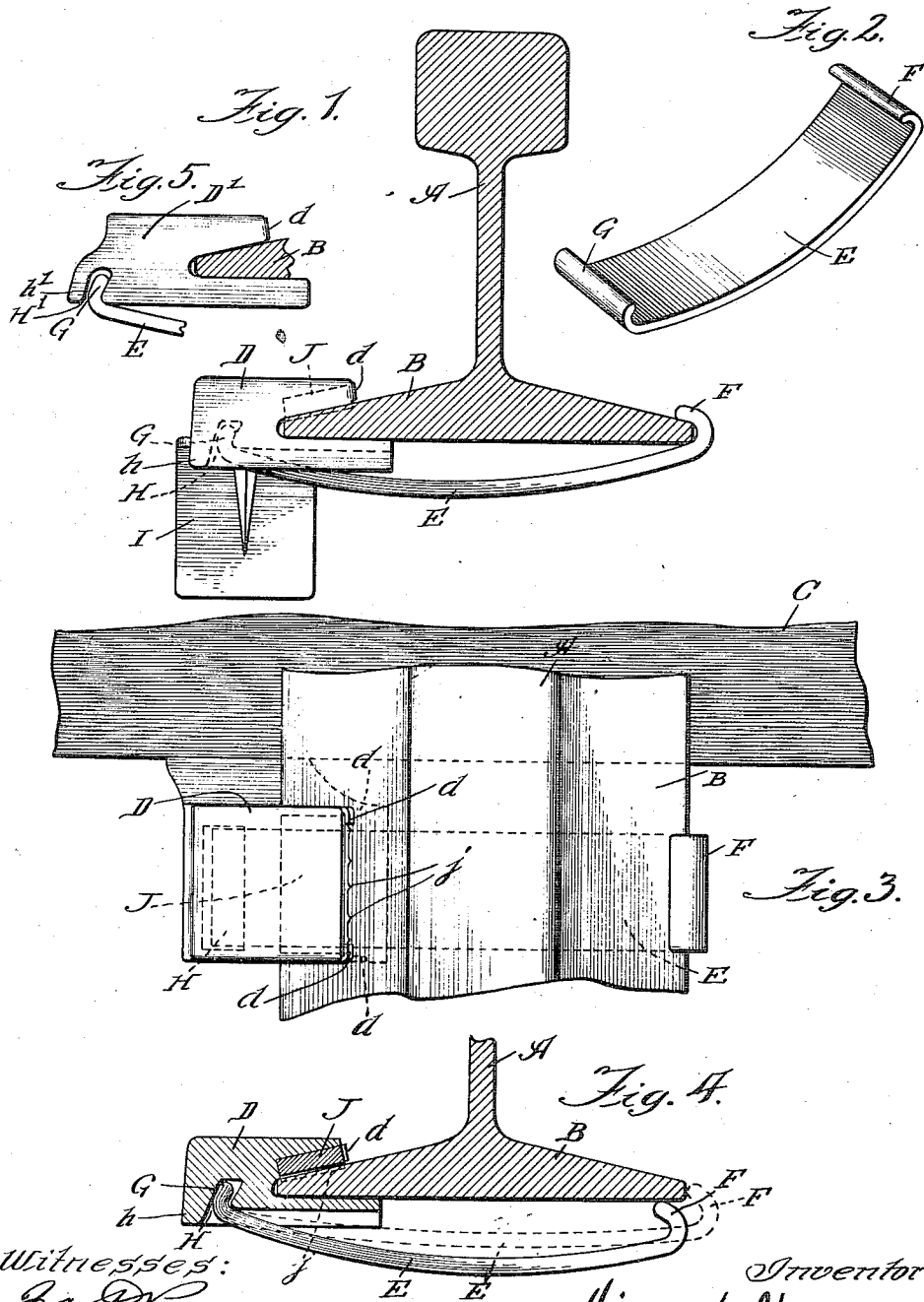


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 DEVICE FOR CHECKING THE CREEP OF RAILWAY RAILS.  
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Patented June 13, 1911.



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# UNITED STATES PATENT OFFICE.

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## DEVICE FOR CHECKING THE CREEP OF RAILWAY-RAILS.

994,795.

Specification of Letters Patent. Patented June 13, 1911.

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*To all whom it may concern:*

Be it known that I, HIRAM H. SPONENBURG, a citizen of the United States, residing at Gurnee, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Devices for Checking the Creep of Railroad-Rails, of which the following is a specification.

My invention relates to devices for checking the tendency of railroad rails to creep longitudinally, such devices being sometimes known as rail stays, anchors, or anti-creepers; and the invention has for its primary object to provide a device for this purpose of new and improved construction in which spring action is employed in securing the device in clamping engagement with the rail.

The invention has for further objects the several novel constructions, arrangements and devices in appliances of the sort mentioned, which will be hereinafter described and claimed.

The invention is illustrated in a preferred embodiment in the accompanying drawings, wherein—

Figure 1 shows the appliance in elevation secured to a rail shown in section; Fig. 2 is a view, in perspective, of the preferred form of spring employed to obtain the clamping action; Fig. 3 is a plan view of the parts shown in Fig. 1; Fig. 4 is an illustrative view, some of the parts being shown in elevation and others in section, demonstrating the method of application of the device to the rail; and Fig. 5 is a detail, in elevation, showing a modified construction of the jaw member.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring to the drawings, A designates a railroad rail of ordinary form, the base of which is designated B.

C designates one of the cross ties on which the rail is laid and against which the appliance of my invention is shown as bearing when in its operative position.

The rail stay of my invention, in the illustrative form shown, consists of a jaw member D which engages one edge of the rail base B; a heavy bowed or curved spring E formed at one end with a hook F and at the other end with a similar hook G, the latter engaging with an undercut notch H in the under surface of the jaw member D; and a

suitable tie abutment shown as consisting of a flange I formed at the front edge of the jaw member D.

While the device is shown as so constructed as to simply bear against one of the ties, it is obvious that it might be permanently secured or anchored thereto.

Instead of abutting against or being secured or anchored to the tie, the device might be made to so engage any other stationary, or relatively stationary, portion of the road bed.

If the jaw member is made of malleable iron or other relatively soft metal it may be desirable to insert in its upper face a hard metal piece such as J shown in the drawings, which is provided on its under surface with the teeth *j* adapted to bite into the rail base and which may be held in position by hammering over upon it the lugs *d* formed at opposite corners of the jaw member. The dotted lines designated *d* in Fig. 3 show the original position of these lugs, their eventual position being shown in the full lines.

In Fig. 5 I have shown a modified form of jaw member. The jaw member D' in this case, instead of being formed with a pocket for the end of the spring, is constructed on its under surface with a preferably undercut channel extending from one side to the other of the jaw, this channel being designated H'.

The method of application of the device to the rail is illustrated particularly in Fig. 4. The jaw D is preferably driven tightly on the rail with a sledge hammer, the teeth *j* of the insert block J embedding themselves in the upper surface of the rail base. The hook G of the spring E is inserted in the pocket or slot in the under surface of the jaw member, the spring extending under the base of the rail. By applying a crowbar against the bottom of the spring the spring may be expanded or straightened out enough to allow the hook F to slip over the edge of the rail base opposite the jaw member. The part of the jaw member designated *h* (or *h'* as the case may be) forms an abutment for the hook G so that when the spring is elongated it has to elongate in the direction of the opposite side of the rail base.

It will be noted that the hook F stands some distance away from the tie C. This is a preferred, although perhaps not an es-

sential feature of the device. It is intended that the device be so constructed and its parts so proportioned that a very strong grip is had on the rail, a grip sufficient to effectually prevent, when the device is abutted against a tie or other stationary portion of the road bed, any creep of the rail. However, by arranging the abutment at one end of the device so that the other stands out of contact with the tie, any tendency of the rail to creep, if such tendency be possible, is self checked by the consequent twisting of the device toward the tie.

It will be readily understood that the principle of my invention might be embodied in various rail stays differing structurally from the form of device which I have chosen for purposes of illustration. For example, while I have shown one end of the spring engaging directly by means of a hook with an edge of the rail base opposite that embraced by the jaw member D, it will be clear to those familiar with this art that this arrangement might be changed without departure from the fundamental idea of my invention. I therefore do not limit myself to the various particulars of construction and arrangement shown and described except so far as such particulars are made limitations on certain of the claims herein.

I am aware that rail stays have been constructed which employ torsional springs for effecting the clamping of the stays on the rail. A spring of the sort herein described, which is flexed along longitudinal lines, makes the device in which it is used more easily applied to the rail than are the devices using torsional springs. A rail stay constructed on the principle of my invention may be secured to the rail by simply flexing or bending the spring with a crowbar or other tool of this sort. I have used the word "bowed" as describing the spring in certain of the claims. It will be understood that this term is used in a broad sense. I do not conceive that it is absolutely necessary to form the spring on the continuous curve shown so long as it is given a form permitting it to expand when the device is applied to the rail and contract so as to grip the device thereon.

I claim:

1. In a device of the character described, the combination of means constituting a rail clamp comprising a spring which is strained along lines longitudinal thereof when the device is in operative position on the rail; and means adapted to engage a stationary portion of the road bed.

2. In a device of the character described, the combination of means constituting a rail clamp comprising a spring which is strained along lines longitudinal thereof when the device is in operative position on the rail; and means constituting a tie abutment, said

tie abutment being at one end of the device and the other end of the device standing away from the tie against which said abutment bears.

3. In a device of the character described, the combination of means constituting a rail clamp comprising a jaw, and a spring which is adapted to engage with said jaw and which is strained along lines longitudinal of said spring when the device is in operative position on the rail; and means adapted to engage a stationary portion of the road bed.

4. In a device of the character described, the combination of means constituting a rail clamp comprising a jaw and a spring adapted to engage said jaw which is strained along lines longitudinal of said spring when the device is in operative position on the rail; and a tie abutment formed on said jaw.

5. In a device of the character described, the combination of means constituting a rail clamp comprising a jaw which engages the rail base at one edge, and a spring adapted to be engaged at one end with said jaw and at the other end with the opposite edge of the rail base and to be strained along longitudinal lines when in such operative position; and means adapted to engage a stationary portion of the road bed.

6. In a device of the character described, the combination of means constituting a rail clamp comprising a bowed spring which is put under a straightening tension when said device is in operative position on the rail; and means adapted to engage a stationary portion of the road bed.

7. In a device of the character described, the combination of means constituting a rail clamp comprising a bowed spring which is put under a straightening tension when said device is in operative position on the rail; and means constituting a tie abutment, said tie abutment being at one end of said device and the other end standing away from the tie against which said abutment bears.

8. In a device of the character described, the combination of means constituting a rail clamp comprising a jaw and a bowed spring adapted to engage at one end with said jaw and being provided at the other end with means whereby it is engaged with the rail base at the side opposite said jaw; and means adapted to engage a stationary portion of the road bed.

9. In a device of the character described, the combination with a jaw formed with a tie abutment, of a bowed spring adapted to be engaged at one end with said jaw and at the other end with the edge of the rail base opposite said jaw.

10. In a device of the character described, the combination with a jaw, of a bowed spring formed with a hook at each end, one of said hooks being adapted to engage with

the jaw, the other with the edge of the rail base opposite said jaw; and means adapted to engage a stationary portion of the road bed.

5 11. In a device of the character described, the combination with a jaw formed on its under side with a notch, of a bowed spring formed at one end with a hook adapted to engage in said notch and provided at the 10 other end with means for engaging the side of the rail base opposite such jaw; said device being formed with means adapted to engage a stationary portion of the road bed.

12. In a device of the character described, 15 the combination of means constituting a rail clamp comprising a jaw and a spring, the spring adapted to engage with said jaw and being provided with means whereby it may be engaged with the rail at the opposite side 20 from said jaw; and means constituting a tie abutment.

13. In a device of the character described, the combination with means constituting a rail clamp comprising a jaw, and a spring

formed at each end with a hook; of means 25 adapted to engage a stationary portion of the road bed.

14. In a device of the character described, the combination with a jaw having a notch on its under surface and formed with a tie 30 abutment, of a spring provided at one end with a hook adapted to engage said notch, and at the other end with a hook adapted to engage the rail base opposite said jaw.

15. In a device of the character described, 35 the combination of means constituting a rail clamp comprising a jaw member and a bowed spring extending under the rail base and having a hook adapted to engage with said jaw member, said jaw member being 40 formed with a part which stands back of said hook for the purpose described; and means adapted to engage a stationary portion of the road bed.

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Witnesses:

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