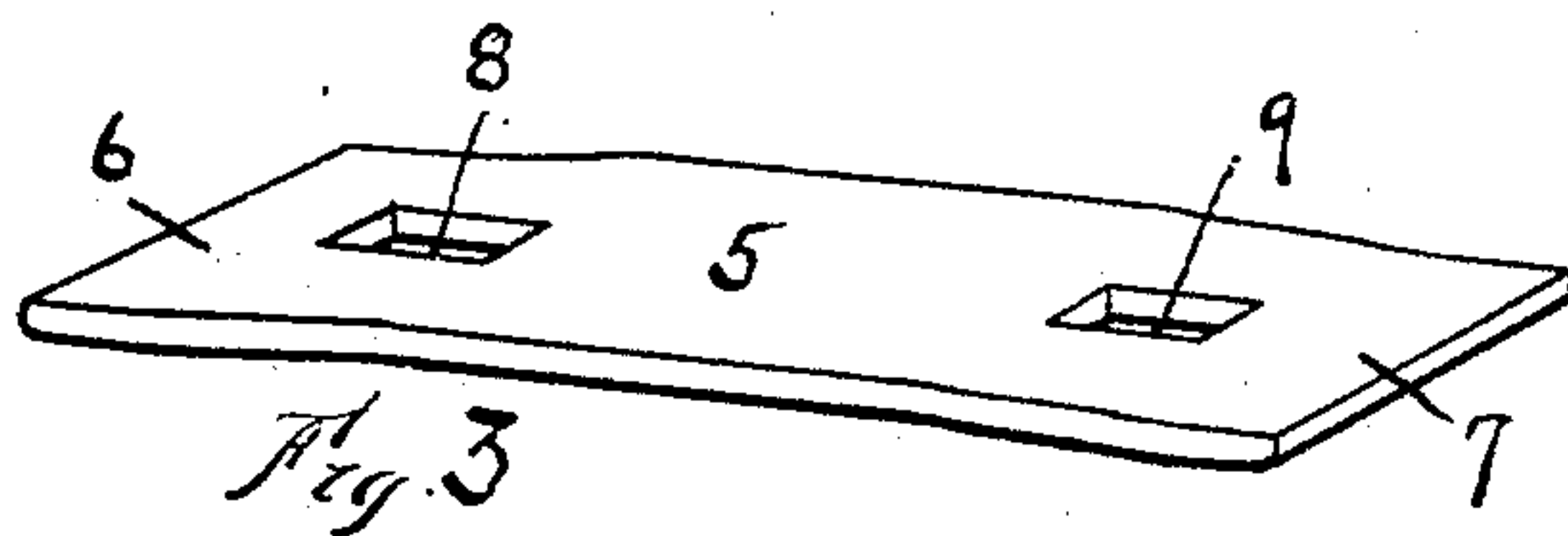
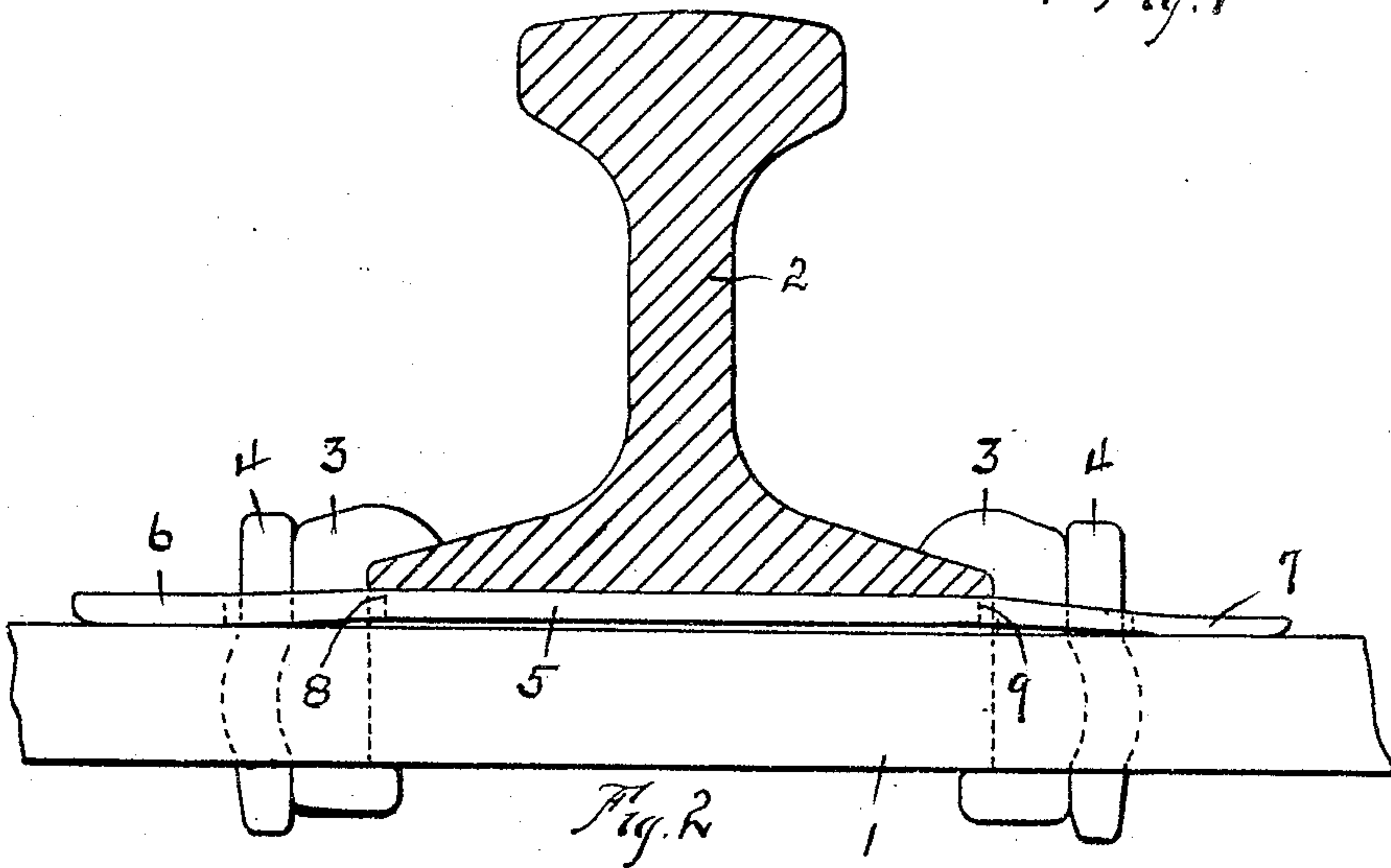
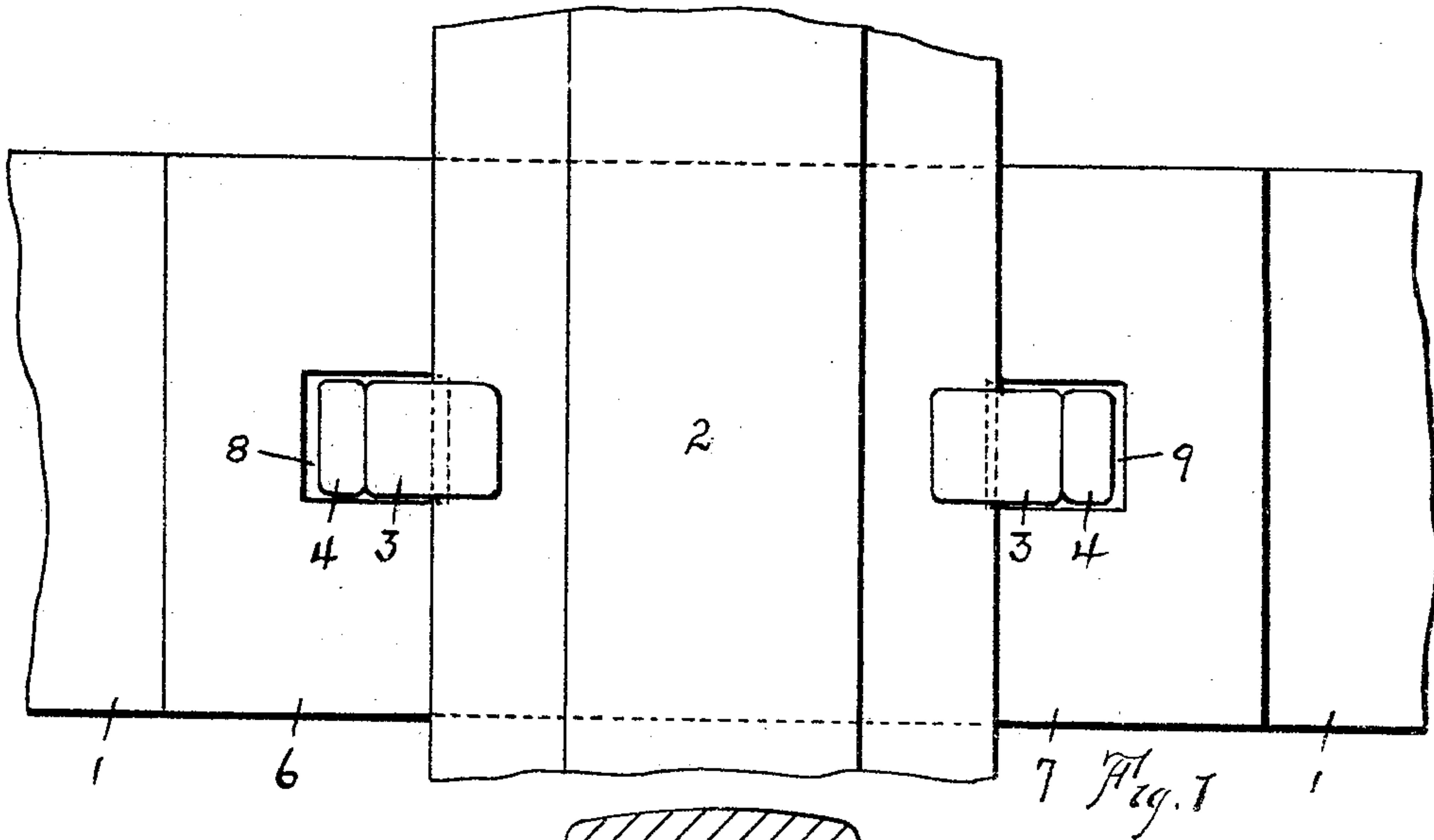


No. 770,939.

PATENTED SEPT. 27, 1904.

G. W. SMITH.
RAILWAY RAIL SPRING.
APPLICATION FILED MAR. 14, 1904

NO MODEL.



WITNESSES

H. W. Dawley
C. B. Butler

INVENTOR

GEORGE W. SMITH

BY *W. T. Miller*
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE W. SMITH, OF BUFFALO, NEW YORK.

RAILWAY-RAIL SPRING.

SPECIFICATION forming part of Letters Patent No. 770,939, dated September 27, 1904.

Application filed March 14, 1904. Serial No. 197,943. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMITH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Railway-Rail Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention is especially designed for application to railway-tracks where solid-metal cross-ties are employed. In the use of cross-ties of this character if the rails are secured directly to the metal ties by any suitable fastening device a construction is involved which is absolutely unyielding in its nature. In other words, the natural elasticity of wood cross-ties is absent, and there is therefore nothing to relieve the destructive pounding effect of heavy loads in transit along the rails.

The object of my invention is to relieve the unyielding feature which naturally obtains in the employment of solid-metal ties, to which the rails are directly secured; and to that end it consists of certain details of construction, all of which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a fragmental portion of a rail and tie, showing the application of my invention. Fig. 2 is a side elevation of Fig. 1, and Fig. 3 is a detached detail in perspective of my improved spring.

Referring to the drawings, 1 is a metal cross-tie of the proper dimensions, and 2 is the railway-rail, which is secured to the tie by any suitable fastener, the form shown in the drawings consisting of a clamp 3 and wedge 4, passing through an aperture in the tie, all being of a particular construction which forms the subject-matter of a separate application.

My improved spring, which is interposed between the rail 2 and tie 1, consists, preferably, of a flat central raised portion 5, upon which the rail 2 has continuous resting contact across its entire width, as clearly shown

in Fig. 2. The normal distance of this raised portion 5 from the upper surface of the tie 1 is in practice from one-eighth to one sixteenth of an inch.

6 and 7 are the inclined supporting ends of my improved spring. They project beyond the sides of the rail and are in resting contact with the upper surface of the tie.

8 and 9 are rectangular openings in the inclined supporting ends 6 and 7 for the passage of the rail-fastener and are of sufficient length to allow for the free and unobstructed play of the inclined ends as they move in and out under the action of the spring.

The supporting end 7 (see Fig. 3) is shown as being made somewhat thinner than the opposite end 6 and should always be placed on the inside of the rail. The reason for this is that the pressure of the load upon the rail is greater on the outer side of the same. Therefore by weakening the supporting power of the inner inclined end of the spring the downward pressure of the rail upon the spring is evenly distributed across the width of the rail, thus preserving the upright position of the rail under pressure.

It will be seen from the above description that the presence of my improved spring between the meeting faces of the rail and metal ties restores to the track the necessary amount of elasticity which is lost by the substitution of metal ties for those of wood.

I claim—

1. The combination with a railway-rail and a metal tie, of a metal spring interposed between the meeting faces of the rail and of the tie, such spring having a flat central raised portion, upon which the rail has continuous resting contact across its entire width, and inclined supporting ends projecting beyond the sides of the rail and in contact with the metal tie, the inner projecting end having less supporting power than the opposite outer supporting end as and for the purpose stated.

2. The combination with a railway-rail and a metal tie, of a metal spring interposed between the meeting faces of the rail and of the tie, such spring having a flat central raised portion, upon which the rail has continuous resting contact across its entire width, inclined

supporting ends projecting beyond the sides
of the rail and in contact with the metal tie,
the inner supporting end having less support-
ing power than the opposite outer supporting
5 end, for the purpose stated, and openings in
the inclined supporting ends for the passage
of the rail-fastener.

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

GEORGE W. SMITH.

Witnesses:

W. T. MILLER,

C. B. BUTLER.