

W. LAUDAHN.
 CONCRETE RAILWAY RAIL SUPPORT.
 APPLICATION FILED APR. 12, 1909.

950,930.

Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.

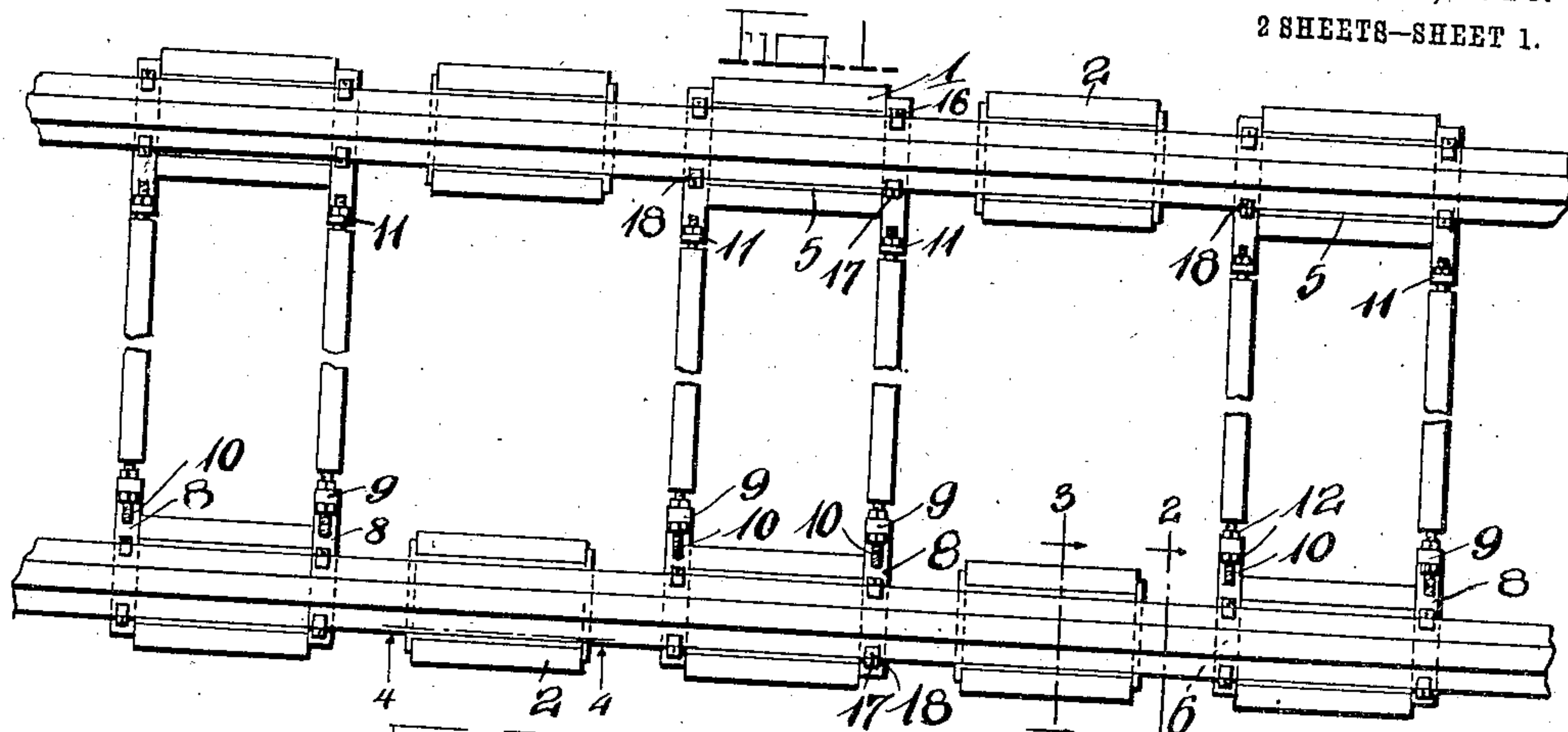


FIG. 1.

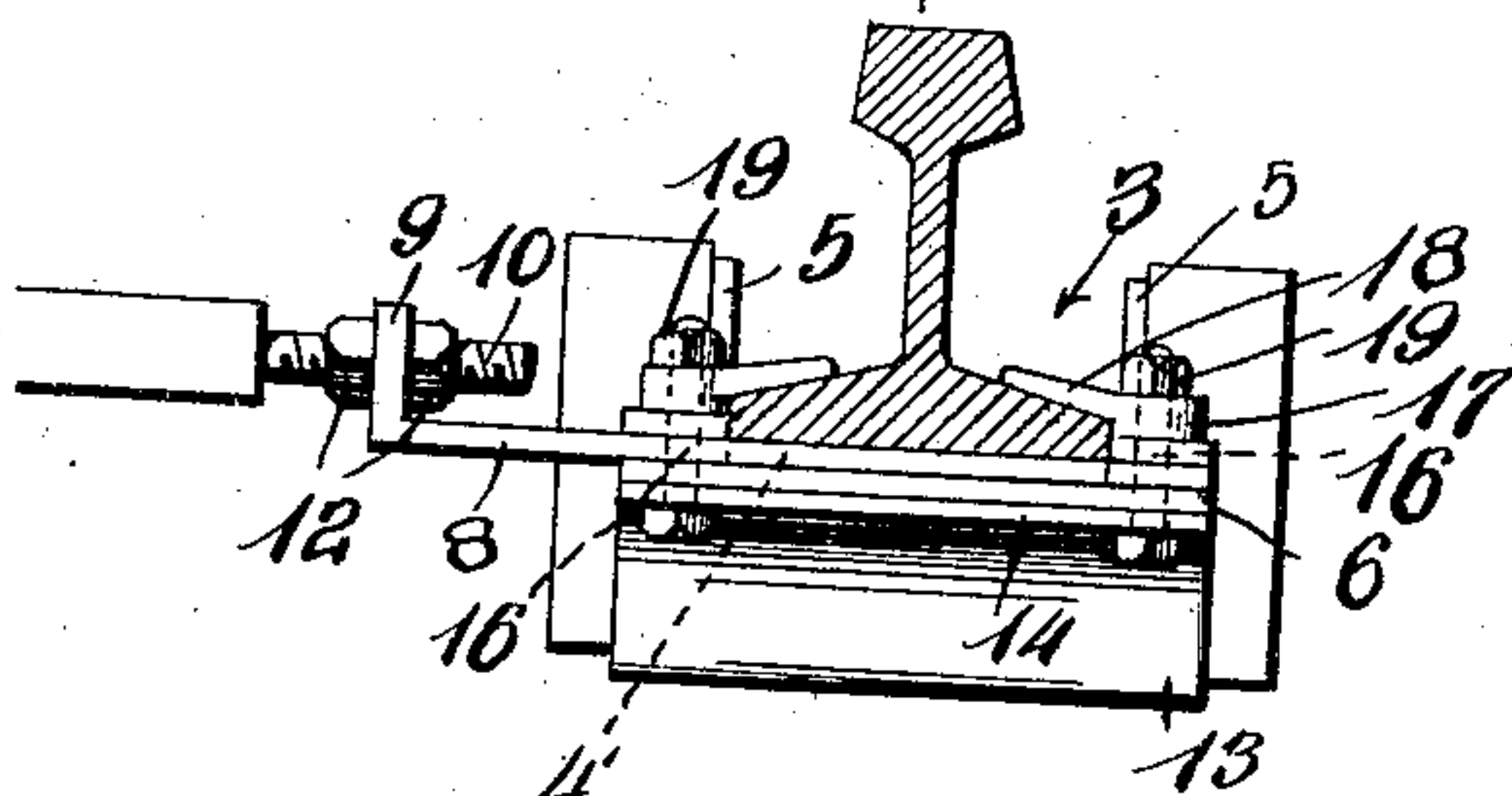


FIG. 2.

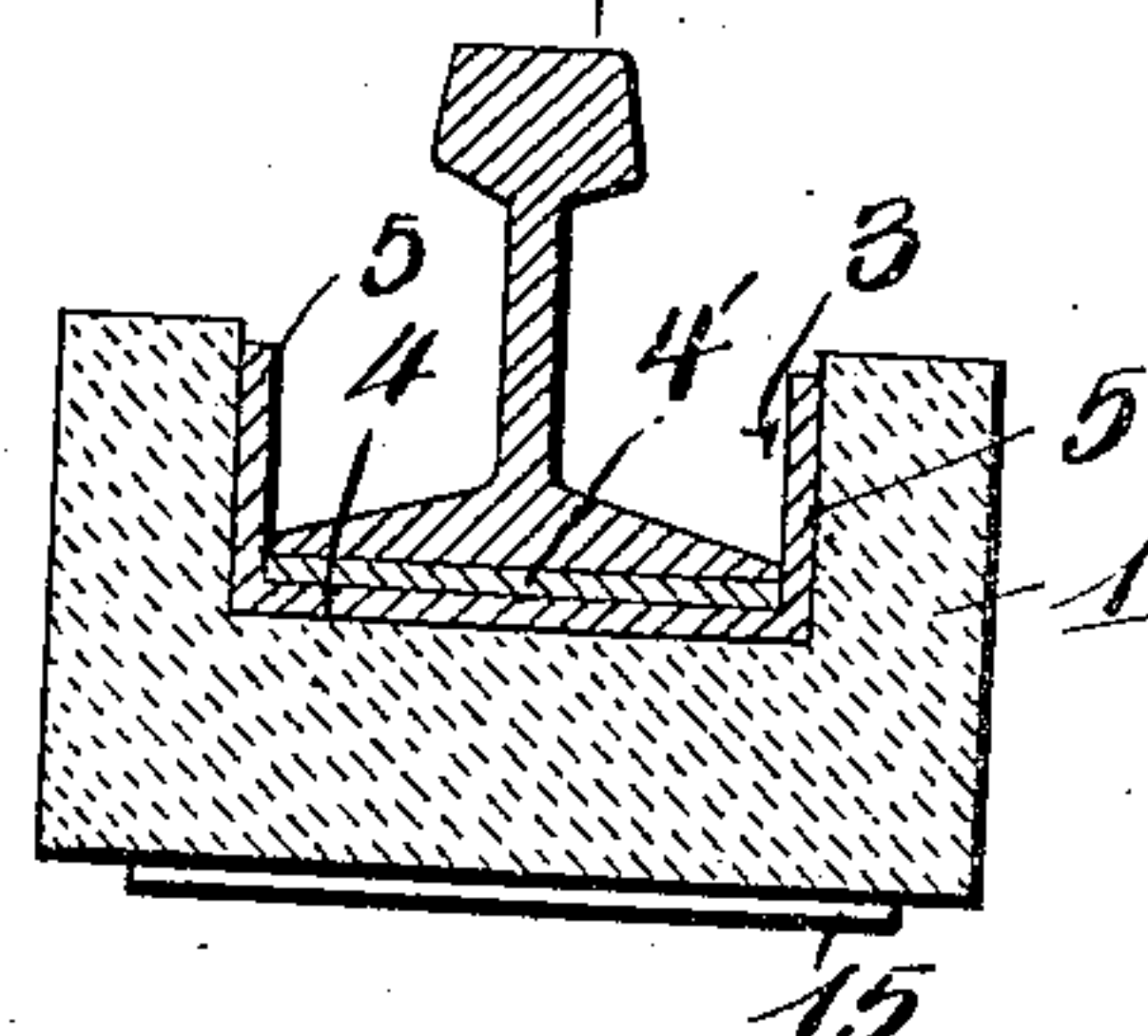


FIG. 3.

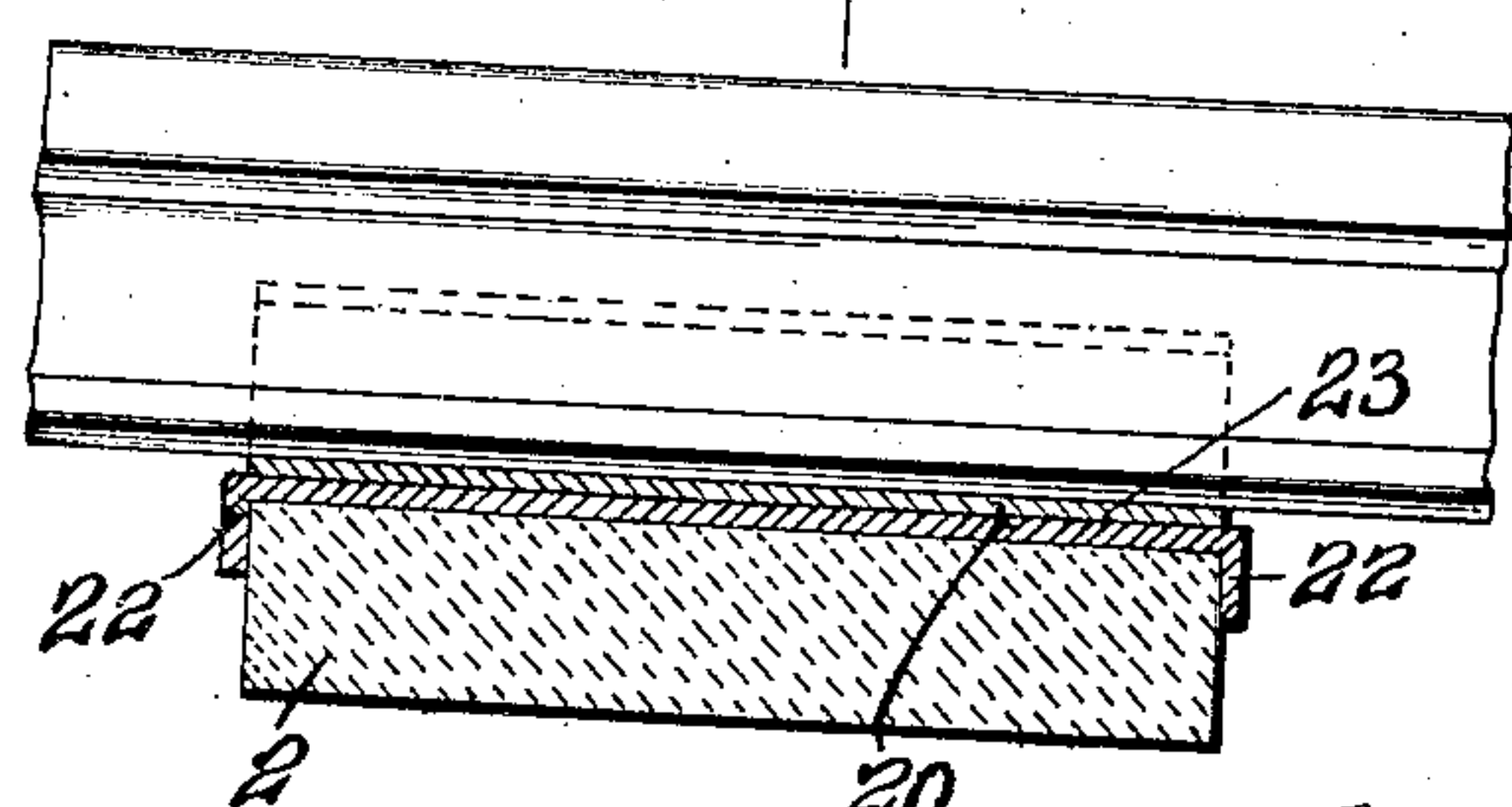


FIG. 4.

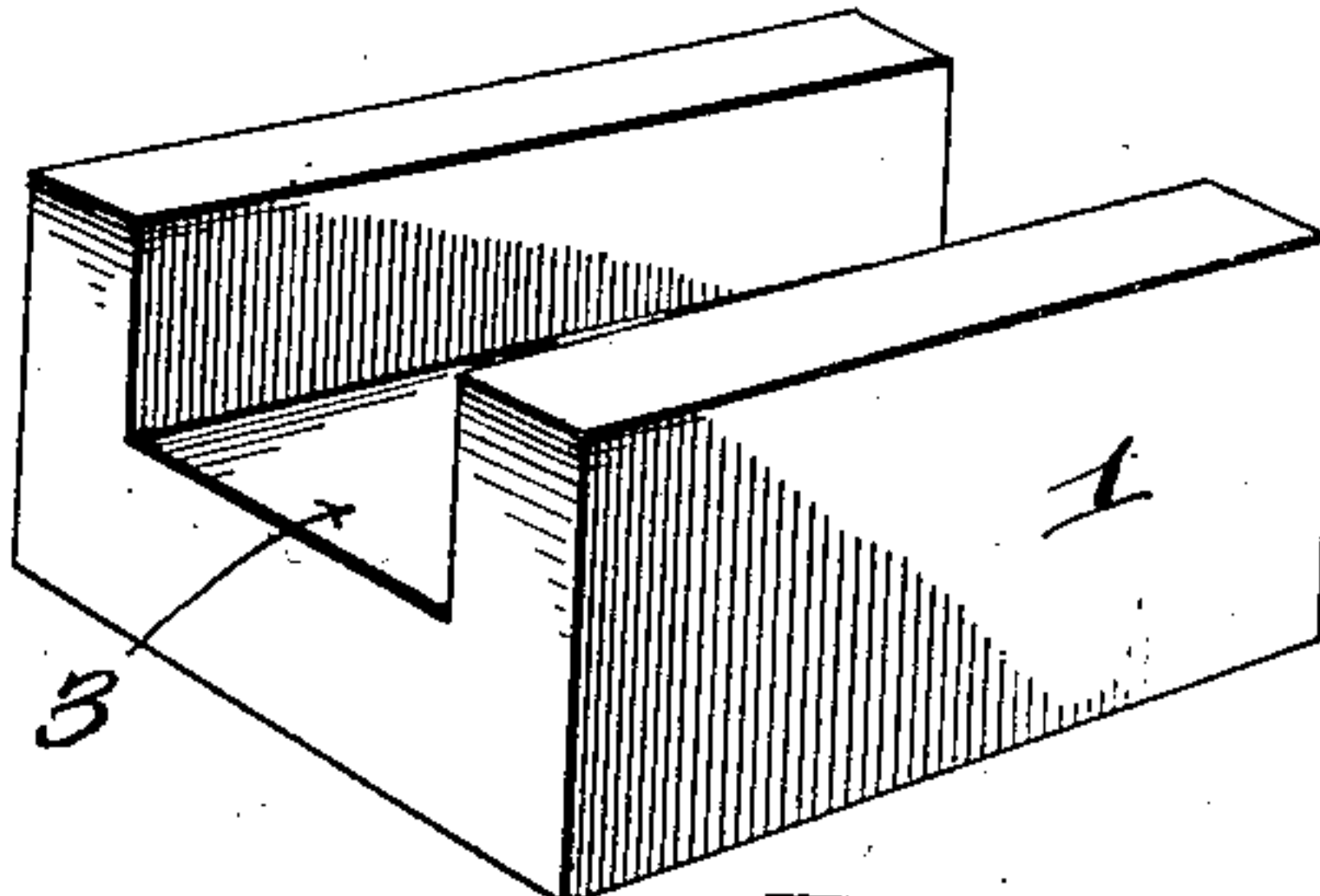


FIG. 5.

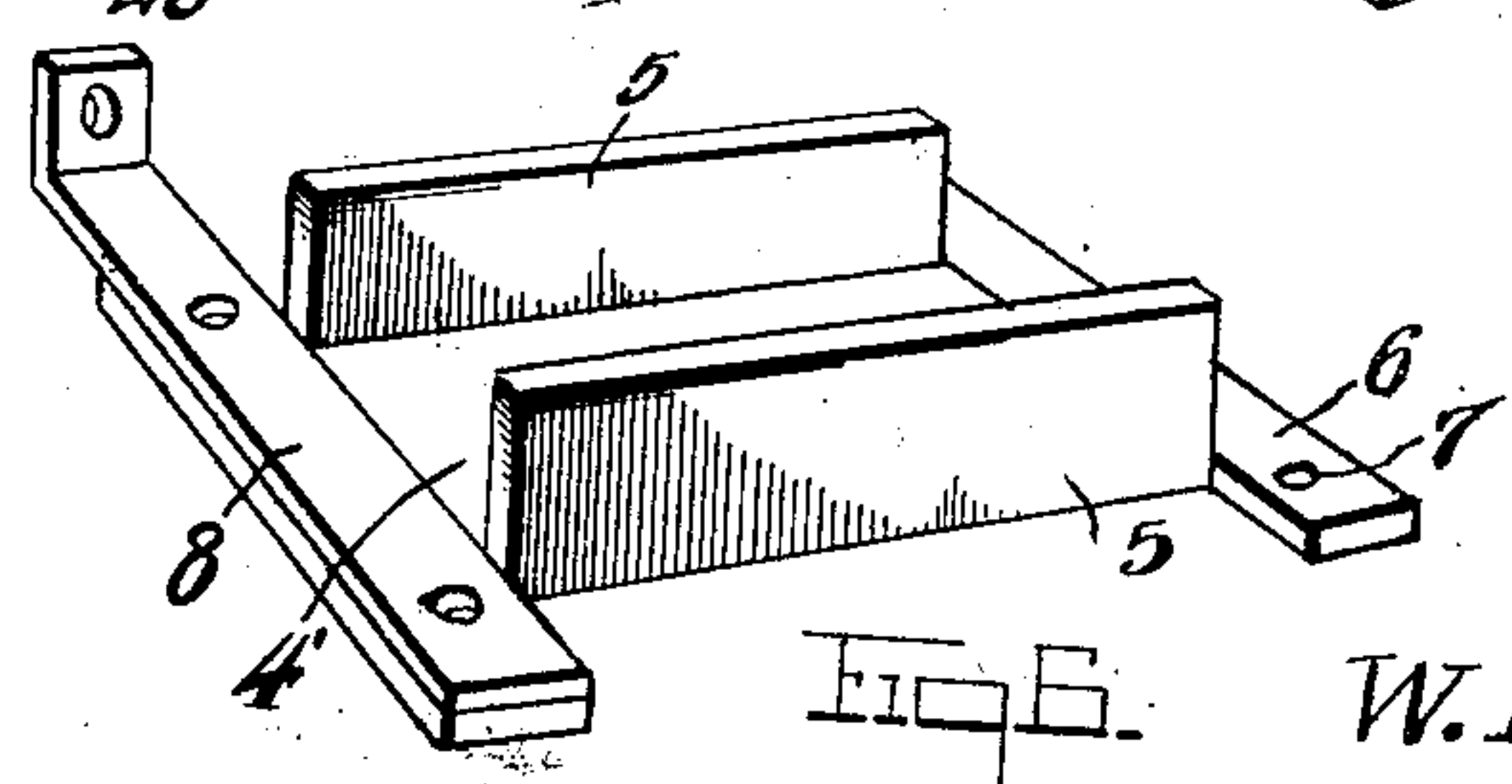


FIG. 6.

Inventor

W. Laudahn.

Witnesses

W. H. Rockwell

C. F. Griesbauer

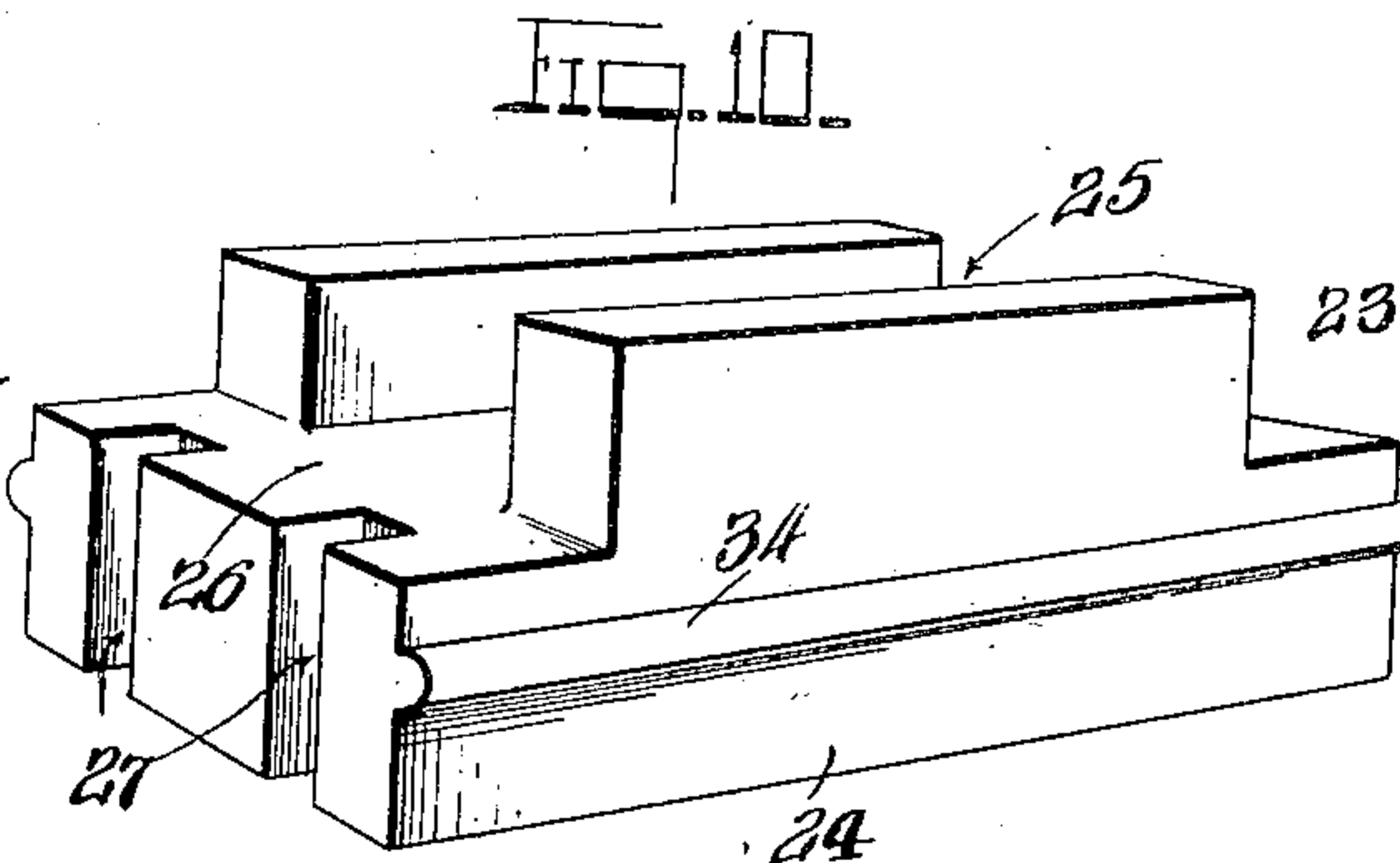
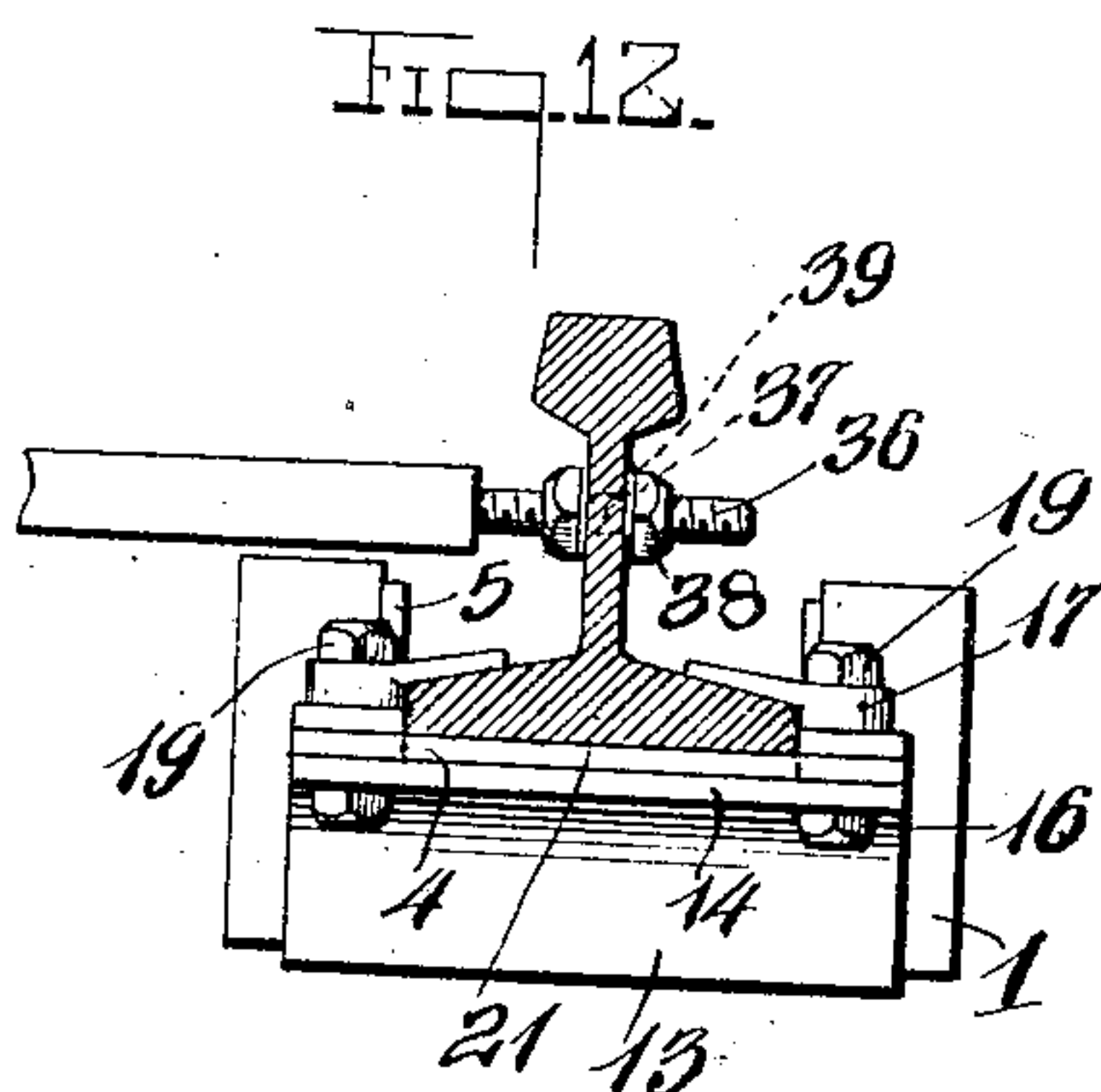
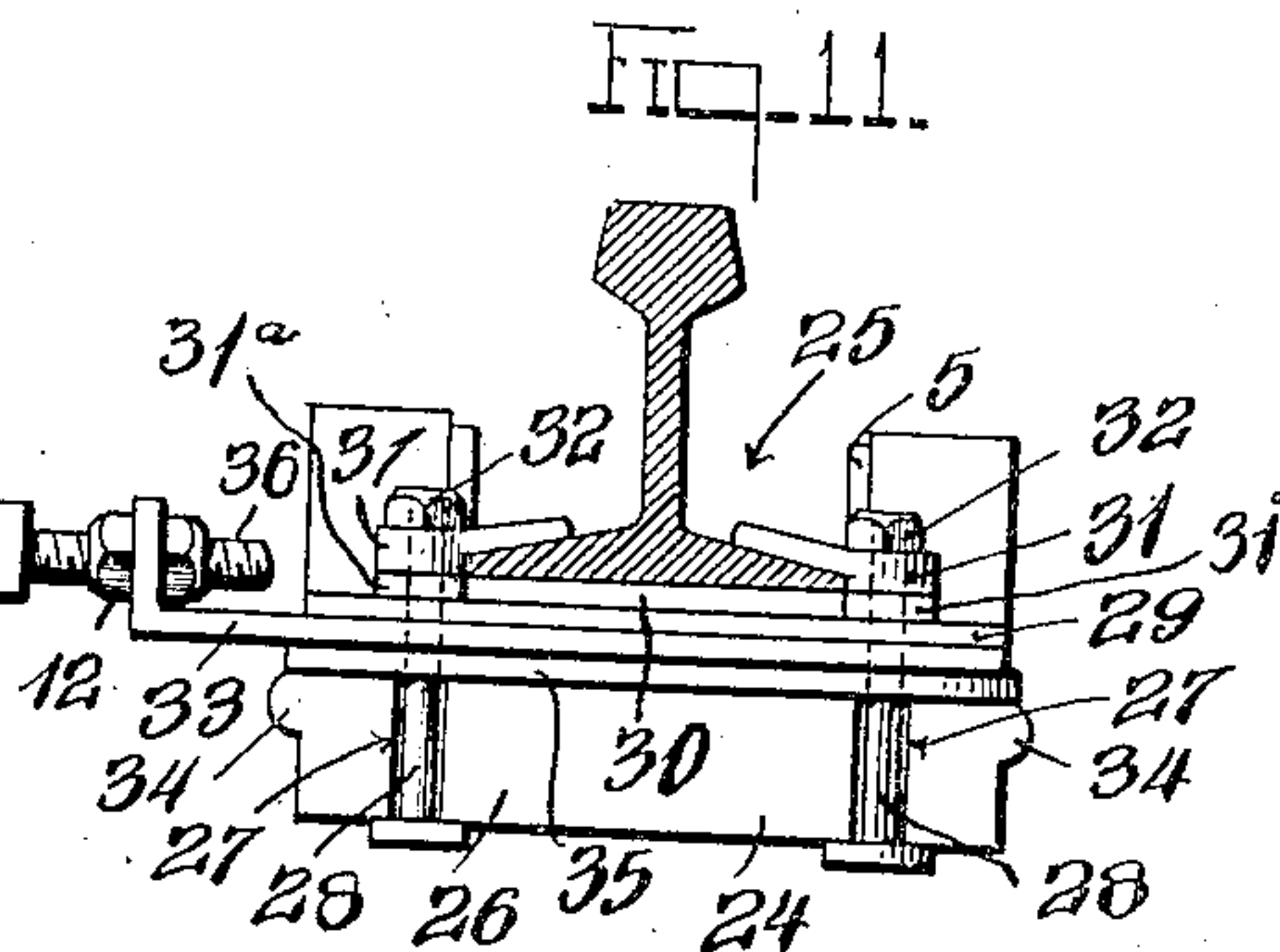
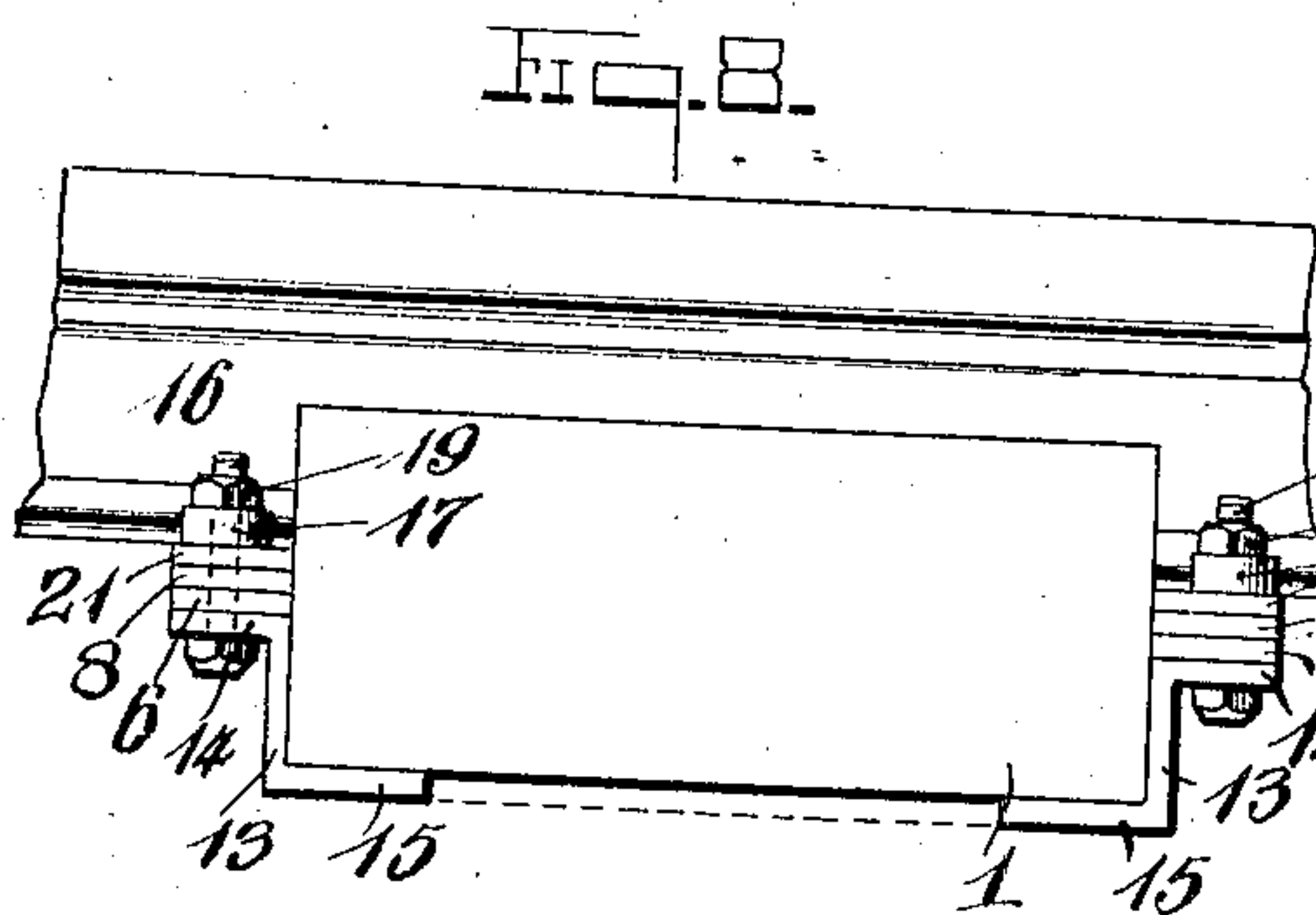
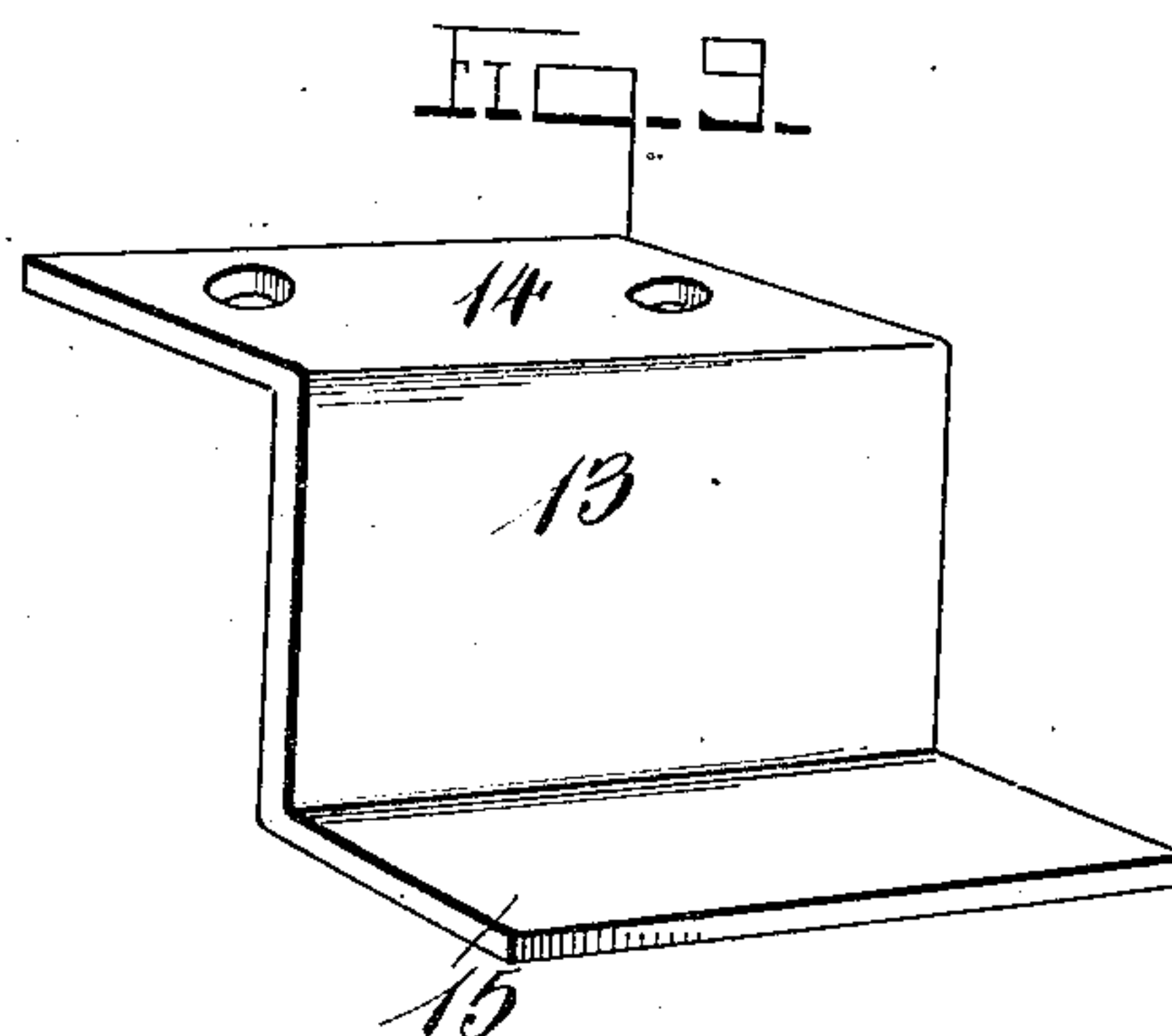
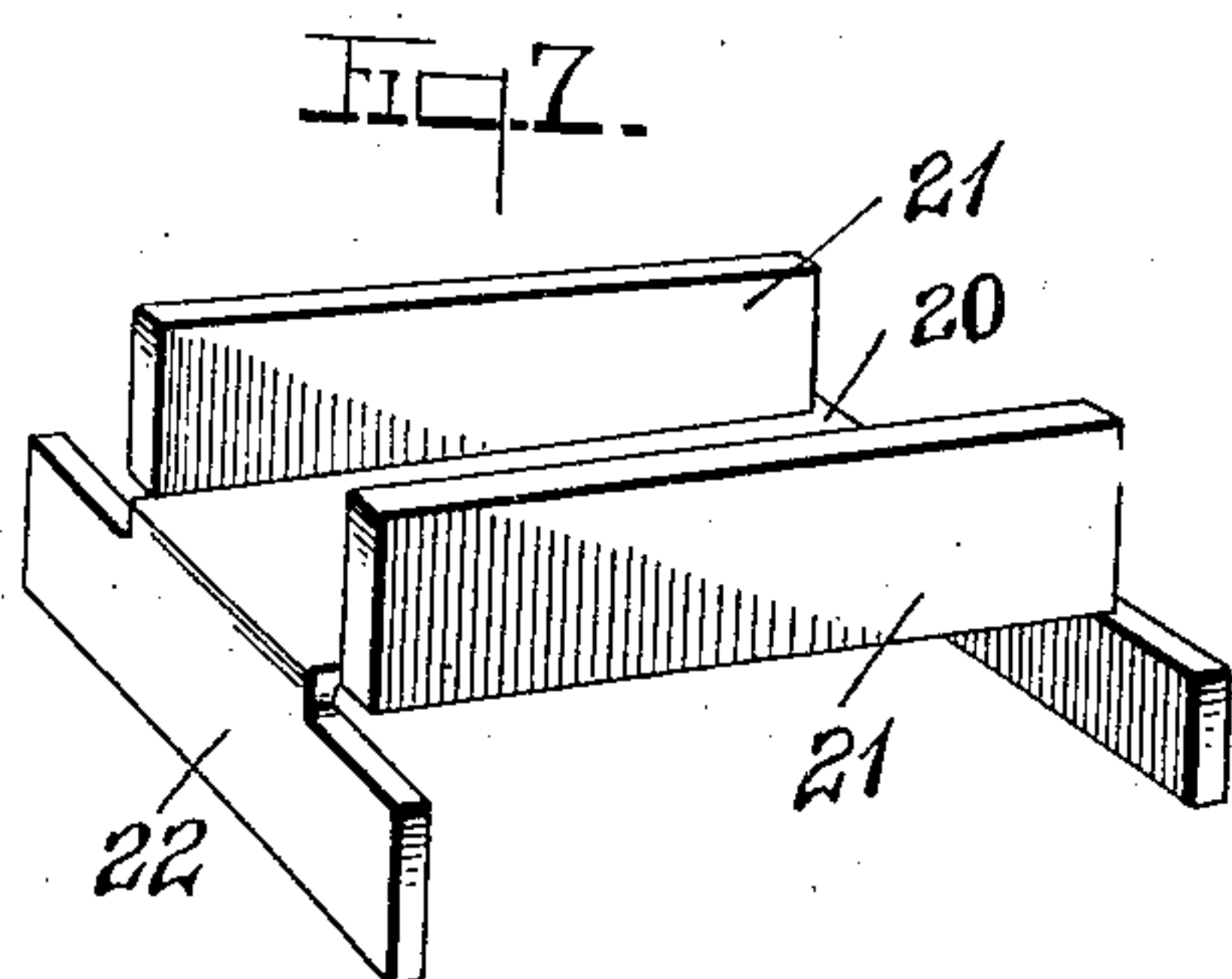
By

H. B. Willson & Co
 Attorneys

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Witnesses
W. Rockwell
C. H. Griesbauer.

Inventor
W. Laudahn.

By
H. B. Wilson & Co.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM LAUDAHN, OF PASADENA, CALIFORNIA.

CONCRETE RAILWAY-RAIL SUPPORT.

950,930.

Specification of Letters Patent.

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To all whom it may concern.

Be it known that I, WILLIAM LAUDAHN, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Concrete Railway-Rail Supports; and I do 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.

This invention relates to improvements in concrete railway rail supports.

The object of the invention is to provide an improved construction of cement supports for railway rails whereby the latter will be securely anchored or held in position and prevented from spreading.

A further object is to provide a support of this character by means of which the use of spikes or similar fastening devices is dispensed with.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a portion of a railway showing the application of the invention thereto; Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1; Fig. 3 is a similar view on the line 3—3 of Fig. 1; Fig. 4 is a detail longitudinal sectional view through one of the intermediate rail supports taken on the line 4—4 of Fig. 1; and showing the construction of the cushioning plates arranged therein; Fig. 5 is a perspective view of one of the supporting blocks; Fig. 6 is a similar view of one of the combined cushioning and tie bar attaching plates of the supporting blocks; Fig. 7 is a similar view of one of the wear and cushioning plates of the intermediate supporting blocks; Fig. 8 is a side view of one of the main supporting blocks showing the angular engaging plates to which the tie bars are connected and showing in dotted lines a modified construction of said plate; Fig. 9 is a perspective view of one of the block engaging plates; Fig. 10 is a perspective view of a modified form of supporting block; Fig. 11 is an end elevation of the same showing the rail secured thereto; Fig. 12 is a detail cross sectional view similar to Fig. 2 showing a

different manner of connecting the rail tie rods with the rail.

Referring more particularly to the first nine figures of the drawings, 1 denotes the main supporting blocks and 2 denotes the intermediate supporting blocks of the rails, said blocks being formed of cement or other form of concrete material. The blocks 1 and 2 are each provided in their upper sides with longitudinally disposed rail receiving channels 3. In the channels 3 of the main supporting blocks 1 are arranged tie bar connecting plates 4, said plates comprising a bottom portion having along its opposite edges upwardly turned flanges 5 which, when the plates are in position lie between the edge of the base flanges of the rails and the adjacent inner walls of the channels 3 thereby preventing wear on the base flanges of the rails and walls of the blocks. The opposite ends of the bottom portion of the plates are extended beyond the flanged edges thereof and said extended ends project beyond opposite sides of the plate to form attaching members 6 which, when the plates are in position in the blocks, engage the opposite ends of the latter, as shown. The attaching members 6 are provided with bolt holes 7 and to said members are bolted the outer ends of tie rod attaching bars 8, said bars having right angularly formed upwardly projecting outer ends 9 which are provided with apertures to receive the reduced threaded ends of rail tie rods 10. On the reduced portion of one end of the tie rods is screwed the clamping nut 11 whereby the shoulder formed by the reduced portion of this end of the rod is drawn into tight engagement with the right angularly bent end of the attaching bars 8. The reduced threaded portion of the opposite end of the rod is preferably of greater extent than the reduced portion at the other end. On said longer end of the rod are arranged adjusting and clamping nuts 12 which engage the opposite sides of the right angularly bent end of the adjacent attaching bar whereby these parts and the rails may be adjusted laterally to maintain the rails at the proper gage.

In addition to the attaching plates 4, the main supporting blocks 1 are provided with cushioning plates 4' of wood or other suitable material and with end engaging or supporting plates 13, the upper ends of which are bent at right angles in one direction to

provide plate engaging flanges 14 and at their lower ends are bent at right angles in opposite directions to form block engaging and supporting flanges 15 which hook under or are engaged beneath the opposite end of the block, as is clearly shown in Fig. 8 of the drawings. Under certain conditions these plates 13 may be formed integral or connected together at their lower ends by forming the flanges 15 in one continuous strip beneath the plates, as shown in dotted lines in Fig. 8 of the drawings. The upper flanges 14 of the plates 13 engage beneath the projecting attaching members 6 of the plates 4 and are provided with bolt holes through which and alined apertures in the attaching bars 8 and the holes 7 are inserted fastening bolts 16 on the upper ends of which are arranged rail clamping washers 17 having beveled inner base flange engaging ends 18 which are engaged with the upper surface of the base flanges of the rail and are clamped in operative position by means of nuts 19 which are screwed on the upper ends of the bolts 16, as shown.

The rail tie rods 10 are engaged with the attaching plates at the opposite ends of each alternate or main supporting block the intermediate blocks 2 having no connection with each other. The supports are formed in separate blocks in the manner described, and spaced apart to provide for the proper drainage of the surface water from between the rails. In the channels 3 of the intermediate supporting blocks 2 are arranged wear plates 20, said plates having side flanges 21 to protect the base flanges of the rails and the adjacent walls of the channels 3 from wear. The ends of the plates 20 are also formed with extensions 22 which are adapted to be bent downwardly at right angles to engage the opposite ends of the blocks 2 as shown in Fig. 7, and to form stops to hold the plates in place. In addition to the plates, the rails are provided with cushioning devices in the form of blocks or slabs 4' formed of wood or other suitable material which are engaged with said plates between their side flanges and are engaged by the rails when the latter are placed in position on the blocks.

In Figs. 10 and 11 is shown a modified form of supporting block 23, said block having formed therein a longitudinally disposed channel 25 and on the opposite ends of the block are formed transverse recesses 26. In the lower part of the recessed ends of the block are formed vertically disposed bolt receiving notches 27, with which are engaged rail fastening bolts 28. In the recessed ends 26 of the blocks and engaging the bolts 28 are tie rod attaching bars 33 which are similar in construction and operation to the bars 8 described in the first figures of the drawings. In the channels 25

of the block 24 are also arranged cushioning plates 30, the ends of which project into the recessed portions of the ends of the blocks. The bolts 28 are provided with clamping clips 31 which rest on washers 31^a to engage the base flanges of the rails and with fastening nuts 32 to secure the parts together. The blocks 23 are provided along their side edges with laterally projecting beads 34 which are adapted to support a clamping band 35 which is preferably arranged around the blocks to protect the notched ends of the same.

In Fig. 12 of the drawings, is shown a different manner in which the threaded ends of the tie rods may be secured to the rails to hold the latter in position. In this form, the rods 36 are constructed in the same manner as the rods 10 and the reduced threaded ends of the same are inserted through apertures 37 in the rails and have screwed thereon adjusting and fastening nuts 38 whereby the rails may be maintained at the proper gage and prevented from spreading or upsetting. When the rails are thus engaged by the tie rods, said rails are preferably reinforced adjacent the connection of the rods with the rails by means of washer or bracing plates 39 arranged on each side of the web of the rail where the aperture 37 is formed. The plates 39 are also provided with apertures through which the threaded ends of the rods 36 are inserted and said plates are clamped into operative engagement with the opposite sides of the rail web by the nuts 38.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In a railway rail support, a series of concrete blocks, cushioning and attaching plates arranged on said blocks, attaching bars bolted to opposite ends of said attaching plates, means to clamp the base flanges of the rails into engagement with said attaching bars and plates, tie rods arranged between said attaching bars, and means whereby the ends of said rods are adjustably secured to the bars.

2. In a railway rail support, a series of concrete supporting blocks, cushioning and attaching plates arranged on said blocks, end engaging and supporting plates arranged on the opposite ends of the blocks and in engagement with the ends of said at-

5 attaching plate, attaching bars also engaged
with the ends of said attaching plates, fas-
tening bolts arranged through the engaging
portions of said attaching plates and bars,
10 rail flange engaging washers on said bolts,
fastening nuts adapted to be screwed into
engagement with said washers to clamp the
same against said rail flanges, and tie rods
adjustably connected to the inner ends of
said attaching bars between the rails.

15 3. In a railway rail support, a series of
main and intermediate supporting blocks,
rail engaging channels formed in said
blocks, cushioning and wear plates arranged
in said channels, said wear plates having up-
wardly projecting side flanges arranged be-
tween the edges of the rail flanges and the
adjacent walls of said channels, whereby
said parts are prevented from wearing,

means to hold said wear plates in position 20
in said intermediate blocks, attaching mem-
bers formed on the ends of the plates of
said main blocks, attaching bars bolted to
said attaching members, said bars having
right angular apertured inner ends, a series 25
of tie rods having reduced threaded ends
adapted to engage the apertured angularly
bent ends of said attaching bars, and ad-
justing nuts arranged on the threaded ends
of said tie rods.

30
In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

WILLIAM LAUDAHN.

Witnesses:

J. W. FIKE,

W. S. HENDRICKSON.