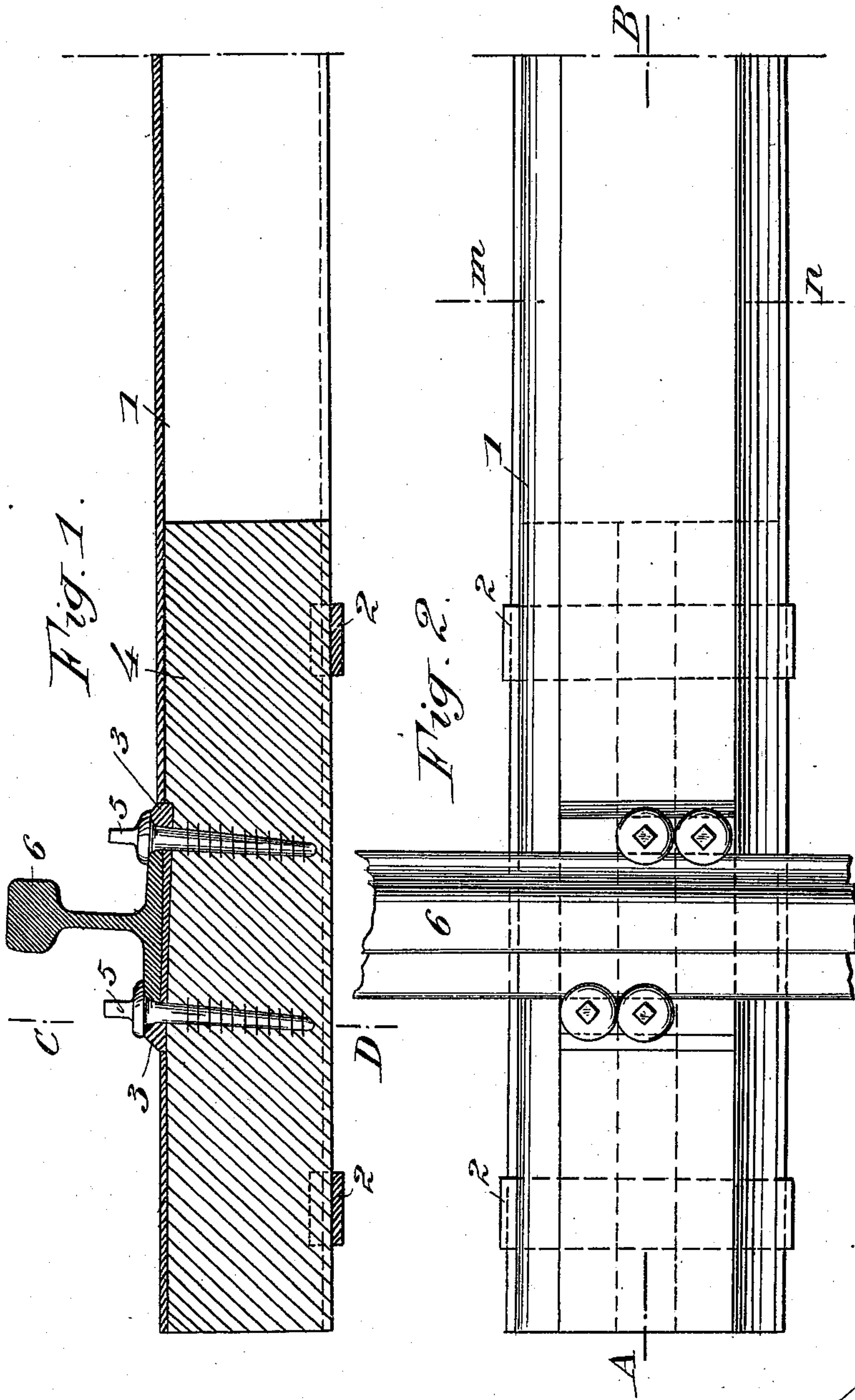


N. DEVAUX & H. RICHARD.
RAILWAY SLEEPER MADE OF METAL AND WOOD.

(Application filed Aug. 28, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:
L. Slater
L. Waldman

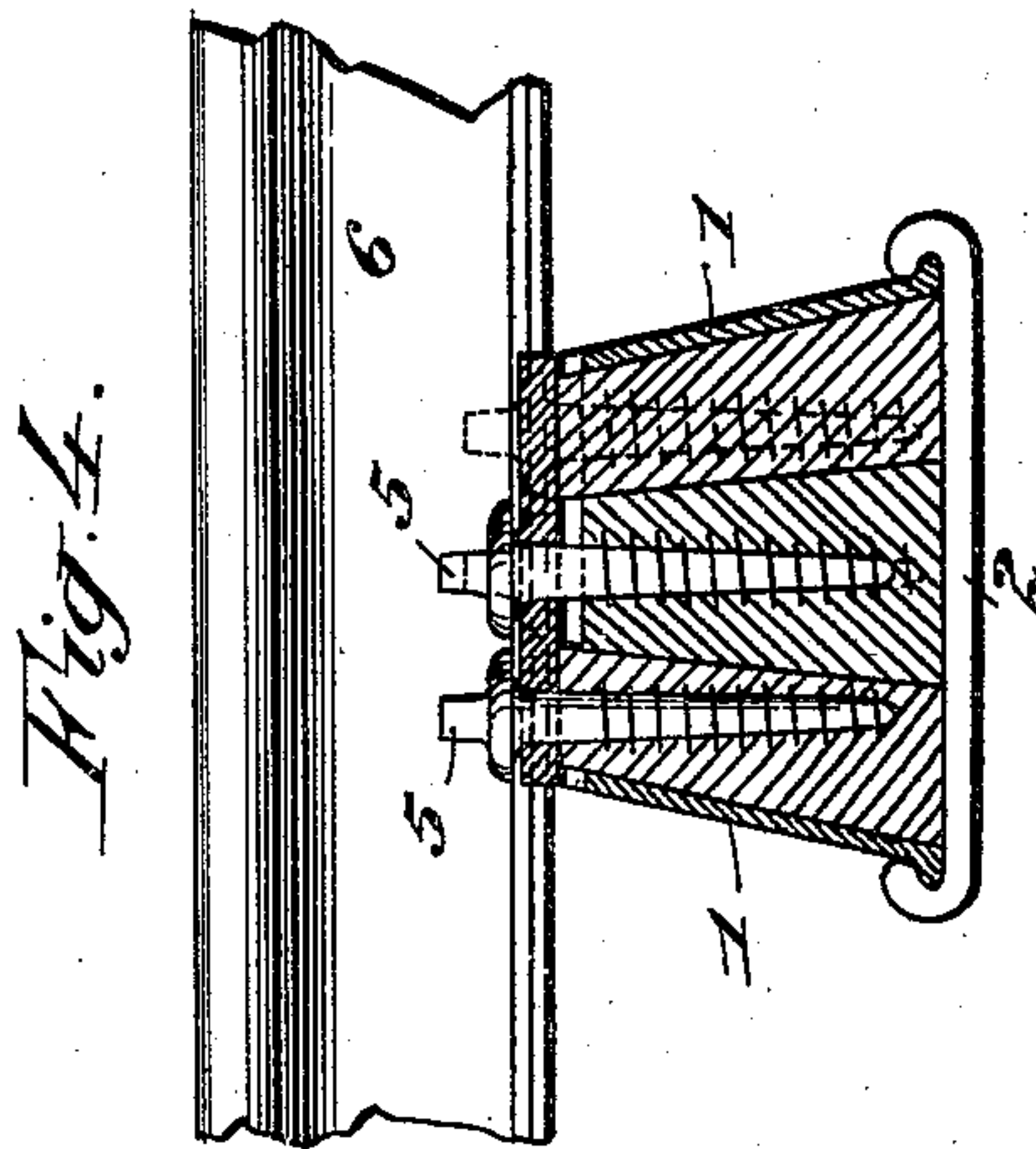
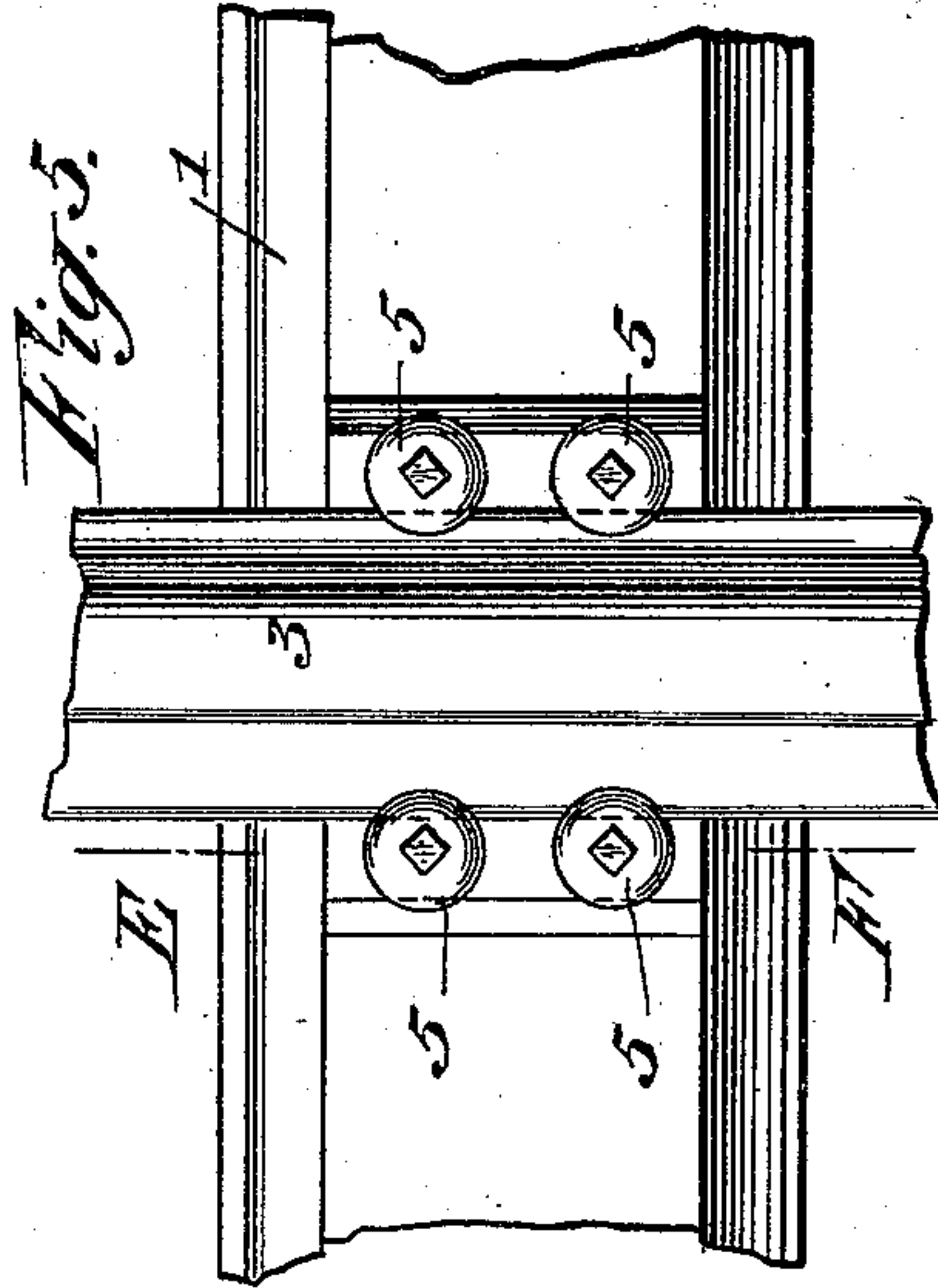
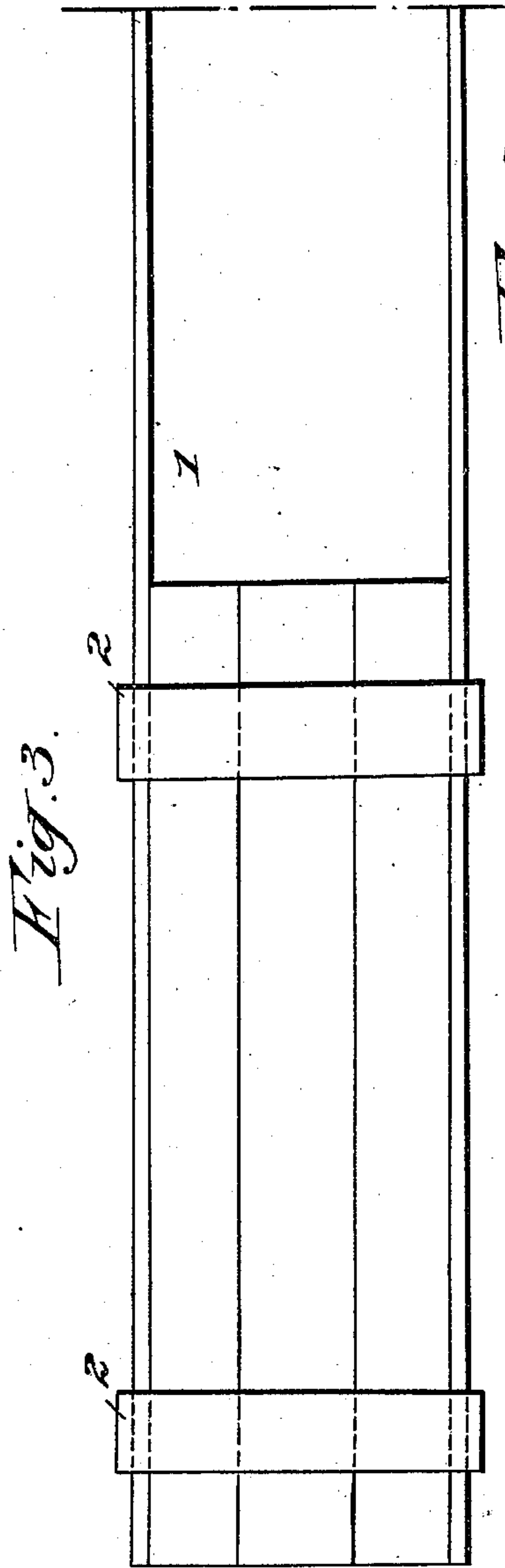
Inventors
Narcisse Devaux and Honoré Richard
per J. J. Singer
Attorney.

N. DEVAUX & H. RICHARD.
RAILWAY SLEEPER MADE OF METAL AND WOOD.

(Application filed Aug. 23, 1901.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses:

L. Slater.
L. Waldman.

Inventors:

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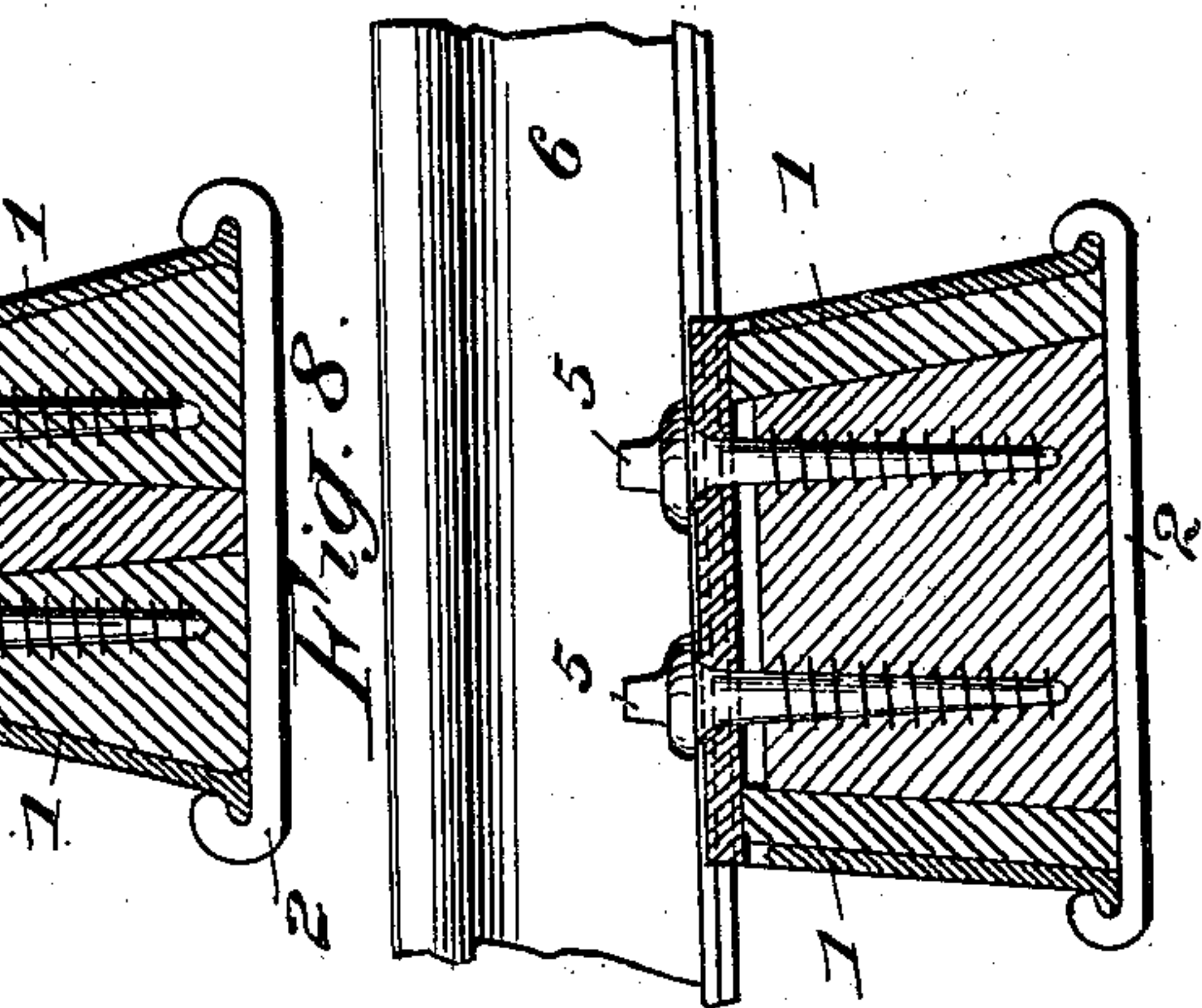
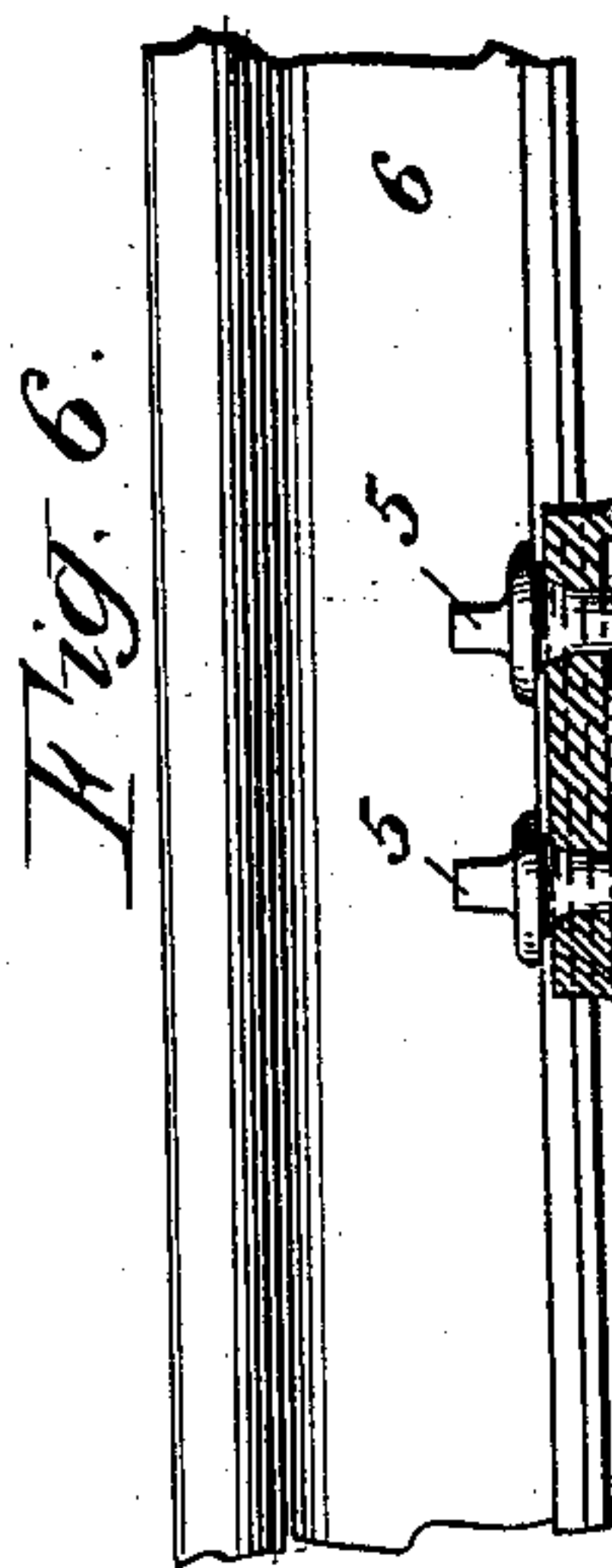
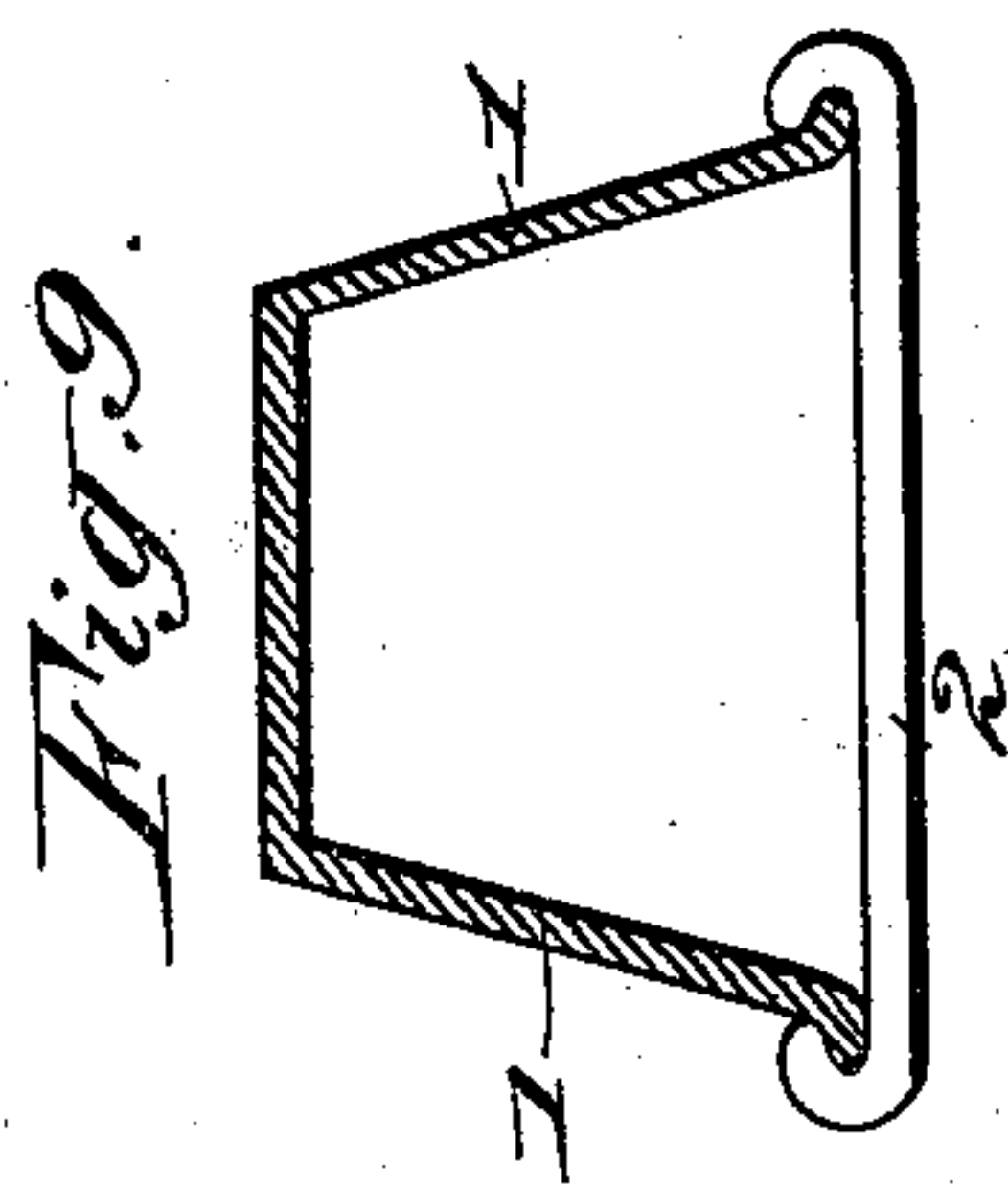
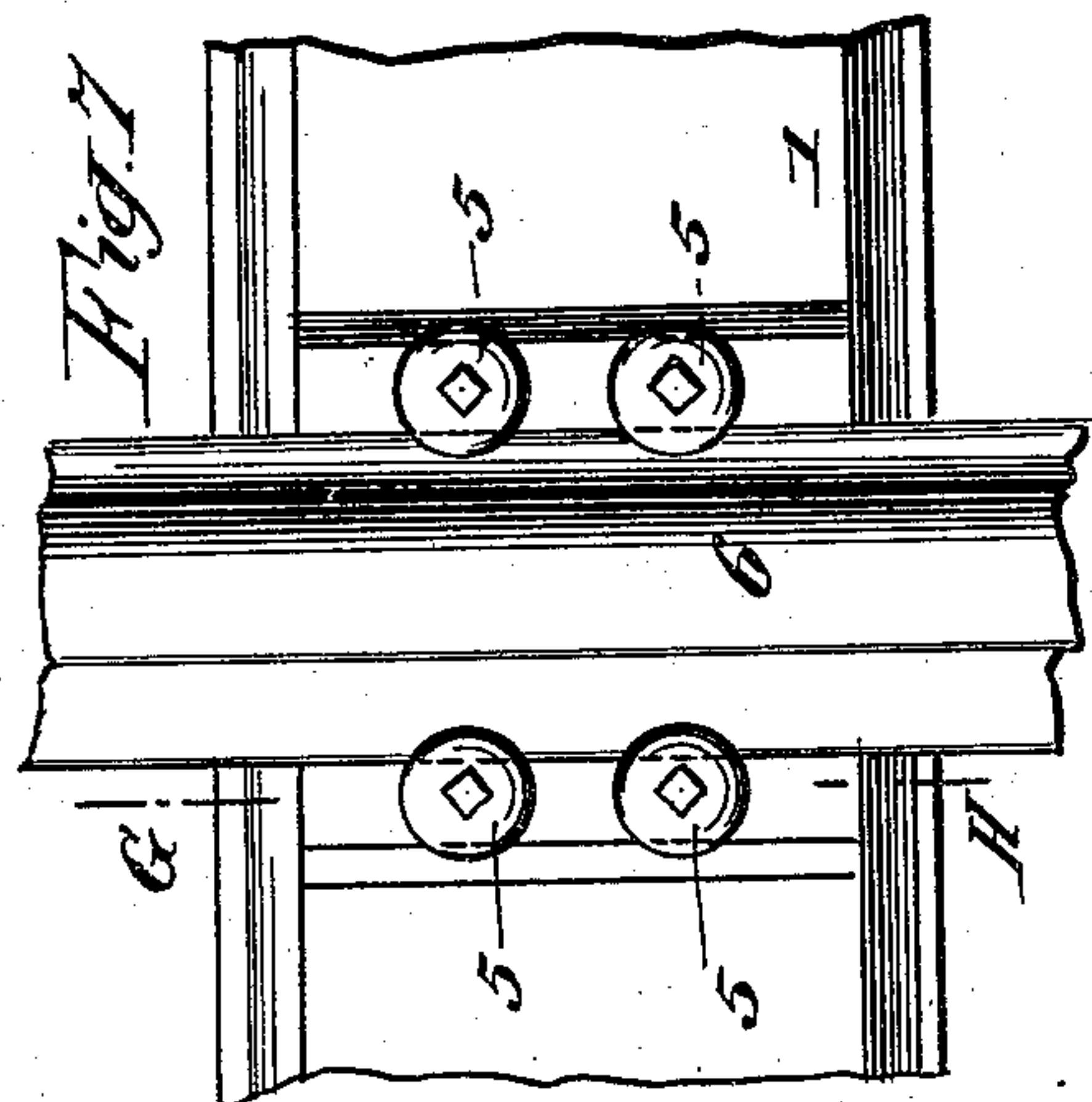
per J. Singer
attorney.

N. DEVAUX & H. RICHARD.
RAILWAY SLEEPER MADE OF METAL AND WOOD.

(Application filed Aug. 23, 1901.)

(No Model.)

3 Sheets—Sheet 3.



Witnessed:
L. Slater.
L. Waldman

Inventors:
Maurice Devaux and Honoré Richard
per J. Singer.
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UNITED STATES PATENT OFFICE.

NARCISSE DEVAUX AND HONORÉ RICHARD, OF VONNAS, FRANCE.

RAILWAY-SLEEPER MADE OF METAL AND WOOD.

SPECIFICATION forming part of Letters Patent No. 695,671, dated March 18, 1902.

Application filed August 23, 1901. Serial No. 73,097. (No model.)

To all whom it may concern:

Be it known that we, NARCISSE DEVAUX and HONORÉ RICHARD, citizens of the French Republic, and residents of Vonnas, Ain, France, have invented certain new and useful Improvements in Railway-Sleepers Made of Metal and Wood, of which the following is a specification.

The object of this invention is a sleeper composed of metal and wood which may be substituted for wooden sleepers on any railway system.

In the accompanying drawings, Figure 1 shows a front view of a sleeper, part of which is shown as a section on A B of Fig. 2. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a bottom plan view thereof. Fig. 4 is a section on C D of Fig. 1. Fig. 5 is a partial plan view of the sleeper. Fig. 6 is a section on E F of Fig. 5. Fig. 7 is a partial plan view of another form of attaching the sleepers. Fig. 8 is a section on A B of Fig. 7. Fig. 9 is a section on *m n* of Fig. 2.

The sleeper forming the object of this invention is composed of a metal casing, inside of which are firmly held two wooden blocks upon which the metals are laid.

The casing 1 is of metal and has a trapezoid section, Fig. 9. The section shown by this figure, which is in the form of a Zores iron, is a section taken lengthwise through the sleeper. Variation at the base of the Zores iron is avoided by two cross-pieces 2, placed under each wooden block, thus making four cross-pieces for each sleeper. The casing is cut away on the upper surface at the point where the rails are placed to receive the ground-plate 3 of the rail-foot 6 or the rail-foot itself if no ground-plates are used. The case is made of sheet iron or steel, the thickness of which is calculated according to requirements. The cross-pieces 2 are also made of cast iron or steel.

One of the wooden blocks 4 (the other being similar) is shown by dotted lines in Fig. 2 and cross-hatched in Fig. 1, in which are seen the wood-screws 5, securing the rail upon its ground-plate or the wooden blocks. The section C D, Fig. 4, shows the metal case having a trapezoid section, inside which is seen the wooden block, provided with wood-screws. The wooden block is formed of three wedges,

the lateral ones being tightly fastened in the metal case by placing wood-screws in the middle wedge, upon which they act as a regulating-screw. It will be noticed that the wood-screws acting as regulating-screws will constitute by tightening a single block under which packing can be used as underneath a wooden sleeper.

The different ways of placing the wedges shown in Figs. 4 and 6 are required by the position of the four symmetrical or unsymmetrical fastenings. In unsymmetrical fastenings, Figs. 2 and 4, the middle wedge is movable and adjusted by the wood-screws for fastening the side wedges. With symmetrical fastenings, Figs. 5 and 6, the lateral wedges are adjusted to be pressed against the middle wedge. In this case the ground-plate bears against the two edges of the case, which is perhaps objectionable, but which can be obviated by placing the four fastenings, Fig. 2, either at the right or at the left of the longitudinal axial line of the sleeper.

Another form of execution of the symmetrical fastenings is shown in Figs. 7 and 8. It consists of a middle wedge, in which are fixed four fastenings, adjusted so as to fasten the two side wedges.

It may be easily seen that with this system of wooden blocks formed of wedges it is possible to fix each length of rail with two, three, or four wood-screws.

Another form of execution may consist of placing within the metal case only blocks composed of a single piece of wood, which, adjusted by the wood-screws, tighten against the side walls of the metal case having a trapezoid section. In this case the ground-plate is necessary and bears against the edges of the case in order to effect the tightening, and there should also be a space between the top of the wooden block and the bottom of the foot-plate. The packing is as under an ordinary sleeper; but this wedge can only be introduced through the end of the sleeper before it is laid in the ballast.

This complete sleeper—that is to say, the metal case furnished with its two wedge-blocks and its four cross-pieces—can be used for partial repairs or renewal on a large scale by simply substituting it for the ordinary wooden sleeper. When the ballast is cleared

for placing the sleeper, the latter is laid, furnished with its two blocks, upon the foundation, and the same fastening means are employed as with wooden sleepers. When it is
5 necessary to replace the blocks for a sleeper already in position, the ends of the sleeper will be freed from ballast, which will also be cleared away between the blocks. Then it will
10 only be necessary to drive out the old blocks and replace them by new ones introduced at each end of the sleeper. It will be seen that in the spaces between the blocks ballast may be introduced and packed, thus providing a
15 sleeper which will be combined with the ballast and cannot be shifted obliquely.

Having now fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A railway-sleeper composed of wood and
20 metal which is distinguished by a metal case the sides of which have a trapezoid section open at the bottom and are protected against displacement by cross-pieces 2 placed below the fastening-points of the rails, so as to al-
25 low this fastening by means of wedge-shaped pieces of wood, held firmly within the metal case by means of wood-screws which act as regulating or adjusting screws, substantially as described and as shown.

30 2. In a railway-sleeper composed of an iron casing and wooden parts, the combination of two wooden blocks, each composed of three wedges, the two lateral ones being held firmly

in the metal case by the introduction of wood-screws into the middle one, upon which they
35 act as adjusting-screws, substantially as described and as shown.

3. A railway-sleeper composed of an iron casing provided internally with wooden parts, arranged for the use of symmetrically-placed
40 screws and consisting of three wedge-shaped pieces of wood of which the two lateral ones are drawn upwardly to be held firmly against the middle wedge, substantially as described and as shown.

4. A railway-sleeper composed of an iron casing provided internally with a wedge-shaped wooden block into which are fixed
45 wood-screws, by means of which the said block is drawn upwardly, thereby pressing against two lateral wooden blocks unprovided with wood-screws, substantially as described and as shown.

5. A railway-sleeper composed of an iron casing provided internally with only one
55 wooden block which, lifted upwardly by wood-screws, bears tightly against the lateral sides of the metal casing having a trapezoidal section, substantially as described and as shown.

In testimony whereof we have hereunto set
60 our hands in presence of two witnesses.

NARCISSE DEVAUX.
HONORÉ RICHARD.

Witnesses:

MARINA VACHOU,
JOSEPH GUINE.