No. 712,337. Patented Oct. 28, 1902.

E. SCHLEGEL.

RAIL.

(Application filed Feb. 13, 1902.)

(No Model.)

Fig. 2

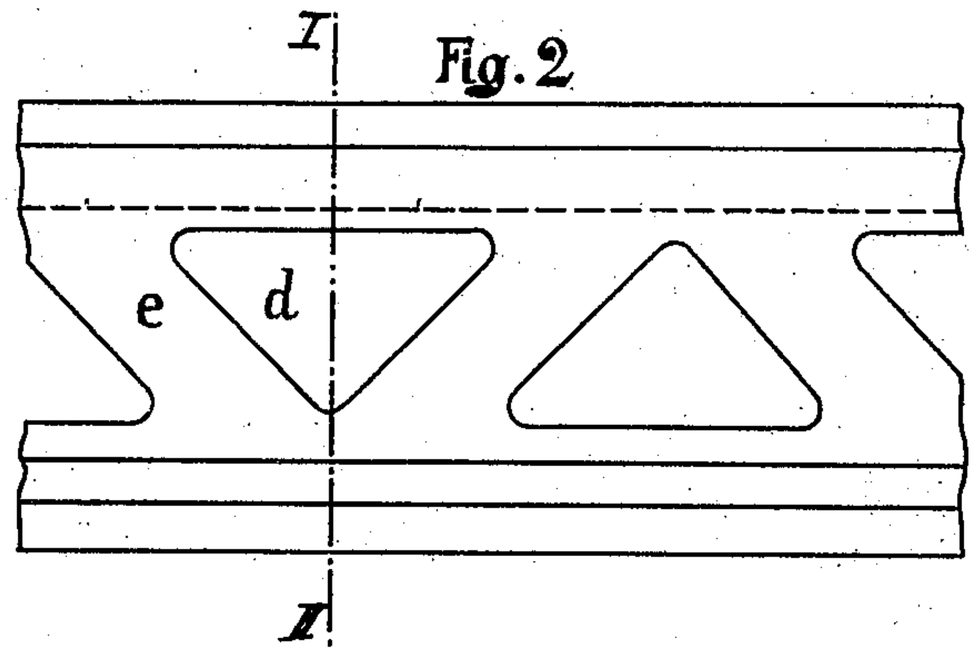


Fig. 1

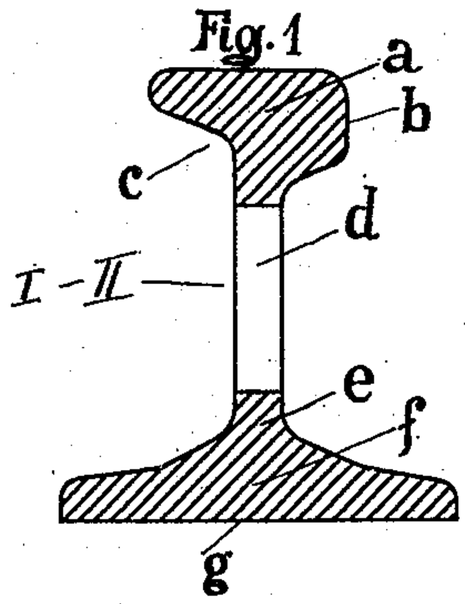


Fig. 3

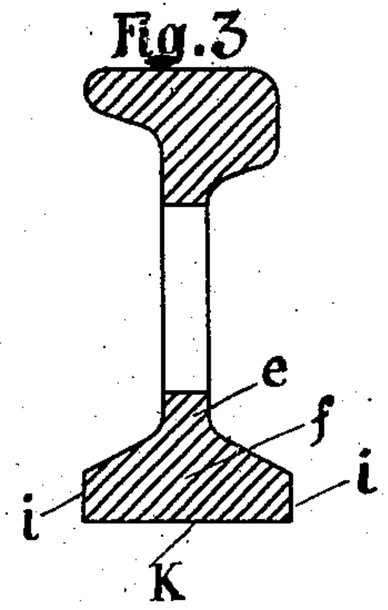
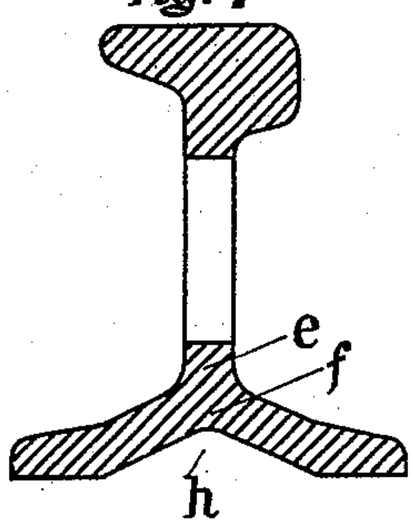


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

ERNST SCHLEGEL, OF COLOGNE, GERMANY.

RAIL.

SPECIFICATION forming part of Letters Patent No. 712,337, dated October 28, 1902.

Application filed February 13, 1902. Serial No. 93,906. (No model.)

To all whom it may concern:

Be it known that I, ERNST SCHLEGEL, a subject of the Emperor of Germany, residing at Cologne-on-the-Rhine, Prussia, Germany, have invented certain new and useful Improvements in Railroad-Rails, of which the following is a specification.

My invention relates to rails for railways of any of the various kinds.

The object of the invention is to provide an improved rail having the least possible weight consistent with the strength necessary to resist the various strains put upon it in practical use.

With this object in view my invention consists in an improved rail, the construction, arrangement, and combination of the parts of which will be hereinafter fully described and afterward specifically claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view of my improved rail on a plane cutting transversely through the rail at the apex of the inverted triangular opening of Fig. 2. Fig. 2 is a view in side elevation of parts of a rail constructed in accordance with my invention. Fig. 3 is a sectional view on a vertical plane cutting transversely through the rail at the apex of the upright triangular opening. Fig. 4 is a partial vertical section showing a shape of flange which may be used with my construction.

In the drawings, *a* indicates the tread of the rail, which is preferably made of a greater vertical thickness on one side, as at *b*, and with a greater lateral projection on the other side, as at *c*.

e indicates the web of the rail, which is formed with alternating triangular openings *d* and *d'*, the openings *d* having the apex of the triangle inverted or downward and the openings *d'* having the apex of the triangle upward, whereby is left of the web alternating portions between the adjacent triangular openings inclined in opposite directions.

f indicates the flange of the rail, which may be of a regular equal width throughout or may be very wide, as at *g* in Fig. 1, at certain points in the length of the rail and cut away at points alternating with such wide portions, as at *i i* in Fig. 3, forming narrow base widths, as at *k* in said Fig. 3.

If desired, the rails may be of a uniform width, hollowed out, as at *h* in Fig. 4.

I am aware that railway-rails have been lightened by cutting away portions of or forming openings through the web; but I do not broadly claim such a construction.

By reason of the peculiar form and arrangement of the openings in my improved rail a large part of the web may be cut away without materially affecting the strength of the rail required to resist the strains brought upon it in use.

By arranging the triangular spaces alternately upright and inverted the portions of the web left are alternately inclined in opposite directions, so that each two of such portions which join at the top of the web form an extremely strong upright arch to resist vertical strain, while each two adjacent portions which join at the apex of the inverted triangular opening form an inverted arch for the same purpose, while those portions which are inclined downward to the left, as shown in Fig. 2, offer special resistance to the downward and forward thrust or strain brought upon the rail by a train moving over it from right to left. Likewise the other alternating portions of the web which are inclined downwardly to the right, as shown in Fig. 2, offer the same resistance to a forward and vertical thrust brought upon the rail by a train moving over it from left to right.

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

A railway-rail comprising a head, web and tread, the web having triangular openings therethrough alternating with each other, one series of such openings having the apices of the triangles inverted or downward and the alternating series having the apices of the triangles upright, whereby the adjacent portions of the web between the triangular openings are oppositely inclined, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ERNST SCHLEGEL.

Witnesses:

LOUIS GEORG LEFFER,

JACOB PLANTZ.