

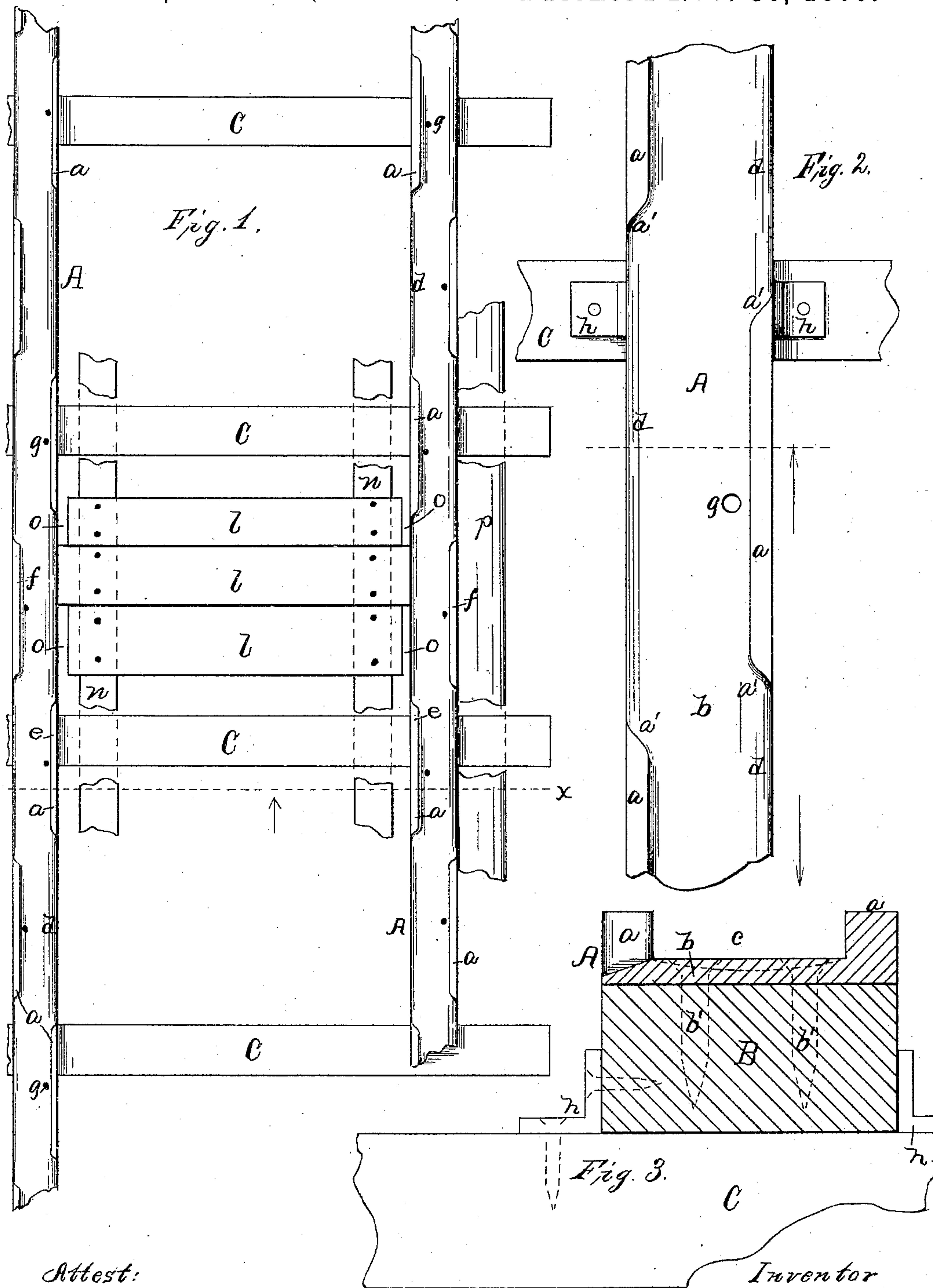
(No Model.)

2 Sheets—Sheet 1.

T. WHALEN.
WAGON RAILROAD.

No. 353,391.

Patented Nov. 30, 1886.



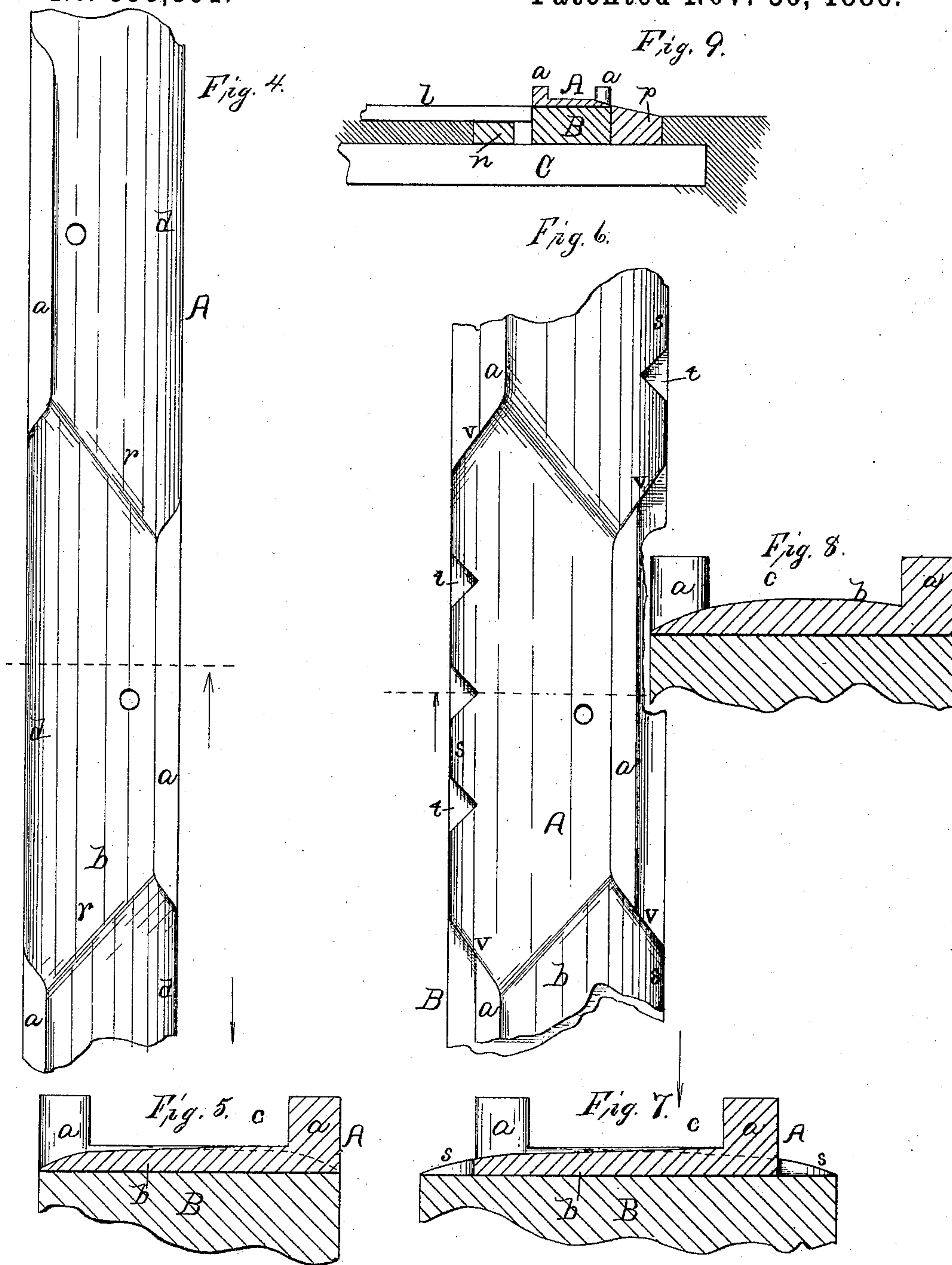
Attest:
C. B. Nash,
H. B. Knight.

Inventor
Timothy Whalen,
By E. B. Whitmore, Atty.

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UNITED STATES PATENT OFFICE.

TIMOTHY WHALEN, OF ROCHESTER, NEW YORK.

WAGON-RAILROAD.

SPECIFICATION forming part of Letters Patent No. 353,391, dated November 30, 1886.

Application filed July 8, 1886. Serial No. 207,408. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY WHALEN, of Rochester, in the county of Monroe and State of New York, have invented a new and useful
5 Improvement in Wagon-Railroads, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

The object of my invention is to produce an
10 improved road for common carriages or wagons, to take the place, principally, of the ordinary plank road or other improved roads leading into cities or along other much-traveled thoroughfares where heavy hauling is done,
15 said road being formed of iron tracks of peculiar form for the wheels of passing vehicles, and an improved road-bed between and beside said tracks, said invention being fully described hereinbelow, and more particularly
20 pointed out in the claims.

Referring to the drawings, Figure 1 shows the plan of a portion of my improved wagon-road, parts being broken away; Fig. 2, an enlarged plan view of one of the wheel-tracks,
25 drawn to better show the form of some of the parts; Fig. 3, a transverse section of a wheel-track with the string-timber beneath, taken as on the dotted line in Fig. 2 and viewed as indicated by the arrow pointed thereon, the figure being drawn to a still larger scale; Fig. 4,
30 a plan of a modified form of rail, drawn to the scale to which Fig. 2 is drawn; Fig. 5, a transverse section of the same, taken as on the dotted line in Fig. 4 and viewed as indicated by the arrow pointed thereon, drawn to a scale
35 twice the size of that to which Fig. 4 is drawn; Fig. 6, another modification in the form of the rail or track, drawn to the same scale to which Fig. 4 is drawn; Fig. 7, a transverse section of the same, taken as upon the dotted line in Fig.
40 6 and viewed as indicated by arrow, drawn to a larger scale; Fig. 8, a cross-section of another form of the rail; and Fig. 9, a cross-section of a part of the road as shown in Fig. 1, taken as
45 upon the dotted line *x* and viewed as indicated by arrow, the scale being slightly larger than that to which said figure is drawn.

Referring to the parts, A are the rails or tracks for the wagon-wheels; B, the stringers
50 or timbers placed longitudinally under the rails, and C the cross-ties. The rails are de-

signed to be formed of iron or steel, and placed to form parallel tracks at the right distance apart to receive the wheels of wagons or other vehicles, said rails being preferably placed
55 upon and fastened to string-timbers at the surface of the ground, which timbers rest upon ordinary cross-ties, C, placed beneath the surface. The rails are formed with a bottom plate, *b*, the surface of which constitutes the
60 tread for the wheels, or the surface upon which the wheels roll, at the edges of which plate raised flanges *a* are formed, between which a channel, *c*, is inclosed, in which the wheels roll. The flanges are for the purpose of preventing
65 the wheels rolling off the tracks should the horses drawing the vehicle at any time pull toward one side or the other. These flanges may be continuous, though I prefer to divide them into isolated parts or sections *a*, as shown,
70 the openings *d* serving to allow the discharge of dirt, water, or other extraneous matter that may at any time collect on the rails. I prefer to make the flanges *a* about one and one-half feet in length, and the outflow-openings be-
75 tween them somewhat longer.

Regarding a single rail, a flange, *a*, at one side is made opposite a space at the other side, as shown, and regarding a pair of rails forming opposing portions of the track or road,
80 said rails are placed so that the flanges at their respective inner edges are opposite, which brings the flanges at the outer edges opposite each other, and likewise the discharge-openings at either edge of the rails. This arrange-
85 ment of the rails in forming a track has several advantages, and by thus alternating and opposing the flanges the wheels of a passing vehicle are surely kept upon the rails, while
90 by the openings ample opportunity is presented for the escape of water and dirt from the tread or floor of the rail.

Regarding the flanges *e* in Fig. 1 at the respective inner edges of the opposing rails, it will be understood that if two wheels of a ve-
95 hicle were passing them along the track the flange of the left-hand rail would prevent the wheel from running toward the right, while the opposing flange of the right-hand rail would prevent the wheel running toward the left;
100 and as the wheels passed to the flanges *f* at the outer edges of the rails they would be pre-

vented by said flanges from running to the right or left, while by turning sharply to one side the vehicle could be easily drawn off the rails.

5 The rails are held to the string-timbers by ordinary spikes, *b'*, driven through holes *g*, and these timbers are held to the cross-ties by simple means, as by brackets *h* spiked to each, said brackets being plane angle-plates of com-
10 mon use, with one plate of each resting squarely upon a cross-tie and the other plate bearing against the string-timber.

The track between the rails for the horses to walk upon may be planked, as shown in Figs. 15 1 and 9, the planks *l* reaching crosswise between the rails upon light stringers *n*, resting upon the ties, the upper surface of said planks being about even with the tread of the rails. Spaces *o* are left at the ends of alternate planks
20 for the escape of the off-flowing water or dirt from said rails.

If desirable, only every third or fourth plank may be made long enough to reach from rail to rail, while the others may be cut away
25 for the purpose stated, the long planks serving to stay the planking and the wheel-tracks relatively in place.

At the openings *d* the plate *b* of the rail is beveled to an edge, as shown in Fig. 3, to fa-
30 cilitate the off-flow of water from the floor of the rail. A longitudinal timber, *p*, is secured upon the ties immediately outside the rails, having its upper surface in whole or in part beveled and made even with the floor of the
35 rail, the use of which timber being to assist the wheels of the vehicle to roll smoothly onto or off of the rails. These timbers may be of any width desirable, at the outer edges of which the roadway may be graveled or mac-
40 adamized to resist wear. The space between the rails, instead of being planked, may also be macadamized or otherwise paved or improved. The bottom plate, *b*, of these rails, if desir-
45 able, may be formed into alternately slightly-inclined water-sheds *r*, as shown in Figs. 4 and 5, to further facilitate the off-flow from the floor thereof, said water-sheds leading out at the openings *d* at the sides of the rail. It may
50 be of advantage, also, to form the floor of the rail convex or crowning, as shown in cross-section in Fig. 8. If the floor of the rail be made straight, as shown in Fig. 3, the wear of wagon-wheels will in time cause it to become
55 longitudinally concaved, as indicated by dotted line in said figure. By making the floor crowning the concaving of the rails by wear will be much longer delayed.

It may also be advantageous to laterally extend the edges of the rails at the openings *d*,
60 as shown at *s*, and form notches *t* therein to assist the wheels of a wagon in rolling onto the rails. The tires of said wheels, catching upon the ends *v* of said extended parts or in the notches, will roll easily upon the tracks, in-
65 stead of for a time sliding therealong, as would be the case were the edges of the rails smooth.

The ends *a'* of the flanges *a* are beveled, giv-

ing to said flanges a trapezoidal form in plan, the advantage of this being that should a wheel, when rolling along the track, be turned
70 to one side, so as to encounter an end of a flange, it will, on account of the incline thereof, be guided back toward the middle of the rail. When rails having the extended parts *s* are
75 used to construct a track, the string-timbers *B* are made correspondingly wider to extend under said extended parts to support them.

The rails are held to the string-timbers by ordinary thin-headed spikes, *b'*.

What I claim as my invention is—

80 1. A rail for a wagon-track having a bottom plate formed with equal upwardly-projecting flanges at the edges thereof and a channel between for the wheels of a vehicle, the floor of the said channel being straight
85 across between the flanges, the opposing inner faces of said flanges rising in straight lines from said floor, said flanges being divided into sections by openings extending below the floor of said rail, substantially as and for the pur-
90 pose set forth.

2. A rail for a wagon-track having a bot-
95 tom plate formed with upwardly-projecting flanges at the edges thereof and a channel between for the wheels of a vehicle, said flanges being divided into sections by openings formed therein, so that a section of said flange at either edge of the rail shall be opposite an opening between two flanges at the other edge of the rail, substantially as shown. 100

3. A rail for a wagon-track having a bot-
105 tom plate formed with flanges at the edges thereof and a channel between for the wheels of a vehicle, said flanges being divided into sections by openings formed therein, the ends of said sections being slanted or inclined, sub-
stantially as and for the purpose set forth.

4. A rail for a wagon-track having a bot-
110 tom plate formed with flanges at the edges thereof, said flanges being divided into sections by openings formed therein, the portions of said bottom plate between the opposing ends of either two adjacent flanges at the same side of the rail being sloped downward or cut away, substantially as and for the purpose specified. 115

5. A rail for a wagon-track having a bot-
120 tom plate formed with flanges at the edges thereof, said flanges being divided into sections by openings formed therein, the floor or tread of said rail being formed into alternately oppositely-inclined water-sheds, sub-
stantially as shown.

6. A rail for a wagon-track having a bot-
125 tom plate formed with flanges at the edges thereof, said flanges being divided into sections by openings formed therein, the rail being further formed with lateral extensions, substantially as shown, and for the purpose set forth.

7. A rail for a wagon-track having a bot-
130 tom plate formed with flanges at the edges thereof, said flanges being divided into sections by openings formed therein, the rail being further formed with lateral extensions hav-

ing notches formed in the edges thereof, substantially as and for the purpose specified.

8. A wagon-railroad formed of parallel tracks constructed of rails having flanges at the respective edges of each, said flanges being divided into sections by openings formed therein, so that a section of flange at one edge of the rail shall be opposite a space or opening at the other edge of the rail, said opposite rails of the track being placed so that a section of flange, for instance, at the inner edge of one rail shall be opposite a corresponding section of flange at the inner edge of the opposing rail, for the purpose set forth.

9. A wagon-railroad formed of parallel tracks constructed of rails having flanges at the respective edges of each, said flanges being divided into sections by openings formed therein, so that a section of flange at one edge of the rail shall be opposite a space or opening at the other edge of the rail, said opposite rails of the track being so placed that a section of flange, for instance, at the inner edge of one rail shall be opposite a corresponding section of flange at the inner edge of the opposing rail, the space between said rails being covered with planking, substantially as shown and described.

10. A wagon-railroad having parallel tracks formed with rails having upturned flanges at their respective edges, said flanges being divided by openings formed therein, substantially as shown, the ground between said tracks being covered with planks, as described.

11. A wagon-railroad having parallel tracks formed with rails having upturned flanges at their respective edges, said flanges being divided by openings formed therein, substantially as shown, the ground between said tracks being covered with planks, some of which reach across from one track to the other, and other of said planks being made short to form openings between the ends thereof and said tracks, as and for the purpose set forth.

12. A wagon-railroad having parallel tracks formed with rails having upturned flanges at their respective edges, said flanges being divided by openings formed therein, the ground between said tracks being covered with planks, longitudinal timbers being placed along the outer edges of said tracks, as described.

T. WHALEN.

Witnesses:

E. B. WHITMORE,
B. WILLSON.