No. 765,526. PATENTED JULY 19, 1904.

D. F. VAUGHAN.

RAILROAD FROG.

APPLICATION FILED MAR. 7, 1904.

NO MODEL.

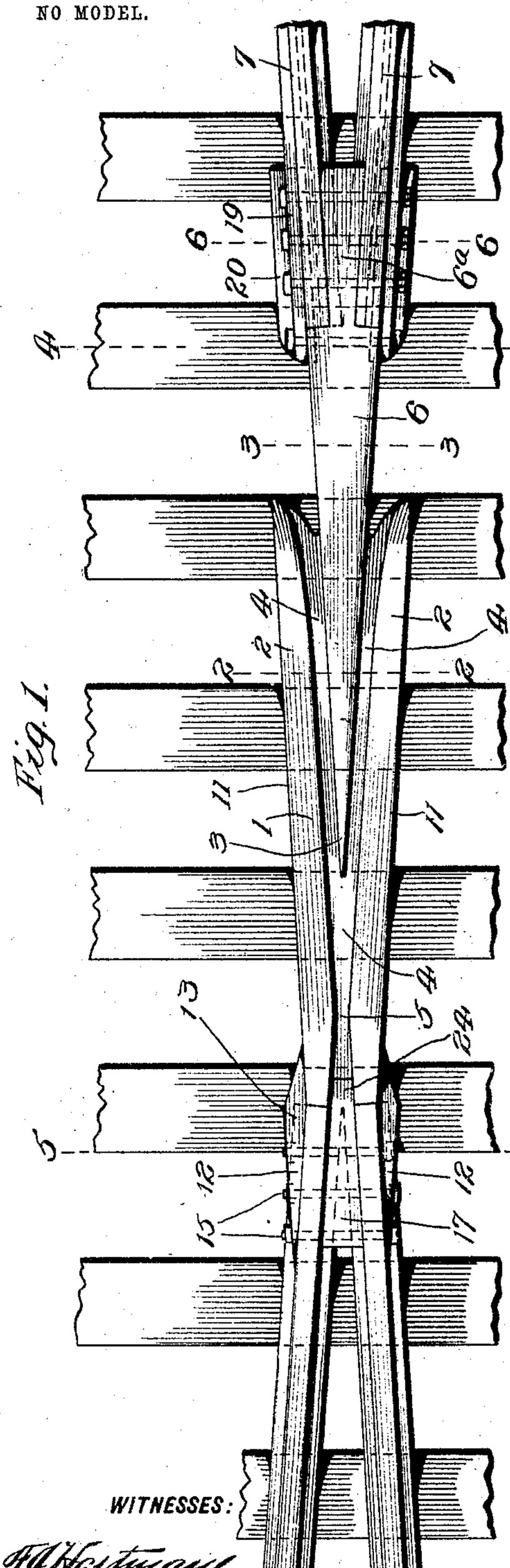

Fig. 1.

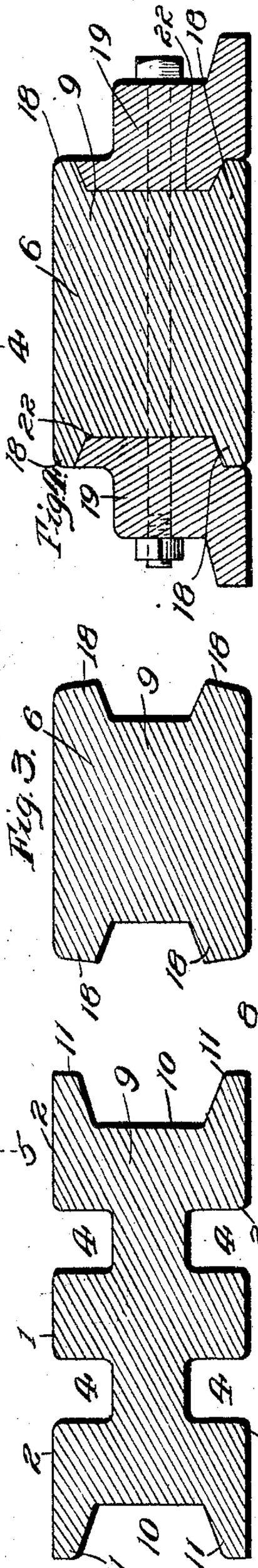

Fig. 3.

Fig. 2.

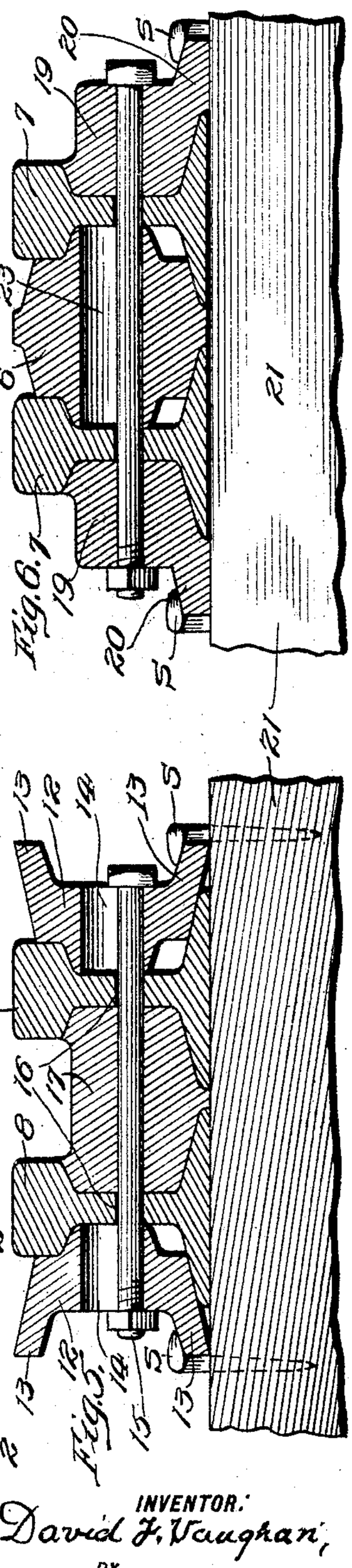

Fig. 4.

Fig. 5.

WITNESSES:

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No. 765,526. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

DAVID F. VAUGHAN, OF HADDONFIELD, NEW JERSEY.

RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 765,526, dated July 19, 1904.

Application filed March 7, 1904. Serial No. 196,877. (No model.)

To all whom it may concern:

Be it known that I, DAVID F. VAUGHAN, a citizen of the United States, residing at Haddonfield, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Railroad-Frogs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 1. Fig. 5 is a section on line 5 5, Fig. 1. Fig. 6 is a section on line 6 6, Fig. 1.

The object of this invention is to provide a reversible railroad-frog of simple and comparatively cheap construction and which may be readily reversed and spiked to the usual cross-ties without requiring the use of chairs or the like.

The precise nature of the invention will clearly appear from the following specification, in connection with the accompanying drawings.

In the said drawings, 1 designates the frog, which is preferably made of an integral body of suitable hard or hardened metal.

2 designates the usual wings; 3, the point; 4, the grooves or flangeways, and 5 the throat portion.

6 is the heel extension, to which the usual convergent rails 7 are adapted to be attached, the two forward convergent rails 8 being adapted to be secured to the toe end of the frog.

The leading feature of the invention comprises a casting or body 9, of suitable metal, in which is duplicated the several parts of the frog on opposite sides or faces of a plane passing through the said body substantially midway of and parallel with the top and bottom surfaces of the frog or casting and recessing the sides of the latter, as at 10, Fig. 2, to form similar flanges 11 at or near the top and bottom of the sides of the casting, the construction being as shown, whereby when one face of the frog has worn away it (the frog) may be readily reversed and secured to the ties by means of the usual spikes.

In order to aid in securing the rails 8 to the toe portion of the frog, I prefer to provide this end of the latter with lateral side extensions 12 integral with the frog, which extensions are formed so as to be also reversible, their inner sides being adapted to fit or take against the sides of the rails 8 and their outer sides being recessed to form flanges 13, similar to the said flanges 11, all as more clearly seen in Fig. 5. In this figure the bottom flanges 13 are secured to the ties by spikes *s*. The said extensions are provided with holes 14 for the bolts 15, that pass through the usual holes 16 in the webs of the rails and also through a filling-block 17, interposed between said rails 8, as seen in Fig. 5. In the present construction the said filling-block is not integral with the frog-casting and is therefore not and need not be reversible. In this the preferred form of my improved frog I make the free end part 6^a of the heel portion 6 of reduced width, with converging sides and of the form substantially in cross-section shown in Fig. 6 and adapted to receive the rails 7 similarly to a filling-block. The said portion 6^a is integral with, and therefore reversible with, the frog, the parts thereof on opposite sides of a plane passing horizontally through the middle of said reduced portion being substantially identical in form, just as the parts on opposite sides of such plane are identical in the main body of the frog,

The sides of the portion of the heel between the frog proper and the reduced portion 6^a are also preferably recessed to form top and bottom flanges 18 for the purpose similar to flanges 11 and 13,(when the extensions 12 are used.)

The rails 7 are in the present instance secured to the heel portion 6 by means of plates 19 of the form shown in cross-section in Figs. 4 and 6—*i. e.*, the inner side of each of said plates is formed to correspond with the under side of the head, side of the web, and top of the foot of the rail—and said plates 19 are extended beyond the line of junction of the reduced portion 6^a and the heel 6, and the inner side of that part of said plates is shaped to correspond with a recess 22 in the side of the heel 6, as seen in Fig. 4. The plates 19

are respectively provided with bottom flanges 20, whereby they are secured to the ties 21 by the usual spikes *s*.

As is well known, in the standard railroad-rails, such as the rails 7 and 8, the holes through the web for the fish-plate or splice-bar bolts are somewhat below the middle line of the rail, (being usually through about the middle of the web portion of the rail.) In this case in order to have the reduced portion 6^a of the heel 6 reversible I make the bolt-holes 23 in said part of such width vertically, (practically equal to two holes,) as seen in Fig. 6, as to permit the bolts to pass through the holes whichever one of the faces of the frog may be uppermost. For a like reason the holes 14 for the bolts in the extensions 12 are similarly vertically enlarged, as seen in Fig. 5.

The filling-block 17 not being reversible in this form of my invention nor the plates 19, it is obviously not necessary to enlarge the bolt-holes therethrough.

I would usually extend the filling-block 17 into a recess in the toe portion of the frog beyond the ends of the rails 7, as seen at 24, Fig. 1, thus "breaking the joint" between said rails and toe portion of the frog.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The reversible frog formed of a body of suitable metal, having the wings, point, flange-ways and throat duplicated on opposite sides of the middle line of said body of metal, the latter having the suitable top and bottom lateral flanges, substantially as and for the purpose set forth.

2. A reversible frog formed of a body of suitable metal, having the wings, point, flange-ways, throat, and the heel portion having the reduced free end adapted to receive the usual rails, the said parts being duplicated on opposite sides of the middle line of said body of metal, the latter, excepting said reduced end, having similar lateral top and bottom flanges, substantially as and for the purpose set forth.

3. A reversible frog formed of a body of suitable metal, having the wings, point, flange-ways, throat and lateral toe-portion extensions adapted to receive the usual rails, the said parts being duplicated on opposite sides of the middle line of said body of metal, the latter having the similar top and bottom side flanges, substantially as and for the purpose set forth.

4. A reversible frog formed of a body of suitable metal, having the wings, point, flange-ways, the lateral toe extensions, and the heel portion having the reduced free end adapted to receive the usual rails, the said parts being duplicated on opposite sides of the middle line of said body of metal, the latter, excepting said reduced free end of the heel portion, having similar top and bottom side flanges, substantially as and for the purpose set forth.

5. A reversible frog formed of a body of suitable metal, having the wings, point, flange-ways, throat and the lateral toe extensions having the enlarged bolt-holes therethrough, the said parts being duplicated on opposite sides of the middle line of said body of metal, the latter having the similar top and bottom side flanges, substantially as and for the purpose set forth.

6. A reversible frog formed of a body of suitable metal, having the wings, point, flange-ways, throat, and the heel portion having the reduced free end adapted to receive the usual rails, said heel extension having the enlarged bolt-holes, said parts being duplicated on opposite sides of the middle line of said body of metal, and the latter, excepting said reduced heel extension, having the similar top and bottom side flanges, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature this 3d day of March, A. D. 1904.

DAVID F. VAUGHAN.

Witnesses:

GEO. L. ROTE,

WALTER C. PUSEY.