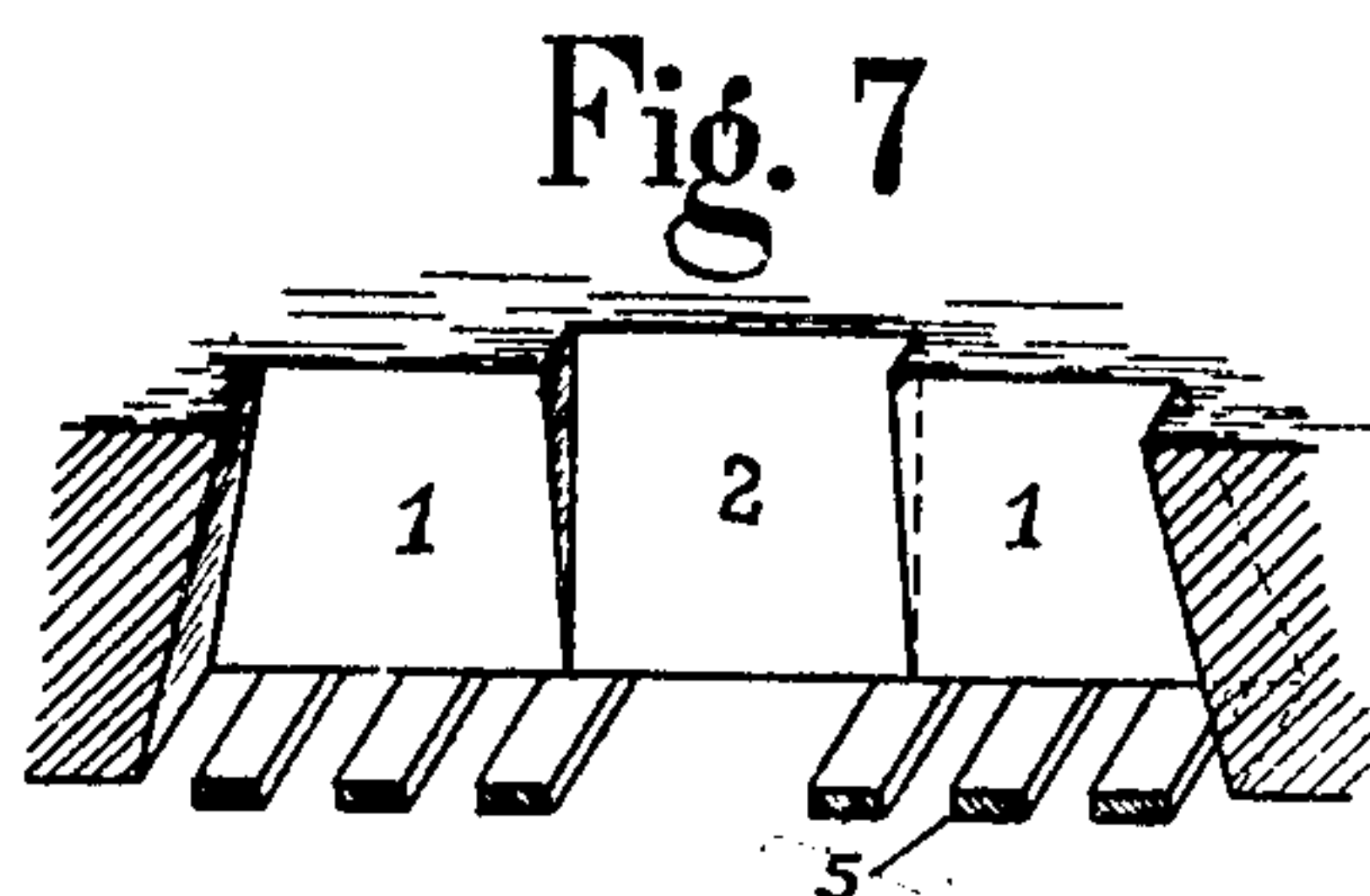
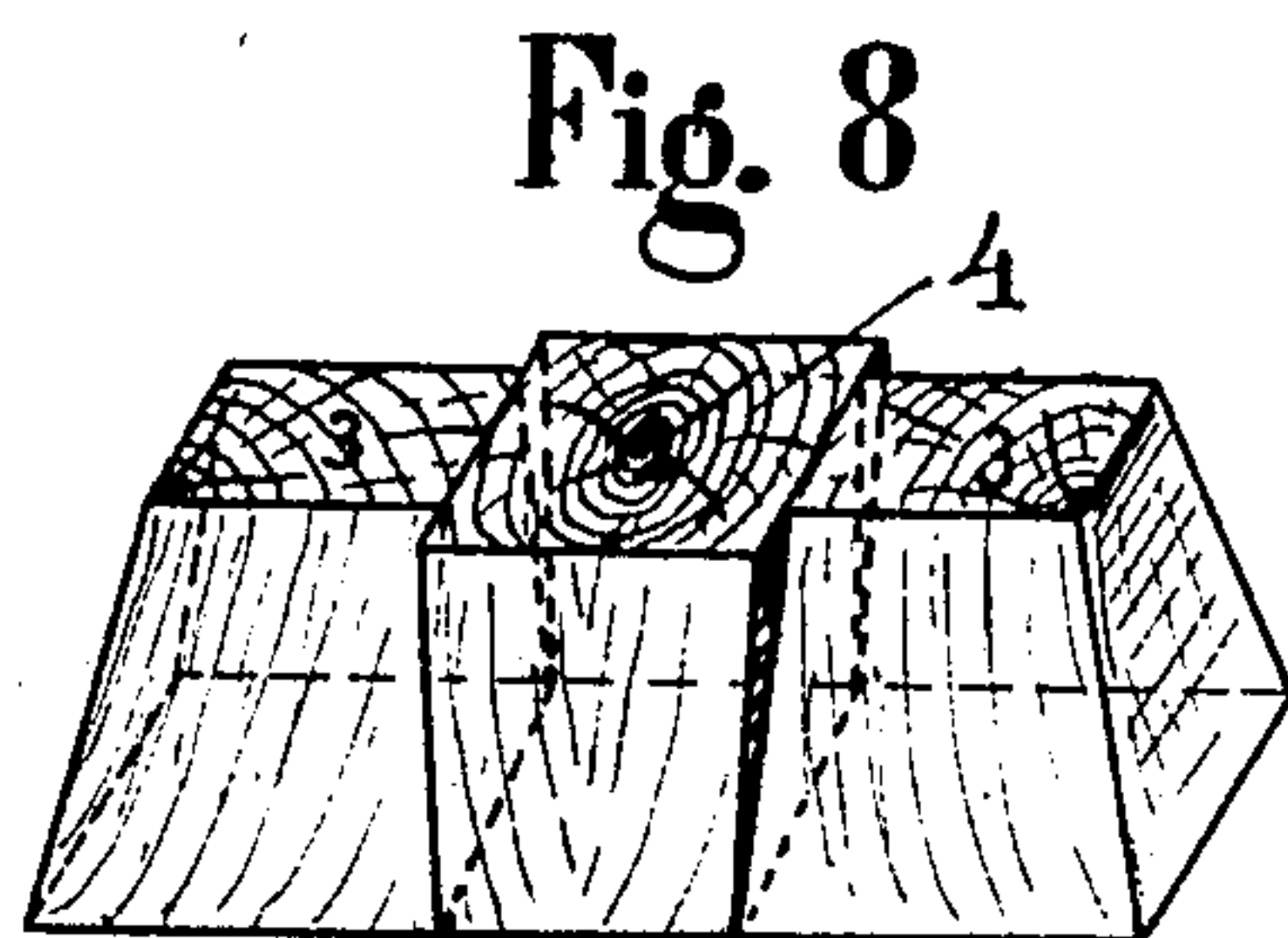
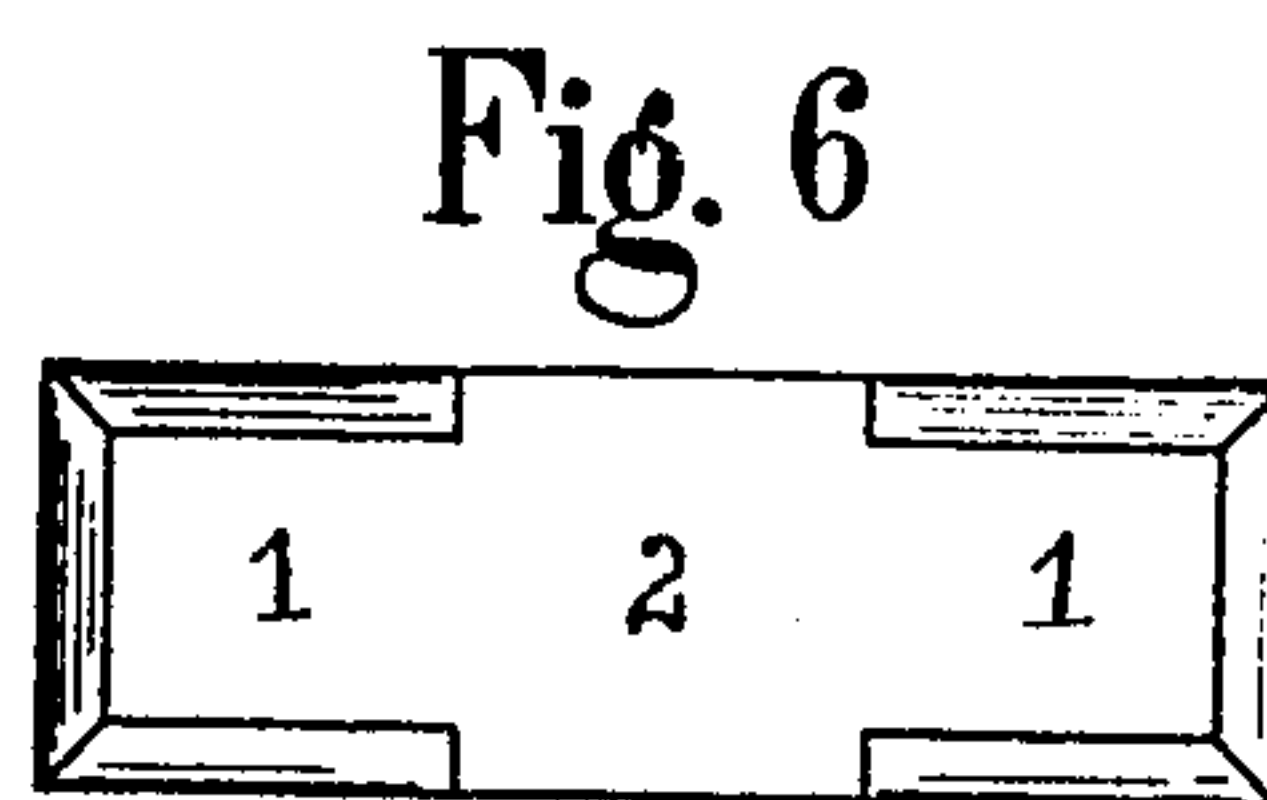
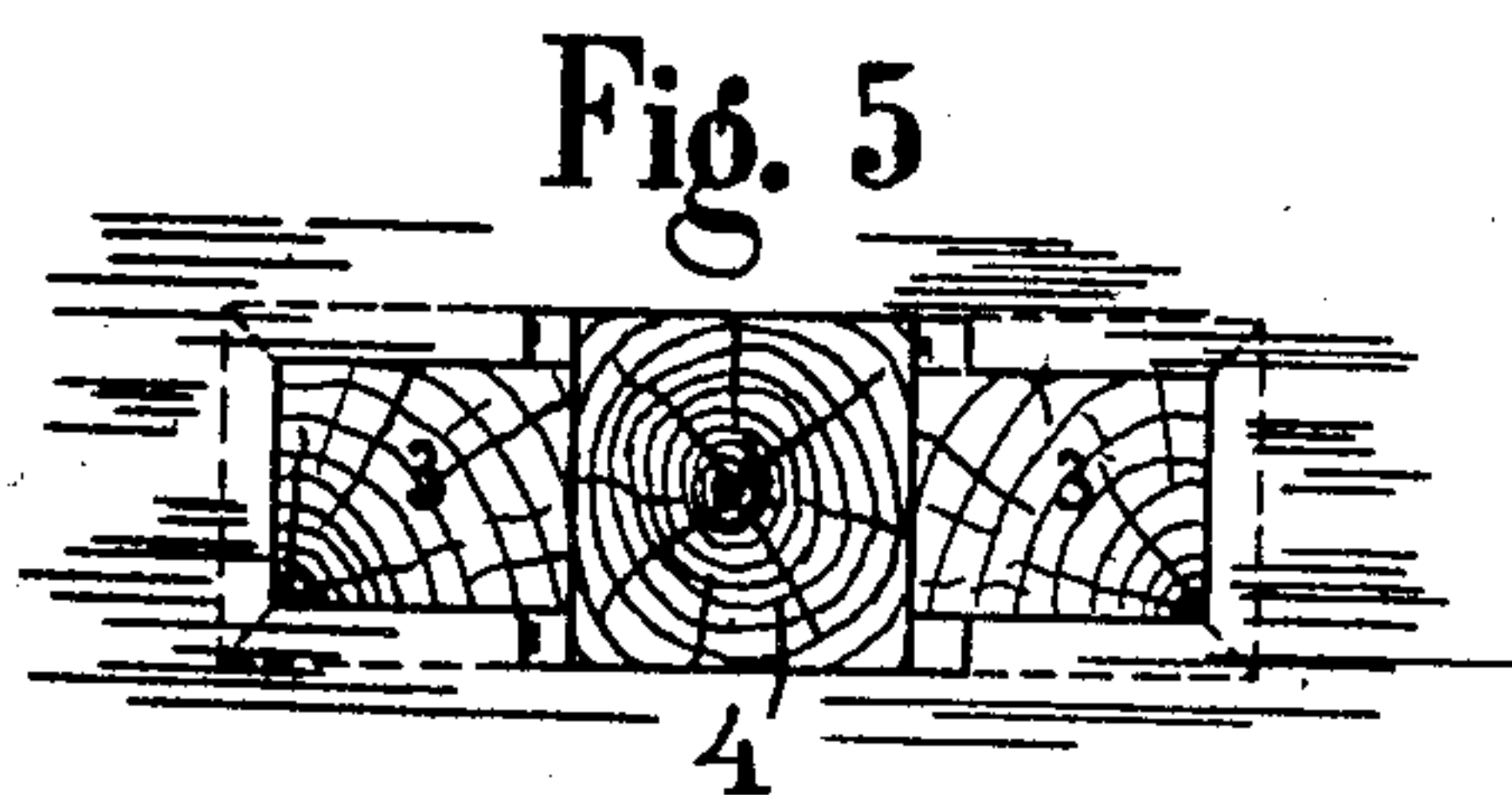
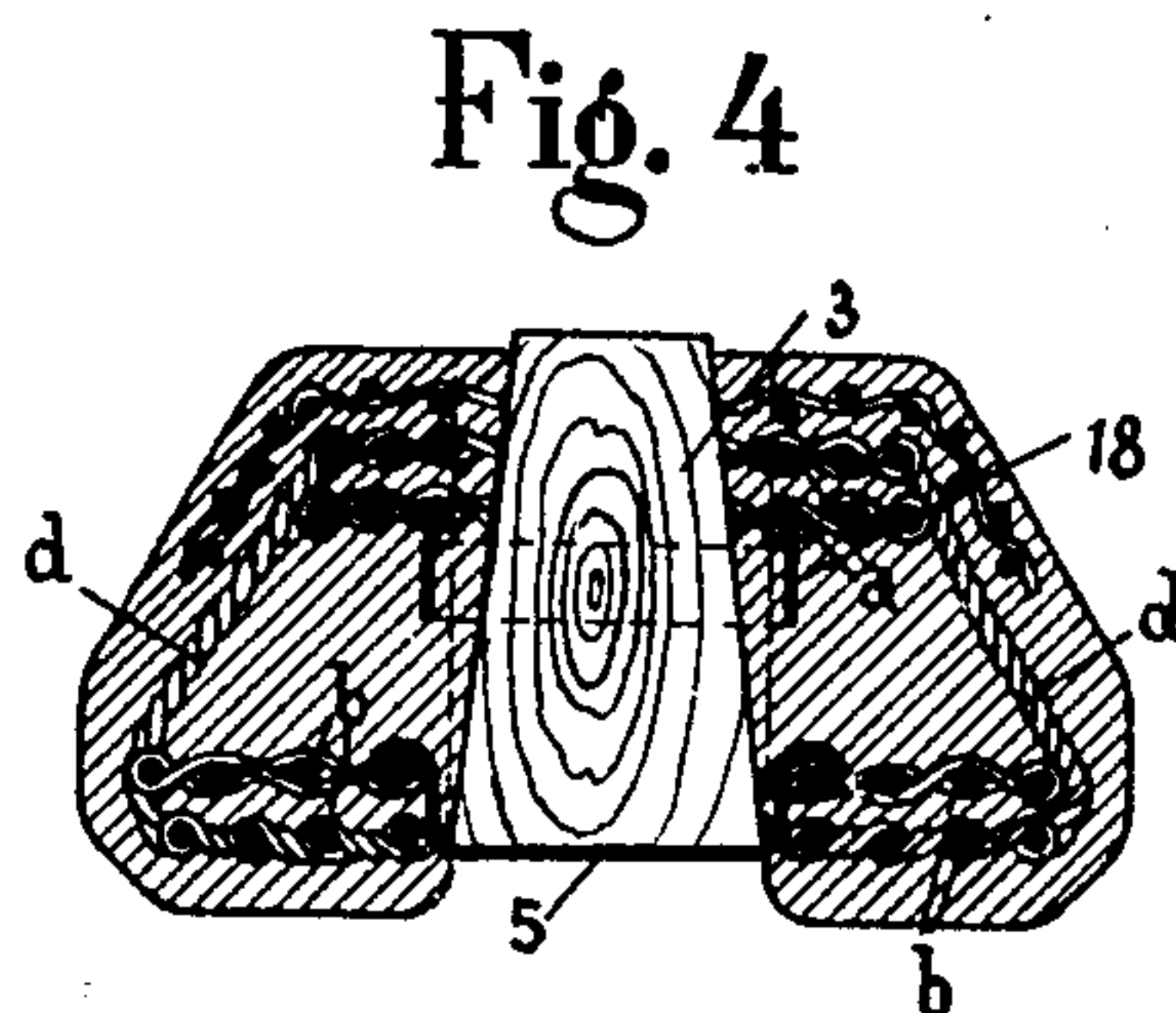
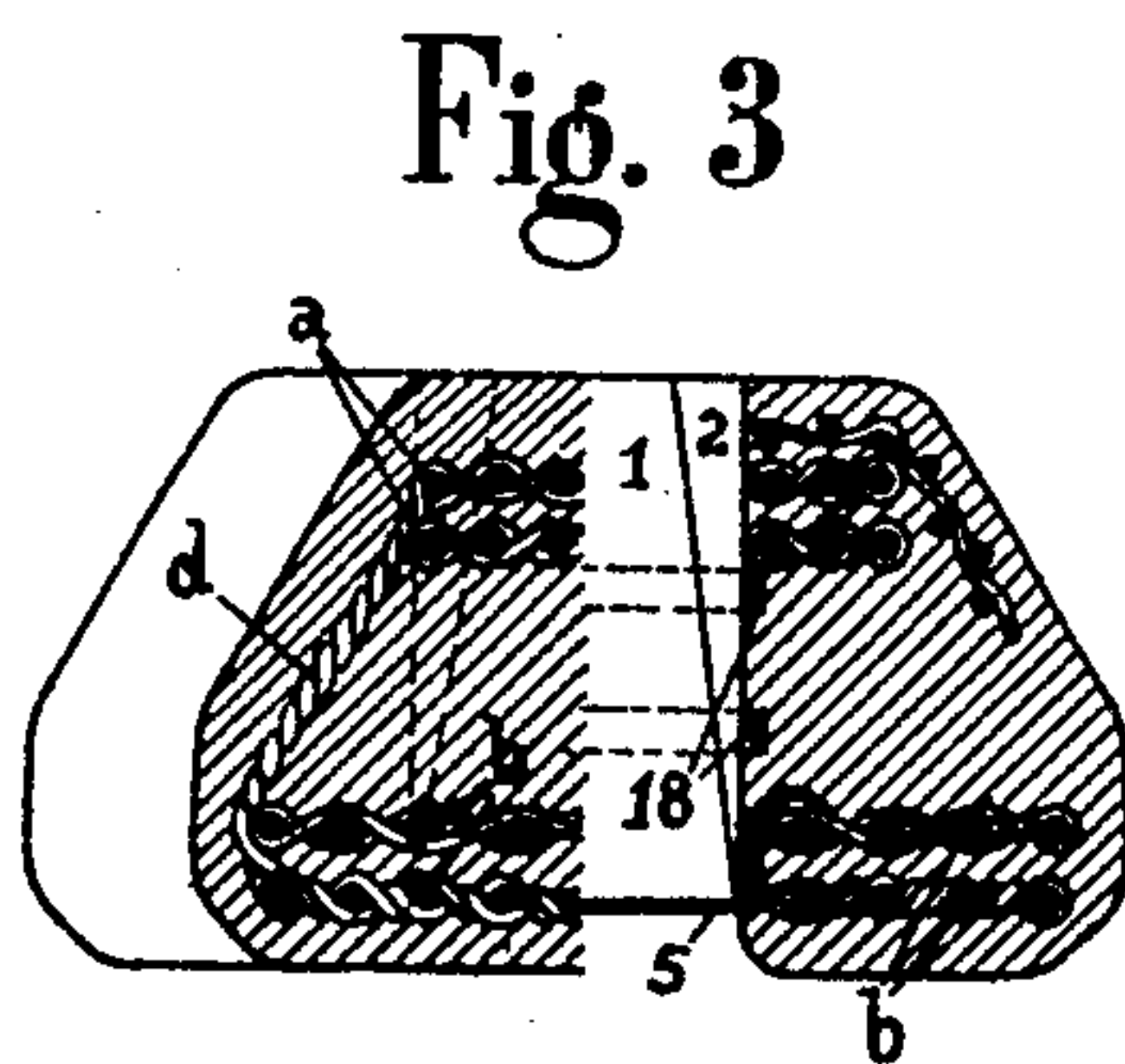
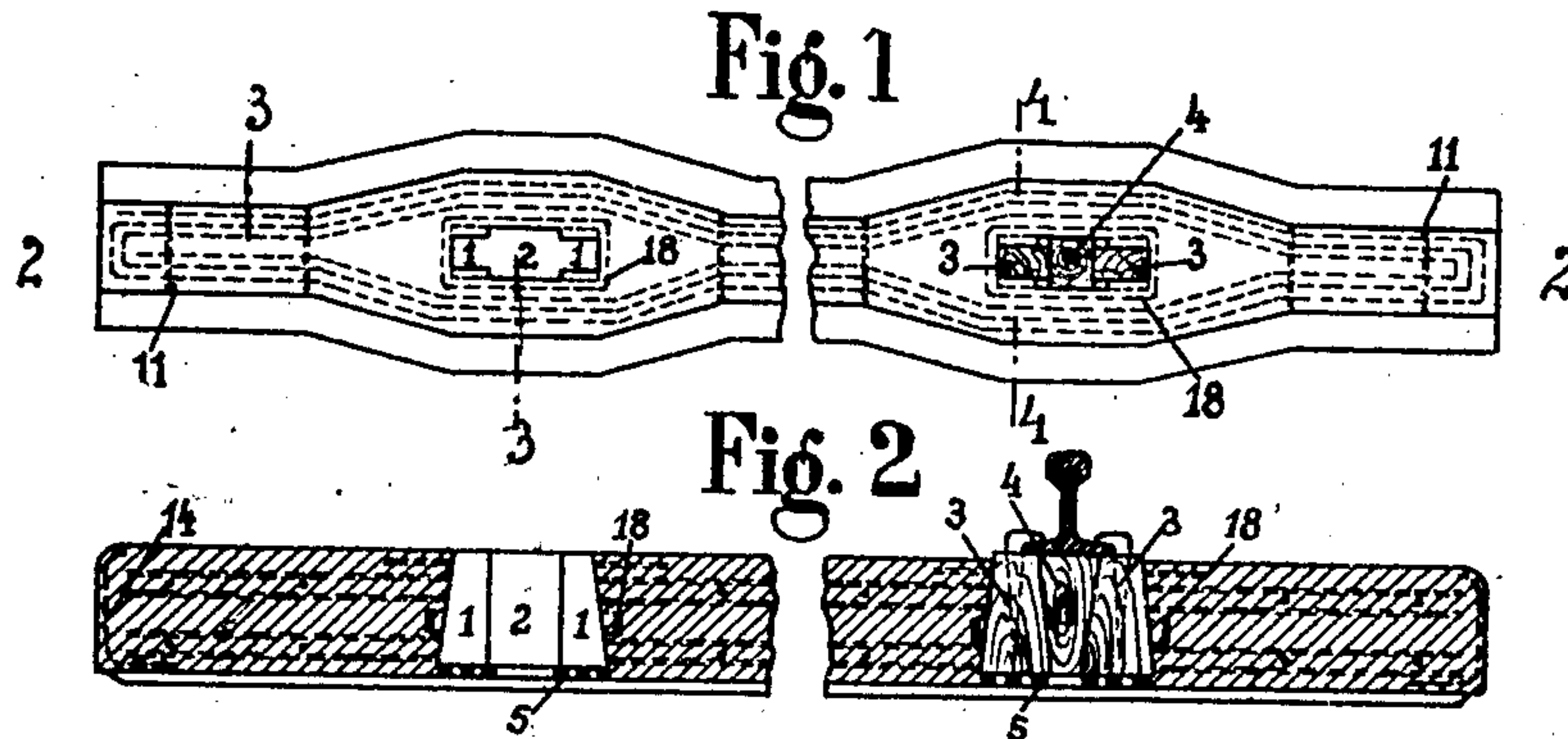


M. BRUKNER.
 REINFORCED CONCRETE RAILWAY SLEEPER.
 APPLICATION FILED OCT. 23, 1907.

906,686.

Patented Dec. 15, 1908.



Witnesses:
 Emanuel Herzog
 S. Brinton

Inventor:
 Maurice Brukner
 by Sigmund Herzog
 his attorney

UNITED STATES PATENT OFFICE.

MAURICE BRUKNER, OF BUDAPEST, AUSTRIA-HUNGARY.

REINFORCED CONCRETE RAILWAY-SLEEPER.

No. 906,686.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed October 23, 1907. Serial No. 398,763.

To all whom it may concern:

Be it known that I, MAURICE BRUKNER, a subject of the King of Hungary, residing at Budapest, in the Kingdom of Hungary, have invented new and useful Improvements in Reinforced Concrete Railway-Sleepers; and I do hereby declare the following to be a full, clear, and exact description of the same.

10 My invention relates to railway sleepers constructed of concrete with iron reinforcement.

Sleepers of reinforced concrete are already known, but those hitherto constructed did not possess a uniform strength and a sufficient elasticity, were easily cracked and were relatively heavy; moreover the bolts or screws for the rails soon worked loose in them.

20 The improved sleeper according to the present invention avoids all these drawbacks and possesses the advantage of being constructed easily, quickly and cheaply.

25 My invention relates further to a construction of the wood wedges embedded in the concrete sleeper by which the wedges can be easily renewed when they are worn out.

The invention is illustrated in the accompanying drawings in which:

30 Figure 1 shows a plan view of the sleeper. Fig. 2 a longitudinal section of Fig. 1. Fig. 3 is a cross section on the line 3—3 of Fig. 1 on an enlarged scale. Fig. 4 is an enlarged cross section on the line 4—4 of Fig. 1. Fig. 5 is an enlarged plan view of the part of the sleeper containing the wood wedges. Fig. 6 is an enlarged bottom view of the opening 1, 2, 1 of the sleeper. Fig. 7 is a perspective longitudinal section of the part of the sleeper containing the opening 1, 2, 1. Fig. 8 is a perspective view of the three wood wedges in their relative position occupied in the sleeper.

45 The sleeper has an approximately trapezoid cross section, and the lower width, as to be seen in Fig. 3, is about twice as great as the upper width so that a large supporting surface is obtained with relatively small weight. For the more secure laying of the sleeper it is preferable to make the under surface thereof slightly concave. In the concrete sleeper and as near as possible to the upper and under surfaces thereof, are embedded thin iron rods running in the longitudinal direction of the sleeper, while in the interior

of the concrete body or in the middle part thereof there is no iron. It is advisable to arrange both the upper and the lower groups of rods each in two layers. At the lower surface of the sleeper there are embedded about twice as many iron rods as in the upper part of the sleeper. The upper rods are indicated in the drawings by the letter —a— and the lower rods by the letter —b—.

The making of the sleeper is effected in a very simple manner because the iron frame forms an easily constructed closed whole. The longitudinal bars are so fastened together at given points by means of the wire binders —d— that a strong framework is constructed. For the securing of the rail bolts or screws, use is made of wood wedges, which have the shape of truncated pyramids.

With reference to the left side of Figs. 1 and 2 and to Figs. 6 and 7, the opening in the sleeper receiving the wood wedges is divided into a prismatic central part 2 and two adjacent pyramidal parts 1, 1 disposed with their smaller ends upwards on both sides of the central part. The wood wedges are composed of three corresponding parts viz. a central part 4 (Figs. 5 and 8) placed with its smaller end downwards (see also the right side of Figs. 1 and 2) and of two adjacent lateral wedges 3, 3 placed with their smaller ends upwards. The two lateral wedges 3, 3 are previously introduced through the central opening 2 and put in place by pushing them laterally and afterwards the central wedge 4 is forced in, whereby the lateral wedges are forced against the walls of the openings 1, 1. The wedges are in this way firmly secured in the sleeper and may be tightened whenever necessary. The wedges are held in their place by means of the stirrups 5 bent in the shape of a A, which stirrups are hung by their hooked ends on two of the iron bars —b— and thus prevent any falling out of the wedges from the sleeper. When the wedges should be renewed, the central wedge 4 is pulled out, after which the lateral wedges 3, 3 can be easily removed. To protect the concrete against the strains caused by the wedges, preferably hoops 18 are provided.

With the arrangement of the parts described the wires are distributed as to be seen from Fig. 1 very uniformly without forming sharp bendings so that the strength of the

sleeper is quite uniform at every point. At the ends of the sleeper preferably wire nets 14 are embedded near to the surface.

Having described my invention, what I claim is:—

1. A reinforced concrete sleeper being of an approximately trapezoid section and having holes therethrough at right angles to the longitudinal axis thereof, iron rods embedded in the concrete near to the upper and lower surfaces thereof, wooden wedges removably inserted in said holes, and means held by said iron rods and adapted to form a support for said wedges.

2. In a reinforced concrete sleeper being of an approximately trapezoid section and having holes therethrough at right angles to the longitudinal axis thereof, said holes having a central prismatic and two adjacent pyramidal parts, wooden wedges fitting each of said holes, being composed of a central and two lateral parts of truncated pyramidal shape fitting respectively in the said holes, iron rods embedded in the concrete near to the upper and lower surfaces thereof, and means held by said iron rods to form a support for said wedges.

3. In a reinforced concrete sleeper being of an approximately trapezoid section and having holes therethrough at right angles to

the longitudinal axis thereof, said holes having a central prismatic and two adjacent pyramidal parts, wooden wedges fitting each of said holes, being composed of a central and two lateral parts of truncated pyramidal shape fitting respectively said holes, iron rods embedded in the concrete near to the upper and lower surfaces thereof, iron hoops embedded in the concrete and surrounding the wooden wedges, and means held by said iron rods to form a resting surface for said wedges.

4. A reinforced concrete sleeper being of an approximately trapezoid section and having holes therethrough at right angles to the longitudinal axis of the same, iron rods embedded in the concrete near to the upper and lower surfaces, a wooden wedge inserted removably in each hole, and wire nets embedded near the surface of the concrete at the ends of the sleeper, substantially as described.

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

MAURICE BRUKNER.

Witnesses:

CHARLES MESSINGER,
EUGENE HARCAMP.