

No. 786,037.

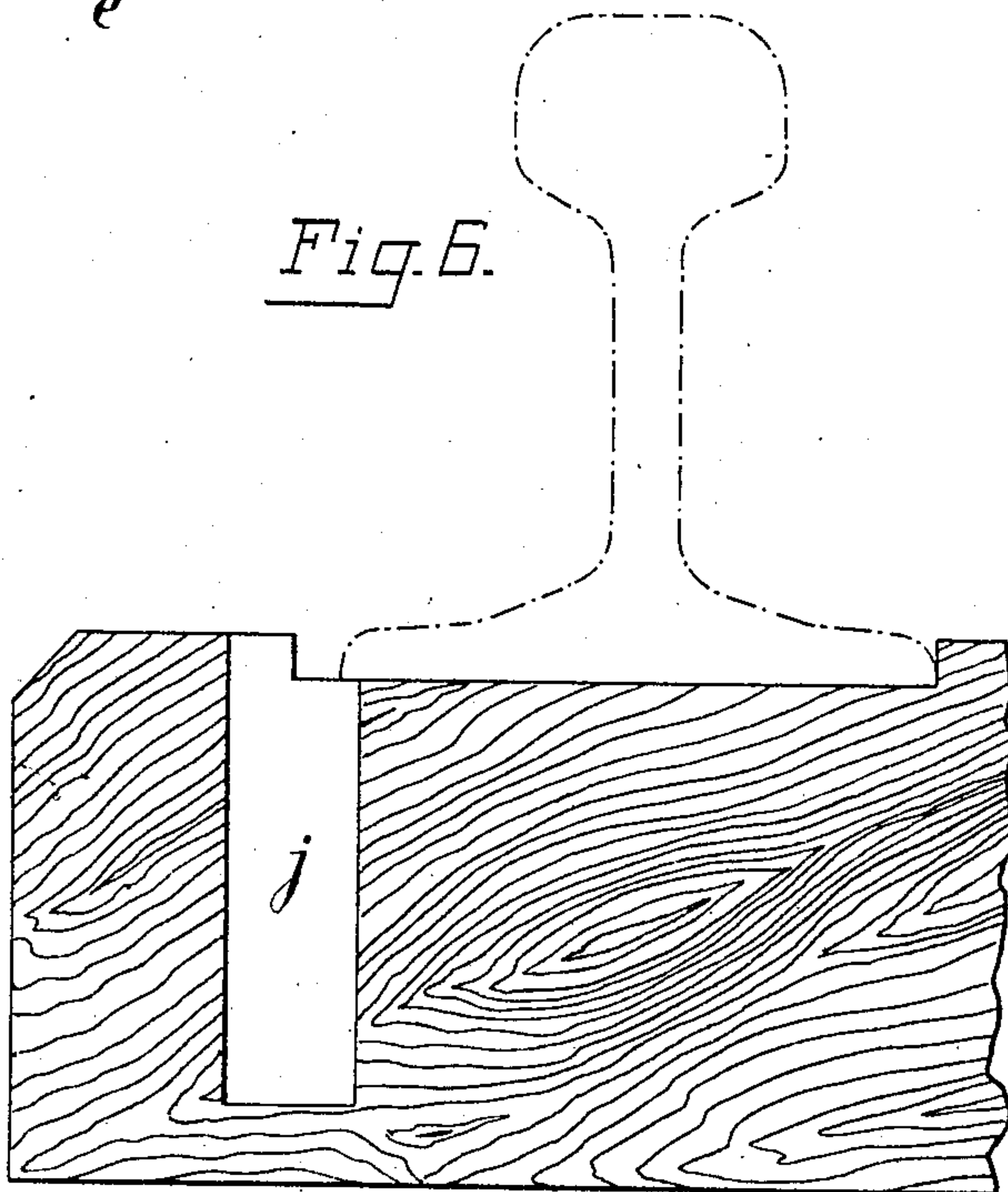
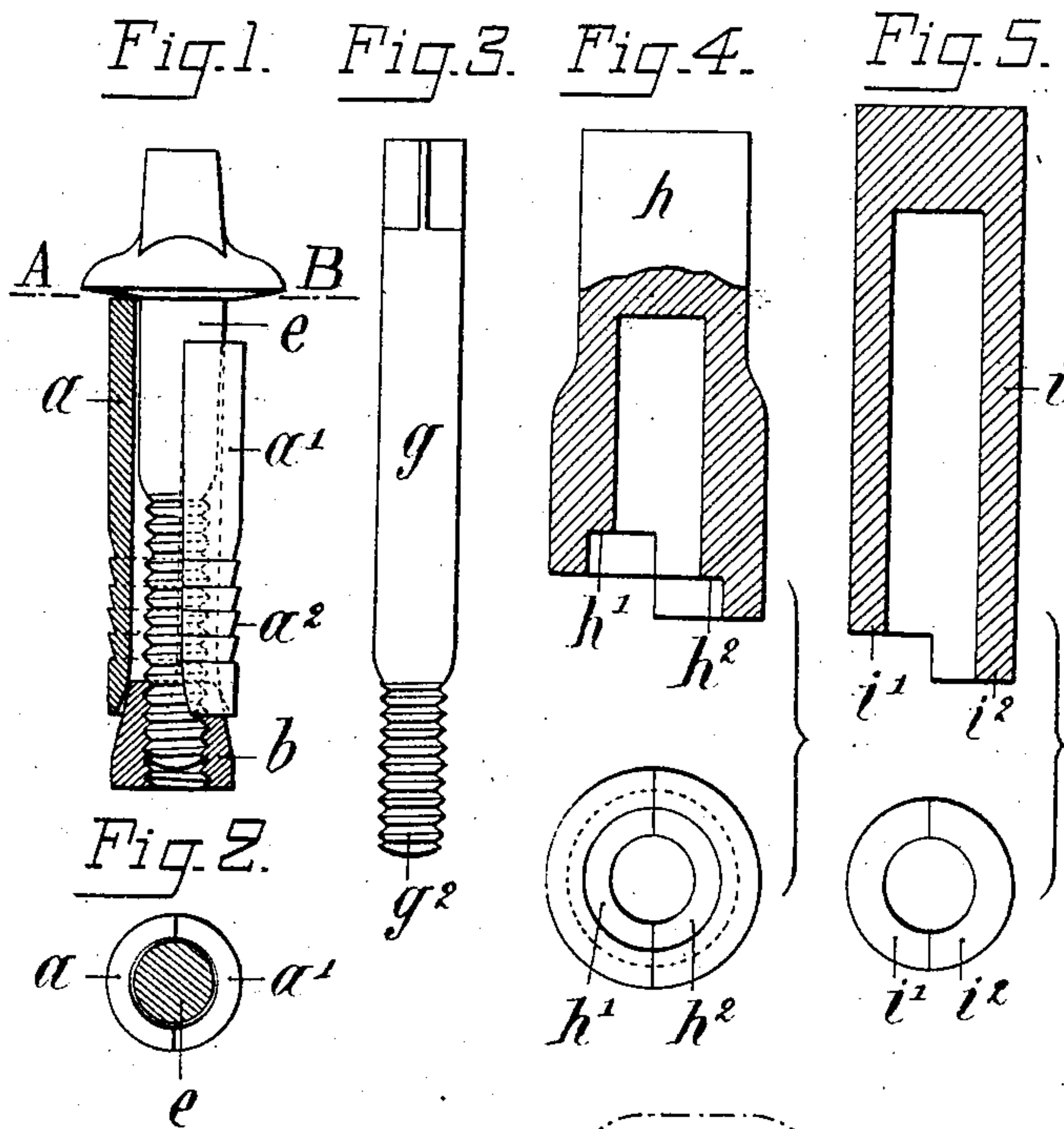
PATENTED MAR. 28, 1905.

G. G. LAKHOVSKY.

MEANS FOR FASTENING IN POSITION RAILWAY SPIKES OR THE LIKE.

APPLICATION FILED APR. 21, 1904.

3 SHEETS—SHEET 1.



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Fig. 7.

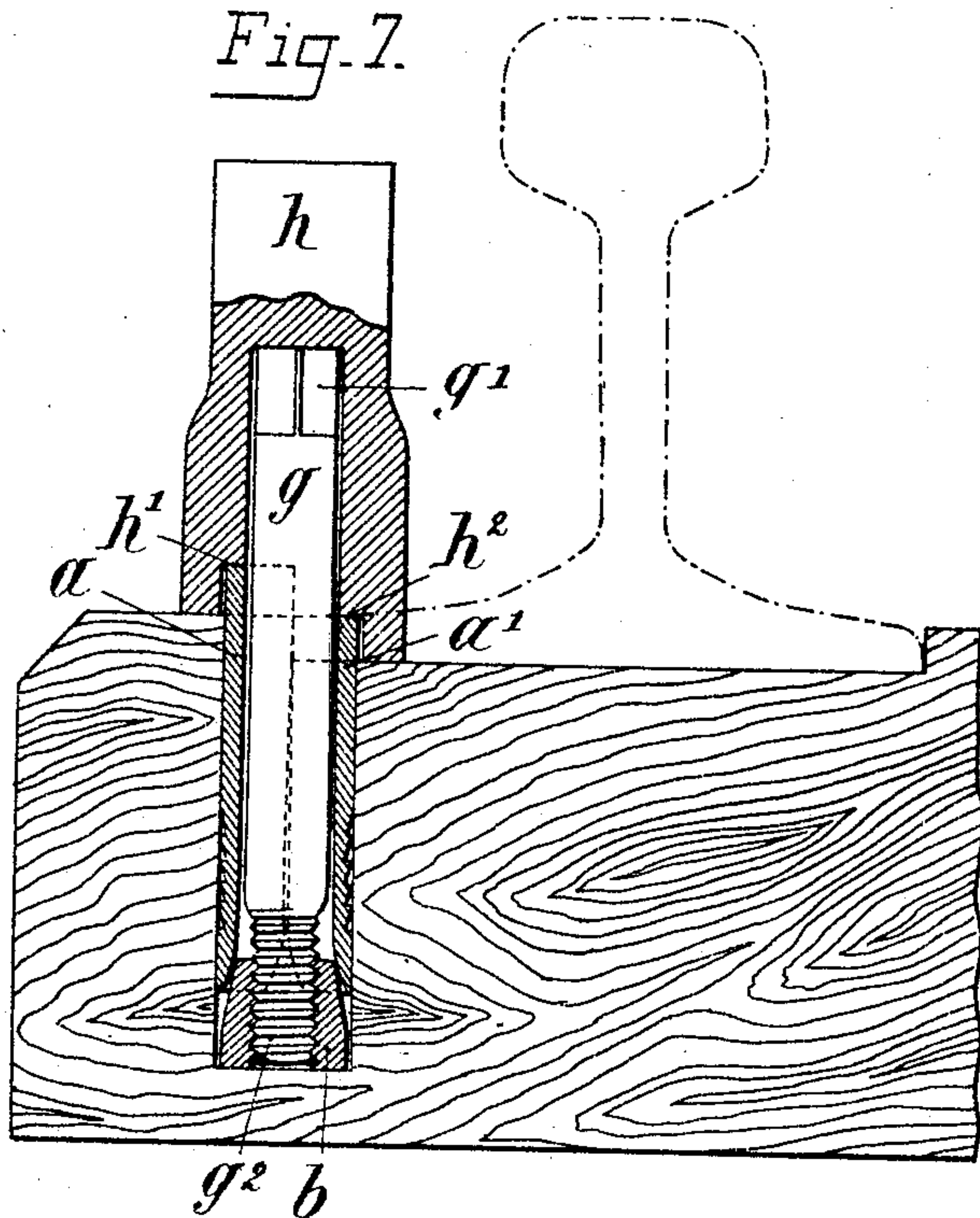
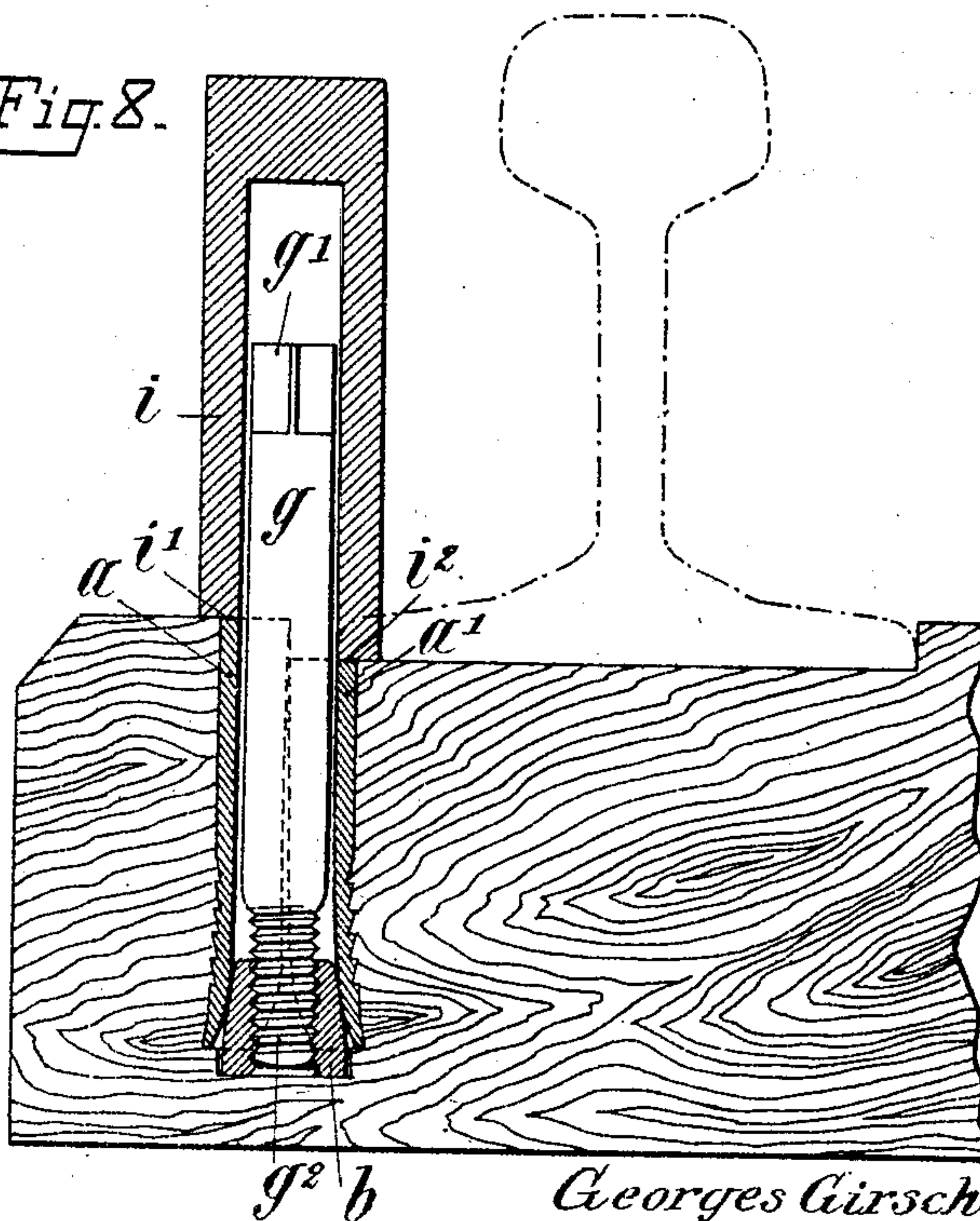


Fig. 8.



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3 SHEETS—SHEET 3.

Fig. 9.

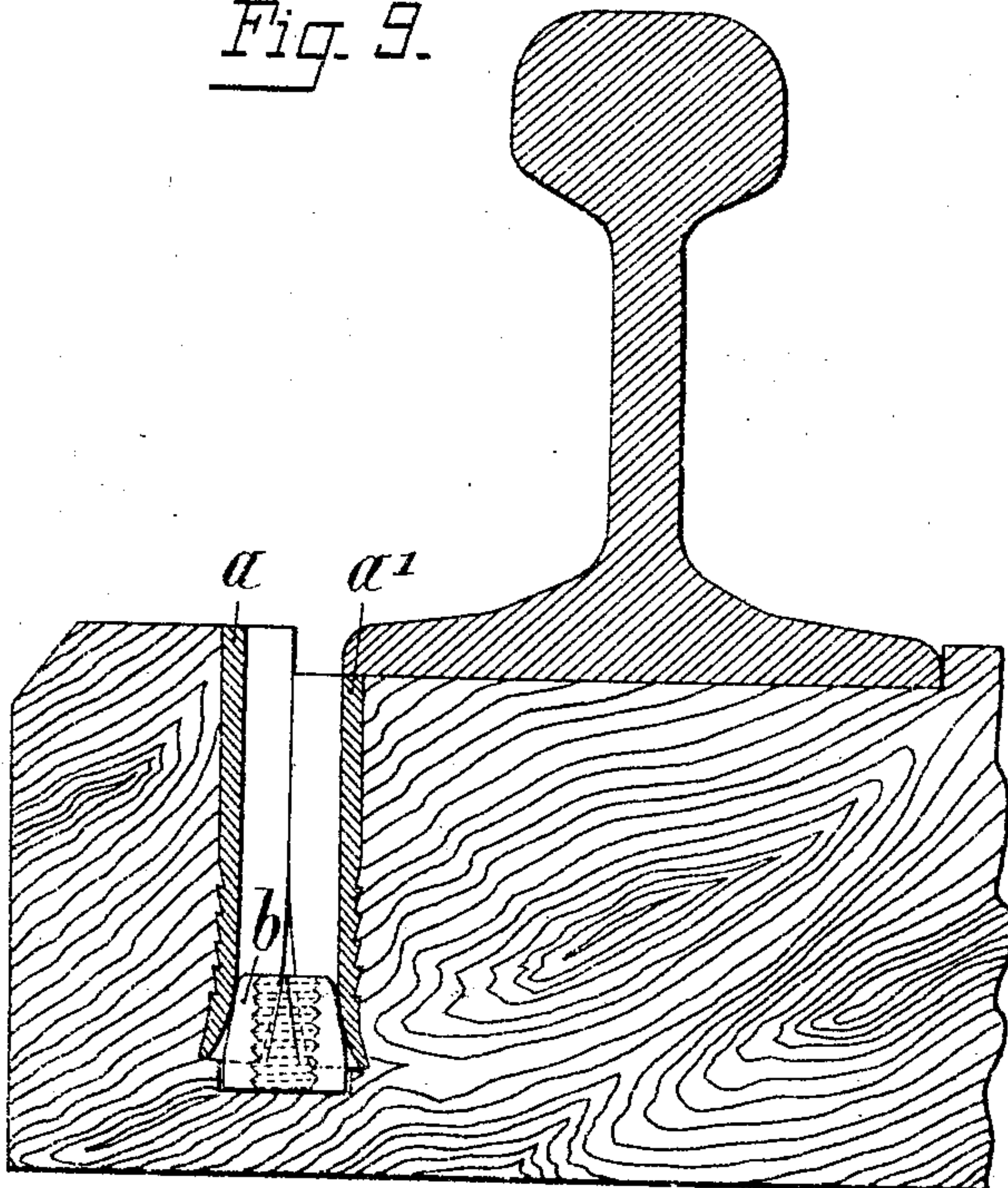
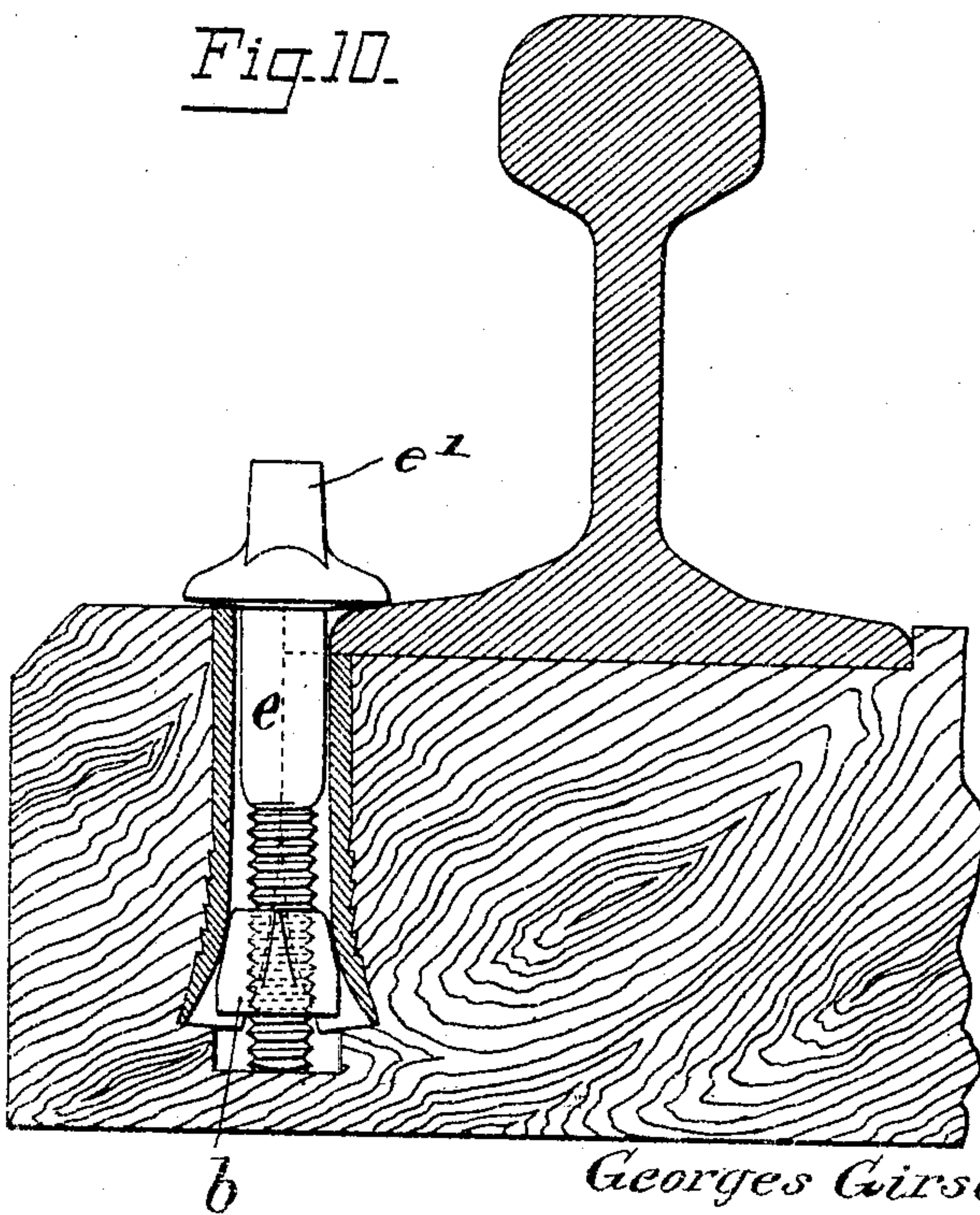


Fig. 10.



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UNITED STATES PATENT OFFICE.

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MEANS FOR FASTENING IN POSITION RAILWAY-SPIKES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 786,037, dated March 28, 1905.

Application filed April 21, 1904. Serial No. 204,224.

To all whom it may concern:

Be it known that I, GEORGES GIRSCH LAKHOVSKY, engineer, of 272 Boulevard St. Germain, in the city of Paris, Republic of France, have invented Improvements in or Connected with Means for Fastening in Position Railway-Spikes or the Like, of which the following is a full, clear, and exact description.

The present invention has for its object to prevent the working loose and play of spikes or the like in their holes and chiefly those employed in connection with the wooden sleepers of railway-lines.

This invention relates more particularly to the means applied to spikes used for securing broad-footed rails in position with the purpose to afford a seat to the head of the spike and to prevent any inclination of the latter outside the rail.

This means consists in the combination of two shells of different lengths in such manner that the longer shell projects with respect to the shorter one when the device is in place and that the edge of this projecting shell may be on a level with the upper surface of the foot of the rail and of a conical angularly-formed nut in which is screwed the threaded extremity of the spike. This nut is provided with wedge surfaces which engage between the two shells. Under these conditions if a rotary movement is imparted to the spike the conical nut not being able to turn, since it is retained by its lugs, is traversed lengthwise or drawn upward by the threaded part of the spike and enters the sleeve, thereby causing the latter to spread, at the same time tightly compressing the wood constituting the walls of the hole in the sleeper and by means of its teeth entering thereinto and obtaining a firm grip thereof. The sleeve, which loosely fits and is traversed by the spike, is not subjected to the action of the vibration of the latter, and consequently remains very firmly fixed in the wood of the sleeper and only exercises on the latter a very considerable compression, which instead of deteriorating it, on the contrary strengthens it and permits the employment of wood of a very soft character.

It must be further noticed that according to the ordinary method of fixing broad-footed

rails the head of the spike rests with one part of its circumference upon the foot of the rail; but the other part of the head of the spike does not rest upon any bearing which offers sufficient resistance, so that in the screwing up of the spike the head of the latter becomes inclined toward the exterior of or away from the rail to the detriment of the fixing of the latter.

Now according to the present invention the head of the spike rests beyond the foot of the rail upon the end of the projecting shell, which constitutes a bearing-surface offering a large resistance in opposition to any inclination or deviation of the head of the spike, and thus the accurate fixing in position of the rail is insured.

Referring to the drawings accompanying the specification, and in which the invention is shown by way of example only, Figure 1 shows in elevation a spike provided with the shells, one of the shells being shown in section. Fig. 2 is a horizontal section taken on the line A B of Fig. 1. Figs. 3, 4, and 5 represent the tool employed for placing the fixing means of the spike in position. Figs. 6 to 10 represent the different phases in this operation.

The device illustrated in the drawings comprises—

First, two shells a a' , exteriorly notched in such manner as to present tapered or ratchet teeth a'' , and the shells a a' are interiorly formed hollow or concave, Fig. 2, so as to constitute by their juxtaposition a sleeve, Figs. 1 and 2, which the spike e traverses, as hereinafter described. The shell a is made longer than the shell a' , so that while the lower extremities of said shells are upon the same level the upper extremity of the shell a projects beyond that of the shell a' and lies in a different plane. Before placing the latter beneath the foot of the rail the difference in length of the two shells a a' must be determined in such manner that the upper end of the shell a lies flush with the upper surface of the foot of the rail.

Second, an angularly-formed conical nut b , screwing, as will also be hereinafter explained, onto the extremity of the threaded part of the spike e . The nut b is formed with opposite in-

clined or wedge-shaped surfaces adapted to engage when the parts are in position the two diametrically opposite notches or recesses which the two shells a a' form, with this object, at their lower part.

For placing this device in position are employed, first, a circular rod or bolt g , having at one end a square g' and at the other end a screw-thread g'' , as shown in Fig. 3; second, a socket-like key h , Fig. 4, having interiorly at its lower end two shouldered recesses h' h'' , arranged at different levels, said difference of level corresponding to the amount of projection of the shell a with respect to that a' ; third, a socket-like key i , constructed as shown at Fig. 5, the lower end of which is formed with two semicircular parts i' i'' , arranged in different horizontal planes, the vertical distance between said planes also corresponding with the amount of projection of the shell a beyond that a' .

The fixing device is fitted in position in the following manner: The rod or bolt g is introduced into the socket of the key h in such manner that its end g' engages the end of said socket. The shells a a' are applied around the rod or bolt g , and their ends engage the key h in such manner that the end of the shell a abuts against the shoulder of the recess h' and the end of the shell a' against that of the recess h'' , and the conical or wedge-shaped nut b is then screwed upon the threaded end g'' of the bolt or rod g . The length of the bolt or rod g is proportioned in such manner that the nut b does not cause the spreading of the shells a a' , but simply retains said shells, which constitute a cylindrical sleeve. The whole of these parts thus temporarily put together are held in a vertical position over the cylindrical hole j previously bored in the sleeper, Fig. 6, the diameter of which is slightly less than the exterior diameter of the sleeve constituted by the shells. A blow is then delivered upon the upper end of the key h by means of a hammer or otherwise, which forces the device into the hole j , causing it to powerfully adhere to the sleeper, since its diameter is slightly greater than that of the hole. When the nut b touches the end of the hole j , Fig. 7, the key h is replaced by the key i , the internal socket of which is longer, in such manner that the end of the bolt g does not meet the end of this socket. A blow is then delivered, by means of a hammer or otherwise, upon the top of the key, by which means the shells a a' are forced to descend and caused to spread at their lower ends, Fig. 8, under the action of the conical nut b , which remains fixed. By these means the upper ends of the shells a a' always preserve their difference of level in consequence of the arrangement of the two semicircular parts i' i'' of the key i . The shells a a' powerfully compress the walls of the hole j by forcing their way into the latter and hold inclosed the nut b . The key i is then withdrawn, the

bolt g is unscrewed, and the rail is placed upon the sleeper, Fig. 9, so that the edge of its foot lies flush with the internal edge of the shell a' . The spike e is then placed in the sleeve constituted by the shells a and a' , and its threaded end is screwed into the nut b , as shown in Fig. 10.

By means of this device the head e' of the spike, which acts as a clamp upon the foot of the rail, is supported upon the opposite side by the shell a , which is fixed with the sleeper.

In some cases the shells employed may be of same length.

The forms, dimensions, arrangements of the details of construction, and nature of the metal employed may be varied according to the different applications of the device.

I claim—

1. In means for fixing the railway-spikes and particularly spikes of broad-footed rails, two shells of different length arranged in such a manner that the longer one projects with relation to the other one which latter is situated beneath the foot of the rail, constituting a firm seat for the head of the spike thereby preventing any inclination of the latter outside the rail and means traversed by the threaded spike for expanding the same substantially as herein shown and described and for the purpose stated.

2. In a device for securing the railway-spikes and more particularly the spikes for broad-footed rails, a fitting intended to metallize the hole of the sleeper, consisting of two semicylindrical entirely independent shells of different length so that the upper edge of the shortest will be placed under the foot of the rail while the longer one projecting beyond the former will offer a resisting seat to the head of the spike and will thus oppose itself to any inclination of the latter outside the rail, substantially as described.

3. The combination with a rail and a support therefor which is provided with a bore, of an expansible sleeve situated within the bore, a nut at the lower end of the sleeve, and a bolt engaging the nut and cooperating with the rail.

4. The combination with a rail and a support therefor which is provided with a bore, of a divided sleeve situated within the bore, a nut at the lower end of the sleeve having inclined faces coacting with said sleeve, and a bolt engaging the nut and cooperating with the rail.

5. The combination with a rail and a support therefor which is provided with a bore, of an expansible sleeve situated within the bore and having upper surfaces lying in different planes, a nut at the lower end of the sleeve, and a bolt engaging the nut and cooperating with the rail.

6. The combination with a rail and a support therefor which is provided with a bore, of an expansible sleeve situated within the

bore and having upper surfaces lying in different planes, one of which surfaces is located beneath the rail, a nut at the lower end of the sleeve, and a bolt engaging the nut and cooperating with the rail.

7. The combination with a rail and a support therefor which is provided with a bore, of an expansible sleeve situated within the bore and having upper surfaces lying in different planes, one of which surfaces is located beneath the rail, a nut at the lower end of the sleeve, and a bolt engaging the nut and cooperating with the rail and with the other sleeve-surface.

8. The combination with a rail and a support therefor which is provided with a bore, of an expansible sleeve situated within the bore and having exterior teeth, a nut at the lower end of the sleeve, and a bolt engaging the nut and cooperating with the rail.

9. A fastening for rails comprising a bolt, a sleeve which may surround said bolt, and a nut for cooperation with the bolt and with the interior of the sleeve.

10. A fastening for rails comprising a bolt, a divided sleeve which may surround said bolt, and a nut for cooperation with the bolt and with the interior of the sleeve, said nut having inclined faces which may enter the sleeve.

11. A fastening for rails comprising a bolt, a sleeve which may surround said bolt and having end surfaces lying in different planes, and a nut for cooperation with the bolt and with the interior of the sleeve.

12. A fastening for rails comprising a bolt, a sleeve provided with exterior teeth and which may surround said bolt, and a nut for cooperation with the bolt and with the interior of the sleeve.

The foregoing specification of my improvements in or connected with means for fastening in position railway-spikes or the like signed by me this 2d day of April, 1904.

GEORGES GIRSCH LAKHOVSKY.

Witnesses:

HANSON C. COXE,

MAURICE H. PIGNET.