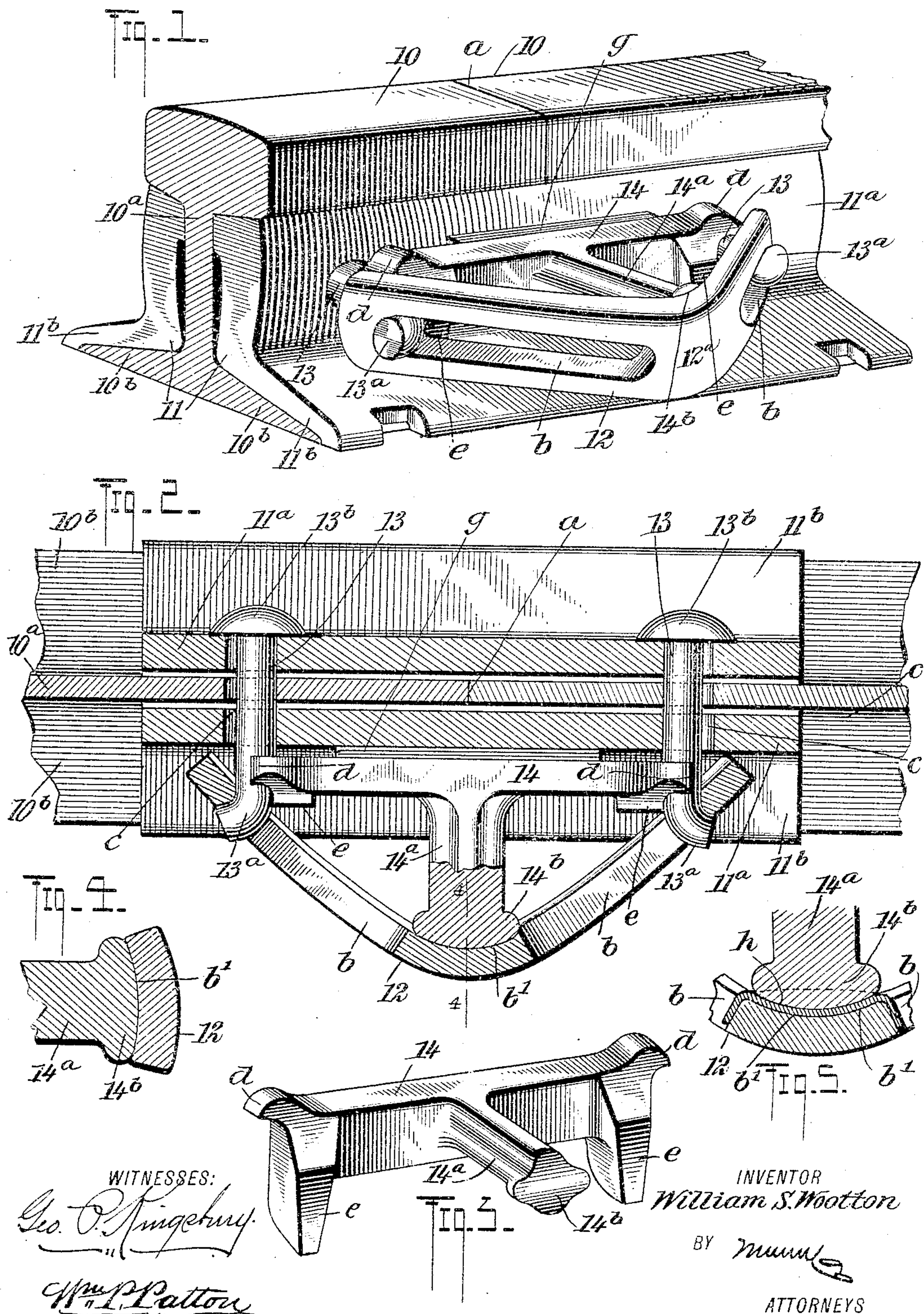


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W. S. WOOTTON.
FISH BAR CLAMP.

APPLICATION FILED JULY 16, 1904.



WITNESSES:
Geo. O. Kinghorn
Wm. J. Patton

INVENTOR
William S. Wootton
BY *Mumford*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM S. WOOTTON, OF ROANOKE, VIRGINIA.

FISH-BAR CLAMP.

SPECIFICATION forming part of Letters Patent No. 778,730, dated December 27, 1904.

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To all whom it may concern:

Be it known that I, WILLIAM SAMUEL WOOTTON, a citizen of the United States, and a resident of Roanoke, in the county of Roanoke and State of Virginia, have invented a new and Improved Fish-Bar Clamp, of which the following is a full, clear, and exact description.

This invention relates to means for securing fish bars or plates oppositely upon the webs of meeting track-rails of a railroad, so as to secure the rails alined and together, and has for its object to provide a novel, simple, and practical device for the indicated purpose that is easily applied and that dispenses with screw-threaded bolts and nuts thereon as means for clamping the fish bars or plates in place on the track-rails.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of two track-rails in part at the joint between them and also of the improved clamping device applied for clamping opposite fish plates or bars upon the track-rails. Fig. 2 is a partly-sectional plan view showing details of the improved clamping device. Fig. 3 is a perspective view of a key-block which is a detail of the invention. Fig. 4 is a fragmentary detail sectional view substantially on the line 4 4 in Fig. 2; and Fig. 5 is a sectional plan view of details, showing a modified construction of the liners employed to take up looseness due to wear of the parts of the clamp.

In the drawings, 10 10 indicate two end portions of T-rails of modern construction that are alined and have contact, as indicated at *a* in Figs. 1 and 2. 11 11 are two fish bars or plates of the angular type, each one consisting of an upright member 11^a and a laterally-projected base member 11^b, that respectively have contact with the web 10^a and base-flanges 10^b of the track-rails at and near their joint, as shown in Figs. 1 and 2.

For the proper securing of the meeting ends

of track-rails in alinement three of the improved securing devices are employed; but as they are alike a description of one and its application will answer for the three, that, it is to be understood, are properly spaced apart and clamp the fish-plates on the track-rails at three adjacent points.

A clamping-bar 12 is a leading feature of the improvement, and as shown consists of a metal bar of suitable dimensions having two slots *b b* formed longitudinally therein at the center of width, each extending from a point near a respective end of the bar to a point sufficiently distant from the longitudinal center of the bar to permit a central bearing portion 12^a to remain unslotted at and near the center of length. The clamping-bar 12 is bowed somewhat, so as to render one side concave and the opposite side convex, and preferably the concavity is both lengthwise and crosswise, as appears in Figs. 2 and 4, producing a cupped formation *b'*, that confers great strength to the central part of the bar, which adapts it to resist bending strain.

Two clamping-bolts 13 are loosely inserted through spaced slotted perforations in one of the fish-plate members 11^a and also pass through opposite openings in the webs of the track-rails 10 near their contacting ends, said bolts each having a hook member 13^a on one end and a head 13^b on the other end. Two spaced longitudinally-trending short slots *c* are formed in the upright member 11^a of the other fish plate or bar, said slots, which are opposite the two bolt-receiving slotted perforations in the webs 10^a of the track-rails 10, permitting the hook members 13^a to be passed therethrough when the clamping-bolts 13 are to be adjusted for service. The hook-shaped ends 13^a of the bolts 13 are projected far enough through the slots *c* in the fish-plate member 11^a when the heads 13^b of the bolts have contact with the outer surface of the other fish-plate member 11^a to permit said hook-shaped ends to pass through the slots in the clamping-bar 12 and have a hooked engagement with the end walls of these slots that are near the ends of the clamping-bar, as is clearly shown in Figs. 1 and 2.

A key-block 14, that is substantially T-

shaped, is provided as a keeper to hold the clamping-bar 12 strained outward or away from the slotted member 11^a of the adjacent fish-plate 11 and also to put pressure upon said fish-plate member, the resulting pull on the bolts 13 serving to hold the two fish-plate members 11^a clamped upon the rail-webs 10^a. The key-block 14 consists of a metal bar that is mainly rectangular in cross-section and at each end is formed with a hook *d*, below which a foot member *e* depends, and at the center of length an arm 14^a projects from the normally outer side of the straight body portion of the key-block. Upon the outer end of the arm 14^a a bearing-head 14^b is formed that is convex on the end surface and adapted to have bearing in the cup-like center *b'* of the clamping-bar 12.

Suitable means are provided for quickly and conveniently drawing upon the clamping-bar 12, so as to permit the insertion of the T-shaped key-block 14 between the adjacent surface of the slotted fish-plate member 11^a and the surface *b'* on the clamping-bar. This implement, which forms the subject-matter of an application filed concurrently herewith, need not be further mentioned than to state that pulling strain is applied upon the inner surface of the clamping-bar at each side of the concave center thereof in a manner which permits the insertion of the key-block in the position shown clearly in Figs. 1 and 2.

When the key-block 14 is applied, it is seated with the lower ends of the foot members *e* bearing upon the base portion of the fish-plate with which said key-block has contact, the transverse bar of the key-block, whereon the hooks *d* and feet *e* are formed, having a bearing upon the upright member 11^a of the fish-plate and the convex face of the head 14^b on the arm 14^a an assured contact within the concavity *b'* in the center of the clamping-bar 12. The length of the transverse bar 14 is such that the ends having the hooks *e* bear upon the bolts 13 near their hooked ends 13^a and keep said hooks engaged with the ends of the slots *b* in the clamping-bar 12.

The sides of the upright members 11^a that bear upon the webs 10^a of the track-rails 10 are somewhat concaved, and when great pressure is applied to draw upon the bolts 13 and simultaneously press upon the slotted member 11^a of the fish-plate that is to be engaged by the key-block 14 the fish-plates will yield and flatten slightly and be forced into close engagement with the rail-webs. Now if the key-block is forcibly inserted into place, as shown in the drawings, causing the hooks *d* to seat upon the bolts 13 near their hooked ends 13^a and the ends of the bar 14 to bear on said bolt, the relaxing of applied pressure will permit the opposed fish-plates to maintain draft strain on the bolts 13 and render the clamping of the fish-plates upon the track-rail perfectly secure, this strain being due to

the slight resilience of the upright members 11^a of the fish-plates, as before mentioned.

Owing to inequality in the relative dimensions of the parts, it is found that in some cases the key-blocks 14 are not of sufficient length to fit tightly in place between the center of the clamping-car 12 and the outer surface of the opposed fish-plate member 11^a, requiring the employment of one or more liners formed of plate metal to compensate for the deficiency in length mentioned. The liners *g*, that are inserted between the head member of the key-block 14 and the fish-plate member 11^a, may be of any suitable number required to fill in and properly lengthen the arm 14^a, so that the key-block may be forcibly inserted into place between the fish-plate and the clamping-bar, as already explained.

If preferred, liners *h* may be employed instead of the flattened liners *g*. The liners *h*, that are somewhat dished, have ears oppositely projected therefrom, which enter the slots *b* in the clamping-bar 12, and thus support the liner or liners *h* in the cupped formation *b'* of the clamping-bar to be engaged by the head 14^b on the arm 14^a of the key-block 14, as is shown in Fig. 5.

In either construction and application of the liners *g* or *h* as explained their slight resilience serves to insure the maintenance of an assured and reliable connection between the fish-plates and track-rails when these parts are subjected to changes in temperature that extends and contracts them. It will also be seen that the employment of the liners *g* or *h* will enable the repair of the railroad-track having the improvement, as wear and any looseness between the parts may be quickly taken up and the clamped connection between the fish-plates and track-rails be rendered perfectly reliable.

Usually the fish-bars that clamp the end portions of track-rails extend a sufficient distance from the joint upon each rail to permit the insertion in suitable perforations in the fish-plates and webs of the track-rails of a plurality of ordinary clamping-bolts that with nuts thereon bind the fish-plates upon the track-rails.

It is to be understood that one or more of the improved fish-bar clamps may be employed with any preferred number of the ordinary bolts and nuts for securing the fish-plates upon the track-rails at their joints.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fish-bar clamp embodying bolts having hook-shaped ends, a clamping-bar having openings therein that receive the hook-shaped ends of the bolts, and a key-block located between the bolts and seating at one end upon the clamping-bar.

2. A fish-bar clamp, embodying bolts, each having a head and a hook-shaped end, a bowed clamping-bar having spaced slots or openings

therein engaged by the hook-shaped ends of the bolts, and a substantially T-shaped key-block, seating on one of a pair of fish-bars and contacting oppositely with the bow portion of the clamping-bar.

3. The combination with track-rails, and similar fish plates or bars lapped upon the ends of the rail-webs near their meeting ends, said plates and webs having spaced bolt-holes therein, of bolts having heads and hook-shaped ends, said ends passing through the bolt-holes when the bolt-heads are seated on one fish plate or bar, a bowed clamping-bar having spaced slots or openings therein, engaged by the hook-shaped ends of the bolts, and a substantially T-shaped key-block, and an arm on said key-block having a convex-faced head seating in a concavity at the center of the clamping-bar.

4. The combination with track-rails, fish plates or bars having upright clamping members, said members and webs of the track-rails which they embrace having alined, and spaced longitudinally-elongated bolt-holes therein, bolts having heads and also provided with hook-shaped ends, said ends passing through the alined bolt-holes, a bowed clamping-bar having spaced longitudinal slots that receive the hook-shaped ends of the bolts, said ends

hooking upon the outer ends of said slots, and an essentially T-shaped key-block, the longer and transverse member of which is provided with depending feet, and an arm formed on said transverse member at its center, said arm at its free end contacting with the clamping-bar at its longitudinal center.

5. In a device of the character described, the bowed clamping-bar having a concavity at its center of length and spaced longitudinal slots therein.

6. In a device of the character described, the key-block having substantially T shape and provided with depending feet at its ends, and an arm projecting from the longer transverse member of the key-bar, said arm having a convex-faced end.

7. In a device of the character described, the liner for lengthening the key-block, comprising a dished metal planchet having opposite ears thereon.

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

WILLIAM S. WOOTTON.

Witnesses:

LEVI WITT,

R. E. BEETON, Jr.