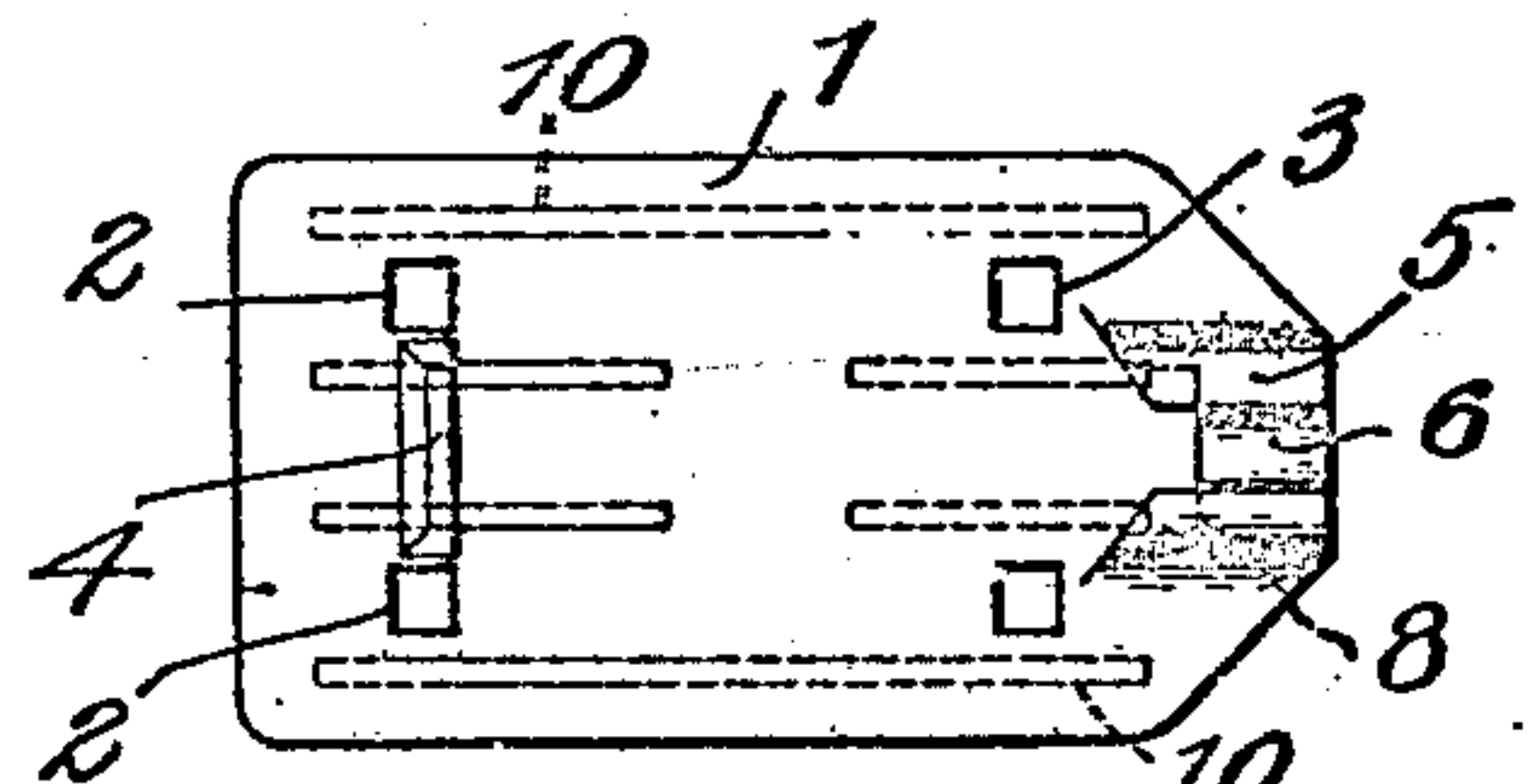
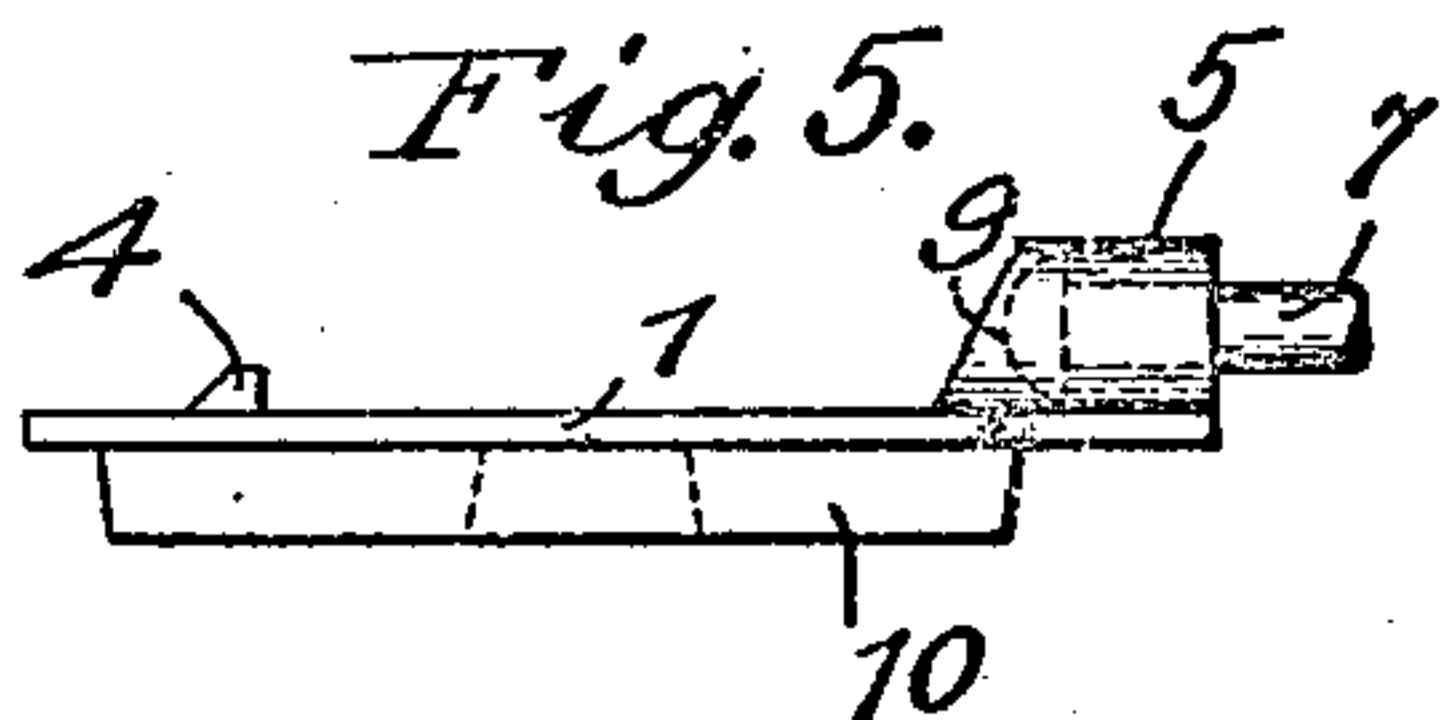
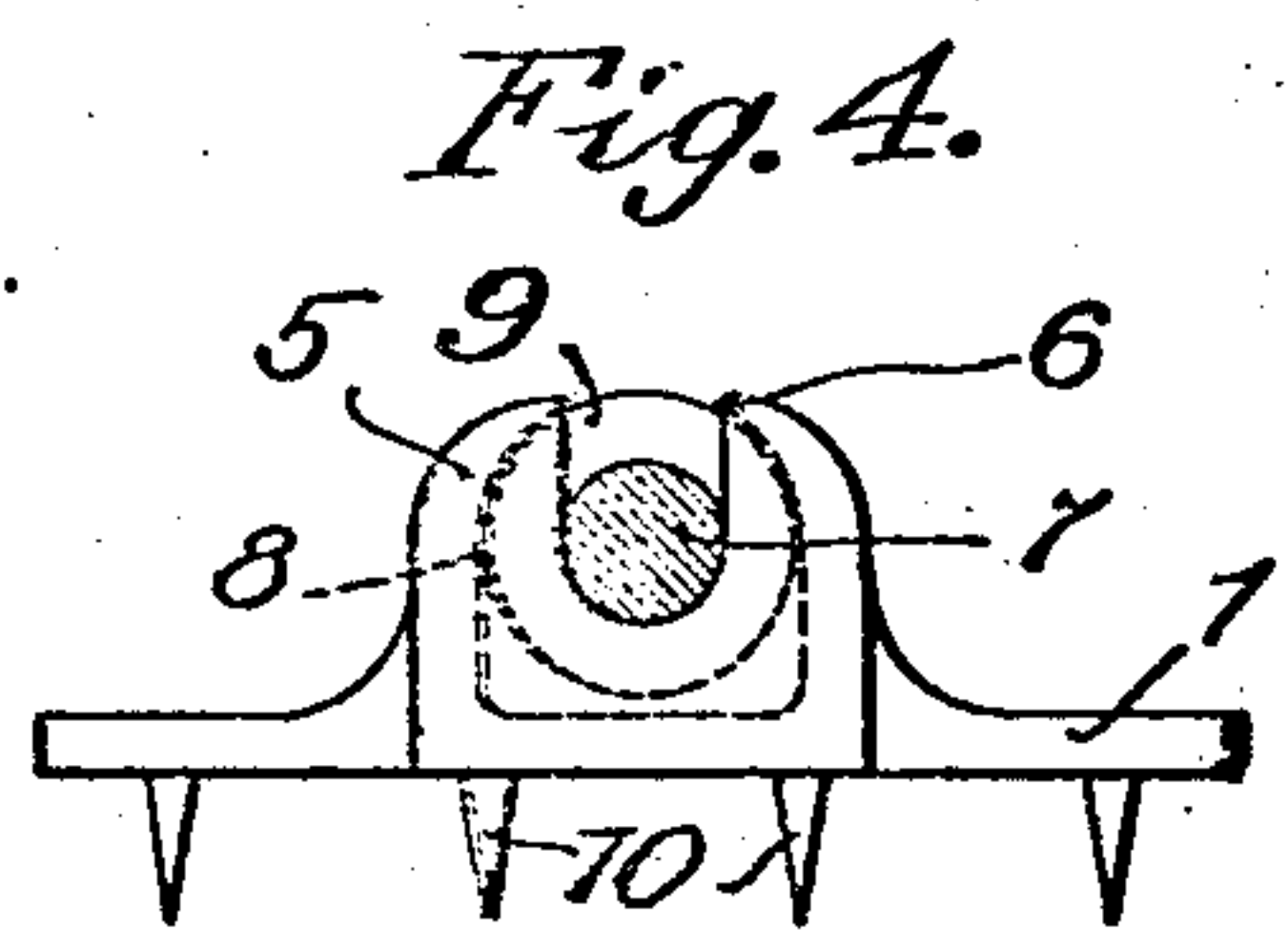
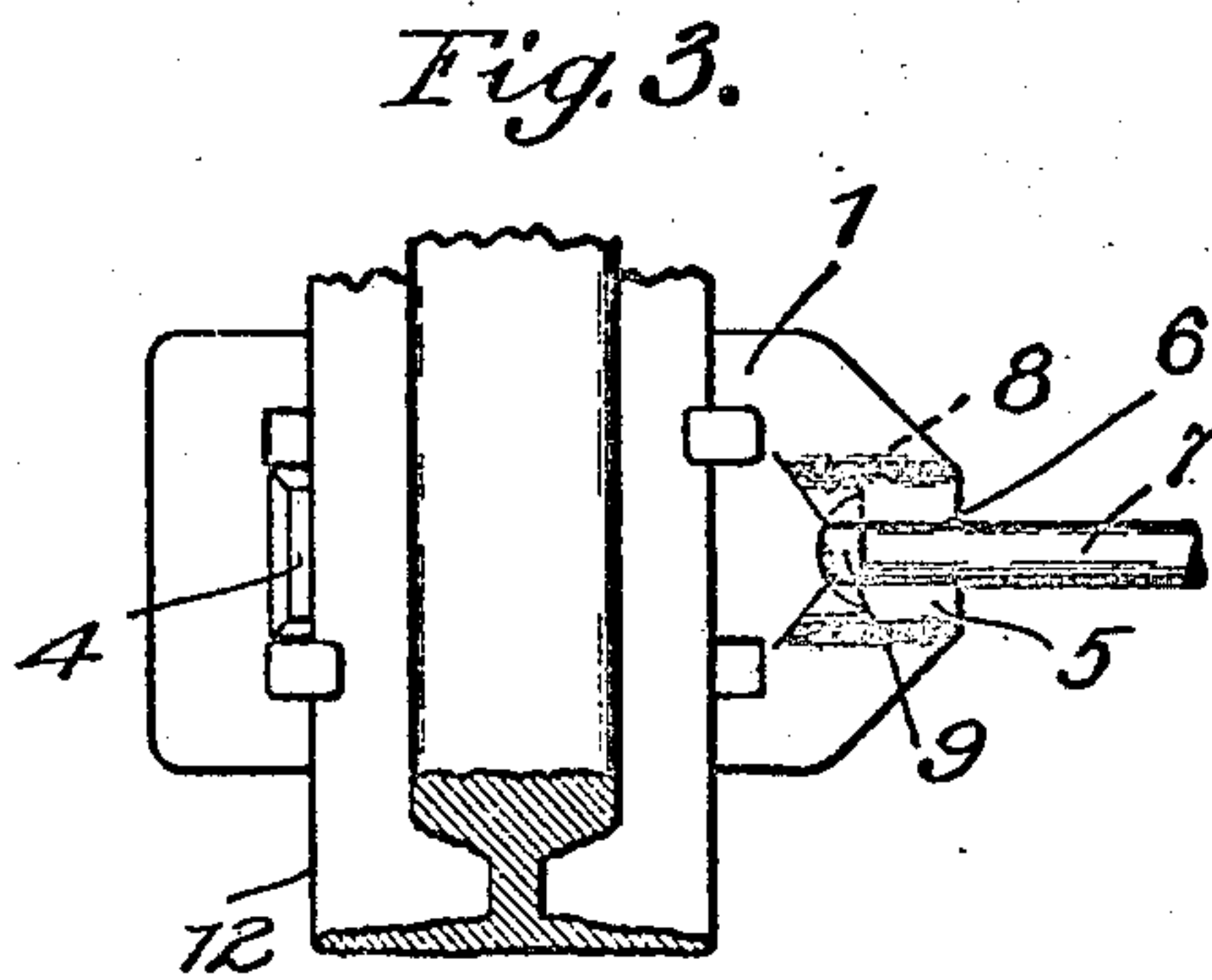
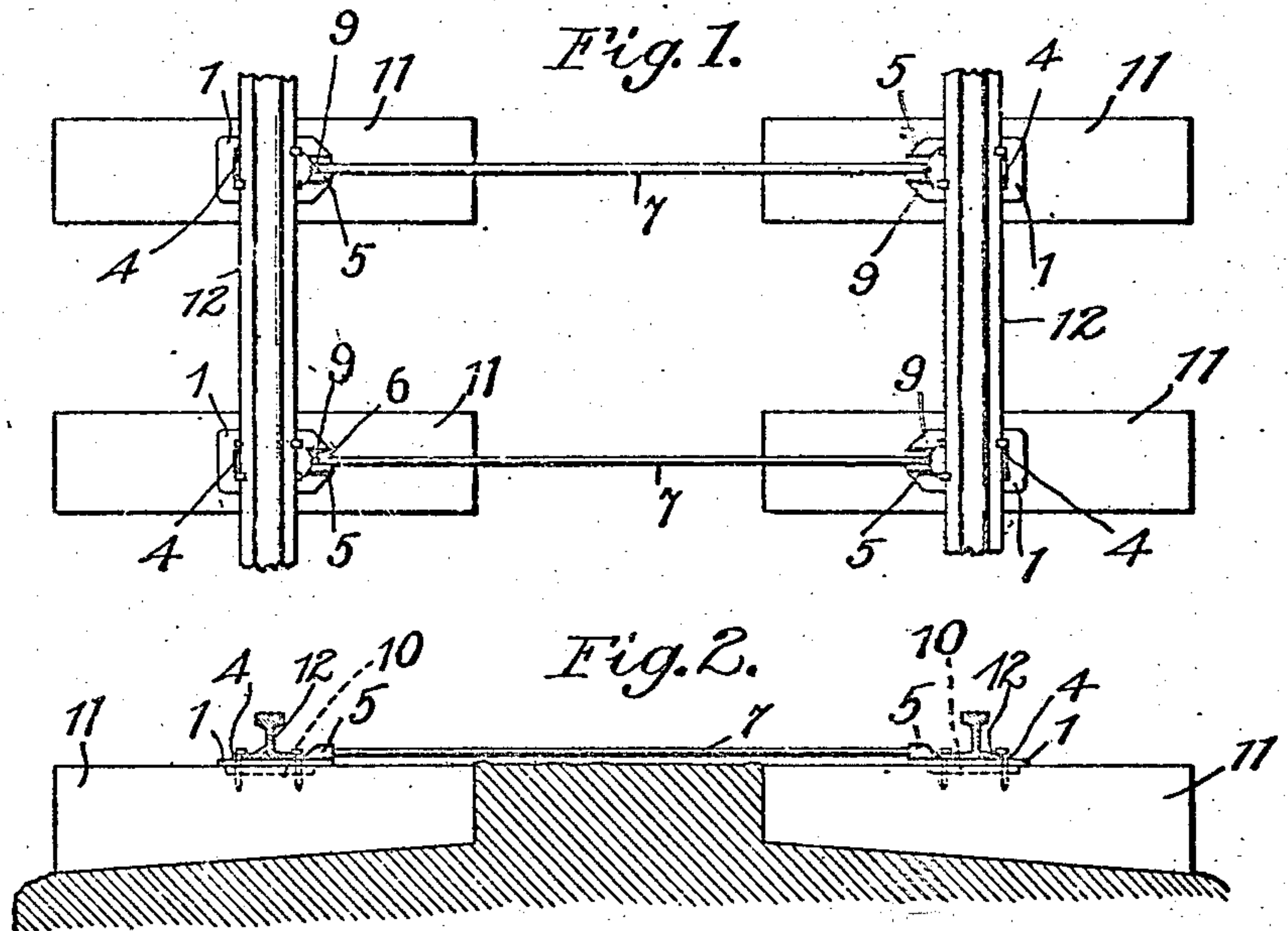


O. B. GRANT.
 TRACK CONSTRUCTION FOR RAILWAYS.
 APPLICATION FILED MAR. 25, 1907.

899,041.

Patented Sept. 22, 1908.



Witnesses:
 Leonard W. Novander, Oscar B. Grant
 Fred W. Kocher. By Charles A. Brown
 Attorney

UNITED STATES PATENT OFFICE.

OSCAR B. GRANT, OF DAVENPORT, IOWA.

TRACK CONSTRUCTION FOR RAILWAYS.

No. 899,041.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed March 25, 1907. Serial No. 364,332.

To all whom it may concern:

Be it known that I, OSCAR B. GRANT, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a certain new and useful Improvement in Track Construction for Railways, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to track construction for railways, its object being to provide more improved and particularly more economical arrangement and construction.

Wooden ties are now almost universally used for supporting rails, but wood is constantly becoming scarcer and its price constantly increasing. These wooden ties are usually eight feet long, and there must consequently be a great deal of waste when ties are cut from a tree, as nothing below eight feet can be utilized.

In accordance with my invention instead of using a single tie eight feet long, I use two ties, each one three feet long and one piece under each rail, the pieces being connected together by suitable tie rods. Thus when a tree is cut up, there will be much less waste, as only pieces less than three feet in length would be wasted. A tree that for the old construction would yield three eight-foot ties would for my construction yield eight three-foot ties which would take the place of four eight-foot ties, thus increasing the product from that tree in the proportion of three to four or 33 $\frac{1}{3}$ %, and further the wasted end of that tree might make one or two more three-foot pieces which would still further increase its production. A given length of track could, therefore, be provided with ties at a greatly reduced price and at the same time less wood would be used.

The exact arrangement of my invention will be best understood when described by referring to the accompanying drawing in which

Figure 1 is a plan view of a section of track; Fig. 2 is an end view; Fig. 3 is an enlarged view of a tie plate and tie rod connection therewith; Fig. 4 is an enlarged end view of the tie plate and rod shown in Fig. 3; Fig. 5 is a side view of the tie plate and rod shown in Fig. 3, and Fig. 6 is a plan view of a tie plate.

The type of tie plate I have shown comprises the plate or body part 1 through

which are the sets of spike holes 2 and 3, there being a ridge or shoulder 4 between the holes 2. At the other end of the plate is the lug 5 having the vertical recesses 6 for receiving the tie rod 7. The inner end of the lug is cut away to form a pocket 8 for receiving the head 9 of the tie rod. Extending from the lower side of the plate are the wedges or teeth 10 arranged in any suitable manner for engaging in the wood when the rail is spiked to the ties.

In Figs. 1 and 2, 11 represents the ties or blocks arranged in alinement. When the rail is to be applied, a tie plate is inserted thereunder on each tie block, but before the rails are brought to gage and spiked, the tie rods are dropped into the recesses 6 of the opposite tie plates, and when the rail is then spread and brought to gage, the heads of the tie rods will engage in the pockets 8 and will be locked against escape. The outer edge 12 of the rail base engages against the shoulders 4 on the plates, and the spikes are then driven, as shown, through the spike holes 2 and 3 and the rails will be securely held to gage and alinement. With this shoulder arrangement on the plates, all four spikes assist in preventing the rail on either side from moving outwardly, especially the outer rail on curves where the lateral pressure is mostly on that rail and the tendency is for the rails to spread.

Where the full length ties are used, the practice is to have a quantity of ballast outside the ends of the ties to hold the ties from sliding or working out of place, especially on curves, but with my arrangement the ballast fills in between the inner ends of the tie blocks, and this part of the ballast holds the track in alinement, and the ballast which under the old construction is applied at the outer ends of the ties is placed between the inner ends of the ties. The tie blocks also may either have a horizontal base or an inclined base as shown in Fig. 2. With the wedge shaped arrangement there is better drainage, the ballast being packed hard under the tie blocks and water will quickly run down the incline, thus producing perfect drainage which is a very desirable feature in track construction. The blocks may be evenly spaced on each side of the rail or either side may be longer than the other, but preferably the outer end should be the longest, as the support under that end is not so solid as at the center of the road bed, and the

movement of the train has a tendency to throw the greater weight to that end of the tie. When a tie, a tie plate or a tie rod is to be renewed, the spikes are removed, the rail lifted so as to let the shoulder pass inwardly under the rail sufficiently to disengage the head of the tie rod from the pocket of the tie plate so it may be lifted out of the recesses. Then the part or parts may be replaced with new ones and the process reversed in putting them back in place.

I thus provide improved track construction in which the amount of wood and iron necessary is reduced to a minimum. The alinement of the rails is securely held by the inner end of the short ties resting against the earth or ballast in the center of the roadbed which holds the other rail from moving outward, and the other short ties hold the opposite rail from moving outward, all of which is accomplished by the rails and tie plates coupled together by means of the tie rods and the spikes holding the tie plates to the blocks. The tie rods, of course, could be made integral with the tie plates, but the construction shown is preferable, as where the gage must be increased as on curves, it is merely necessary to insert longer tie rods.

I do not wish to be limited to the exact arrangement and construction herein shown, as many modifications could be made without departing from the scope of the invention.

I claim as new and desire to secure by Letters Patent:

1. In track construction for railways, the combination of two rows of tie blocks, one row under each of the rails of the track, ballast under the tie blocks and between the inner ends thereof, a tie plate on each block under the rail thereon, spikes passing through each tie plate and engaging the rail thereon to secure the tie plate and rail to the block, tie rods connecting together the tie plates on

opposite blocks to hold the track to gage, the lower faces of the blocks being inclined downwardly and outwardly so that water will flow away from the road bed.

2. In track construction for railways, the combination of two rows of short tie blocks, one row under each of the rails of the track, tie plates under the rails having spike holes for receiving the spikes which secure the track to the tie blocks, lugs extending from each tie plate and forming a groove, tie rods for engaging in the grooves of opposite tie plates, heads on the tie rods, and locking extensions on the lugs for engaging with the heads to lock the tie rods to the plates.

3. In track construction for railways, the combination of two rows of short tie blocks, one row under each of the rails of the track, metallic tie plates on each block under the rails having spike holes through which pass spikes which engage the rails, a set of vertical lugs on each tie plate forming a groove, a locking pocket formed at the inner end of each set of lugs, and a tie rod connecting together opposite tie plates, said tie rod engaging at its ends in the grooves and having heads for engaging in the locking pockets to lock the tie rods in place.

4. In track construction for railways, the combination of two rows of tie blocks, one row under each of the rails of the track, the upper faces of the tie blocks being in a horizontal plane, rails secured to the blocks, tie rods connecting together the rails and blocks, the lower faces of the blocks being inclined downwardly and outwardly, and ballast under and between the blocks.

In witness whereof, I hereunto subscribe my name this 19th day of March A. D., 1907.

OSCAR B. GRANT.

Witnesses:

H. H. SCHMIDT,
F. S. WEISBROOK.