

(No Model.)

J. W. WHITE.
CHAIR AND SLEEPER.

No. 430,553.

Patented June 17, 1890.

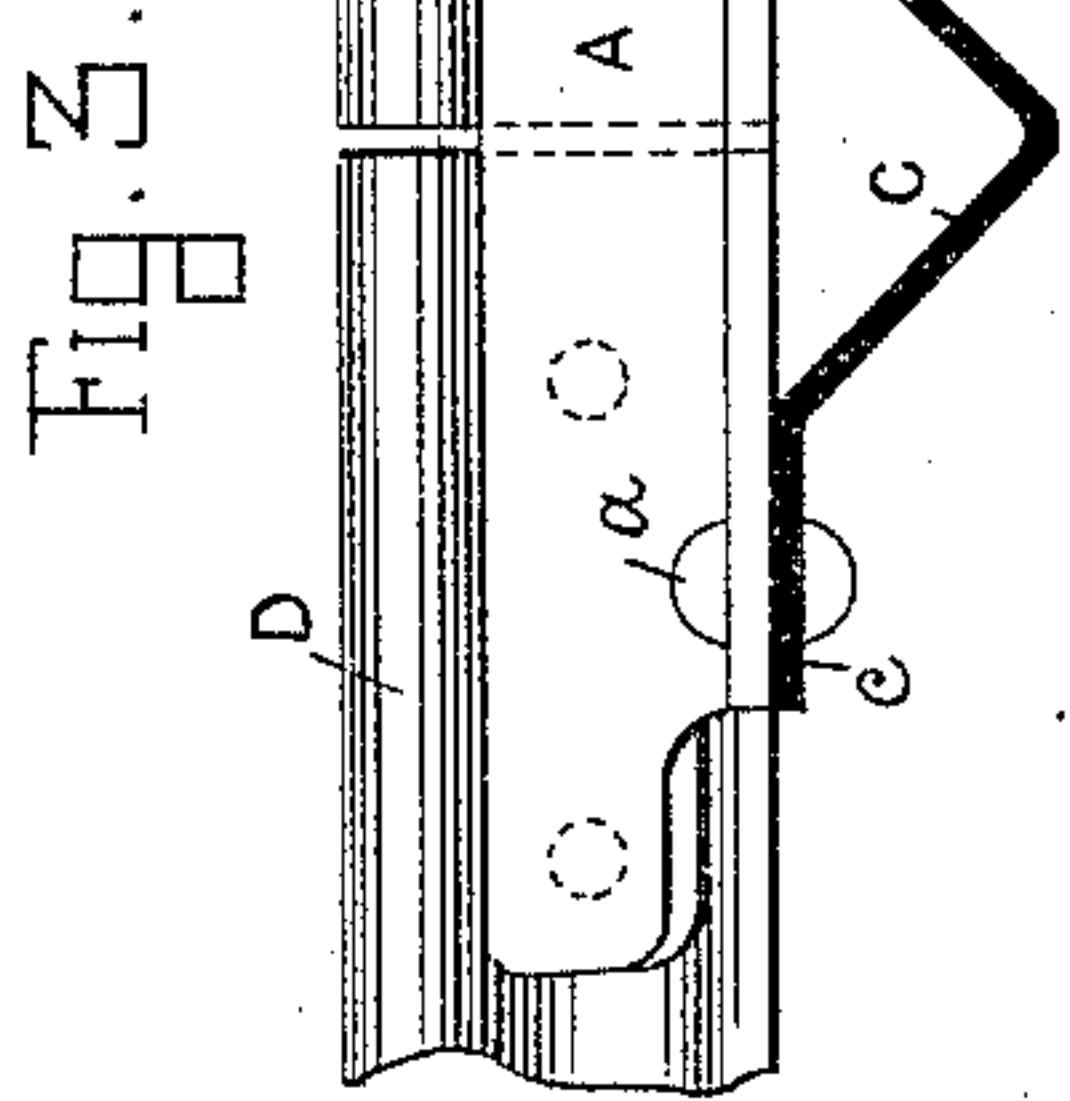
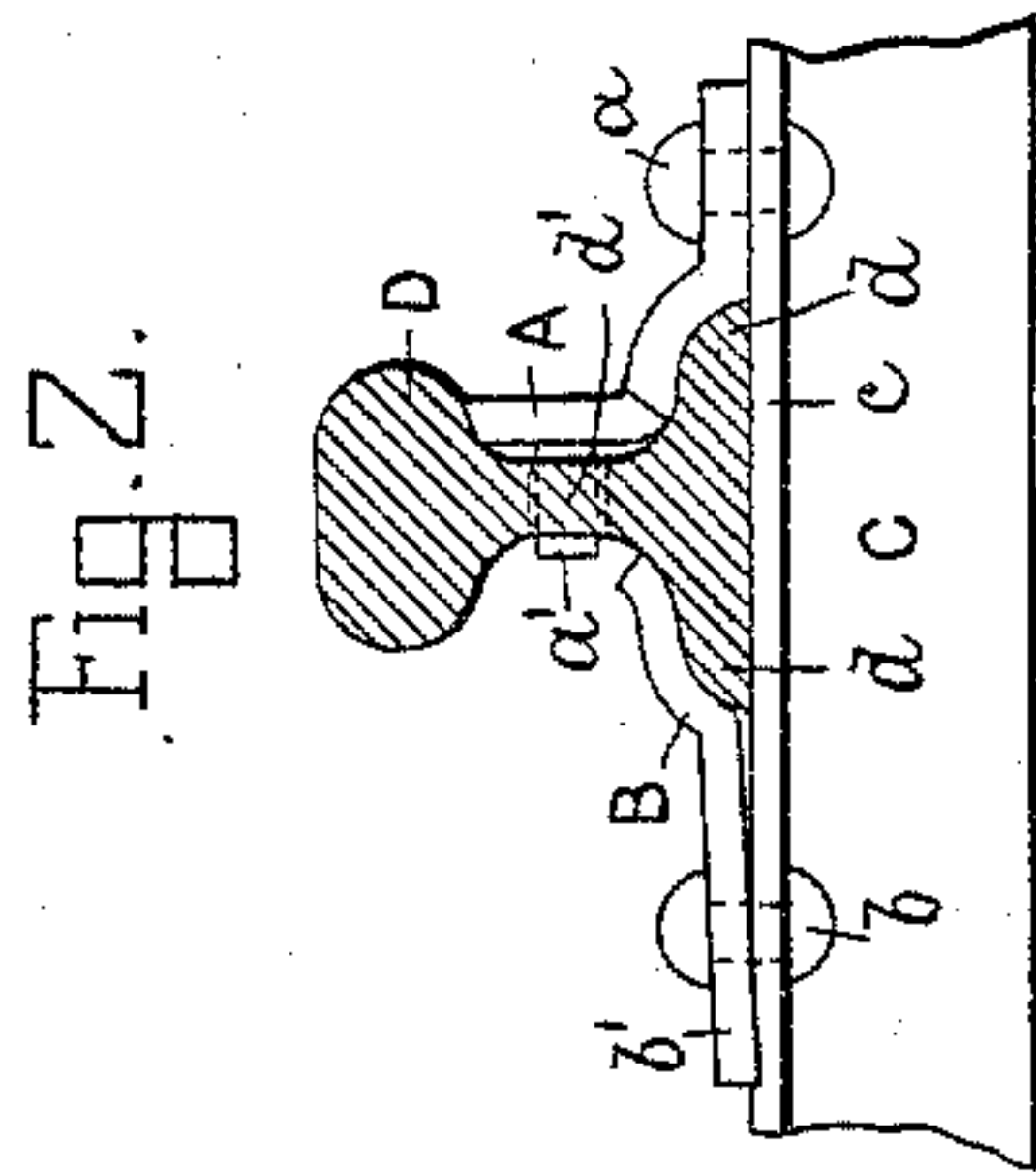
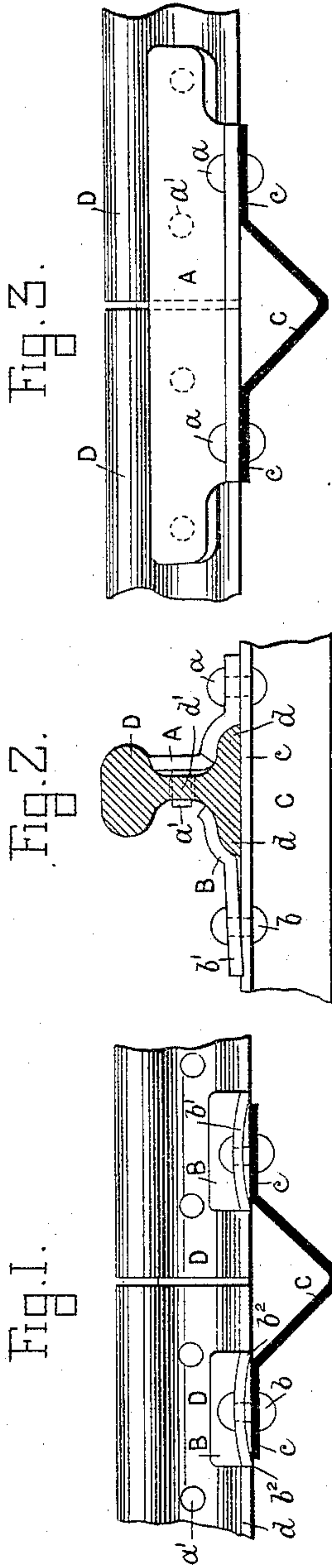


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UNITED STATES PATENT OFFICE.

JOSEPH WALWYN WHITE, OF HALEBANK, NEAR WIDNES, COUNTY OF LANCASTER, ENGLAND.

CHAIR AND SLEEPER.

SPECIFICATION forming part of Letters Patent No. 430,553, dated June 17, 1890.

Application filed April 7, 1890. Serial No. 346,919. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WALWYN WHITE, merchant, a subject of the Queen of Great Britain, residing at Halebank, near

Widnes, in the county of Lancaster, in the Kingdom of England, have invented certain new and useful Improvements in Chairs and Sleepers, of which the following is a specification.

This invention relates to rail supporting or fastening devices.

It has for its principal object a supporting or fastening device which is so arranged and combined with the sleeper, whether metallic or wooden, as to obviate the necessity of employing fish-plates, bolts, nuts, and chairs.

The invention permits of the sleepers being laid without the rails being first attached thereto, such attachment being afterward readily effected by the aid only of a hammer.

The drawings illustrate the invention as applied to a flanged or single-headed rail.

Figure 1 is an elevation, partly in section, looking at the inner side of the rail. Fig. 2 is an end elevation showing the rail in section. Fig. 3 is an elevation, partly in section, looking at the outer side of the rail. The above figures all show the invention as applied at the junction of two rails. Figs. 4, 5, and 6 are views similar to Figs. 1, 2, and 3, showing the fastening device as applied at intermediate points on the rail. Fig. 7 is a section showing a modification and taken as on line xx , Fig. 5. Fig. 8 is a plan view showing a slight modification of the fastening device. Fig. 9 is a view similar to Fig. 5, showing one way of applying the improved device to wooden sleepers.

C is the sleeper, of any ordinary construction, the V-shaped-trough form shown being the kind I prefer to employ.

A is a stationary jaw or half-chair, which is rigidly attached to the sleeper on the outside of the rail D, as by rivets a , passing through the flanges c of the sleeper. The jaw A thus serves also to strengthen the sleeper. The jaw hugs the adjacent rail-flange d , as in Figs. 2 and 5. It also hugs the whole or part of the web d' , as in Fig. 5, or it may only bear against the fish-plates at the top and bottom of the web, as in Fig. 2.

When the jaw A is placed at the junction of two rails, as in Figs. 1 to 3, it also serves as a fish-plate. For this purpose it is made of a greater length, as shown in Fig. 3, and is provided on its inner face with two or more studs or projections a' , which are adapted to enter or pass through the fish-plate bolt-holes in the rail, and may be slightly tapered, if desirable. The studs a' and jaw A thus take the place of the fish-bolts and fish-plates, respectively. On the inner side of the rail opposite the jaw A one or more swiveling clips or jaws B are placed. They are each pivoted (as by a rivet b) upon the sleeper C or other part rigidly connected to the jaw A. Each clip is so formed that when swiveled round against the rail considerable force has to be employed in hammering or otherwise bringing it into the position shown in Figs. 2 and 5, and when in that position it presses hard against the rail, or rather against the flange thereof. The clips are, by preference, made of spring-steel—say one-fourth inch or three-eighths inch thick.

Each clip B is so arranged that in being swiveled into its normal position, as in Figs. 2 and 5, it has to pass a point or points at which it is in unstable equilibrium, and has a tendency, by reason of its elasticity, to move into said normal position. Its elasticity also acts to keep it in position when once forced therein. There are various ways in which this can be effected. For instance, the sleeper-flange c , in a line with the pivot b , can be slightly bulged upward, as at c' , Fig. 7, and the back part b' of the clip formed also of a curved corresponding contour, so that when the salient point of the bulge of the sleeper is opposite the crown of the concave portion of the clip the latter will have a very strong tendency to remain in that position, as it would have to mount up with one of its salient points b^2 onto the salient portion c' of the sleeper before it could get out of its locked position; or the sleeper-flange c may remain in its unaltered flat condition, and the salient points b^2 of the curved clip may project beyond the edges of the sleeper-flange, as shown in Figs. 1 and 4, so that one or both of these points have to ride over the edges of the flange before the clip can become unfastened. If de-

sired, the clips can be still further secured when in position by hammering the points b^2 down over the flange c .

As the clip is forcibly sprung into position, as above set forth, it is prevented by its elasticity from working loose even after considerable wear. The clip is made rather longer than might otherwise be necessary in order to give it sufficient leverage and elasticity.

Fig. 8 shows a modification of the clip B. One corner of that part of the clip which is to bear against the rail is turned back, as at b^4 , before the clip is swiveled into position. After it is in position the part b^4 is hammered down against the rail, and the corners b^5 prevent the clip from turning upon its pivot; or the toe of the clip may be bent back entirely instead of only at one corner thereof, so that the rail may be placed in position and the clip bent forward upon it. In this case it is not essential that the clip should be made to swivel upon the sleeper.

When the invention has to be applied to wooden sleepers, the jaw A has attached to it or formed in one with it a rigid projection or plate a^2 , Fig. 9, which passes below the rail and upon which the clip B swivels. This bed-plate or projection a^2 is securely attached to the sleeper, as by spikes a^3 .

I declare that what I claim is—

1. The combination of a rigid jaw A, fixed to the sleeper and hugging one side of the rail, and one or more elastic clips B, each mounted on a pivot in rigid connection with said jaw and adapted to be swung round and sprung into position against the opposite side of the rail, substantially as described.

2. The combination of a rigid jaw hugging one side of the rails at the junction thereof, and having a series of projections adapted to enter the fish-plate bolt-holes in the rails, and one or more swiveling elastic clips B, mounted as described and adapted to hug the opposite side of the rails, whereby the use of fish-plates and bolts is obviated, substantially as described.

3. In a rail-fastening device, an elastic rail-clip B, swiveling on a pivot upon the sleeper with part of its under surface in contact with the upper surface of the sleeper, one of said surfaces having two points, one on each side of the pivot, projecting beyond the normal level of an intermediate point on the adjacent opposing surface, all three points lying

on a circle concentric with the pivot, whereby a portion of the clip is sprung forcibly upward as it approaches a position on either side of its normal position, and the clip thus has a strong tendency to spring into the latter position and to remain therein, substantially as described.

4. The combination, with the sleeper C and rail D, of the rigid jaw A, fixed to the sleeper and hugging one side of the rail, and the swiveling elastic clips B, pivoted on the sleeper and hugging the opposite side of the rail, substantially as described.

5. In combination with the trough-shaped sleeper C, rail D, and fixed jaw A, the swiveling elastic jaws B, pivoted on the sleeper-flanges c and having downwardly-curved heels b' overlapping the said flanges at both edges thereof, substantially as described.

6. The combination of the sleeper C, rails D D, fixed rigid jaw A, having projections a' , as described, and swiveling elastic clips B B, substantially as described.

7. In a rail-fastening device, an elastic rail-clip B, pivoted upon the sleeper, as described, and having two salient points b^2 b^2 on its under surface, one on each side of the pivot, projecting below the level of an intermediate point on the adjacent opposing surface, all three points lying on a circle concentric with the pivot, whereby the clip must undergo a considerable amount of bending strain in order to be swiveled out of its position against the rail, substantially as described.

8. In a rail-fastening device, an elastic swiveling rail-clip B, having a downwardly-curved heel b' , adapted to bear upon the flange of the sleeper and overlap the same at both edges thereof, substantially as, and for the purpose described.

9. The sleeper C, rail D, and fixed jaw A, hugging one side of the rail, in combination with a flexible clip B on the opposite side of the rail, having its end bent backward to permit of the rail being placed in position, and adapted to be afterward bent forward against the rail, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH WALWYN WHITE.

Witnesses:

GEO. C. DYMOND,
JOHN HAYES.