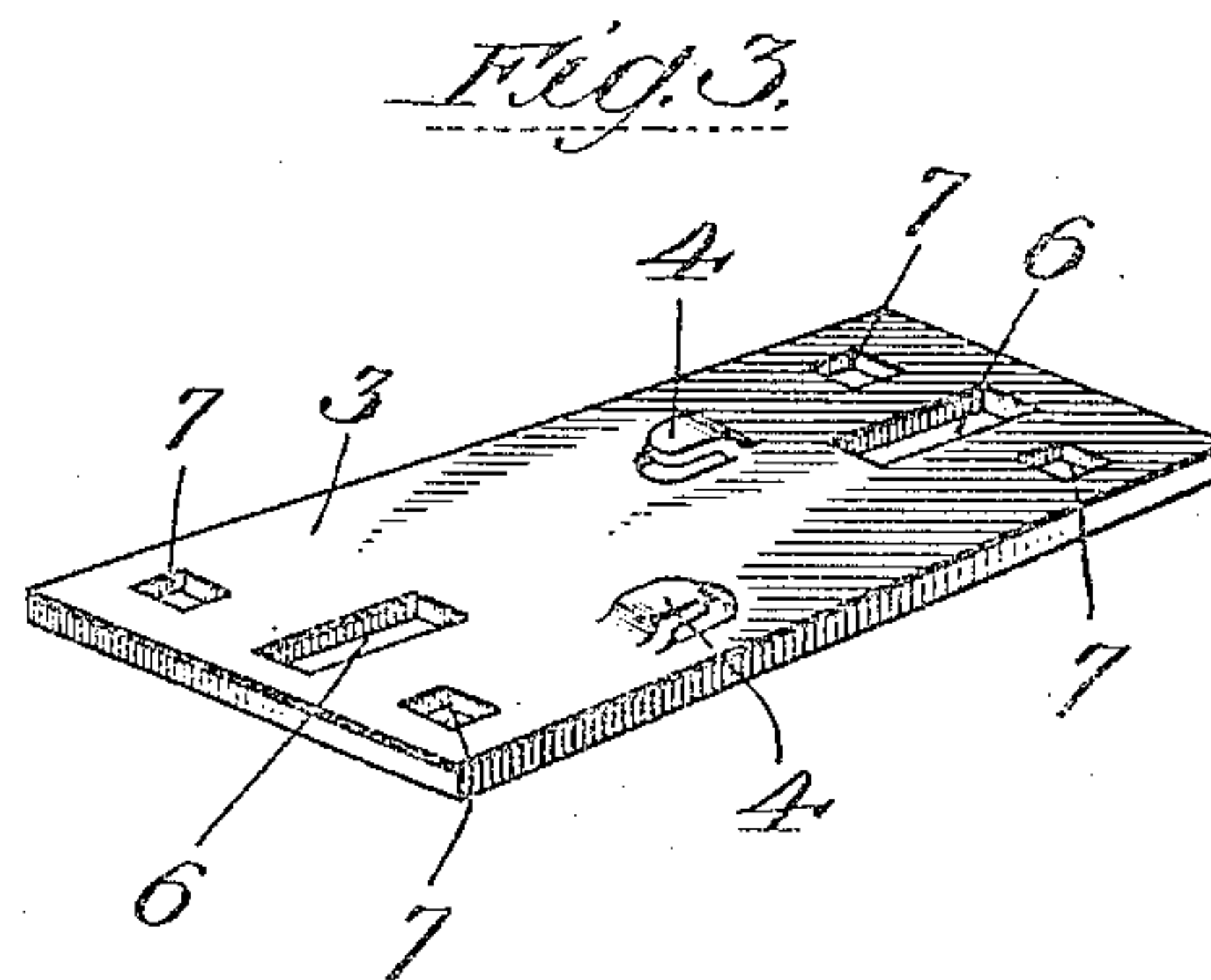
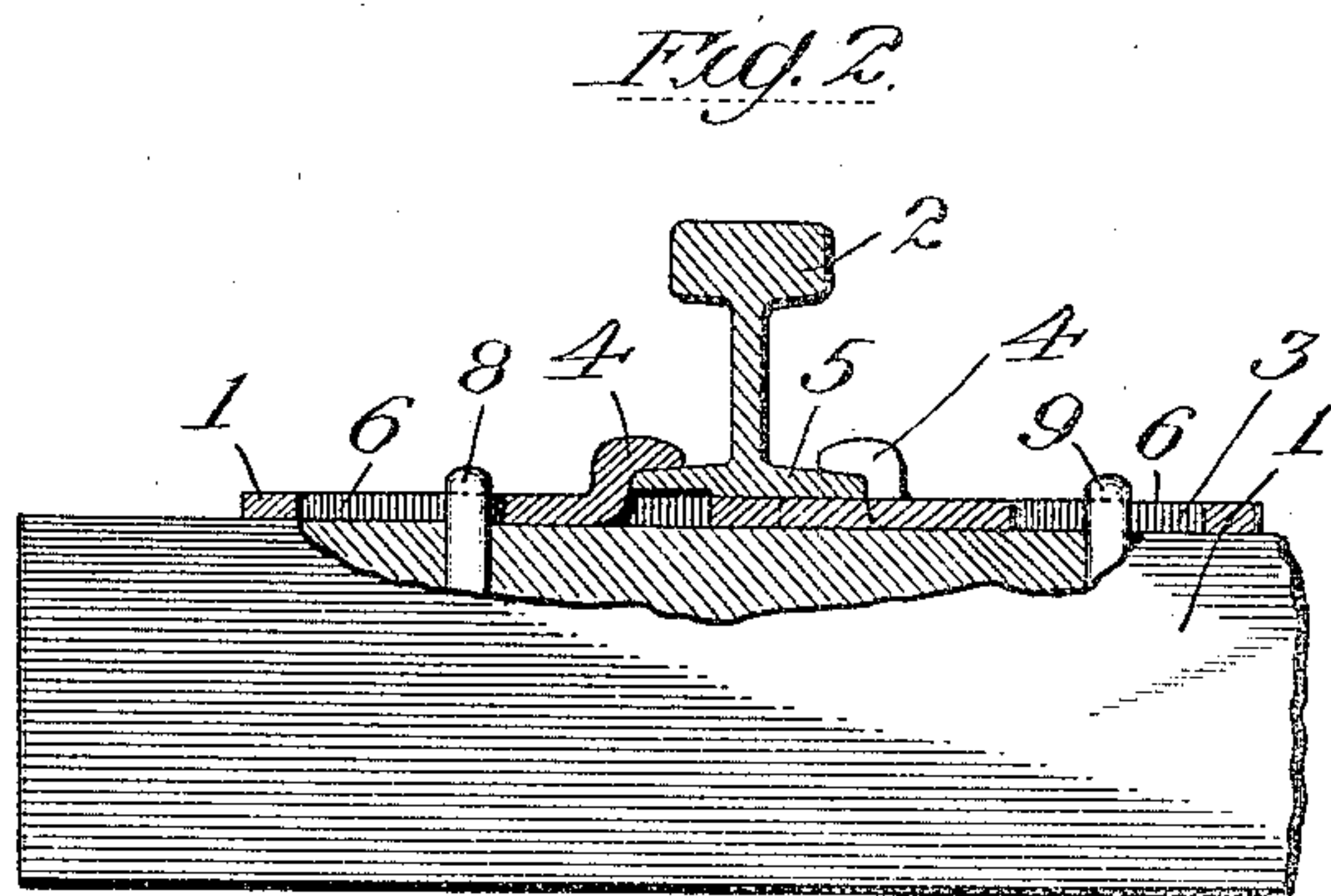
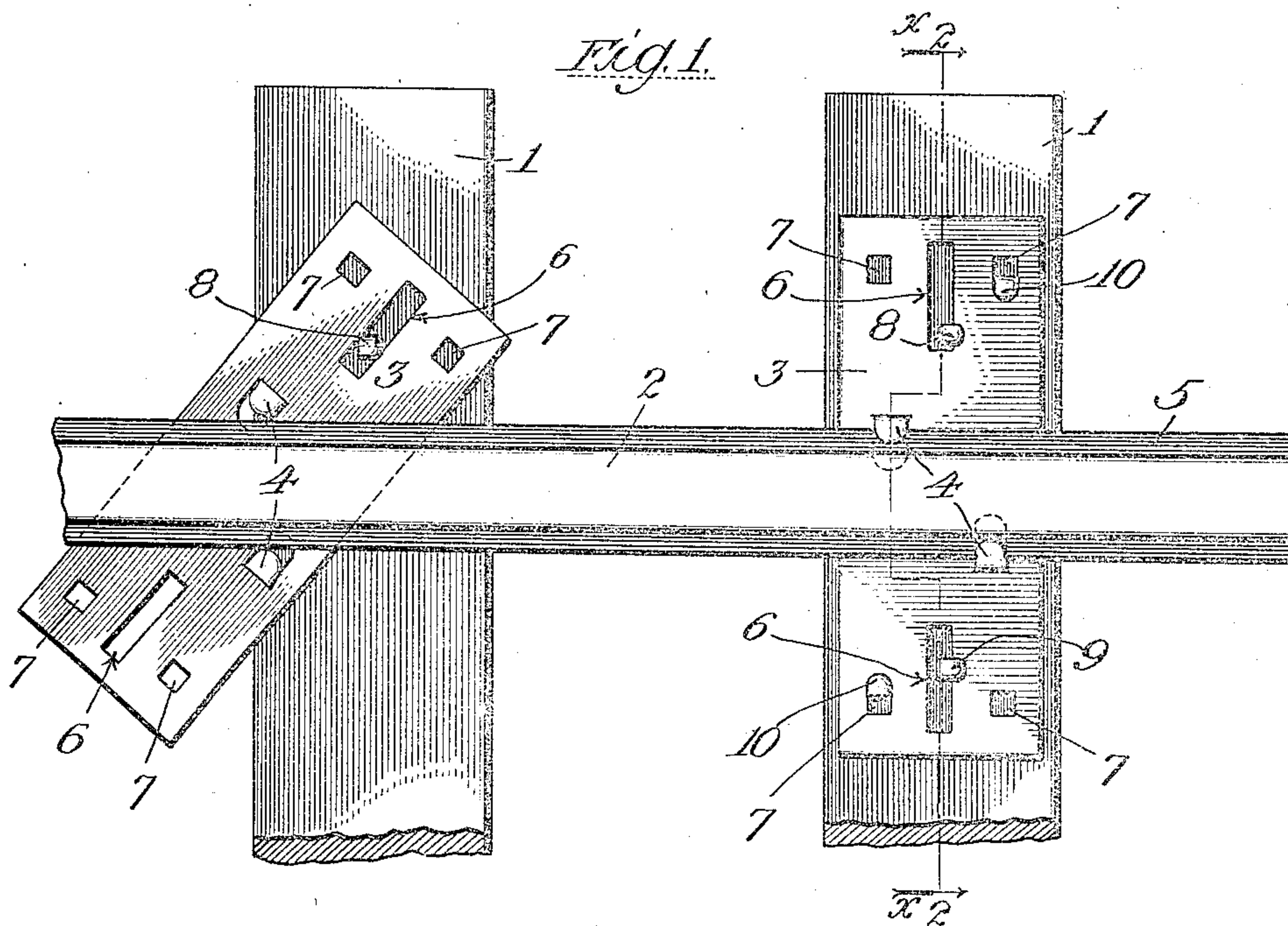


RAIL FASTENING.

898,611.

Patented Sept. 15, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER L. VAIL, JR., OF PANTANO, ARIZONA TERRITORY.

RAIL-FASTENING.

No. 898,611.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed June 25, 1907. Serial No. 330,656.

To all whom it may concern:

Be it known that I, WALTER L. VAIL, Jr., a citizen of the United States, residing at Pantano, in the county of Pima and Territory of Arizona, have invented a new and useful Rail-Fastening, of which the following is a specification.

This invention relates to means for fastening rails to ties, and the objects of the invention are to provide a fastening which is of simple and economical construction and by means of which rails may be securely fastened to the ties.

A further object is to facilitate the laying of the rails particularly facilitating in securing the alinement and gage.

Other objects and advantages will be brought out in the following description.

The accompanying drawings illustrate the invention, and referring thereto:—Figure 1 is a plan view showing a portion of two adjacent ties and a portion of the rail, showing the rail as held in place on the tie at the right by the device, the fastening device on the other tie being shown in a position preliminary to its final setting. Fig. 2 is a section on line x^2-x^2 Fig. 1. Fig. 3 is a perspective view of the fastening plate.

1 designates the ties and 2 designates the rail.

3 designates the fastening plate which is preferably formed of a single piece of sheet metal having two upturned lugs 4 staggered with respect to each other and spaced apart diagonally a sufficient distance to receive the lower flange 5 of the rail. The plate 3 is provided with two elongated slots 6 near each end thereof, and is also provided with several spike holes 7 which may be arranged, for example, with one spike hole near each corner of the plate. The slots 6 are closed at their ends and are located on a line intermediate the lugs 4 so that the plates are perfectly interchangeable and reversible and, if desired, one or both of the spikes through the slots may be located at the inner and outer ends thereof, respectively, so as to assist by engaging with said ends in preventing endwise movement of the plate in the direction of the greatest strain, as, for instance, toward the outside of a curve.

The plates 3 rest upon the top of the ties and are first laid at an angle to the tie as shown at the left in Fig. 1 to enable the flange 5 of the rail to pass down between the lugs 4 so that the rail rests flat upon the

plates. The plates may be laid on the ties in this position before the rail is laid down, or the rail may be laid down upon the ties and then the plates may be slipped under the rail by prying up the rail slightly above the ties. A spike 8 is driven into the tie through one of the slots 6 as shown at the left in Fig. 1, the spike being at an intermediate point of the slot and not being driven completely home so that the plate can be rocked on the spike 8 as a fulcrum; then the plate is swung around so that it lies parallel with the tie and at right angles to the rail as in the position shown at the right in Fig. 1, in which position the lugs 4 tightly clasp the lower flange 5 of the rail, as clearly shown in Figs. 1 and 2, thus holding the rail securely to the plate 3. Then a spike 9 is driven through the other slot 6, but not driven completely home so that the plate is slidable with respect to spikes 8 and 9 along the upper face of the tie. Then the rail may be brought into the proper alinement and position by sliding the plate 3 in either direction as required, the length of the slots being sufficient to permit of the required amount of adjustment. After this adjustment has been secured, both spikes 8 and 9 may be driven home to set the plate 3 in the exact position, after which, if desired, other spikes 10 may be driven into the tie through holes 7 to anchor the plate 3 in position against any possible creeping. By providing four spike holes, as shown, it is possible to drive the spikes into the tie out of line to prevent splitting the tie or to avoid a soft spot in the tie. An important point to be noted is that when the rail is thus secured to the tie, all the spikes which are used in fastening the plate to the tie are effective against side movement or spreading of the rail in either direction, whereas with the ordinary form of fastening only one half that number of spikes exercise that function, the spike or spikes on one side of the rail preventing the rail from moving toward those spikes only, but not preventing the rail from moving away from those spikes, and the spike or spikes on the other side of the rail acting in a similar way to prevent the rail from moving toward them but not preventing the rail from moving toward the first named spikes. In the present device, however, it will be seen that if there is a tendency of the rail to move sidewise in one direction, one or the other of the integral lugs 4 will positively

prevent movement of the rail sidewise on the plate, and that the plate is prevented from moving on the tie by all of the spikes which secure it to the tie, and thus side spreading of the rail is opposed by twice the resistance of the ordinary spike fastening. The plates being of sheet metal may be formed with a die expeditiously and economically.

10 What I claim is:—

A rail fastening comprising a plate formed from an elongated sheet of metal; provided with perforations and a slot at each end and upturned lugs in its intermediate portion to

receive and retain the flange of the rail, the lugs being staggered to permit of the entrance of the flange when the plate is at less than a right angle to the rail, and the slots being closed at their ends and located on a line intermediate said lugs. 15 20

In testimony whereof, I have hereunto set my hand at Los Angeles California, this 19th day of June 1907.

WALTER L. VAIL, JR.

In presence of—

GEORGE T. HACKLEY,
FRANK L. A. GRAHAM.