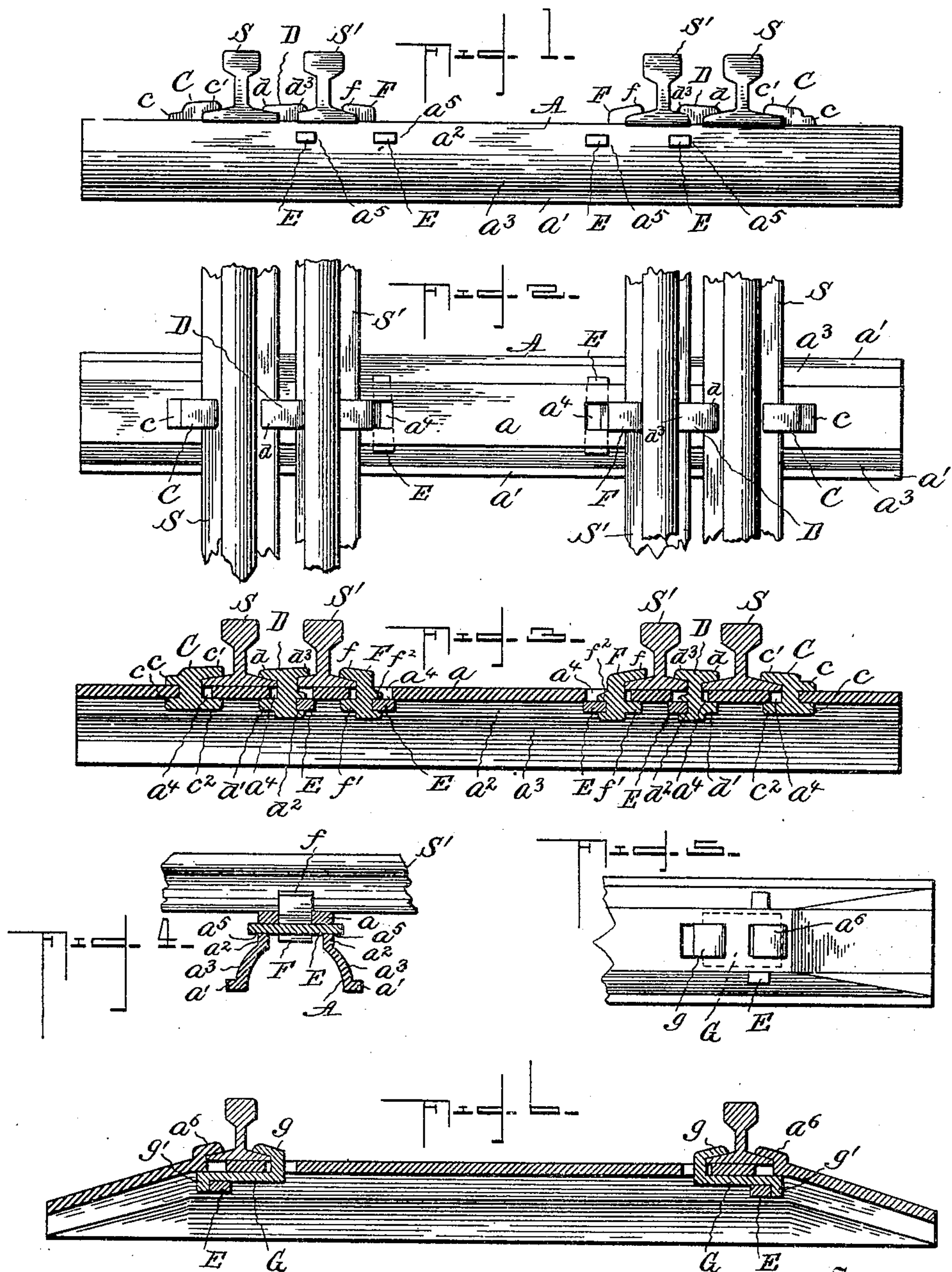


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PATENTED JUNE 26, 1906.

W. J. WILSON.  
SLEEPER OR STRINGER FOR RAILWAYS.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

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## SLEEPER OR STRINGER FOR RAILWAYS.

No. 824,324.

Specification of Letters Patent.

Patented June 26, 1906.

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*To all whom it may concern:*

Be it known that I, WALTER J. WILSON, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented a Railway Sleeper or Stringer, of which the following is a specification.

The object of this invention is to provide a metal sleeper or stringer for railways that shall be light and cheap in construction, strong and durable, and in which the material is so distributed with respect to the cross-sectional shape of such sleeper or stringer as to slightly yield and yet effectually withstand the maximum weight of rolling-stock it is designed to support.

A further object of the invention is to provide the metal railway sleeper or stringer with peculiar means for securely attaching the rails thereto and so that there will be no possibility of such rails working loose or spreading.

With these principal objects in view the invention consists of a steel beam arched transversely to provide a raised support for the rails, in combination with blocks seated in the sleeper or stringer to engage and clamp against the base-flanges of the rails and keys adapted to securely hold the blocks in such clamped engagement with the rails, all as hereinafter particularly described, and specifically set forth in the appended claims.

In the drawings, Figure 1 is a side elevation of my improved railway sleeper or stringer and showing the rails secured in position thereon. Fig. 2 is a plan view of the arrangement shown in Fig. 1. Fig. 3 is a longitudinal sectional view. Fig. 4 is a transverse sectional view. Fig. 5 is a plan view illustrating a modification of the rail-clamping device and adapted for use especially in connection with single rails. Fig. 6 is a longitudinal sectional view thereof.

In carrying out my invention I employ, in the first place, a metal sleeper or stringer comprising, in the present instance, a transversely-arched steel beam A of such shape in cross-section as to provide at the upper part or head of the arch a flat horizontal seat *a*, upon which the rails rest, and at the lower part or base oppositely-projecting lateral flanges *a'* *a'*, which form the bearings for the sleeper or stringer, the intermediate portions or side walls each presenting an upper short vertical portion *a<sup>2</sup>* and a lower outwardly-curved portion *a<sup>3</sup>*, the latter extending to the

aforesaid base-flanges. This provides a construction of steel beam which will yieldingly support the rolling-stock, and consequently provide an easy road-bed for bridges, &c.

In order to provide the beam A to receive the rail-securing means hereinafter described, the upper part or seat *a* thereof has openings *a<sup>4</sup>* formed therein, into which the rail-clamping members are passed for engagement with the rails and beam, while the vertical portions *a<sup>2</sup>* of the side walls of the beam are provided with openings *a<sup>5</sup>*, said latter openings being on a plane immediately below the seat *a* and are adapted to receive the locking wedges or keys forming a part of such rail-securing means.

In Figs. 1, 2, and 3 of the drawings I have shown the sleeper or stringer as supporting the running-rails S S and the usual guard-rails S' S' adjacent thereto, and consequently have illustrated a series of clamping members adapted thereto. At the outer side of the running-rail is a clamping member or block C, having a pair of jaws *c c* at the outer side thereof spaced apart to receive the upper part or plate *a* of the sleeper or stringer and embrace the upper and lower edges thereof, while at its inner side said member or block is provided with upper and lower jaws *c'* and *c<sup>2</sup>*, adapted to engage the flange of the rail and under side of plate *a*, respectively. In placing this member or block in position it is first turned at a slight angle, so that the jaw *c<sup>2</sup>* may be passed through the opening *a<sup>4</sup>* and under the plate *a*, after which the jaws *c c* are brought on a line with the upper and lower edges of said plate and the member or block then slid rearward, so that said jaws will engage the plate *a* and support the device, it being understood, of course, that during this operation the rail S is out of the way. The rail may then be placed in position by inserting the base-flange thereof under the jaw *c'*. To hold the rail securely, a second clamping member D is clamped against the opposite base-flange thereof. This clamping member D comprises a block having an upper laterally-projecting head *d*, adapted to overlap the base-flange of the rail, and a lower laterally-projecting jaw *d'*, adapted to bear against the under side of the top of the sleeper or stringer, said clamping member being passed through one of the openings in said top. At the lower part of this clamping member and at the side thereof opposite the jaw *d'* there is a groove or channel *d<sup>2</sup>*, which



when the clamping member is in place registers with the openings  $a^5$  in the opposite sides of the sleeper or stringer. When thus arranged, a wedge-shaped locking-key E is  
 5 passed through the openings and channels and driven home, so as to firmly clamp the rail between the clamping members C and D. In order to secure the guard-rail in place, the clamping member D is provided with a jaw  
 10  $d^3$  opposite the head or jaw  $d$ , the former being adapted to overlap the usual short flange of the guard-rail, while the opposite flange of said rail is engaged by a clamping member F, similar to the clamping member D—that  
 15 is to say, having an upper laterally-projecting head or jaw  $f$ , a lower jaw  $f'$ , and a channel  $f^2$  opposite said lower jaw and adapted to receive a locking-key E. It will be seen that by this arrangement the rails are firmly  
 20 and securely fastened to the sleeper or stringer and without the use of bolts and nuts, as is usual, and the locking-keys being slightly wedge-shaped will when driven tightly in place securely hold without lia-  
 25 bility of becoming loose. The rails at each side of the track are secured in place by the same style of clamping members, and where a guard-rail is not required the clamping member F may be substituted for the clamp-  
 30 ing member D. It will also be understood that the same style of clamping member may be used for securing rails in place at switches, frogs, and other contingencies.

In Figs. 5 and 6 I have illustrated a modi-  
 35 fication of the clamping device, which in this instance consists of a plate G, adapted to extend under the top plate of the sleeper or stringer and having at one end a clamping-jaw  $g$ , adapted to engage one edge of the base-  
 40 flange of the rail, and at the other end a depending flange  $g'$ , engaged by the locking-key E, the opposite edge of the base-flange of the rail being engaged in this instance by means of a jaw  $a^6$ , preferably stamped from the top  
 45 portion or plate  $a$  of the stringer or tie. In this instance the body of the fastening-plate, including the depending flange  $g'$ , is wider than the rail-engaging jaw  $g$  thereof, and consequently wider than the openings through  
 50 the top plate of the tie or stringer, whereby the top plate of the latter is reinforced. In some instances the jaw  $a^6$  (illustrated in Figs. 5 and 6) may be used in lieu of the jaw or clamping member C. (Shown in Figs. 1,  
 55 2, and 3.)

Having thus described my invention, I claim—

1. In a sleeper or stringer for railways, the combination of a beam arched transversely,  
 60 clamping members having opposing jaws engaging the base-flanges of the rails and the under side of the top of the beam, respectively, and a locking-key passed transversely through the beam and adapted to hold the  
 65 clamping members in place.

2. In a sleeper or stringer for railways, the combination, of a beam arched transversely, clamping members having opposing jaws engaging the base-flanges of the rails and the under side of the top of the arched beam re-  
 70 spectively, and horizontally-disposed wedge-shaped locking-keys passed transversely through the beam and engaging the clamping members.

3. In a sleeper or stringer for railways, the  
 75 combination of a beam arched transversely, a clamping member engaging one edge of the base-flange of the rail, a second clamping member having opposing jaws engaging the other edge of the base-flange of the rail and  
 80 the under side of the top of the beam, respectively and provided with a groove or channel, and a wedge-shaped locking-key engaging the beam and the clamping member last mentioned in the groove or channel thereof. 85

4. In a sleeper or stringer for railways, the combination with a beam arched transversely and provided with openings in the top and sides thereof, of a clamping member engag-  
 90 ing the base-flange of the rail at one edge thereof, a second clamping member having an upwardly-inclined jaw engaging the other edge of the base-flange and having a portion depending below the top of the beam through the opening therein said depending portion  
 95 having a jaw engaging the under side of the top of the beam, and a horizontally-disposed wedge-shaped locking-key engaging the openings in the sides of the beam and bearing against the latter clamping member to clamp  
 100 the rail tightly between the clamping members.

5. In a sleeper or stringer for railways, the combination with a beam arched transversely and provided with openings in the top and  
 105 sides thereof, of a clamping member engaging the base-flange of the rail at one edge thereof, a second clamping member engaging the other edge of the base-flange and having a portion depending through the top and  
 110 provided with a jaw bearing against the under side of the latter, said depending portion also having a channel or groove, and a horizontally-disposed wedge-shaped locking-key engaging the openings in the sides of the  
 115 beam and the groove or channel in the clamping member, substantially as shown and for the purpose set forth.

6. In a sleeper or stringer for railways, the combination with a beam arched transversely  
 120 and provided with openings in the top and sides thereof, of a clamping member comprising a block having the pair of beam-engaging jaws  $c$   $c$  and opposite jaws  $c'$  and  $c^2$ ; a second clamping member having upper and lower  
 125 jaws at one side, the upper one of which engages the rail, and a groove or channel at the other side, the latter being on a line with the openings in the sides of the beam, and a hori-  
 130 zontally-disposed wedge-shaped locking-key



engaging said openings and the groove or channel in the clamping member last mentioned.

5 7. In a sleeper or stringer for railways, the combination with an arched beam having openings in the top and sides thereof, of the clamping member C having companion jaws at opposite sides thereof adapted to engage the rail and top of the beam, the clamping  
10 member D having the rail and beam engaging jaws, and the clamping member F also having rail and beam engaging jaws; together with

the horizontally-disposed wedge-shaped locking-keys E passed transversely through the beam to engage the clamping members D and F and clamp them tightly against the rail, as  
15 herein shown and described.

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

WALTER J. WILSON.

Witnesses:

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JOSEPH GLOVER