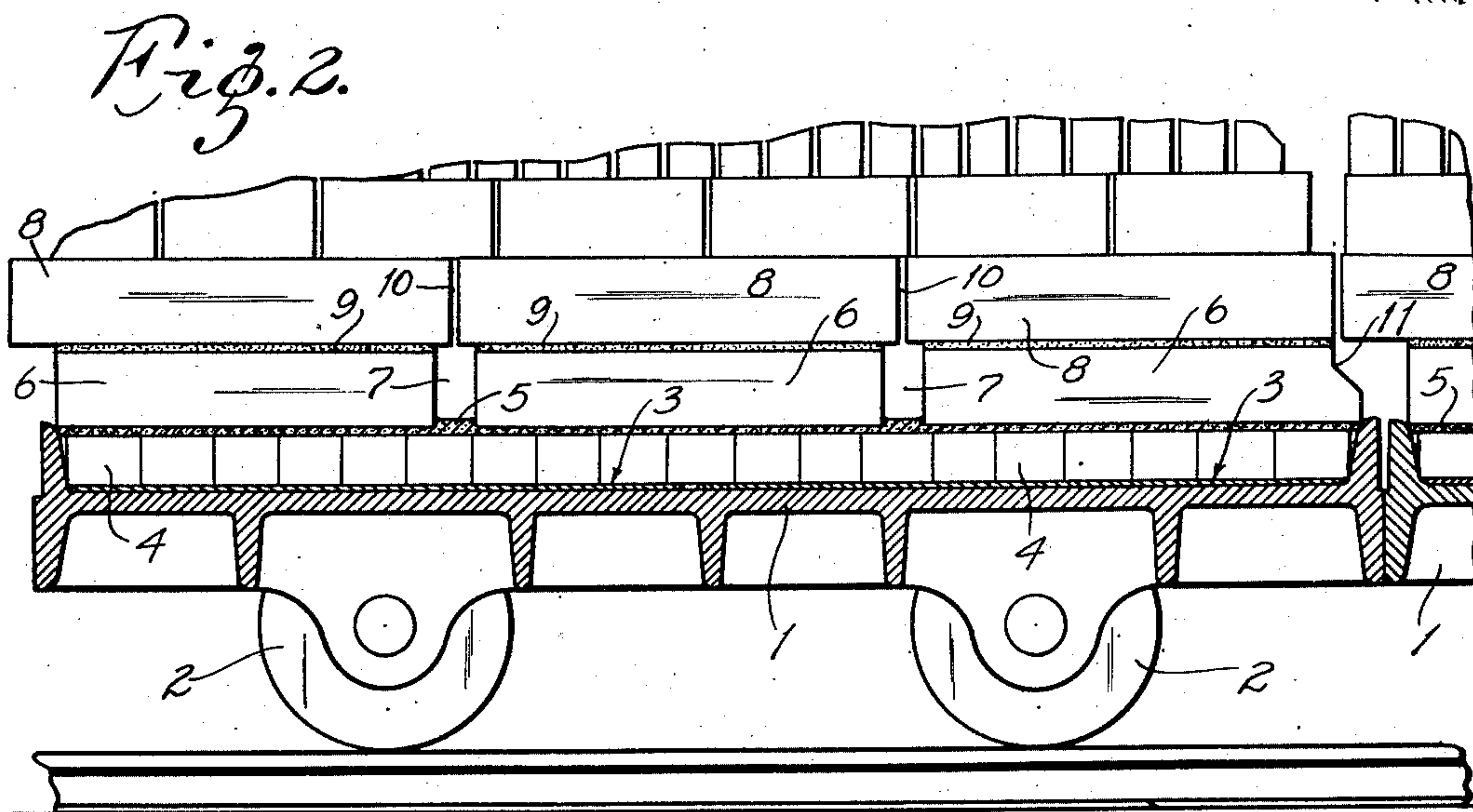
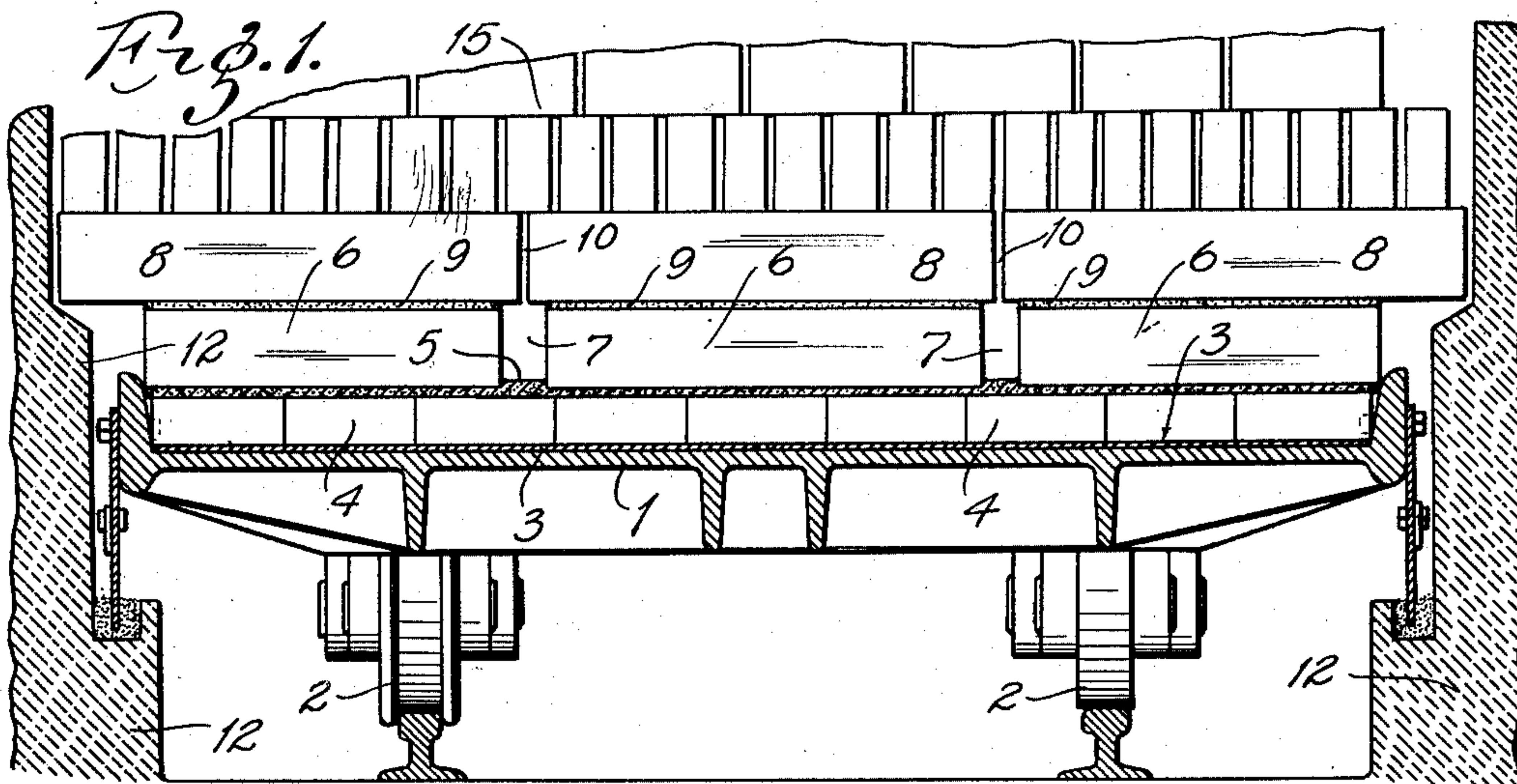
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H. L. PEARSON

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KILN CAR TOP

Filed Oct. 11, 1929



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UNITED STATES PATENT OFFICE

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KILN-CAR TOP

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My invention relates to stops for cars for use in continuous or tunnel kilns. It has for its principal object a construction that is able to withstand the extreme heat of such kilns and the alternating heating and chilling resulting from passing into and out of the kiln, which can be easily made and which has an accurately formed surface for the charge to rest upon.

The invention consists in the kiln car top and in the parts and combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawing,

Fig. 1 is a vertical cross-sectional view of a kiln car embodying my invention,

Fig. 2 is a longitudinal sectional view; and

Fig. 3 is a top plan view on a smaller scale.

The substructure of a suitable car consists of an open work metal frame 1 mounted on wheels 2. Resting on said frame are metal plates 3, which support a layer of insulating material, as bricks 4. Suitable bricks for the purpose are so called "cork bricks". A layer 5 of a plastic refractory cementing material is placed on top of said insulating bricks 4 and on said layer of cement are placed blocks 6 of refractory material, the blocks becoming firmly bonded to said cement, their undersides preferably being roughened for the purpose.

Said blocks 6 are arranged in rows transversely and longitudinally of the car, comparatively large spaces 7 being left between adjacent blocks. The cement 5 covers the top of the bricks 4 between the blocks and extends a little above the level of the lower edges of the blocks 6. On top of each block 6 is an upper block 8, each secured to the block beneath by means of suitable refractory cement 9, such as that used between the insulating bricks 4 and the lower blocks 6. The upper blocks 8 are of such size that comparatively small spaces 10 are left between adjacent upper blocks.

At the sides, the upper blocks 8 project beyond the planes of the car sides; and at the forward end of the truck, the upper blocks 8 extend beyond the front ends of the lower blocks 6 and beyond the front end of the car.

At the rear end of the car, the lower blocks 6 are provided with recessed rear upper edges 11, the rear edges of the upper blocks 8 being substantially flush with the edges of the recesses. The bottom of the recess of each block slopes downwardly to the rear.

A multiplicity of these cars are used in continuous or tunnel kilns, the foremost car being pushed out of the kiln as a new car enters. As indicated in Fig. 2, the forward upper blocks 8 of each car extend into close proximity with the rear upper blocks 8 of the car just ahead. The upper blocks along each side extend into close proximity with the side walls 12 of the furnace. Thus the heat of the furnace, which comes from oil or other burners disposed above the level of the upper blocks, is prevented from reaching the substructure and running gear of the car.

The bricks 15 being fired are stacked on the upper blocks in any desired fashion, the upper blocks and the bricks themselves being sprinkled with sand to prevent the bricks from sticking to each other and to the refractory blocks. Some of this sand may work its way into the spaces 10 between the upper blocks, whence it falls down between the much wider spaces 7 between the lower blocks. After the car has left the kiln, the sand may be removed from said spaces 7, thus preventing it from injuring the car in subsequent firing operations. The cement coating 5 in the spaces 7 protects the insulating bricks from being injured by the scraping operation. The cement 5 also prevents sand from working its way under the blocks 6 along the lower edges thereof.

The use of a multiplicity of blocks simplifies the construction of the cars and minimizes cracking of the refractory materials. By means of the cement, irregularities in the blocks may be compensated for, making a smooth horizontal, or if desired, a slightly dishd surface for the bricks being fired to rest upon.

Obviously, numerous changes may be made without departing from the invention and I do not wish to be limited to the precise construction shown.

What I claim is:

1. A device of the kind described comprising a substructure, a layer of insulating material thereon, a layer of refractory cement on said insulating material, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks.

2. A device of the kind described comprising a wheeled substructure, a layer of insulating bricks thereon, a layer of refractory cement on said bricks, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks.

3. A device of the kind described comprising a substructure, a layer of insulating material thereon, a layer of refractory cement on said insulating material, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, said cement extending over the lower edges of said lower blocks.

4. A device of the kind described comprising a substructure, a layer of insulating bricks thereon, a layer of refractory cement on said bricks, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, said cement extending over the lower edges of said lower blocks.

5. A refractory tunnel kiln car top comprising a layer of insulating material, a layer of refractory cement thereon, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, said upper blocks being arranged to extend beyond said lower blocks at the front and sides of the car.

6. A tunnel kiln car top construction comprising a wheeled substructure, a layer of insulating bricks thereon, a layer of refractory cement on said bricks, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, said upper blocks extending beyond said lower blocks and the substructure at the front and sides of the car and stopping short of said lower blocks at the rear of the car.

7. A tunnel kiln car top construction comprising a wheeled substructure, a layer of insulating bricks thereon, a layer of refractory cement on said bricks, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, the rearmost lower blocks having upper marginal recesses in their rear ends, the rear upper blocks terminating substantially flush with the front edges of said recesses and the front upper blocks projecting beyond the front lower blocks so as to be in position to extend over the recessed rear bottom blocks of a car ahead.

8. A tunnel kiln car comprising a wheeled substructure, a layer of insulating bricks thereon, a layer of refractory cement on said bricks, refractory blocks arranged in longitudinal and transverse spaced rows on said cement, and an upper block cemented to each of said first mentioned blocks, the spaces between upper blocks being less than those between lower blocks, the rearmost lower blocks having upper marginal recesses with downwardly sloping bottoms in their rear ends, the rear upper blocks terminating substantially flush with the front edges of said recesses and the front upper blocks projecting beyond the front lower blocks so as to be in position to extend over the recessed rear bottom blocks of a car ahead.

Signed at Mexico, Missouri, this 8th day of October, 1929.

HOWARD L. PEARSON.

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