

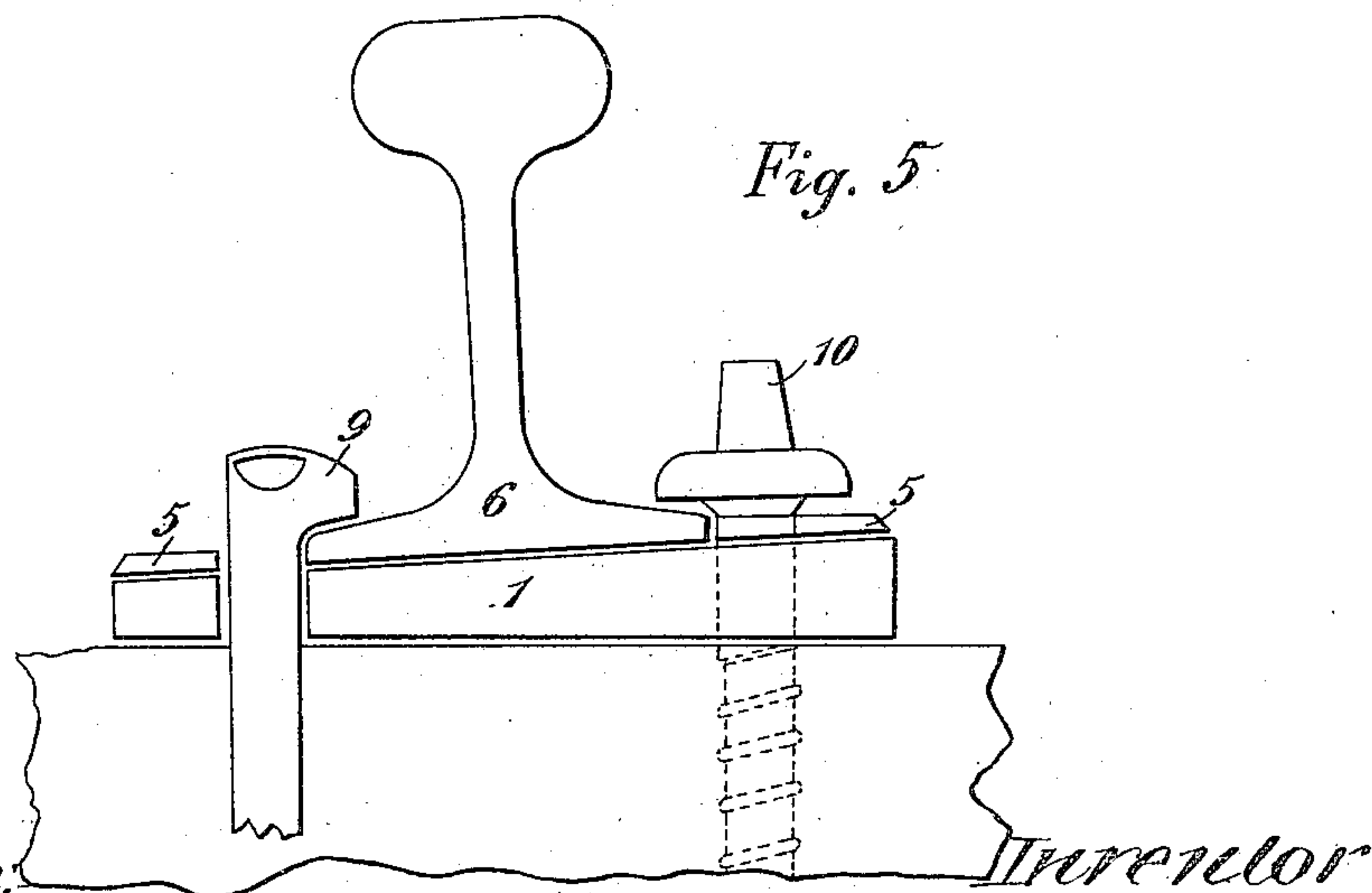
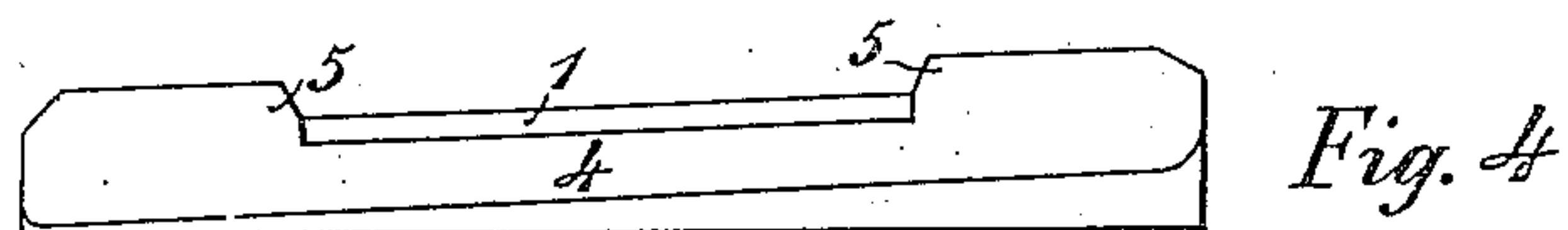
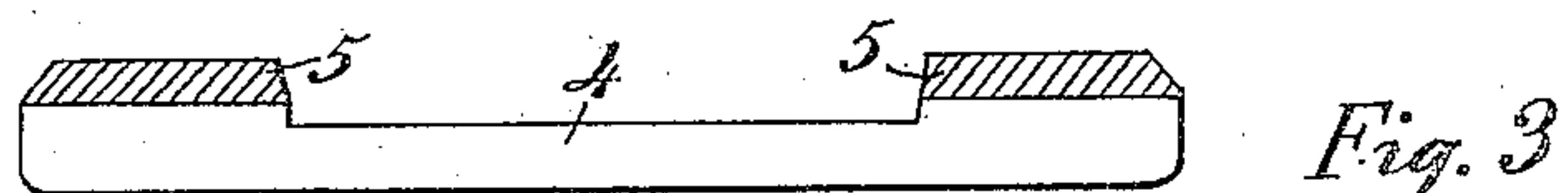
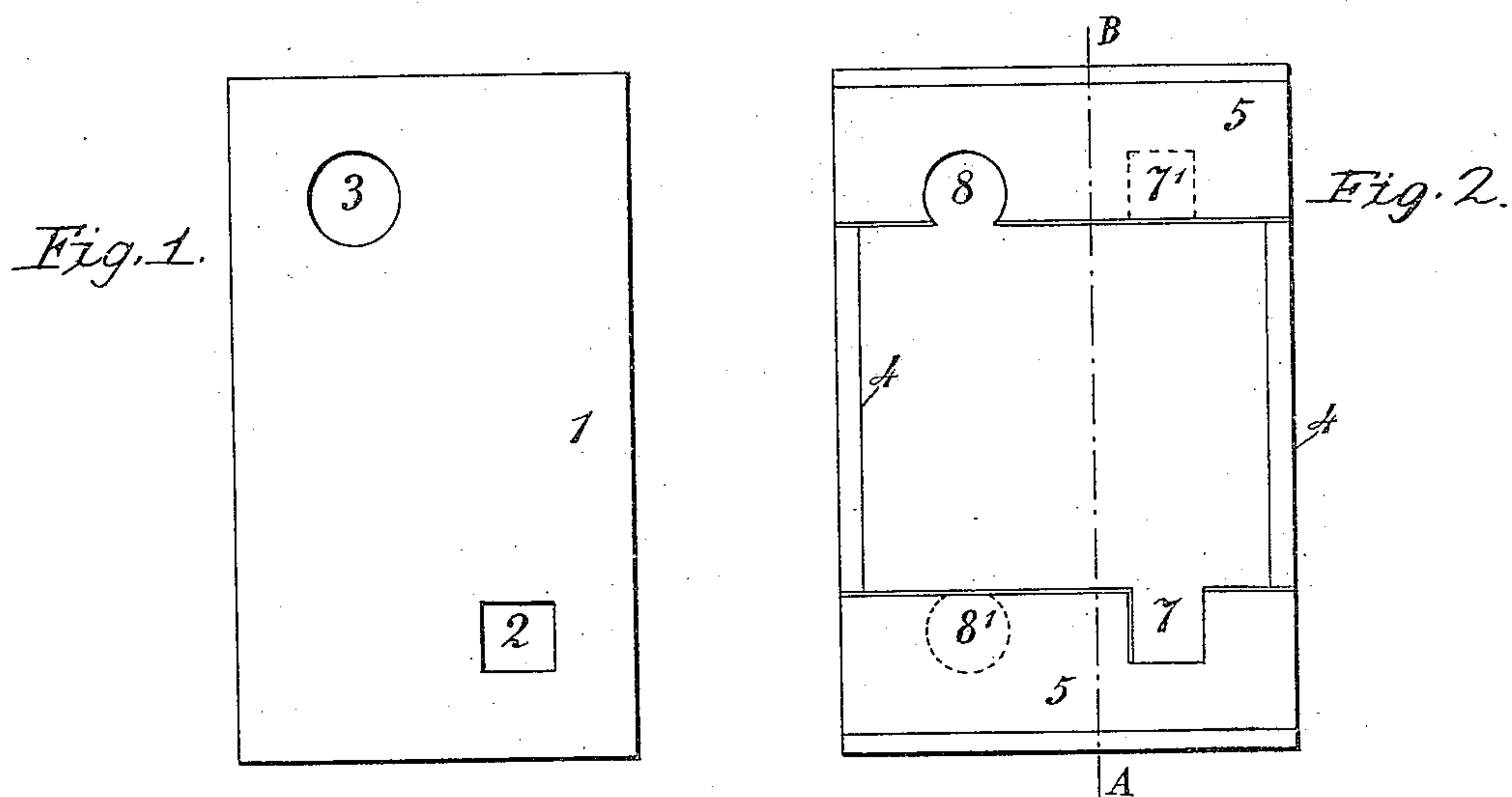
No. 816,774.

PATENTED APR. 3, 1906.

G. BORINI.

IRON FRAMED WOOD PAD FOR TRACK RAILS.

APPLICATION FILED OCT. 26, 1905.



WITNESSES.

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UNITED STATES PATENT OFFICE.

GIUSEPPE BORINI, OF REGGIO EMILIA, ITALY.

IRON-FRAMED WOOD PAD FOR TRACK-RAILS.

No. 816,774.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed October 26, 1905. Serial No. 284,508.

To all whom it may concern:

Be it known that I, GIUSEPPE BORINI, manager of the Ferrovie di Reggio Emilia, a subject of the King of Italy, residing at Reggio Emilia, in the Kingdom of Italy, have invented certain new and useful Improvements in Iron-Framed Wood Pads for Track-Rails, (for which I have obtained a patent in Italy, No. 205,158, dated April 3, 1905,) of which the following is a specification.

This invention relates to an iron-framed wood pad designed to be interposed between track-rails and sleeper where Vignolles rails on timber sleepers are used, the object of the wood pad being to give the rail-foot an elastic support, avoiding contact with metallic surfaces and also with the material of the sleeper, thus preventing wear of the latter, and the object of the iron frame being to oppose transverse pressures and thoroughly relieve the wood of the pad, which would be unable to stand them.

A modification of my novel wood pad for track-rails has been shown as a mere illustrative example in the accompanying drawings, wherein—

Figure 1 is a plan or upper view of the wood pad; Fig. 2, a plan view of the iron frame; Fig. 3, a cross-section on line A B of Fig. 2; Fig. 4, a sectional end view of pad with frame; and Fig. 5, a general section of rail, sleeper, and pad in place.

In the said figures, 1 is the pad, comprising a wood plate of rectangular shape in plan, Fig. 1, and trapezoidal in cross-section, Figs. 4 and 5, with the usual slope of one-twentieth of the upper face and provided with holes 2 and 3 to receive hooks or bolts. The wood of the pad may be of any suitable quality, beech being preferred for Italy, being of uniform resistance and elasticity, very durable, not subject to splitting, standing high compression, and resisting impacts or shocks.

The metallic frame is suitably of cast iron or steel, made of one piece, comprising two vertical side pieces 4 in transverse direction to the track and two horizontal transverse pieces 5 in longitudinal direction of the track. The frame 4 5 is superposed to the wood plate 1, so as to embrace its edges and leave a space for the rail-foot 6. The horizontal frame-pieces 5 have recesses 7 and 8 corresponding to holes 2 and 3 of plate 1 and through which are to pass hooks and bolts 9 10, Fig. 5.

A number of frames will be provided with

the recesses 7 and 8 in reversed arrangement, as shown in dotted lines at 7' and 8' in Fig. 2, in order to be substituted for the ordinary type when the holes of the latter or of the timber of the sleepers are worn out. It is obvious that the same effect may be obtained by simply unscrewing and removing an ordinary frame and then replacing it reversedly onto the pad and sleeper, so that recesses 7 and 8 are placed on unworn parts of pad and sleeper, capable to stand drilling of fresh holes.

In the above-described device the wood plate acts only as a pad for the rail-foot and is designed to stand no other effort than the compression due to the weight of the cars.

The thickness of the wood plate 1 and the side pieces 4 of the frame are adjusted so that the rail-foot has no contact with the said side pieces 4, but only with the cross-pieces 5, acting as heels. The frame is so constructed as to oppose the necessary resistance to the tearing effort due to the centrifugal force of the cars running on curved tracks.

The advantages of iron-framed wood pads as described on the usual iron pads are the following: Owing to the flexibility of the wood plate, the supporting-surface of the sleeper is increased and maintained, while iron pads wear the timber of the sleeper. The track-gage is maintained and improved owing to the greater rigidity of attachment between sleeper and rail. Using wood pads impregnated with antiseptic substances the stem of the hooks or bolts is lubricated with, and thus preserved by, the oily antiseptic liquid squeezed out from the impregnated pad by the rail-foot under compression. By the use of my new rail-pad wearing of sleepers at the point of attachment with the rails is greatly diminished, as the direct action of the rail is received by the pad acting as a bearing and preserving the sleeper not only from mechanical wear, but also from chemical alteration, the iron not being in direct contact with the sleeper and the contact-surface of the sleeper being saturated with the antiseptic liquid squeezed out from the wood pad by the rail under compression. Furthermore, the stability of the attachment of the rails to the sleepers is greatly improved by my new iron-framed wood pads as compared with iron pads, as the timber of the sleeper in direct contact with metal plates is rapidly worn out, so as to loosen the connections and produce elastic play, flexion, and deformation of

rails under the weight of passing trains, while
with my new iron-framed wood pad the at-
tachment becomes much more rigid, every
point of the plate being perfectly fitted onto
5 the sleeper, so as to form one piece, besides of
the rail-foot adhering more closely to a wood
surface than to a metallic one. Owing to the
elasticity of the plate, the action of compres-
sion on the sleeper is less obnoxious.

10 Having now fully described my said inven-
tion and the manner in which the same is to
be performed, what I claim, and desire to se-
cure by Letters Patent, is—

15 In an iron-framed wood pad for track-rails,
a wood plate on which the rail-foot is directly
supported, and a metallic frame superposed
to the wood plate leaving an upper free sur-

face designed to be in direct contact with the
rail-foot, the said frame embracing the block
and located above the lower face thereof and 20
having side pieces out of contact with the
foot of the rail which is kept elevated by the
thickness of the wood plate, while the two
horizontal cross-pieces of the frame act as
shoes or heels to receive the lateral pull of 25
the rail, and have holes on their edge for the
passage of hooks and bolts.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

GIUSEPPE BORINI.

Witnesses:

H. P. SMITH,
M. H. DRAGS