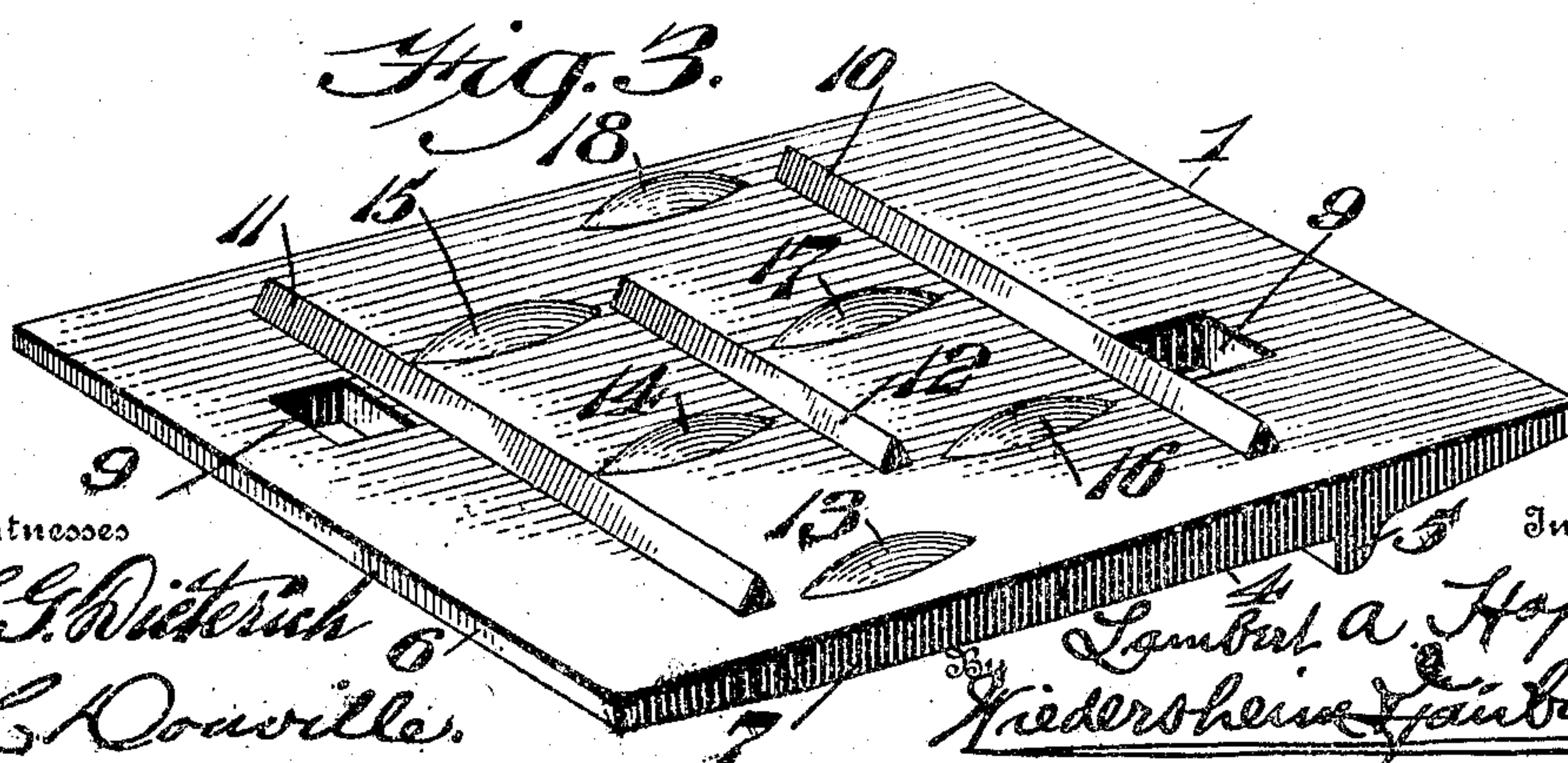
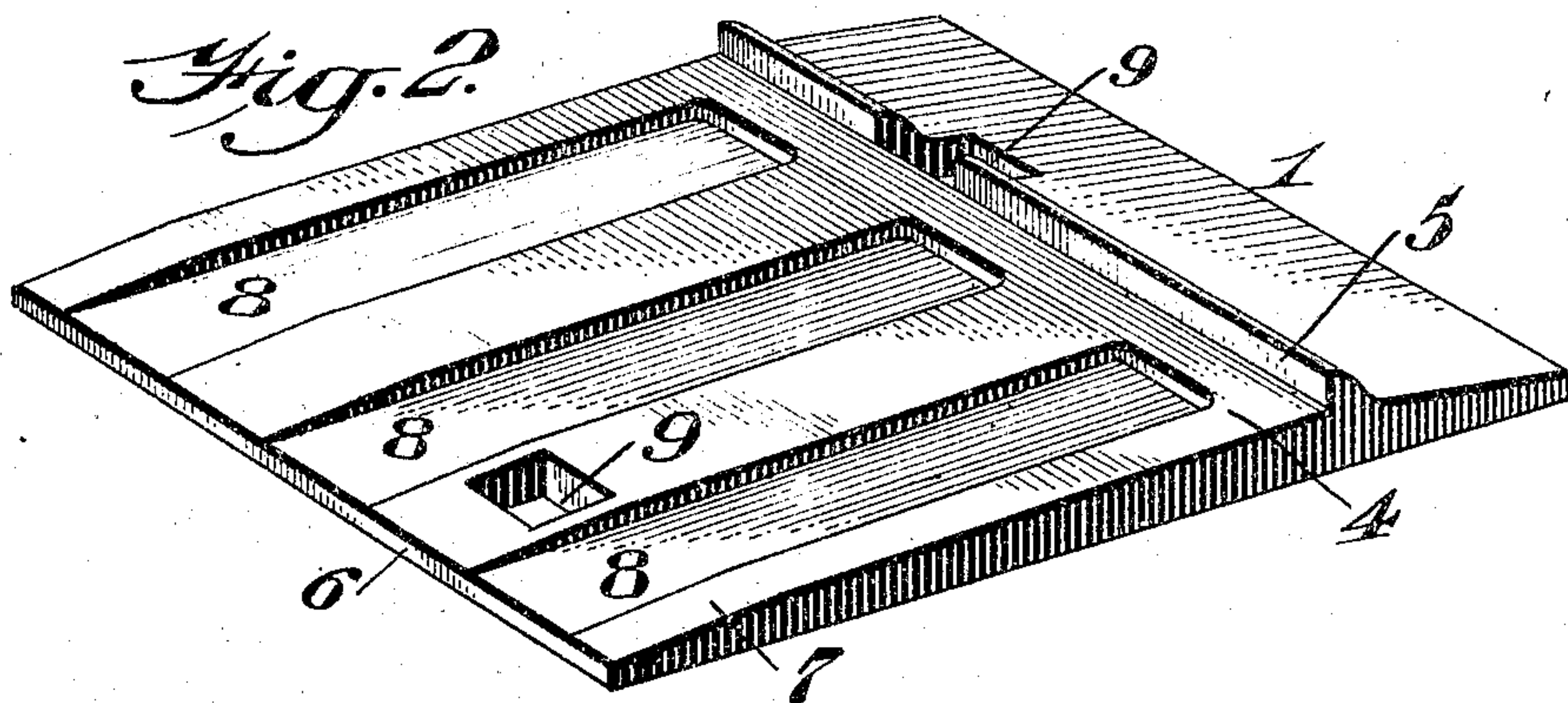
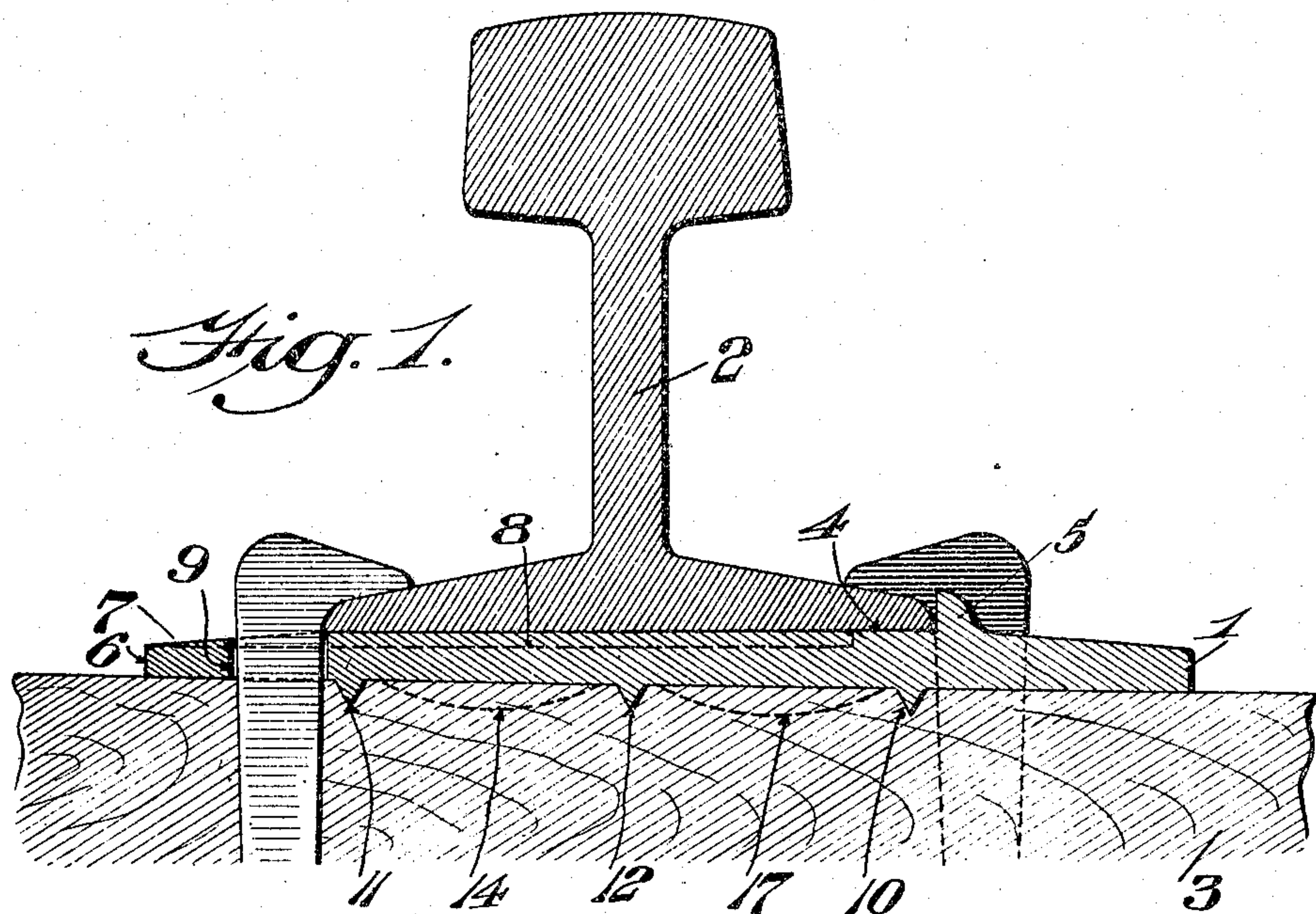


L. A. HOPKINS.
TIE PLATE.
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TIE-PLATE.

No. 919,867.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LAMBERT A. HOPKINS, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a new and useful Tie-Plate, of which the following is a specification.

My present invention consists of a novel construction of tie plate which is adapted to be interposed between the railroad rails and the supporting ties, whereby both the longitudinal creeping and lateral spreading of the rails with respect to the ties is prevented in an efficient manner, provision being also made on the upper surface of the tie plate so that water, sand or other deleterious matter will be drained off and carried away from the tie plate so that the life of the tie plate is prolonged, since if the water, sand and dirt accumulate below the rail the grinding action between the rail and the plate will cause the latter to soon become worn out thereby necessitating the renewal of the tie plate.

It further consists of a novel construction of a tie plate provided with flanges and ribs on its under surface which are so located and arranged respectively to each other that when the tie plate is spiked to the tie such ribs and flanges will be embedded in the tie and thus prevent movement in any direction of such tie plate with respect to its tie.

It further consists of other novel features of construction all as will be hereinafter set forth.

For the purpose of illustrating my invention I have shown in the accompanying drawings a preferred form thereof, since the same has been found in practice to give satisfactory and reliable results and is at present preferred by me, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that the same is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents a sectional view of a tie plate embodying my invention, the same being shown in assembled position with respect to the tie and the rail. Fig. 2 represents a perspective view showing the upper face of my novel tie plate. Fig. 3 represents a perspective view showing the bottom surface of my novel tie plate.

Similar numerals of reference represent corresponding parts in the drawings.

Referring to the drawings:—1 designates a tie plate embodying my invention, the same being adapted to be interposed between the rail 2 and the tie 3. The upper surface 4 of the tie plate is provided with a shoulder 5 extending across the tie plate and against which the flange of the rail 2 is adapted to abut. The upper surface 4 preferably inclines or tapers toward the side 6 and in proximity to the side 6 the upper surface is beveled or inclined as indicated at 7.

8 designates proportionately wide channels or grooves on the upper surface 4 of the tie plate which begin in proximity to the shoulder 5 and extend completely across the plate to the side 6 and these channels or grooves 8 preferably incline or slope toward the face 6 of the plate so that water, sand or other deleterious material will be drained off, thereby preventing the accumulation of water or other foreign material between the engaging surfaces of the tie plate and the rail.

9 designates spike holes one of which is located preferably in alignment with the shoulder 5 so that the strain or sheer on the spike will be reduced to a minimum and the other spike hole is preferably located as most clearly seen in Fig. 2, near the beginning of the beveled or inclined portion 7 of the top surface 4. The under surface of the tie plate is provided with transversely extending flanges 10 and 11, the flange 10 being located in proximity to the spike hole 9 and preferably running parallel with the shoulder 5, while the flange 11 is preferably parallel with the flange 10 and is located in proximity to the spike hole on the opposite side of the plate.

12 designates a flange located intermediately of the flanges 10 and 11, it being noted that the flange 12 is shorter than the flanges 10 and 11 and all of the flanges, 10, 11 and 12, are preferably made wedge shape in order that they will more easily enter the fibers of the wood of the tie 3.

13, 14 and 15 designate longitudinally extending ribs or lugs located on the under surface of the tie plate 4 preferably arranged parallel to each other, it being noted that the rib 13 is located in proximity to a plane passing through the ends of the flanges 10 and 11, while the rib 15 is located in proximity to a longitudinal plane at the end of the intermediate transverse flange 12, while the rib 14 is located intermediately the ribs 13 and 15.

16, 17 and 18 designate ribs located between the flanges 10 and 12 and preferably arranged parallel with each other, the rib 17 being located intermediately of the ribs 16 and 18, the rib 18 being located in a longitudinal plane passing in proximity to the end of the flanges 10 and 11 and located on the opposite side of the tie plate from the rib 13, while the rib 16 is located in a longitudinal plane in proximity to the end of the central transverse plane 12 and is located on the opposite side from the rib 13, said ribs 13 to 18 being arranged in staggered order with respect to each other, and being preferably wedge shaped and rounded as is indicated in Figs. 1 and 3. It will be seen that by such an arrangement and disposition of the ribs 13, 14, 15, 16, 17 and 18 and the flanges 10, 11 and 12, such ribs and flanges are located on the under side of the rail tie directly beneath the rail so that the weight of the rail and the traffic thereover will cause such ribs to become firmly embedded in the fiber of the tie so that any lateral or longitudinal movement of the tie with respect to the tie plate will be positively prevented. It will be evident that after the tie plate is once spiked in place it will be necessary for the whole tie to be removed in order to change the position of the tie plate with respect to the rail.

The location of the channels 8 is such that the water and other deleterious material will be drained from the tie plate and at the same time owing to the location of these channels and the location and arrangement of the ribs and flanges on the under surface of the rail, the tie plate will have the requisite structural strength without increasing the amount of material and it has been found in practice that a tie plate embodying my invention can be readily and cheaply manufactured and is very durable under heavy traffic.

It is to be noted that in my present construction, the flanges 10, 11 and 12 and the rail abutting shoulder 5 extends transversely of the tie while the lugs on the lower surface of the tie plate extend longitudinally of the tie.

It will now be apparent that I have devised a novel and useful construction of a tie plate which embodies the features enumerated as desirable in the foregoing, and while I have, in the present instance, shown and described a preferred embodiment thereof which in practice gives satisfactory and reliable results, it is to be understood that the same is susceptible of modification in

various particulars without departing from the spirit and scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:--

1. A tie plate, provided on its upper face with a transversely extending shoulder, and a series of drainage channels extending at an angle to said shoulder, the lower surface of said plate being provided with a plurality of transversely extending flanges, and a plurality of wedge shaped ribs, arranged in staggered order with respect to each other and extending at an angle to said flanges.

2. A tie plate provided on its rail supporting surface with a transversely extending shoulder and a series of channels or grooves angularly inclined with respect to said shoulder and extending to the side opposite said shoulder, and the lower surface of the plate being provided with a plurality of transversely extending wedge shaped flanges substantially parallel with each other, the intermediate flange being of less length than the outer flanges, and a plurality of longitudinally extending curved, wedge shaped ribs arranged in staggered order intermediate of said flanges, and at substantially a right angle thereto.

3. A tie plate provided on its upper face with a shoulder 5, drainage channels 8 and spike holes 9, the lower surface of said plate being provided with flanges 10, 11 and 12, the flange 12 being of less length than the flanges 10 and 11, and with a plurality of ribs arranged in staggered order intermediately of the flanges 10 and 12 and the flanges 11 and 12.

4. A tie plate provided on its rail supporting surface with a transversely extending shoulder and a series of drainage channels beginning a slight distance from said shoulder and extending at an angle thereto to the edge of the plate whereby a better bearing surface for the rail is obtained, said rail supporting surface inclining slightly to said edge opposite said shoulder and the under surface of said plate being substantially rectilinear and provided with a plurality of transversely extending flanges and a plurality of wedge shaped ribs arranged in staggered order with respect to each other and extending at an angle to said flanges.

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