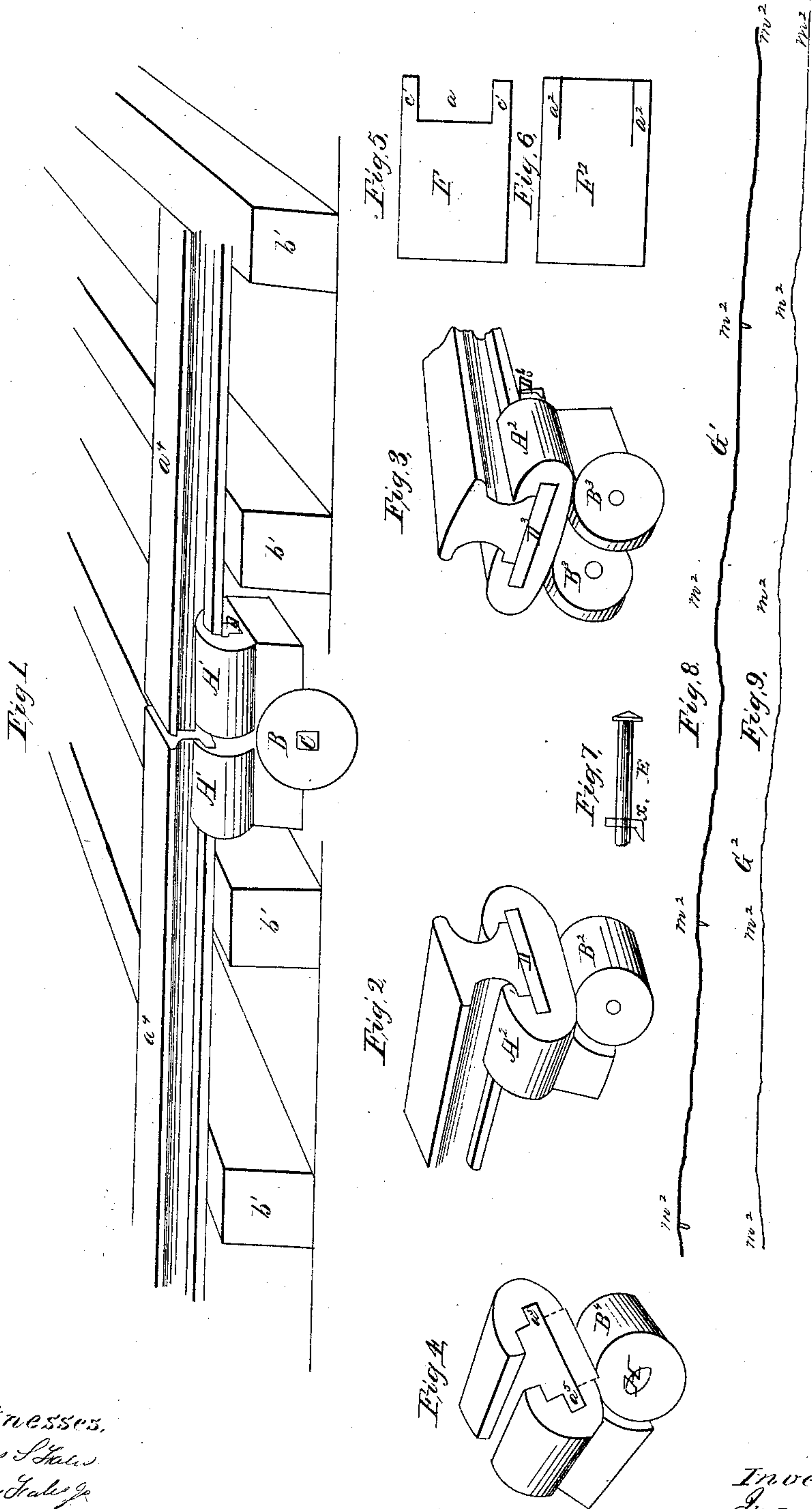


J. Davis.

Railroad Rail Joint.

N^o 24,724.

Patented Jul. 12, 1859.



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UNITED STATES PATENT OFFICE.

JOHN DAVIS, OF NEW BEDFORD, MASSACHUSETTS.

MODE OF CONNECTING THE ENDS OF RAILWAY-BARS.

Specification of Letters Patent No. 24,724, dated July 12, 1859.

To all whom it may concern:

Be it known that I, JNO. DAVIS, of New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and improved mode of preventing the ends of the rails of railroads from being battered, broken, and worn by the action of the wheels of the cars in running over them; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, and to the letters of reference marked thereon.

My invention consists in connecting the rails of railroads in continuous chains, with hinges: (with continuous couplings provided with hinge joints,) so that when the trains pass over them the connected ends of the rails will not be held rigid as by other inventions, but may be depressed by the weight of the trains. The hinge joints cause both of the rails thus connected not only to be equally depressed but rise to the same plane. The hinge joints also cause the rails vertically to assume the same line and permit them freely to expand and contract.

Figure 1 is a perspective view showing two rails connected with said continuous coupling. Figs. 2, 3, 4 are the same views with the joint of the coupling separated. Fig. 7 is the bolt which connects the joint. Figs. 5 and 6 are vertical sections of the keys or wedges for fastening the rails in the coupling. Figs. 8 and 9 are lines to set forth the positions of the rails when the trains are running over them.

Fig. 1 A' A' are the two parts of the continuous coupling; B the joint; C' the bolt which connects the joint. $a^4 a^4$ are the rails inserted into said coupling. $b' b' b' b'$ are ties which need no further specification. D is the end of the key clenched down over the end of the coupling.

Figs. 2 and 3 A² A² is the same as A' A' in Fig. 1 separated to illustrate the construction of the joint; D² D³ are the wedges on keys which raise the ends of the rails from the base of the coupling and secure thereby apertures through the "webs" of said rails, &c. B² is the tongue, or male of the joint; B³ B³ are the sides of the other part of said hinge (see Fig. 3.) D² is the end of the wedge or key clenched down to secure it in said coupling. Shown also by D' in Fig. 1.

Fig. 4, B⁴ is the male of the joint; H is

a longitudinal aperture through the tongue B⁴ through which the bolt shown at C, in Fig. 1, passes. Said aperture permits the rails to expand and contract, $a^5 a^5$ shows that part of the coupling into which the wedge is inserted.

Fig. 7. E is the bolt shown at C' in Fig. 1. x is a key passing through said bolt and secures it when inserted in the coupling.

Figs. 5 and 6 are the keys or wedges shown and placed by the side of each other to show the different manner of construction. a' in Fig. 5, shows a portion of said wedge or key removed so that $c' c'$ may be clenched as shown at D' in Fig. 1, and D² in Fig. 3; F² in Fig. 6 shows another form of said wedge. $a^2 a^2$ are supported from F so they may be clenched as at D', in Fig. 1, and D² in Fig. 2.

Fig. 9 shows the position of the rails, which are under the trains when said trains are in motion; $m^2 m^2 m^2 m^2$ show the uneven joints in consequence of the ties settling, and the chairs in universal operation—permitting one of the rails of a joint to settle before the wheels reach the end of the next rail, &c.

Fig. 8 is a line showing the position and appearance of the rails when connected with a hinge joint. When the trains are in motion on said rails $m^2 m^2$ &c. show on even plane or surface horizontally and vertically and the monotonous pounding of the tread and flanges of the wheels butting the ends of the rails is not heard. The wave like appearance, viewed horizontally, is the same as in Fig. 9.

Operation: The rails of railroads being connected in continuous chains with hinge joints, the novelty of which is set forth by the above specification; and which is the base of my invention; the novelty, utility and operation may be noted by observing and contrasting the horizontal working and appearance of the rails of a railroad track—connected with the chairs in universal operation when the trains are passing over them &c. By said observation it will be demonstrated, that by the elasticity of the rails and the settling of the ties in consequence of the massive weight of the trains, and the pounding of the wheels, when in motion that the horizontal plane of the rails of any railroad track, is worked, comparatively speaking, into a wave like position or appearance, as shown by the lines G' Fig. 8 and G² Fig. 9.

When connected with the chairs in general use—the wave like horizontal plane is not continuous and smooth, but rough, as may be also observed by the monotonous striking and battering of the tread and flanges of the wheels against the ends of the rails.

When the rails of railroads are connected by my invention, with hinge joints, as herein set forth and described—the wave like position is even and smooth; and there is no pounding by the tread or by the flanges of the wheels against the ends of the rails. Neither is the monotonous battering heard; and consequently the wear of the rails at their ends is greatly lessened—the speed of the trains increased; the safety and ease of the traveling public is enhanced and the rolling stock lessened.

I do not confine to connecting the hinge with a bolt; said coupling may be cast with

a movable joint, or otherwise constructed. It may be connected with more than one joint and bolt if greater strength be required. Neither I do not claim or desire to claim any device previously invented or patented for connecting the rails of railroads, but

What I do claim as my invention is—

1. Connecting the rails of railroads in continuous chains, with hinge joints, in any practical mode.

2. I claim securing the rails in the couplings by inserting wedges longitudinally under the rails and clenching their margins.

3. I claim wedge D^2 in Fig. 2 to secure wedge D^3 in Fig. 3, and vice versa, by means of the hinge joint, or bolt C in Fig. 1.

JNO. DAVIS.

Witnesses:

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