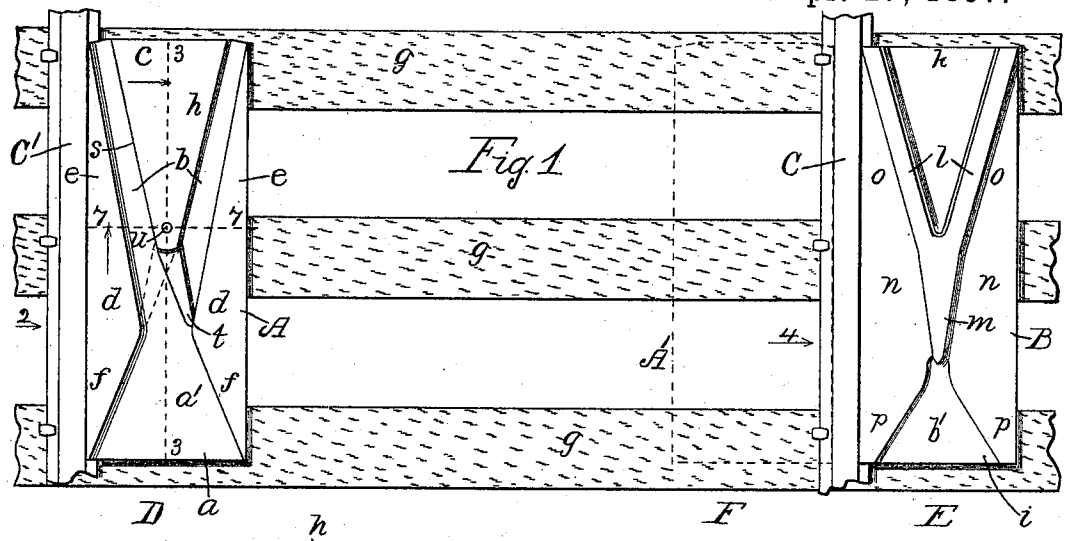
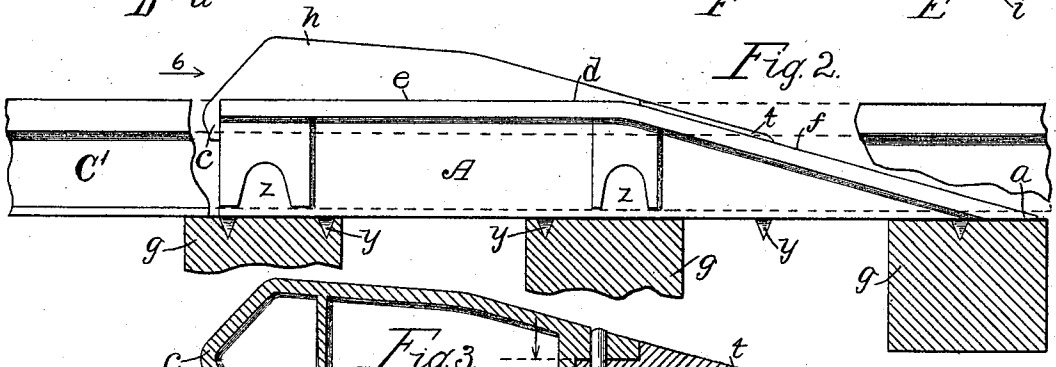
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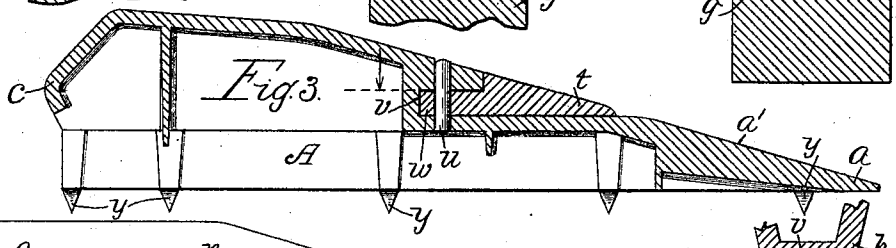
H. B. GILBERT & B. W. COYNE.

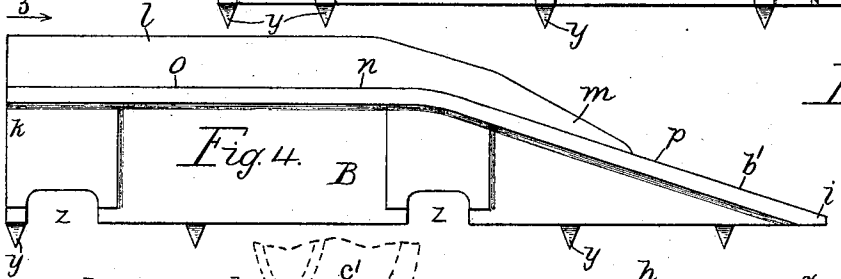
RETRACKING FROG.

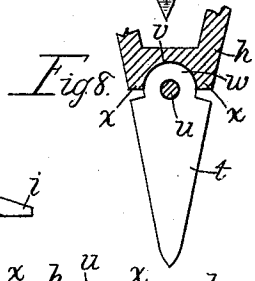
No. 581,393. Patented Apr. 27, 1897.

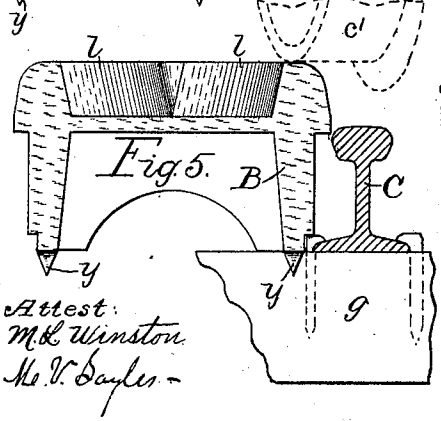


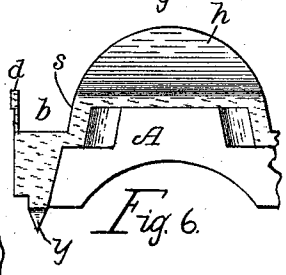


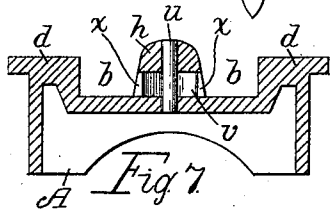












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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY B. GILBERT AND BURNETT W. COYNE, OF NEWARK, NEW YORK.

RETRACKING-FROG.

SPECIFICATION forming part of Letters Patent No. 581,393, dated April 27, 1897.

Application filed September 28, 1896. Serial No. 607,204. (No model.)

To all whom it may concern:

Be it known that we, HENRY B. GILBERT and BURNETT W. COYNE, of Newark, in the county of Wayne and State of New York, have invented a new and useful Improvement in Retracking-Frogs, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

Our invention relates to portable frogs for railway service, to be carried aboard railway-trains for the purpose of aiding to replace derailed cars upon the track. This frog, which we style a "retracking-frog," consists of two separate pieces or sections used conjointly for the purpose of carrying the truck-wheels of derailed cars back upon the rails by simply moving the derailed car in a direction backward or forward, as the case may be, by the power of the locomotive attached thereto, or by other power in the absence of a locomotive.

When a car is derailed, the wheels at one side of the car are between the rails and the wheels at the other side of the car are outside of the rail, all resting upon the ties or the ballasting material of the road-bed. On account of this condition of things two frog-sections differently formed and shaped are required to properly engage the two sets of wheels (the ones between the rails and those without the rail) and carry them all safely back upon the rails. The wheels, for example, that are between the rails need to be simply raised and guided back to the proper rail, while the wheels outside of the rail need to be not only carried back to the rail, but also to have their flanges carried up over the rail, so as to drop inside of the latter.

The two parts of our divided frog are formed to adapt them to these two purposes, so that in a single operation the wheels of a truck at one end of a derailed car may be carried back to their proper positions upon the rails.

Our invention is hereinafter more fully described and particularly pointed out.

Referring to the drawings, Figure 1 shows a short piece of railway with the sections of our improved retracking-frog in place ready for use. Fig. 2 is a side elevation of the inside section, seen as indicated by arrow 2 in Fig. 1, the rail being mostly broken away and the ties transversely sectioned. Fig. 3 is a central longitudinal section of the inside section, taken on the dotted line 3 3 in Fig. 1, view indicated by arrow pointed on said dotted line. Fig. 4 is a side elevation of the outside section, view indicated by arrow 4 in Fig. 1. Fig. 5 is an end elevation of the outside section, view indicated by arrow 5 in Fig. 4. Fig. 6 is an end elevation of the inside section, partly broken away, view indicated by arrow 6 in Fig. 2. Fig. 7 is a transverse section on the dotted line 7 7 in Fig. 1. Fig. 8 shows more fully the form of the shiftable guide-tongue. Fig. 1 is drawn to a scale one-half that of the other figures.

Referring to the drawings, the frog consists of an inside section A, to be placed between the rails, and an outside section B, to be placed outside the rail, as shown in Fig. 1. These sections are of iron and commonly about two and one-half feet long and twelve inches wide, though these dimensions may be varied at pleasure, as found convenient or necessary. The section A is formed with a thin end *a* and a thick or high end *c* and two horizontal diverging channels or grooves *b b*, branching outward from a point near the middle of the section to the two corners at the high end. At the outside of each of these channels is formed a plain surface *d*, each of which surfaces is made up of a horizontal part *e*, Fig. 2, and an inclined part *f*, and the height of the section is such that the horizontal parts *e e* are level with the tread of the track-rails C C'. When in use, the section is placed with its side against the rail C', as shown in Fig. 1, the channels *b b* being formed to receive the flanges of the wheels of the car while they are passing over the frog, the parts *e e* constituting short temporary tracks for the wheels to roll upon.

An inclined part *a'*, Figs. 1 and 3, which may or may not correspond with the inclines *f f*, leads upward from the thin end *a* of the section to the entrance to the channels *b b*, which serves to carry the wheels upward to a level with the adjacent rail C' as the car advances. This inclined part is usually depressed slightly below the faces of the parts *f f*, so as to aid in guiding the flanges of the wheels into a channel *b*. The part *h* between the channels is formed high and crown-

ing, as shown in Figs. 2, 3, and 6, for the purpose of controlling the wheels as they move along and crowding them over toward the rail.

The outer section B is likewise formed with a thin end *i* and a high end *k*, as shown in Fig. 4. This section is formed with two horizontal raised parts or bars *l*, diverging from a point near the middle of the section to the two corners at the high end of the section. These raised parts form temporary tracks for the wheels to roll upon as they mount the section and join at their convergent ends in a tapered longitudinal tongue *m*, which terminates in a point toward the thin end *i* of the section.

At either side of the tracks *l* and the tongue the section is formed with a plain surface *n*, each being composed of a horizontal part *o*, Figs. 1 and 4, and an inclined part *p*. The section when in use is placed with its side against the outer surface of the rail C and its height is such that when resting upon the ties *q* the horizontal parts *o o* are slightly above the level of the tread of the rail. An inclined part *b'*, Figs. 1 and 4, leads upward from the thin end *i* to the rigid tongue *m*, up along which the flanges of the wheels roll as the latter are propelled over the frog. If, to illustrate, the wheels of the derailed car are at D and E, respectively, Fig. 1, the sections of the frog are placed, as shown, with their thin ends adjacent to the wheels and their sides against the rails. Now if the car be moved toward the frog the flanges of the wheels will easily roll upon the thin ends *a* and *i* of the sections and so up the inclines *a'* and *b'* to the horizontal parts. When the top of the incline *a'* is reached, successively, by the wheels rolling over the section A, the flanges will follow along the left-hand channel *b* to the inner surface of the rail C', the wheels rolling temporarily upon the adjacent surface *e*, and when the wheels rolling upon the section B successively reach the tongue *m* they will be guided onto the left-hand track *l* and roll along the latter to the rail C. As the track *l* is high, the flanges of the wheels *c'*, Fig. 5, will be carried over the rail C to the inside thereof. Thus by the time the respective wheels reach the high ends of the two sections of the frog they will be in positions to resume their places upon the rails.

The prominence of the triangular part *h* of the section A causes the wheels upon said section to be carried with certainty to the left and toward the rail C' as the car advances, the outer surfaces of the flanges of the wheels being guided along the surface *s* of the part *h*. To aid in guiding the flanges of the wheels into the proper channel *b*, a shiftable steel tongue *t* is provided, pivoted at *u* in the small end of the part *h*. (See Figs. 1, 3, and 7.) This tongue controls the entrance into the channels and when thrown to one side or the other closes one channel and guides the flange of the wheel safely into the other channel. As at times the flanges of the wheels may crowd the tongue hard, we do not depend wholly upon the strength of the pivot-pin *u* for holding the tongue in place. As the section A is preferably constructed, the part *h* is formed with a semicircular cavity *v*, Fig. 8, concentric with the pin *u*, and the adjacent end of the tongue is formed with a semicylindrical part *w* to fit and fill the cavity, so the tongue will have the support of the solid side walls *x x* to hold it. Thus constructed the pivot-pin serves mainly to hold the tongue in its place on the section.

The tongue is of such a length that when its free end is moved over one way or the other it will strike against the outer wall of the channel upon that side, so that the tongue will substantially form a continuation of the wall between the depressed portion *a'* and the triangular portion *h* between the channels, and at the same time the shoulders formed at the pivotal end of the tongue will engage with the ends *x x* of the triangular portion and assist in holding the tongue in position against the lateral pressure as the wheel is crowded into the channel *b*.

The sections of the frog are both formed at their lower sides with downward-projecting spikes *y*, which bed into the ties *g*, as shown in Fig. 2, when the sections receive upon them the weight of the car.

The sides of the sections are formed with openings or vacant spaces *z*, Figs. 2 and 4, to avoid the heads of the spikes for holding down the rails.

Should the car be derailed in such manner that the wheels, instead of being at E and D, Fig. 1, are at F and a corresponding place at the left of the rail C', the section A would be placed against the rail C, as indicated by dotted lines at A', and the section B would be placed correspondingly at the left of the rail C'. It will also be understood that the sections may be turned end for end—that is to say, with their thin ends in the other direction along the track. At times, as when the wheels of but one truck are off of the rails, it is most convenient to place the frog under the car between the forward and rear trucks. Under other circumstances it is more convenient to place it at the end of the car near the wheels. The two sections of the frog are so formed as to adapt them to any positions that may be found necessary in retracking the wheels in any given case.

What we claim as our invention is—

A railway-frog consisting of two sections, the upper surface of one of which is provided with a depressed inclined portion at one end and two diverging channels leading therefrom to the opposite end of the section, the points of the triangular portion being perforated and provided with a semicircular concavity, a tongue provided with a perforated semicylindrical portion to fit within the cavity, and a

shoulder at each side of the semicircular portion, a pin through the perforations, the length of the tongue being such that when its free end is moved in front of either of the channels it will engage with the outer wall of the channel adjacent to the depressed inclined portion, substantially as set forth.

In witness whereof we have hereunto set our hands, this 17th day of September, 1896, in the presence of two subscribing witnesses.

HENRY B. GILBERT.
BURNETT W. COYNE.

Witnesses:
ERNER E. BURLEIGH,
CALVIN P. H. VARY.