

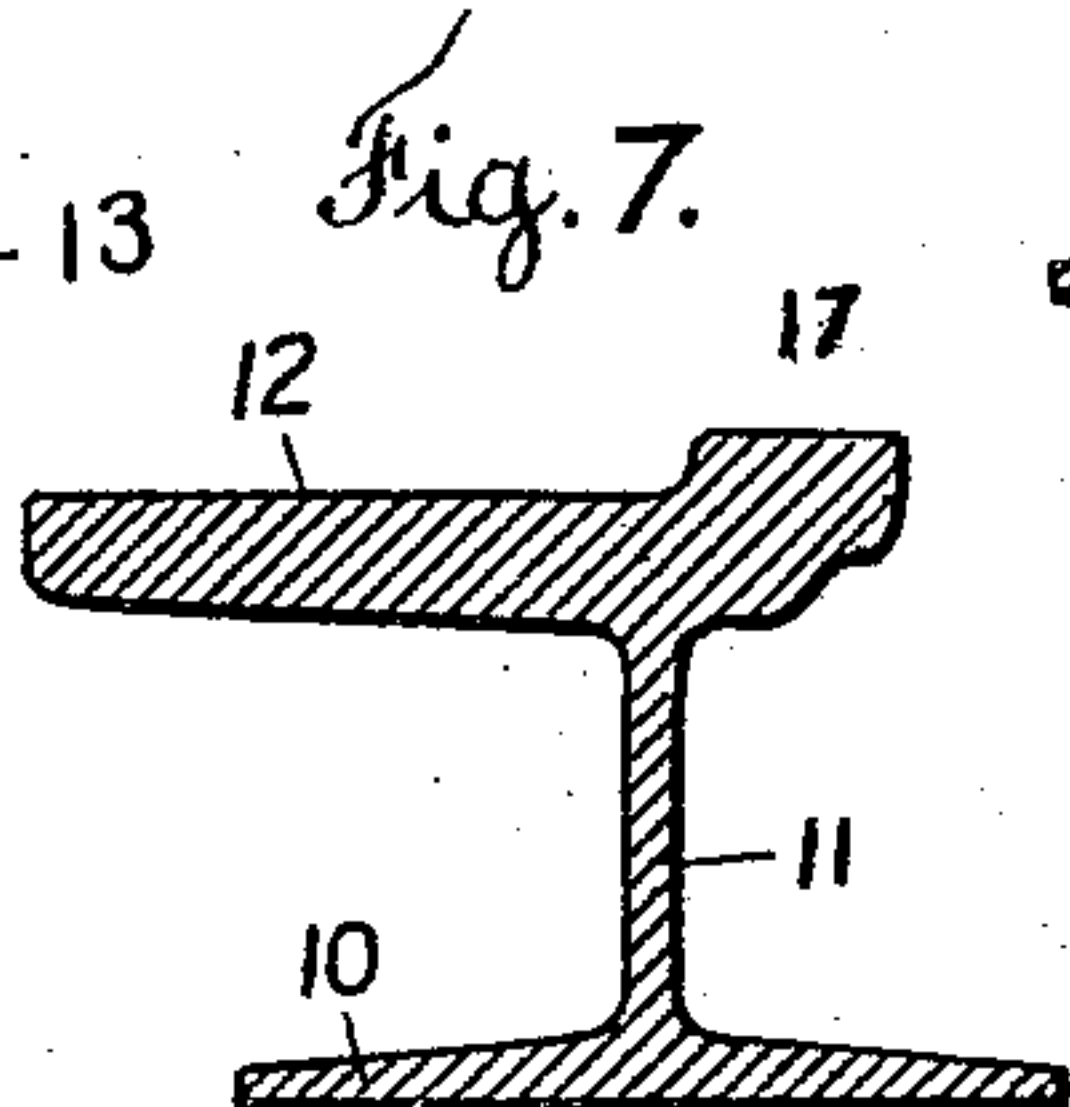
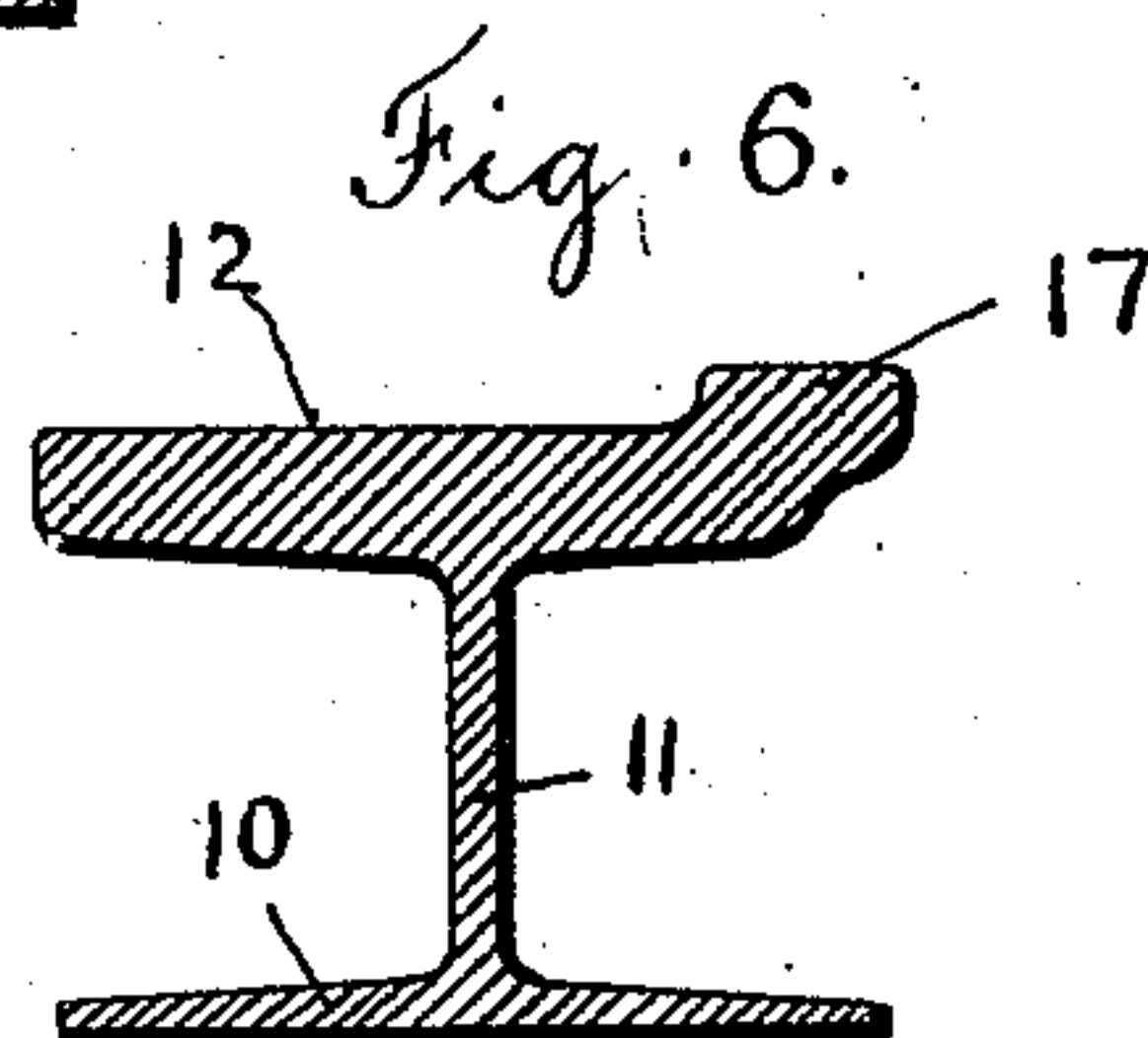
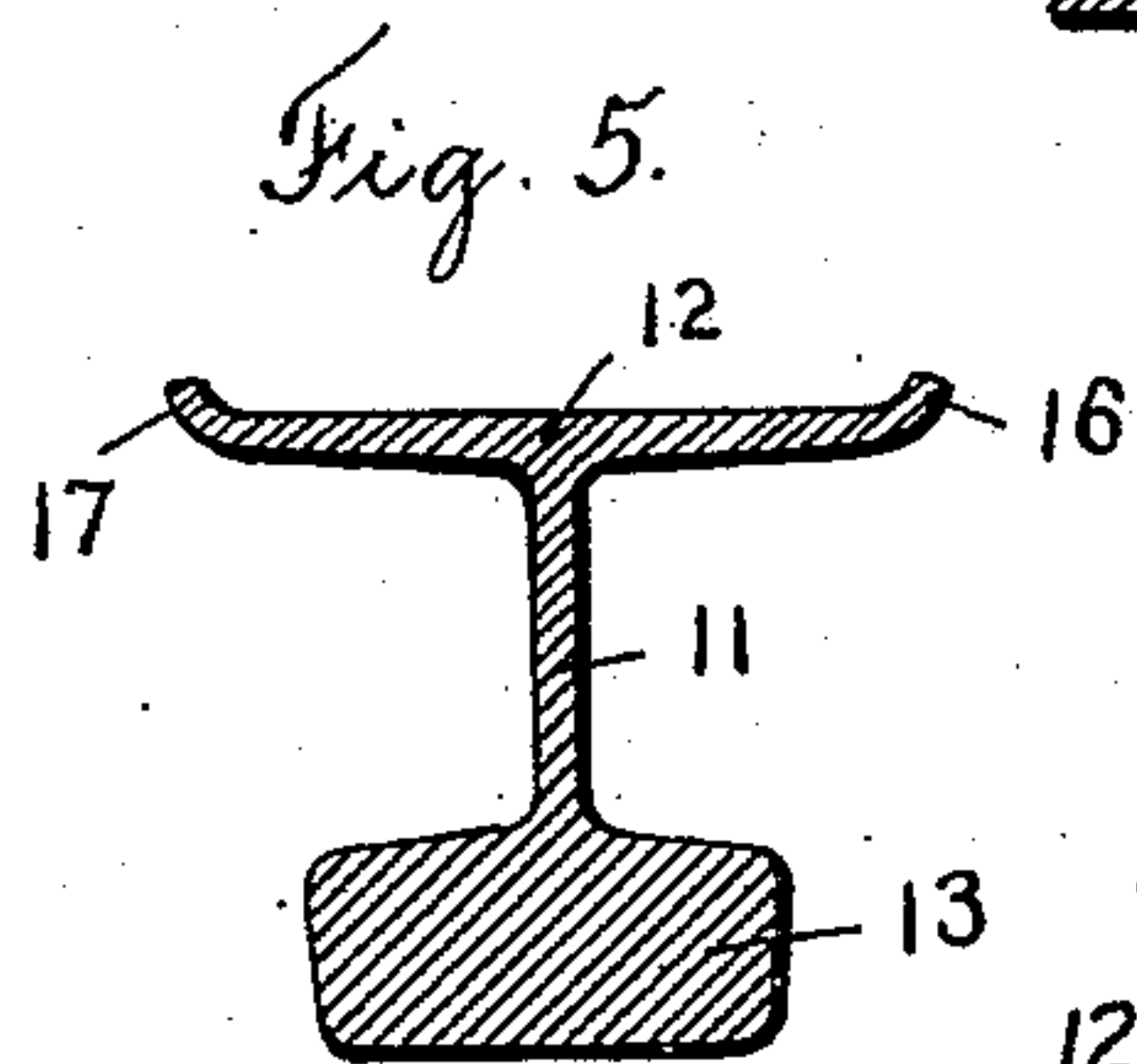
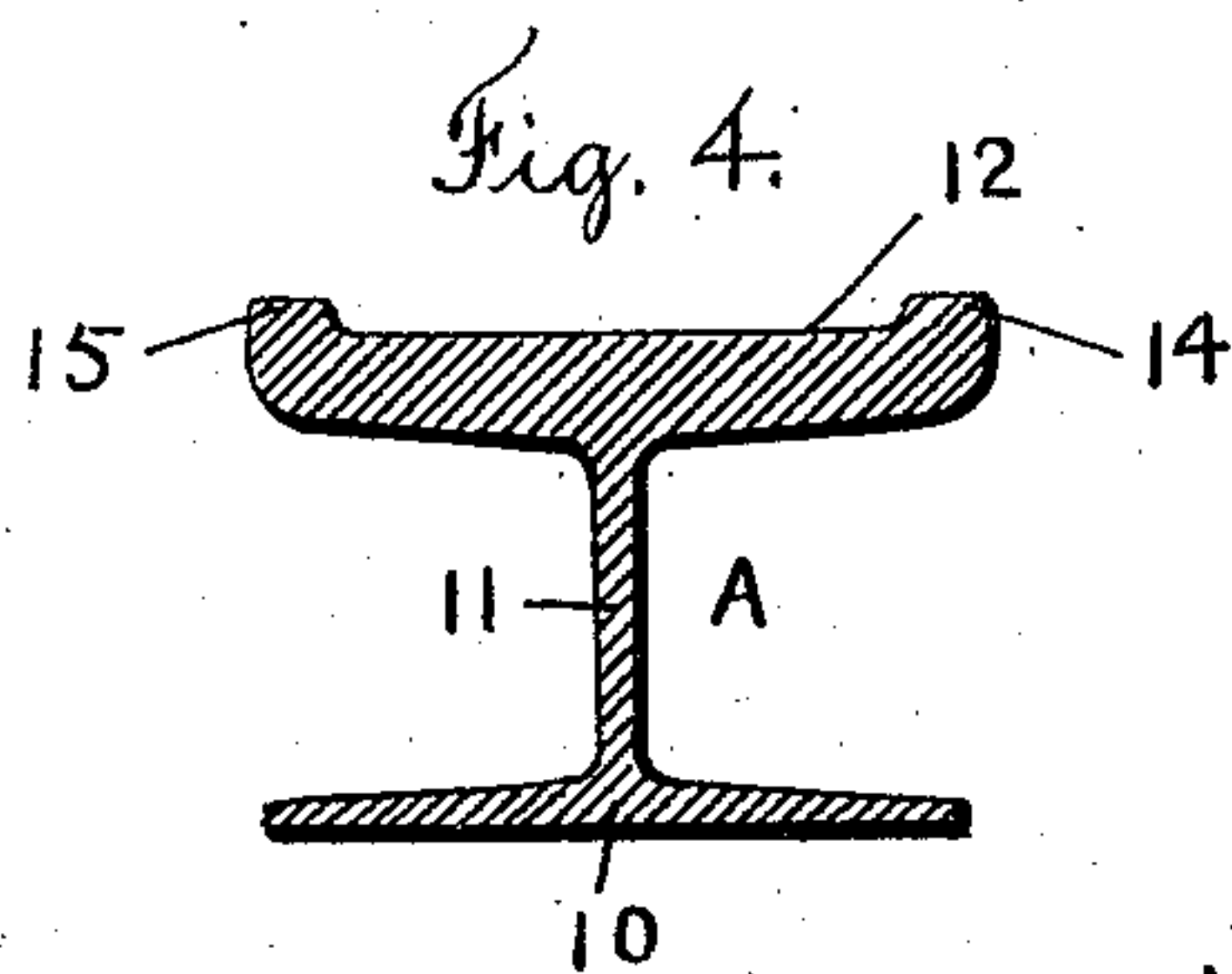
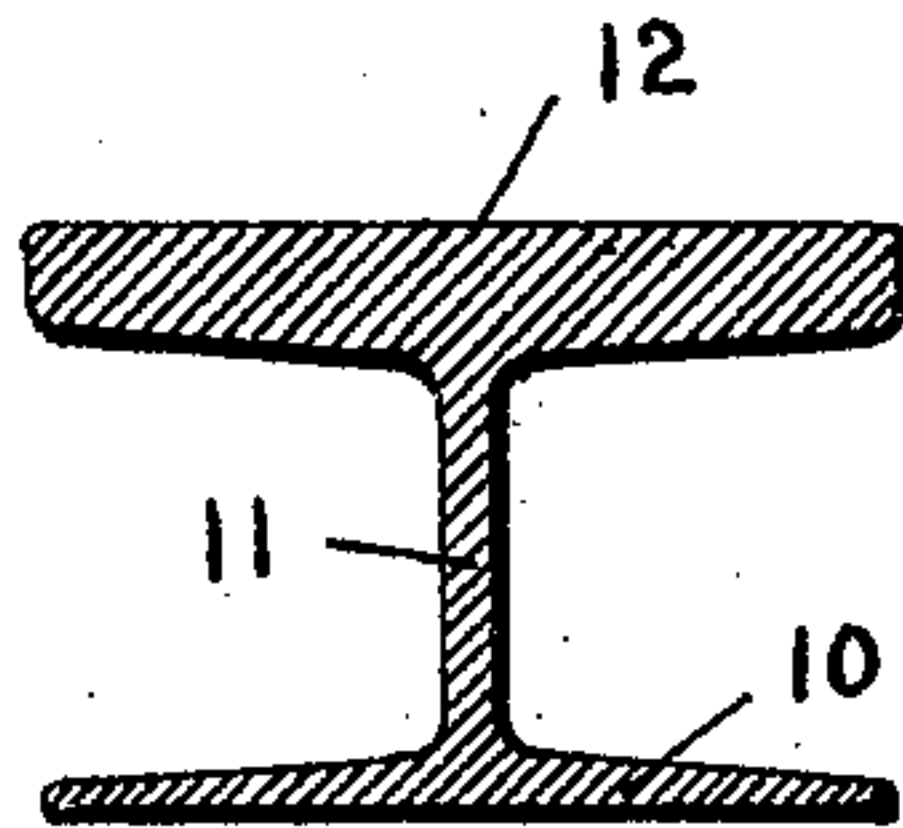
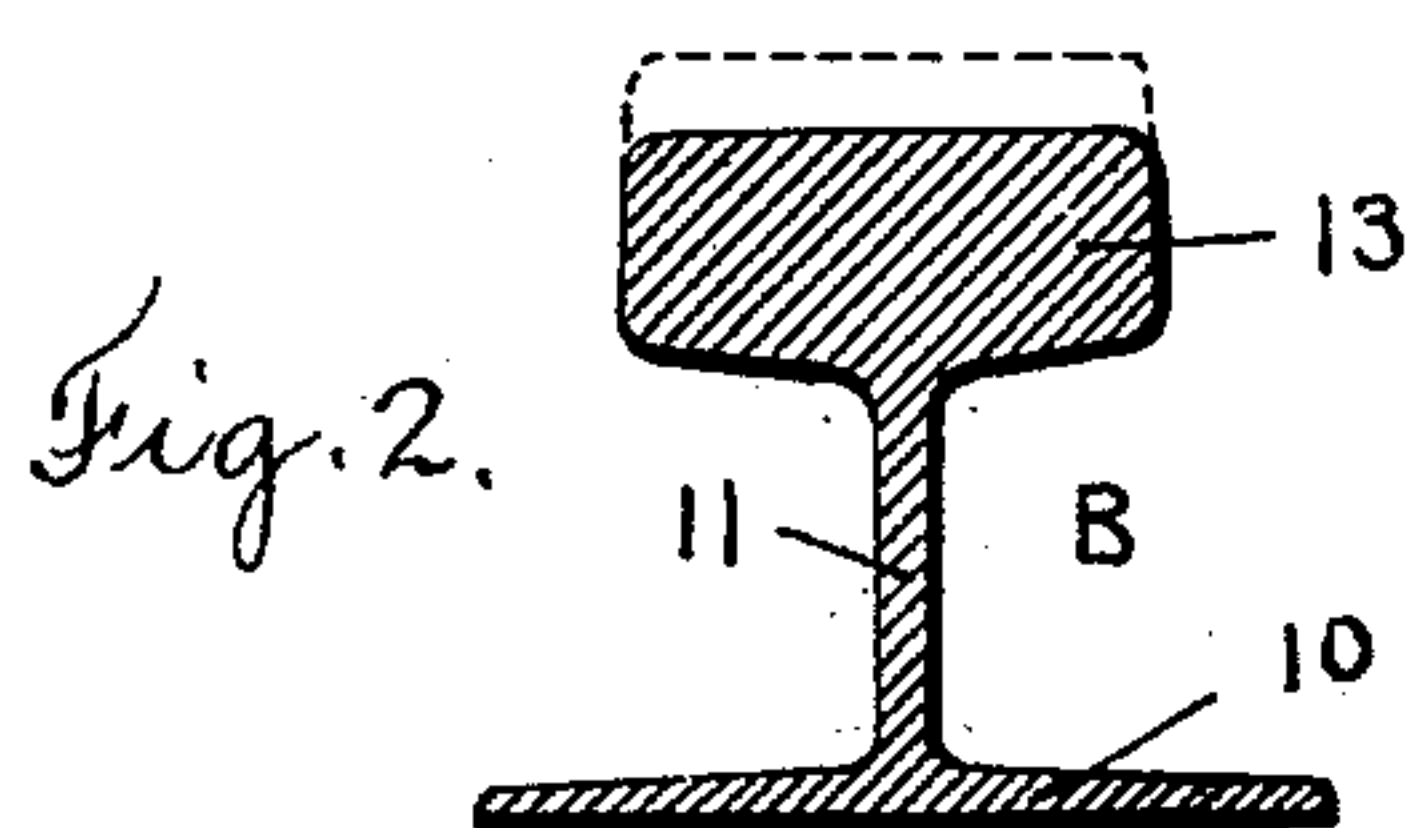
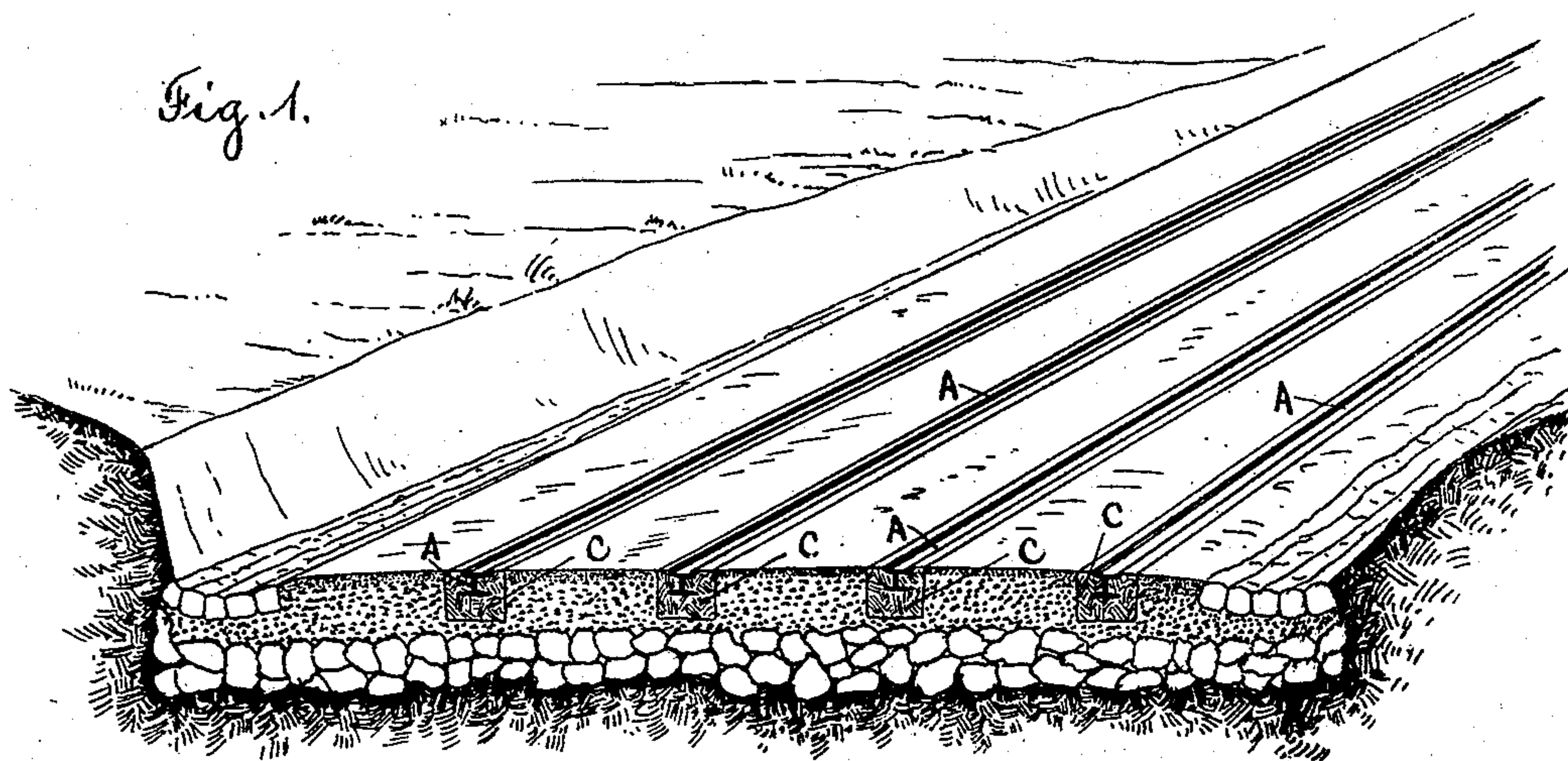
(No Model.)

2 Sheets—Sheet 1.

H. R. KEITHLEY.
ROAD RAIL FOR HIGHWAYS.

No. 572,303.

Patented Dec. 1, 1896.



Witnesses.

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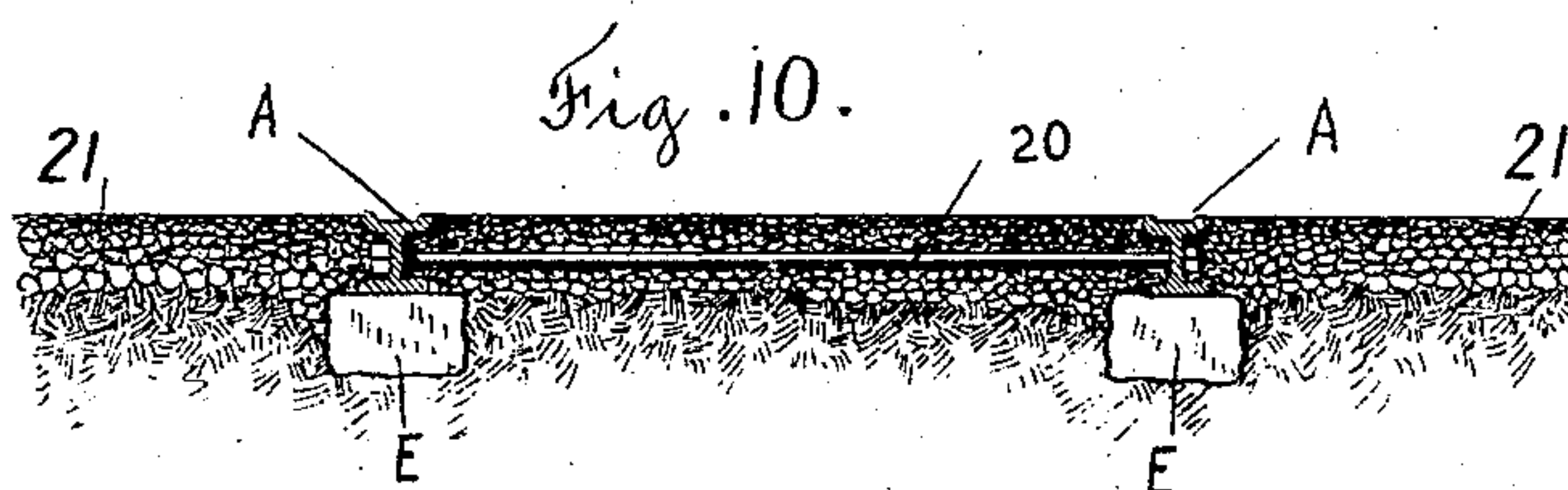
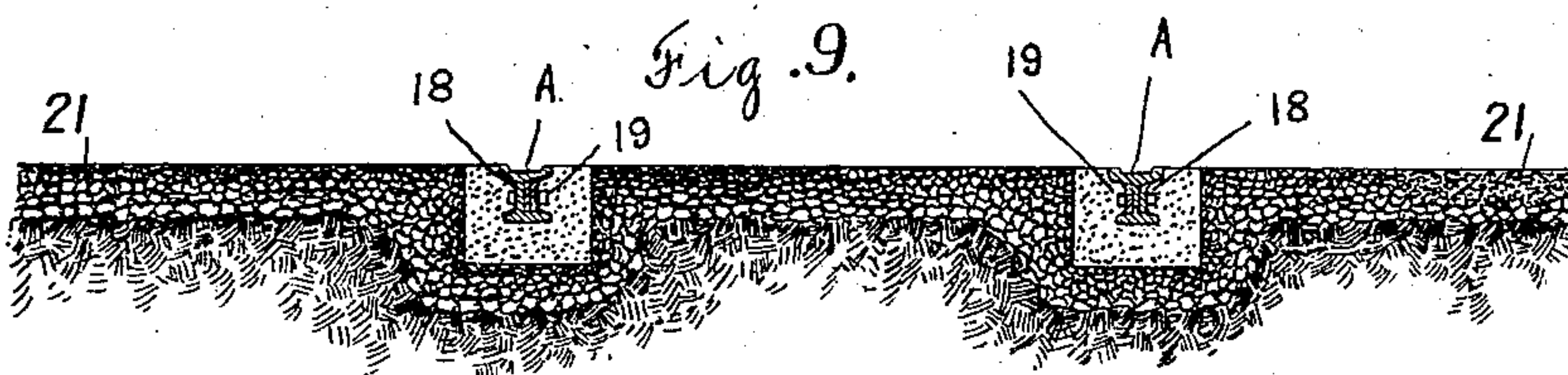
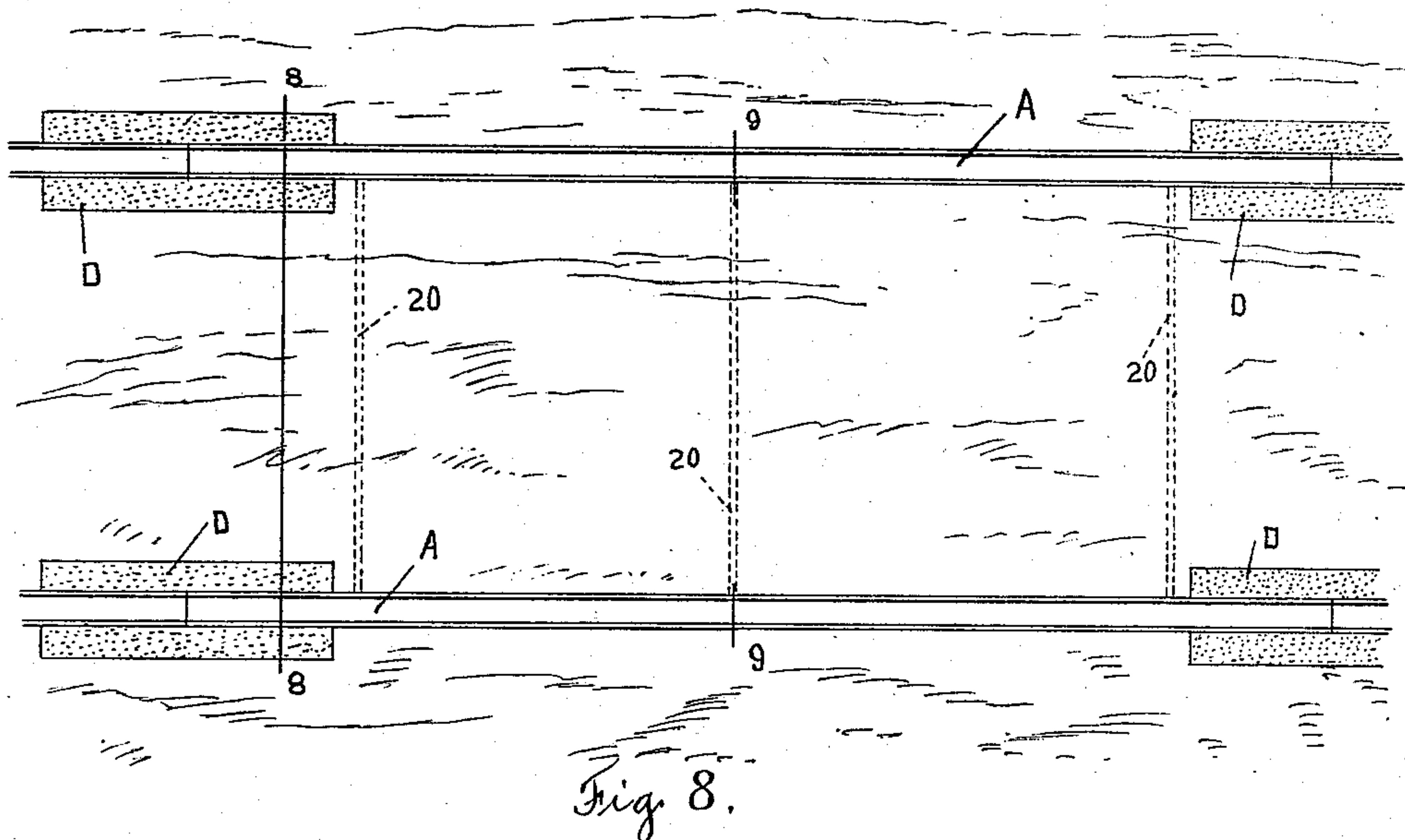
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2 Sheets—Sheet 2.

H. R. KEITHLEY.
ROAD RAIL FOR HIGHWAYS.

No. 572,303.

Patented Dec. 1, 1896.



Witnesses.

Chas. B. Johnson
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UNITED STATES PATENT OFFICE.

HERBERT R. KEITHLEY, OF NEW YORK, N. Y.

ROAD-RAIL FOR HIGHWAYS.

SPECIFICATION forming part of Letters Patent No. 572,303, dated December 1, 1896.

Application filed May 28, 1896. Serial No. 593,393. (No model.)

To all whom it may concern:

Be it known that I, HERBERT R. KEITHLEY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improvement in Road-Rails for Highways, of which the following is a specification.

The object of my invention is to improve the construction of highways or wagon-roads by providing road-rails, which may be arranged flush with the surface of the highway to form supports for vehicle-wheels; and the further object of my invention is to provide a suitable road-rail for highways which may be made by reshaping or rerolling worn T or railroad-track rails or made from new material.

To these ends my invention consists of the road-rail, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying two sheets of drawings, Figure 1 is a perspective view, partially in section, of a highway constructed according to my invention. Fig. 2 is a sectional view illustrating the form of T or railroad-track rail from which my road-rail is preferably formed. Fig. 3 is a sectional view of a partially-formed road-rail constructed according to my invention. Figs. 4 and 6 are sectional views of the road-rails which I preferably employ. Figs. 5 and 7 are sectional views illustrating modified forms of cross-section. Fig. 8 is a plan view illustrating a modified form of highway; and Figs. 9 and 10 are sectional views taken on the lines 8 8 and 9 9 of Fig. 8, respectively.

A road-rail for highways constructed according to my invention is preferably substantially H-shaped in cross-section when turned upon its side and is provided with a comparatively wide tread or wearing-surface for receiving the flat or unflanged wheels of vehicles, said wearing-surface being preferably located substantially above the web of the rail. At one or both sides of the tread or wearing-surface the edges of the rail are raised or bent up to form slight retaining-flanges.

Road-rails constructed according to my invention are designed to be used in connection with any of the ordinary highways or car-

riage-roads, and are intended to form ways or supports for vehicle-wheels to prevent the surface of the highway from being rutted or worn out by the action of the wheels and to present smooth surfaces for engagement with the wheels of vehicles, so that much heavier loads can be transported and moved for longer distances than is now feasible.

In practice it has been found that the action of horses' hoofs upon the surface of a highway causes comparatively little wear, and rather, on the contrary, tends to harden and compact the surface of the road so as to keep the same in good condition.

The greatest amount of wear to which a highway is subjected arises from the grinding action of vehicle-wheels, which quickly cut into the surface of the road and form uneven grooves or ridges.

By protecting the surface of a highway with road-rails according to my invention I am enabled to provide a construction which is much more durable than the ordinary road construction and which may be constructed at a comparatively small expense and may be readily and cheaply repaired.

Referring to the drawings and in detail in Fig. 2, B designates a worn-down T or railroad-track rail. The T-rails employed in railroad construction are originally rolled or formed substantially with the cross-section indicated by dotted lines in Fig. 2. When they have been worn down so as to assume substantially the cross-section shown in the full lines of Fig. 2, they are regarded as unfit for railroad use and are condemned or removed from the railroad-track. These condemned or worn railroad-track rails can be purchased comparatively cheaply, and it is an especial object of my invention to reroll or reshape the worn railroad-track rail to form road-rails for highways. The worn T-rail, as illustrated, comprises a base-section 10, a central web 11, and a head 13.

I preferably reshape or reroll the T-rail so as to flatten the head 13 down into a comparatively wide wearing-surface 12, as shown in Fig. 3, so as to form a road-rail of a substantially H shape in cross-section. At the sides of the wearing-surface 12 (which it will be noted is substantially over the web 11 of the rail) I preferably form slight retaining-

flanges 14 and 15, as illustrated in Fig. 4. A designates the road-rail, considered as a whole, and as thus constructed it will be seen that the tread or wearing-surface 12 of the rail is adapted to cooperate with the unflanged or ordinary vehicle-wheels, and as the wearing-surface is substantially over the central web of the rail the wearing-surface can be made of a considerable width without danger of having the rail cripple or bend when subjected to heavy loads. I do not, however, limit myself to a cross-section of rail which is substantially H-shaped only, for it is entirely practical to shape a rail in cross-section so that the greater part of the tread or wearing-surface will project to one side of the web, as shown in Fig. 7.

In some cases, instead of reshaping the railroad or T rails by rolling down the head thereof, I may employ the base of the old T-rail to form the tread or wearing-surface of my road-rail, and I have illustrated such a construction in Fig. 5. As shown in this figure, the T-rail is substantially inverted, and the edges of the base 10 are bent or turned up to form slight retaining-flanges 16 and 17.

Instead of employing retaining-flanges at both sides of the tread or wearing-surface of my road-rail a single retaining-flange 17 may be bent up or formed at one side of the tread or wearing-surface 12, as illustrated in Fig. 6.

My road-rails as thus constructed are to be distinguished from the various forms of railroad-rails that have heretofore been employed, as they are designed to cooperate entirely with the ordinary unflanged or vehicle wheels and are not designed for or adapted to be employed with the flanged wheels which are generally used in connection with railroad-track rails and street-railroad rails.

In constructing a highway according to my invention I provide my road-rails with a suitable backing for supporting said rails, so that their tread or wearing-surface will be substantially flush with the surface of the highway.

In the preferred form of construction I form narrow trenches in the highway, which are filled with a concrete backing for the road-rails, and I prefer to employ concrete or other similar plastic material as a backing for my road-rails, as such material may be molded around the joint between two contiguous rails and will lock the securing-bolts and fish-plates so that they cannot work loose.

As shown in Fig. 1, A designates the road-rails, which are constructed as hereinbefore described, and C designates the concrete backing, which is located in the shallow trenches in the surface of the highway.

In some cases instead of employing a continuous concrete backing for my road-rails I may employ stone to form the principal support for the road-rails and may employ concrete sections simply at the joints between the various rails.

As shown in Fig. 8, D designates the concrete sections, which are located at the joints between the various road-rails; and in Fig. 10 E designates stone supports.

The road-rails A are connected together by means of fish-plates 18 and securing-bolts 19, as shown in Fig. 9, and the concrete, being molded around the rails, will lock or fasten the securing-bolts 19, so that the same cannot work loose.

To preserve the right gage or distance between the rails A, I may employ the ordinary tie-rods 20, as shown in Fig. 10.

While I have described a road-rail above as made by rerolling an old railroad-rail, I do not limit myself to such manner of making said rails, since they may be made of new material.

A wagon-roadway constructed according to my invention may be either a double-track way, as shown in Fig. 1, in which case those vehicles moving in one direction would take one of the tracks, while those moving in the opposite direction would take the other track, or it may have a single track, as shown in Figs. 8, 9, and 10. In the latter case I prefer to make the surfacing material of my roadway, which may be of macadam, concrete, asphaltum, or other suitable surfacing material, and which I have designated by the numeral 21 in Figs. 9 and 10, of sufficient width outside of the rails to enable the wagon to be easily drawn upon the track, and I prefer, also, to make such macadam or other surfacing material of sufficient width to enable two wagons to pass each other without having the outer wheels of either wagon leave the macadam. This may be accomplished by making the macadam of sufficient width either throughout the whole length of the roadway or merely widening the same at convenient points. The narrower construction is illustrated in Fig. 10 and the wider in Fig. 9.

I am aware that road-rails for highways may be constructed of somewhat different shapes and sizes and may be secured in place in various manners by those who are skilled in the art without departing from the scope of my invention as expressed in the claims.

I am also aware that it has been proposed to use flat rails for the purposes of street traffic, and that such rails have been illustrated as provided with retaining-flanges at one or both sides of their tread, and I do not claim such as my invention, as the track-rails for highways which I employ belong to that class of rails which are known as "girder-rails," and are provided with integral base, web, and top sections. I do not wish, therefore, to be limited to the form which I have shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. A metallic girder-rail for wagon-roads having a base, a web and a tread formed integrally and adapted to support only flange-

less wheels of vehicles and having a flange for retaining said wheels upon the tread, substantially as described.

2. As an article of manufacture, an integral girder road-rail for highways substantially **H**-shaped in cross-section, and having a wearing-surface or tread substantially over the web of the rail for receiving ordinary or unflanged vehicle-wheels, and a retaining-flange at the side of the wearing-surface, substantially as described.

3. As an article of manufacture, an integral girder road-rail for highways substantially **H**-shaped in cross-section, and having a tread or wearing-surface substantially over the web of the rail for receiving ordinary or unflanged vehicle-wheels, and two retaining-

flanges, one at each side of the wearing-surface, substantially as described.

4. As an article of manufacture, an **H**-shaped integral girder road-rail for highways formed by reshaping or rerolling a **T** or railroad-track rail, said road-rail having a tread or wearing-surface substantially over the web of the rail, and a retaining-flange at the side of the wearing-surface, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HERBERT R. KEITHLEY.

Witnesses:

MAURICE SPILLANE,
MURRAY CORRINGTON.