(No Model.) 2 Sheets—Sheet 1.

W. K. SEAMAN.

HOT BED FOR COOLING RAILROAD RAILS.

No. 272,781. Patented Feb. 20, 1883.

Fig. 1

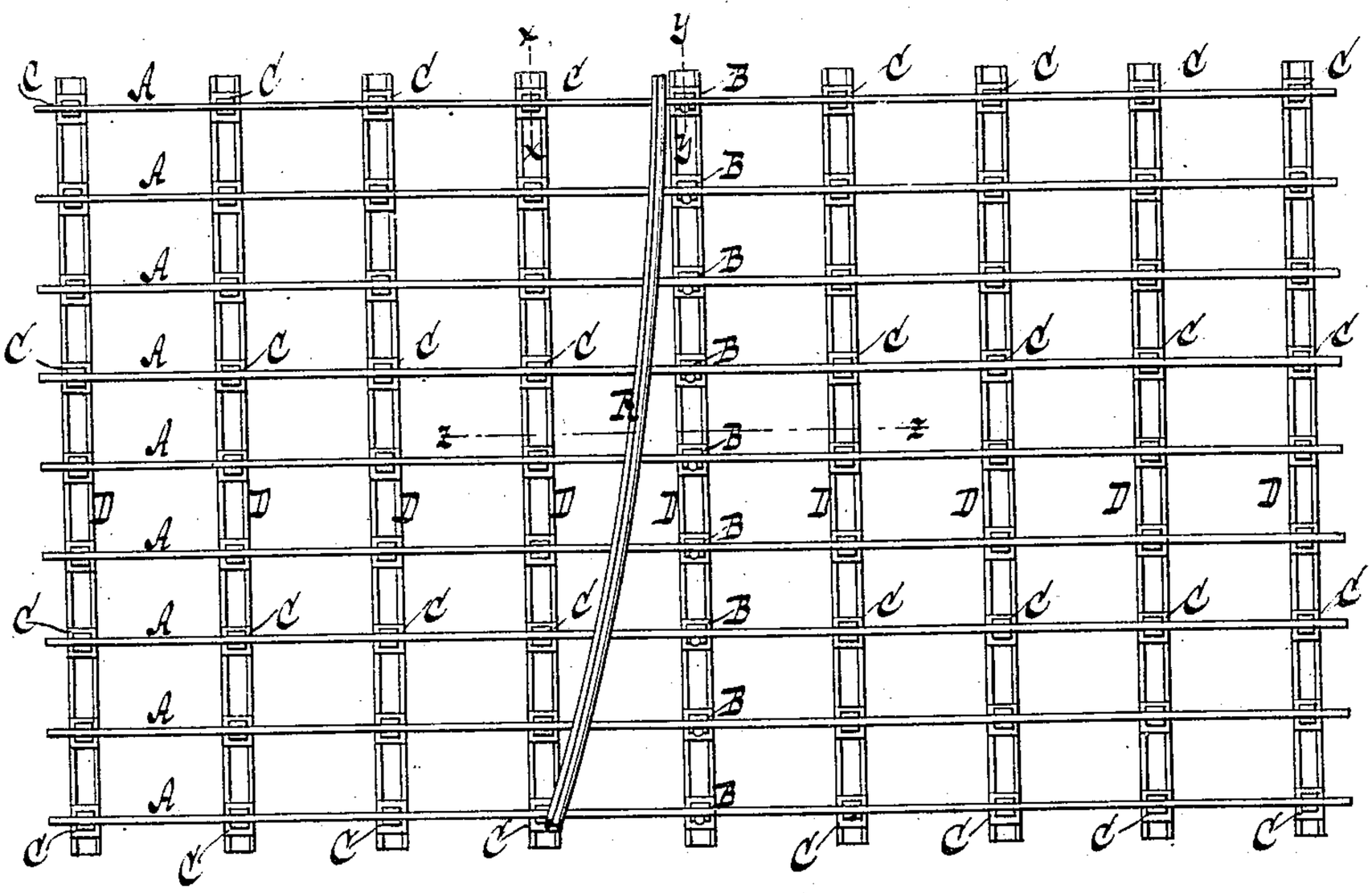
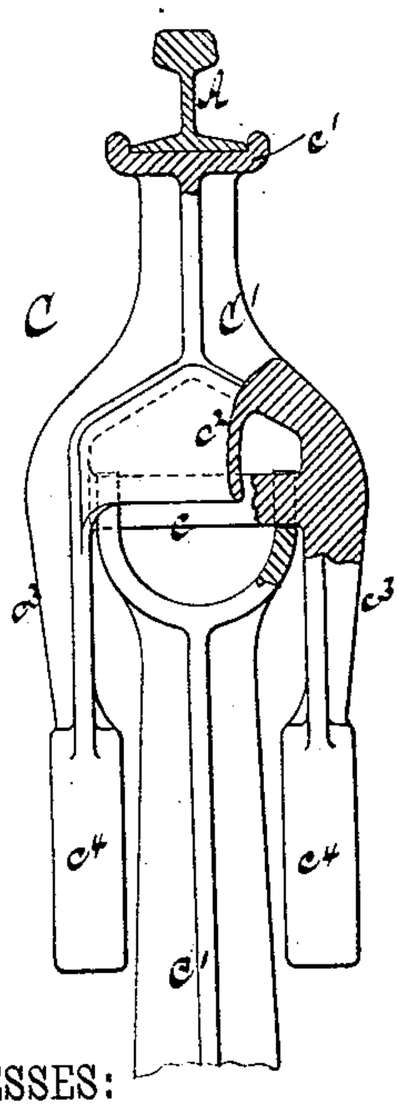
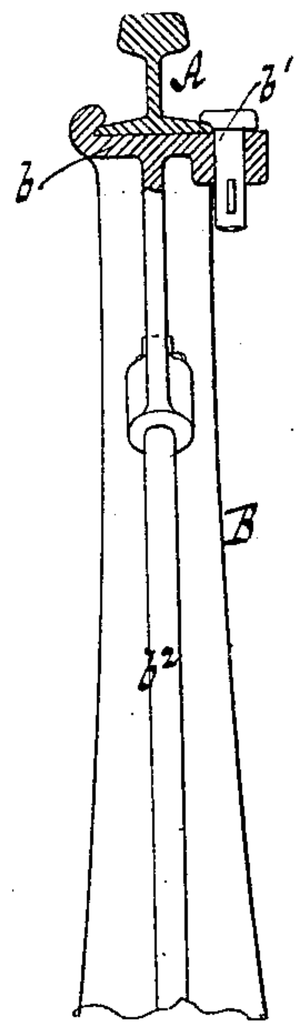


Fig. 2

Fig. 3.





WITNESSES:

Otto Hufeland

William Miller

INVENTOR

William K. Seaman

BY Van Santvoord & Hauff

ATTORNEYS

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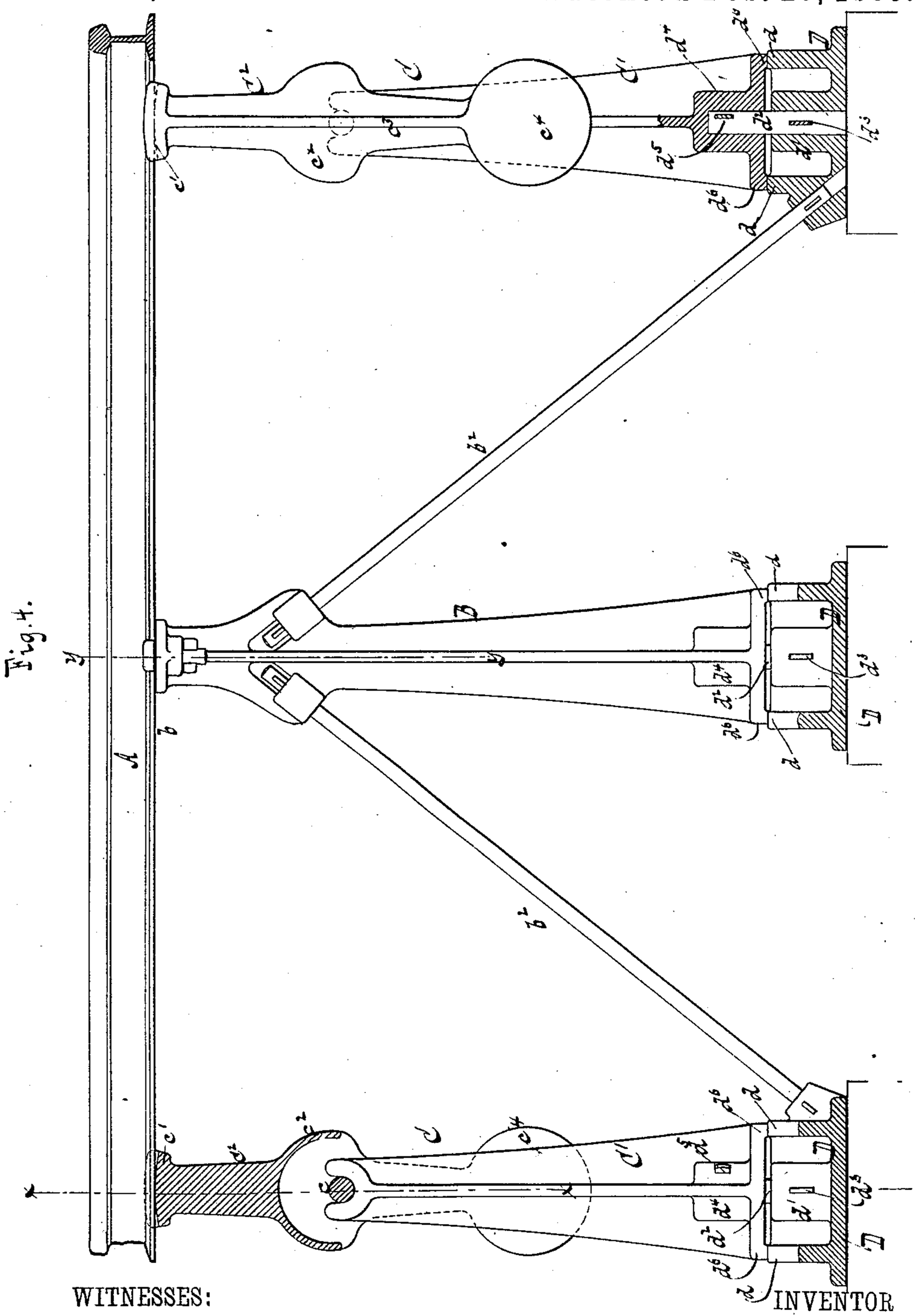

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM K. SEAMAN, OF SCRANTON, PENNSYLVANIA.

HOT-BED FOR COOLING RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 272,781, dated February 20, 1883.

Application filed October 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM K. SEAMAN, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented new and useful Improvements in Hot-Beds, of which the following is a specification.

The object of this invention is to obtain a hot-bed the upper surface of which can be readily brought into one and the same plane, and which will retain this position under the varying degrees of temperature to which it is subjected while in use.

The peculiar construction of my hot-bed is pointed out in the following specification, and illustrated in the accompanying drawings, in which—

Figure 1 represents a plan or top view of a portion of a hot-bed constructed according to my invention. Fig. 2 is a transverse vertical section in the plane *x x*, Figs. 1 and 4, on a larger scale than the previous figure. Fig. 3 is a similar section in the plane *y y*, Figs. 1 and 4. Fig. 4 is a longitudinal section in the plane *z z*, Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letters A A A designate the bed-rails, which are supported by columns B C. All these columns are firmly bolted to bed-plates D, and the columns B B, which support the bed-rails at the middle, are provided at their upper surfaces with chairs *b*, in which the bed-rails A A A are firmly fastened by keys *b'*, Fig. 3. From the sides of these columns, near their tops, extend truss-rods b^2 b^2, Fig. 4, to the bed-plates of the adjoining columns C C, so that said columns are retained immovably in position and the bed-rails are firmly retained at the middle. Each of the columns C is made in two sections, C' and C^2. The lower section, C', is firmly bolted to the corresponding bed-plate D, and its upper end is bifurcated, and forms the bearing for a pin, *c*, which is cast solid with or otherwise firmly attached to the upper section, C^2, Figs. 2 and 4. The top of this section forms a chair, *c'*, which is convex, its surface forming the section of a circle described from the center of the pin *c*. This pin is protected by a shield, c^2, which prevents dust, cinders, or other impurities from accumulating in the bearings of said pin, and which is cast solid with or otherwise firmly attached to the section C^2. From the body of this section depend arms c^3, carrying weights c^4, so that when the pin *c* of the section C^2 has been adjusted in the bearings of the section C' said upper section is free to rock in the lower section. The bed-rail A rests loosely on the convex bottom of the chair *c'*, and when it expands or contracts by the variations of the temperature to which it is subjected the section C^2 of the column C swings out or in, while at the same time the bed-rail A, being supported by the convex surface of the chair *c'*, retains its original level; and since all the bed-rails A are firmly fastened in the chairs of the middle columns, B, being left free to expand or contract from the middle toward their ends, the level of the hot-bed will not be disturbed, provided its surface has been correctly adjusted when newly constructed. In order to bring the surfaces of all the bed-rails A in one and the same plane, and to obtain a level hot-bed, all the columns B and C must be precisely of the same height, and the surfaces of the bed-plates D on which said columns rest must be planed off or otherwise so arranged that when the columns are bolted down the surfaces of the chairs *b* and *c'* will all be in one and the same plane. In order to effect this purpose, the bed-plates are provided with flanges or facing-strips *d d*, which can be easily finished on a planer. Between these flanges or facing-strips are bosses *d'*, "cored out" to receive the pins d^2, which are secured in said bosses by keys d^3 and enter sockets d^4, Fig. 4, formed in the bottom ends of the columns, and are fastened therein by keys d^5. The columns B C are also provided with flanges or facing-strips d^6, and if these flanges or facing-strips are planed to a templet measured from the surfaces of the chairs *b c'*, all the columns will be precisely of the same height, and if the columns are secured on the bed-plate D, which can easily be leveled with the required accuracy, a perfect hot-bed is obtained. The pins d^2 and keys d^3 d^5 are rough, and enter cored holes. In fact, the flanges or facing-strip d^6 are the only tool-finished surfaces on the columns, and the desirable object of a comparatively cheap construction is obtained as well as a level bed.

In the foregoing it has been explained how the expansion and contraction of the rails A are provided for. There is another contraction to take into account—viz., that of the red-hot fresh rails R lying transversely on the bed-rail A. As these fresh rails contract they have a tendency to tip the upper sections, C^2, of the columns C sidewise; but by placing the counter-weights c^4 c^4 on either side of the center-pin c this tendency is resisted and the fresh rail R will slip on the bed-rails A before it will lift the sections C^2. When fresh hot rails are delivered on a hot-bed, the bed-rails (which compose the hot-bed) expand by the heat of the fresh rails, and by the unequal expansion of the bed-rails the hot-bed is thrown out of its original level condition, so that the fresh rails, in cooling, are liable to become bent, (being supported by an uneven hot-bed.) In the drawings the fresh rail R appears bent, because all fresh rails, before being delivered to the hot-bed, are passed through a "cambering-machine," by which they are bent in such a manner that they become straight in cooling.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore described, of the rigid columns B, the bed-rails A being firmly secured to said columns, the sectional columns C, and the convex chairs formed on the tops of said sectional columns for supporting the bed-rails.

2. The combination, with the columns B, the bed-rails A, which are firmly secured to said columns, and the sectional columns C, provided with convex chairs at the tops, of the bed-plates D and trusses b^2, substantially as and for the purpose described.

3. The combination, substantially as herein-before described, of the rigid columns B, the bed-rails A, which are firmly secured to said columns, the rigid sections C′, the swinging sections C^2, and the convex chairs formed on the top of these swinging sections.

4. The combination, substantially as herein-before described, of the rigid columns, the bed-rails A, which are firmly secured to said columns, the rigid sections C′, the swinging sections C^2, the convex chairs formed on the tops of said swinging sections, and the counter-weights c^4.

5. The combination, substantially as herein-before described, of the rigid columns B, the bed-rails A, which are firmly secured to said columns, the rigid sections C′, the sections C^2, provided with pins c, to engage with bearings formed on the rigid sections C′, and the shields c^2.

6. The combination, substantially as herein-before described, of the rigid columns B, the bed-rails A, which are firmly secured to said columns, the sectional columns C, the convex chairs formed on the tops of these sectional columns, the bed-plates D, the flanges or facing-strips d^6, formed on the columns B C, and the flanges or facing-strips d, formed on the bed-plates.

7. The combination, substantially as herein-before described, of the rigid columns B, the bed-rails A, which are firmly secured to said columns, the sectional columns C, the convex chairs formed on the tops of these sectional columns, the bed-plates D, the facing-strips d d^6, the bosses d' and sockets d^4, and the pins d^2.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

WM. K. SEAMAN. [L. S.]

Witnesses:
A. J. MILLER,
C. P. COLVIN.