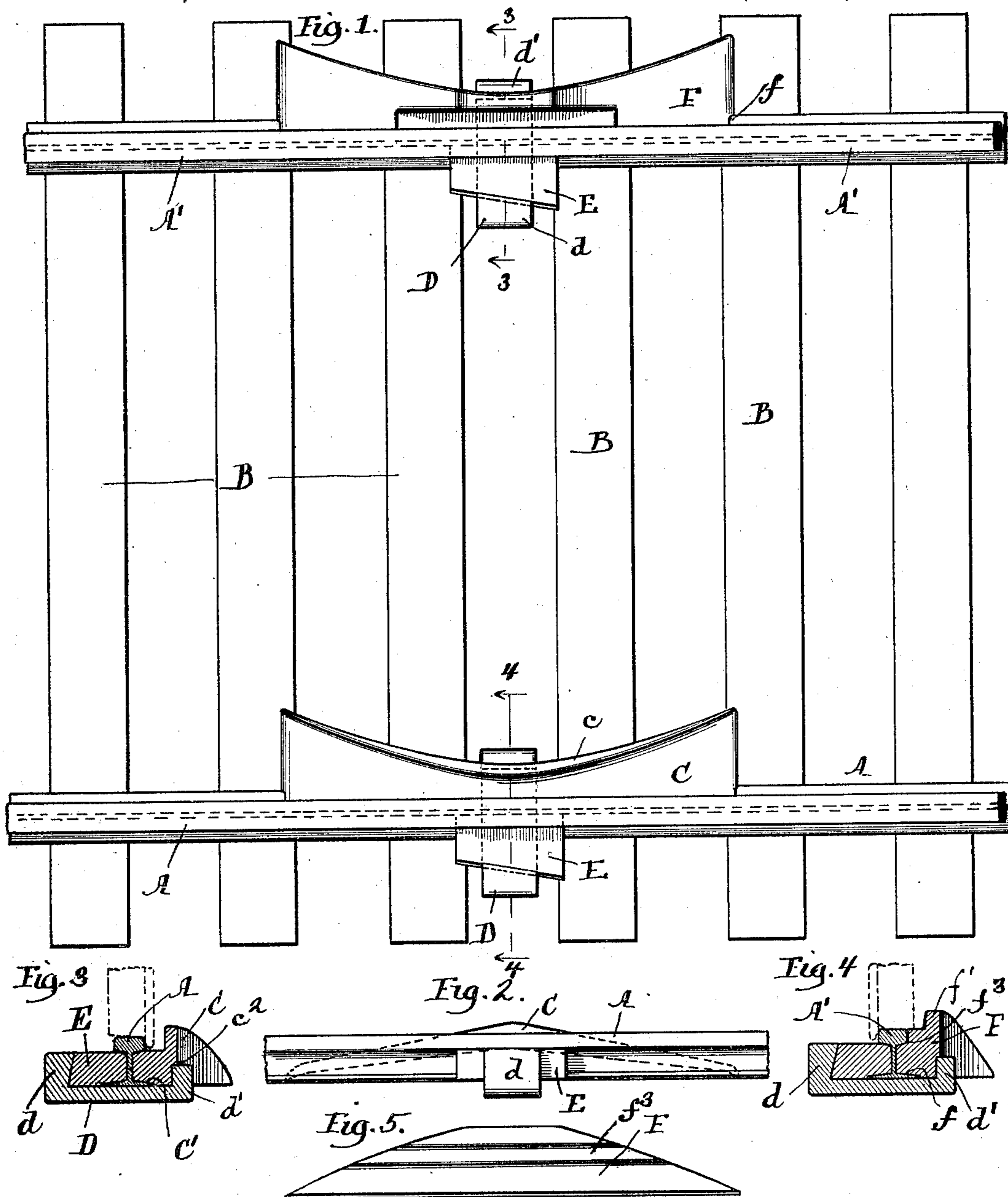


(No Model.)

J. W. HOOD.  
SAFETY FROG FOR RAILWAY TRACKS.

No. 592,589.

Patented Oct. 26, 1897.



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# UNITED STATES PATENT OFFICE.

JOHN W. HOOD, OF PORTSMOUTH, OHIO.

## SAFETY-FROG FOR RAILWAY-TRACKS.

SPECIFICATION forming part of Letters Patent No. 592,589, dated October 26, 1897.

Application filed May 29, 1896. Serial No. 593,554. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. HOOD, a citizen of the United States, and a resident of Portsmouth, in the county of Scioto, in the State of Ohio, have invented certain new and useful Improvements in Safety-Frogs for Railway-Tracks, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 is a plan view of a section of a railway-track the rails of which have my improved frog attached thereto. Fig. 2 is a view in side elevation of the upper rail shown in Fig. 1, with a frog in place, as shown in said Fig. 1. Fig. 3 is a view in cross-section on line 3 3 of Fig. 1. Fig. 4 is a view in cross-section on line 4 4 of Fig. 1. Fig. 5 is a view in side elevation of the frog shown attached to the upper rail in Fig. 1.

The present invention has for its object to provide a simple, cheap, and effective construction of safety-frog for railway-tracks; and the invention consists in the novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claim at the end of this specification.

A and A' designate the rails of the track, these rails resting upon the usual cross-ties B.

My improved construction of safety-frog may be used in single form, as illustrated in Fig. 1 of the drawings, in which event one frog will be attached to the inside of one rail and a companion frog will be attached to the outside of the other rail, or a pair of my improved frogs may be attached to each rail.

To the inner side of the rail A is attached the frog C, the body of this frog being raised about its center or crown and tapering from such central point to each end, and along the edge of the upper face of the frog extends the raised flange *c*, the ends of which flare or spread outwardly and serve to direct the flange of the car-wheels so that the tread of the wheels shall pass onto the head of the rail approximately upon a level with the under side of the rail-head, as shown in Fig. 2 of the drawings.

The body of the frog C is fixed between the

base-flange and head of the rail A, (see Fig. 2,) the bottom of the frog being preferably formed with a groove *c'*, corresponding in outline with one side of the base-flange of the rail, and the top portion of the frog C is in like manner shaped to bear against the under side of the rail-head for a distance at each side of the crown or center of the frog.

To firmly unite the frog C to the rail, I prefer to employ a clamp-plate D and a wedge E. The clamp-plate D has the upturned ends *d* and *d'*, these ends being formed at an angle with the body of the clamp, as seen in Fig. 2. The upturned end *d'* sets within a groove or cut-away space *c''* formed in the side of the frog C, and between the opposite end *d* of the clamp-plate D and the rail A is fitted the wedge E. By reference to Figs. 1 and 2 it will be seen that the upturned end *d* of the clamp-plate has its inner face inclined so as to cooperate with the correspondingly-inclined face of the wedge E, and the inner face of this wedge has its lower end grooved to set over the base-flange of the rail A.

In order to attach the frog C of the rail A, it will be set against the rail, as seen in Figs. 1 and 2. The clamp-plate D will then be set in position and the wedge E will be forced between the end *d* of the clamp-plate and the rail A. By this means the frog C will be securely united to the rail, and inasmuch as the frog C rests upon the base-flange of the rail A and has its upper portion bearing beneath the head of the rail A and is held securely in place by the clamp-plate D and the wedge E all danger of the shifting or turning of the frog is avoided. So, also, it will be seen that as the bottom of the frog C can rest upon the cross-ties it will also be securely supported thereby. By this means the necessity of using spikes or the like for attaching the frogs in place is avoided and the frog can be quickly applied at any desired part of the rail and removed when required and when in position will not interfere with the ordinary passage of wheels over the rail.

To the outer side of the rail A is attached the frog F, that will cooperate with the frog C in directing the car-wheels onto the rails. The frog F has its lower portion shaped similarly to the frog C—that is to say, the bottom

of the frog F is formed with a long groove  $f$  to receive the outer base-flange of the rail A' and is formed with a groove  $f'$  to receive the upturned end  $d'$  of the clamp-plate D, and when applied to the rail A' the frog F will be retained in position by the wedge E, that will engage with the upturned end  $d$  of the clamp-plate D. Inasmuch as the frog F is applied to the outer side of the rail A', while the frog C is applied to the inner side of the rail A, it will be understood that the upper end of the frog F differs in outline from the upper face of the frog C. The frog F has its upper face formed with a raised portion that will come flush with the head of the rail, as seen in Fig. 3 of the drawings, and adjacent this central portion of the frog F is formed a raised flange  $f'$  to guide the wheel onto the rail A'.

By reference to Figs. 3 and 5 of the drawings it will be seen that the frog F has its inner face formed with a long groove  $f^3$ , adapted to receive the lower portion of the head of the rail A', and when the frog F is in place, as seen in Figs. 1 and 4, it firmly bears against the outer face of the web of the rail, and as well also against the bottom flange and head, and consequently all danger of the shifting or turning of the frog F is avoided.

My improved safety-frog will be found especially advantageous for attachment to rails at the approaches of bridges, tunnels, trestles, or in like situations, and, in its simplicity of construction and the readiness with which it can be attached to rails at any desired point, must commend itself to those familiar with this class of devices, as it can be conveniently

carried as part of the equipment of wrecking-cars, caboose-cars, or locomotives.

It is obvious that the details of construction above set out may be varied by the skilled mechanic without departing from the spirit of the invention. Thus, for example, I have in the accompanying drawings shown the frogs as formed of solid metal, but in practice these frogs will preferably be formed of one-half-inch-thick plate-steel, the proper shape having been given thereto by suitable dies.

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

A safety-frog for railway-rails comprising a body the upper face of which is provided with a bearing-surface and with a guide-flange, the inner or rail side of said frog being arranged to bear against the base-flange and head of the rail, and the base of said frog extending upon the level of the base of the rail and the outer face of said frog being provided at its base with an open space, a clamp-plate having an upturned end that enters the open space at the base of the outer face of the frog, the body of said plate extending across and beneath said frog and across the base of the rail and having an inclined upturned end and a wedge engaging the inclined end of the clamp-plate and bearing against the web of the rail, substantially as described.

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