(No Model.)

T. S. RIDDEL.

WAGON ROAD.

No. 497,344. Patented May 16, 1893.

Fig. 1.

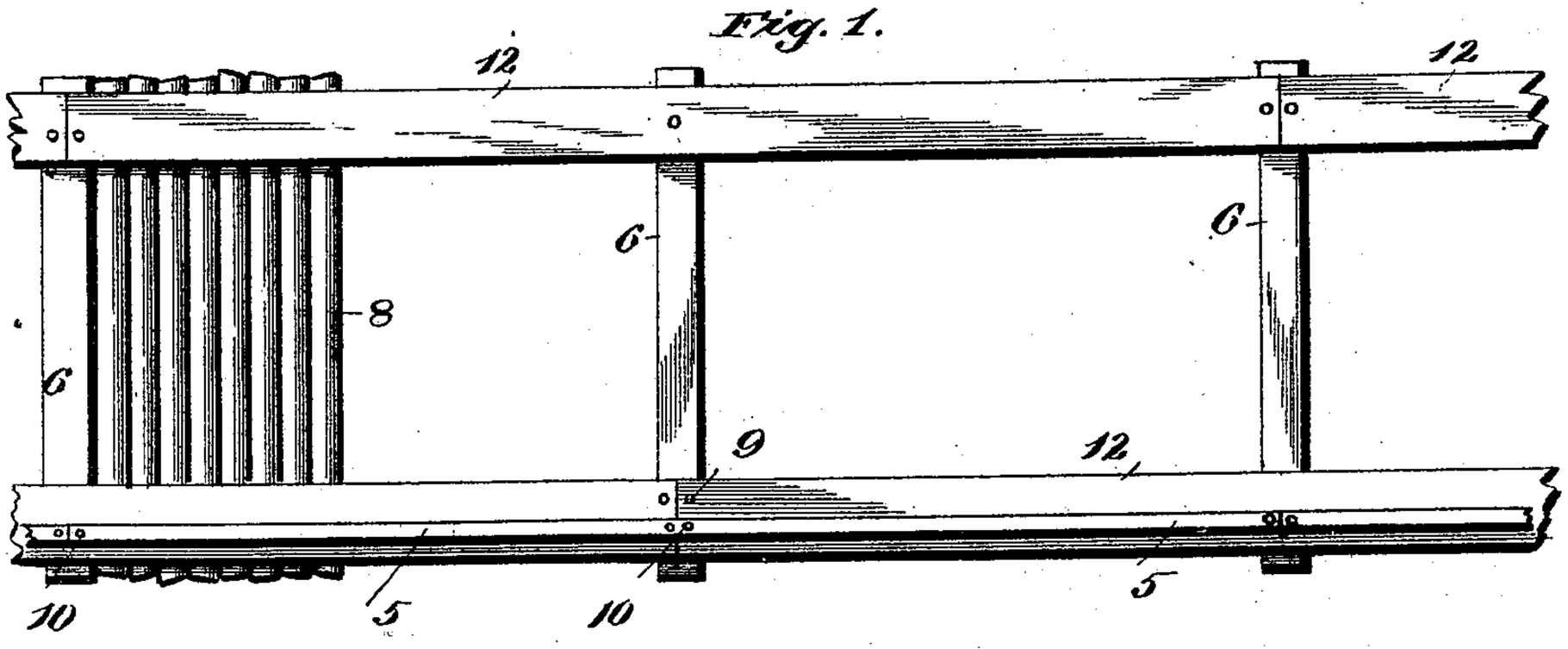


Fig. 2.

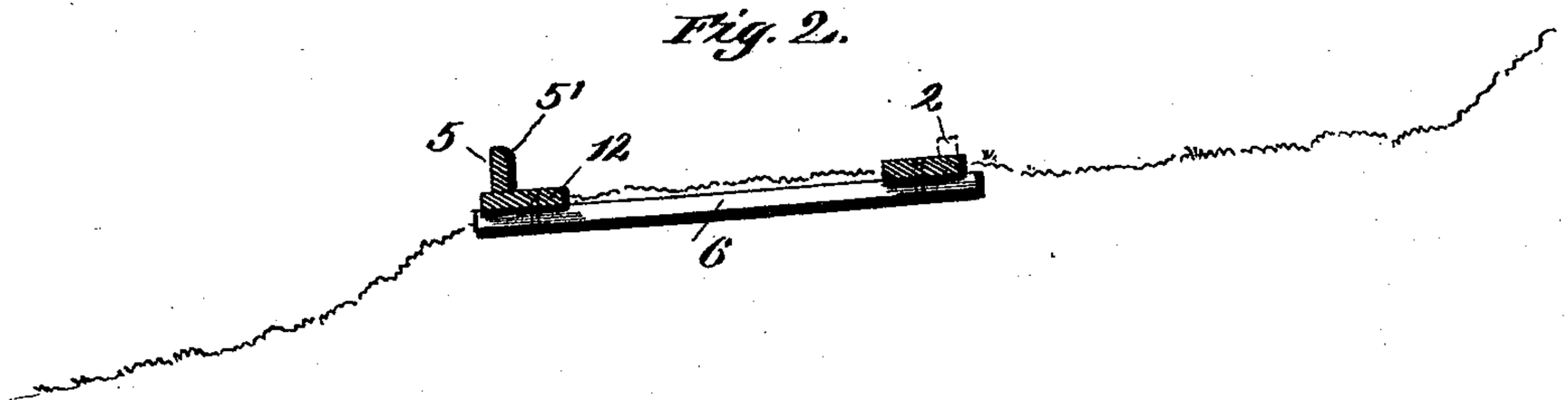


Fig. 3.

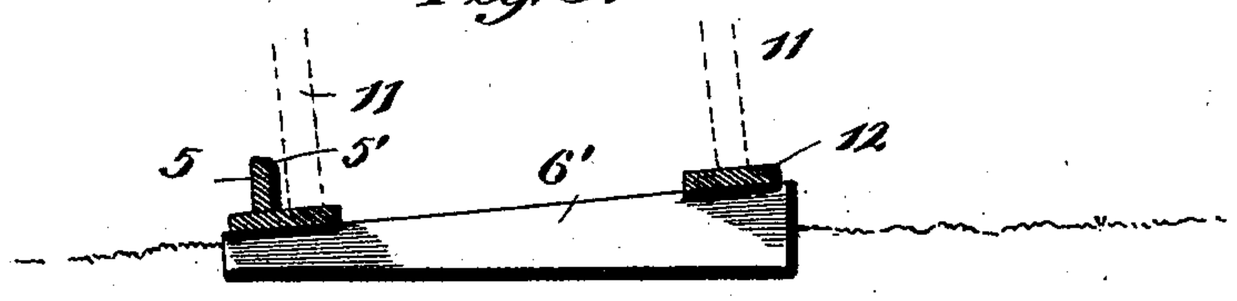
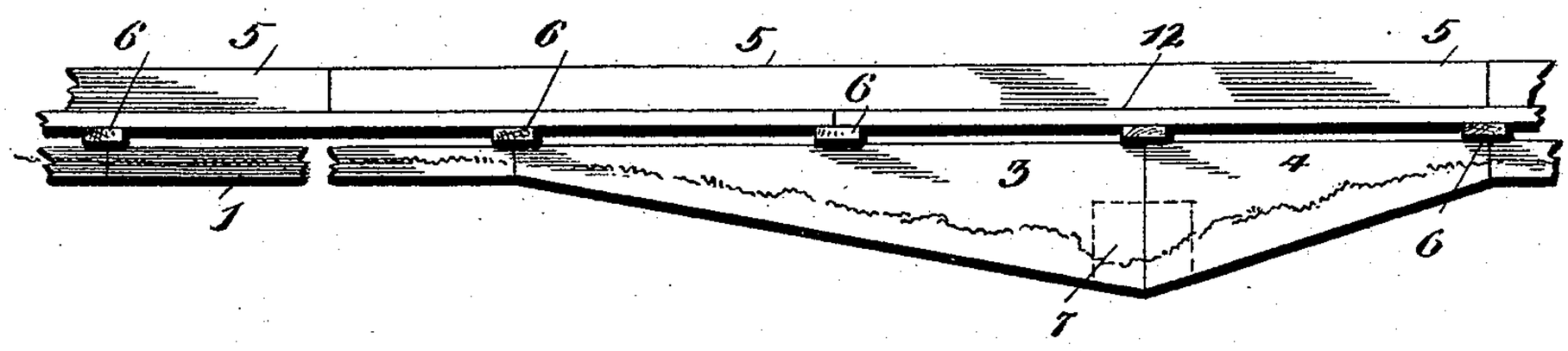


Fig. 4.



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UNITED STATES PATENT OFFICE.

TICE S. RIDDEL, OF EUGENE, OREGON.

WAGON-ROAD.

SPECIFICATION forming part of Letters Patent No. 497,344, dated May 16, 1893.

Application filed August 22, 1892. Serial No. 443,743. (No model.)

To all whom it may concern:

Be it known that I, TICE S. RIDDEL, a citizen of the United States, residing at Eugene, in the county of Lane and State of Oregon, have invented certain new and useful Improvements in Wagon-Roads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to road building, and more especially to tracks which are permanently or temporarily laid upon a soft road for the passage of vehicles; and the object of the same is to render a soft road as of mud or quicksand passable even by heavy vehicles at all seasons of the year. In certain sections of this country there exists what is known as the "rainy season" wherein rain falls daily for from five to six months, and in such parts of the sections of the country where the soil is of quicksand or other soft material, such incessant rain and constant and repeated soakings of the soil reduce it to a state approximating mush and render the roads over such soil almost utterly impassable especially to heavy vehicles. The wheels churn the soil into a condition resembling paste, after which further rainfall adds to the difficulty of passage, and a cessation of rain would cause the road to dry in ruts. If the soil have in it any considerable degree of sand and the road is not exactly level, the rain will wash out gulleys and furrows in the road which still further enhance the difficulty of passage. To overcome these objections I have provided a wagon track adapted to be laid upon such road, either to remain the year round or only through the rainy season; and the following specification describes such track and the manner of forming the road bed to co-operate therewith—either for a road on a hill side, one that is level, or one that has longitudinal depressions.

In the drawings hereto annexed and wherein the parts are drawn to scale—Figure 1 is a plan view of a section of my improved wagon track, showing how the road bed may be covered with corduroy as for quicksands. Fig. 2 is a transverse section of Fig. 1 showing the road as built on a hill side. Fig. 3 is a similar section showing the track as adapted for level ground. Fig. 4 is a side elevation of a section of this track showing the arrangement I employ when the road has longitudinal depressions or transverse gullies.

In building a graded road on a mountain side or hill side where the soil is soft, a road-bed is formed from six to eight feet in width and descending laterally about six inches toward the base of the hill so as to shed the water from the road as much as possible. Across this road-bed at intervals of eight feet are laid wooden ties two by six inches and six feet long, and to these ties are secured as by spikes or bolts longitudinal planks which serve as rails for the wagon wheels to run upon, and which measure two by twelve inches and sixteen feet long. These planks are so arranged as to break joint with each other, and their transverse centers are about five feet apart, or the width of an ordinary wagon. Upon the upper face of the lowermost plank or rail, near its outer edge, is then secured as by spikes or bolts a flange three by five inches, and in sections of sixteen feet arranged to break joint with the sections of this rail. A wagon track is thus formed which will present a transverse section as seen in Fig. 2, and the ties and even some portions of the rails may, and probably will, sink to a certain extent into the soft surface as there indicated. When a wagon is driven over this track, its wheels travel on the planks or rails and by the lateral inclination of the track one wheel will be caused to travel close against the flange 5, whose upper corner is preferably slightly beveled as at 5′, while the other wheel will at the same time travel on the center of the other plank or rail. If the road is one on which there is comparatively little travel, an additional and smaller flange 2 may be secured upon the upper rail, but I usually omit this. Between the rails the bed is preferably filled in with stone, gravel, sand, or other material to make a hard surface for the horse or team. When two teams meet, one driver turns his horse to the right and both wheels are drawn from the track toward the upper side of the road. In this way one team does all the turning out, and the small flange 2 if used will not materially interfere with the same.

Where the soil is excessively soft, where it

is of clay so as to form a basin for the water, or where it is even of quicksand, I may arrange a corduroy bed for the horse as seen in Fig. 1. This can be done by passing beams or logs 8 under the planks or rails and parallel with the ties, and they may or may not be secured in place as thought necessary. If the travel on the road is heavy it will perhaps be best to have them disconnected from the track so that they may be replaced as fast as worn out.

Perhaps the greatest difficulty in a country having a soft soil and a long wet season occurs where the road bed is level, and Fig. 3 illustrates my manner of laying this wagon track on such a bed. The parts are the same, except that the ties 6′ are considerably thicker at one end than at the other in order that the track when finished shall stand at a transverse inclination as seen. The whole structure will sink slightly, and its uses and advantages are the same as above described, the wagon wheels 11 here also traveling on the planks or rails.

The general configuration of the road may be level but with occasional depressions, or some little stream may flow across the bed; and Fig. 4 shows my preferred manner of constructing this improved wagon track in such a case. Here the parts are the same as at first described, but beneath the ties I arrange base pieces which follow the topography and support the ties in about a straight line. At 1 is shown a plain base piece, at 3 one of the shape of a wedge and whose upper edge supports three ties while its lower edge stands at a considerable incline, and at 4 is shown another base piece supporting two ties and whose lower edge stands at a much greater incline. These base pieces are preferably of fir or cedar if such wood is obtainable, and they are generally submerged to a considerable extent; and if the gully in the road has water in it flowing transversely across the road bed, I may cut an opening as shown in dotted lines at 7 to permit the water to pass out. Thus it will be seen that by shaping the parts properly this improved wagon track can be built on a level bed, a laterally inclined bed, or an uneven bed; and it will be understood that by combining the features above described, the track can be laid on a bed which may incline laterally and longitudinally and which may have many ruts, and yet the ascent and descent of the track will be gradual and uniform. The material which is to be used is wood such as is most readily obtainable, though fir is considered preferable, and the spikes 9 and 10 may be of galvanized iron to prevent rusting or they may be of ordinary iron or in the shape of bolts or screws. At any rate the parts when they are spiked together are preferably connected rather loosely, which can be accomplished by boring holes with a bit, and inserting bolts a trifle smaller than the holes; and this will not only permit a certain degree of flexibility in the stucture but will render it possible to take up the track in the spring if desirable. Where it is intended that the track shall remain permanently in place, the wood may be creosoted or treated in any other manner to prevent its decay.

Without limiting myself to the exact shapes, sizes, and materials of parts, I claim—

1. The herein described wagon track consisting of transverse ties, longitudinal rails supported thereby, one rail being higher than the other, and a flange upon the lowermost rail, as and for the purpose set forth.

2. A track consisting of transverse ties and parallel interposed corduroy pieces all laid upon the ground, rails spiked to said ties so as to break joint with each other and extending over the corduroy, and flanges spiked to the rails and breaking joint therewith, as and for the purpose set forth.

3. A road whose bed inclines transversely, and a wagon track laid thereon and comprising two rails and a flange rising from the lowermost rail, as and for the purpose set forth.

4. A road having a transverse inclined bed consisting of ties thicker at one end than the other, rails secured upon said ties, and a flange rising from the lowermost rail and having its upper inner corner beveled, as and for the purpose set forth.

5. A wagon track consisting of base pieces laid upon the ground longitudinally of the road, their lower edges conforming with the configuration of the ground and their upper edges forming an approximately straight line, transverse ties upon said base pieces, and longitudinal rails secured upon the ties, as and for the purpose set forth.

6. A road consisting of a bed inclining transversely, base pieces laid thereon longitudinal of the road, their lower edges conforming with the configuration thereof and their upper edges presenting an approximately straight line, said base pieces having openings for the transverse passage of water, ties upon said base pieces, rails upon said ties, and a flange rising from the lowermost rail, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

TICE S. RIDDEL.

Witnesses:
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