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ROADWAY SMOOTHER

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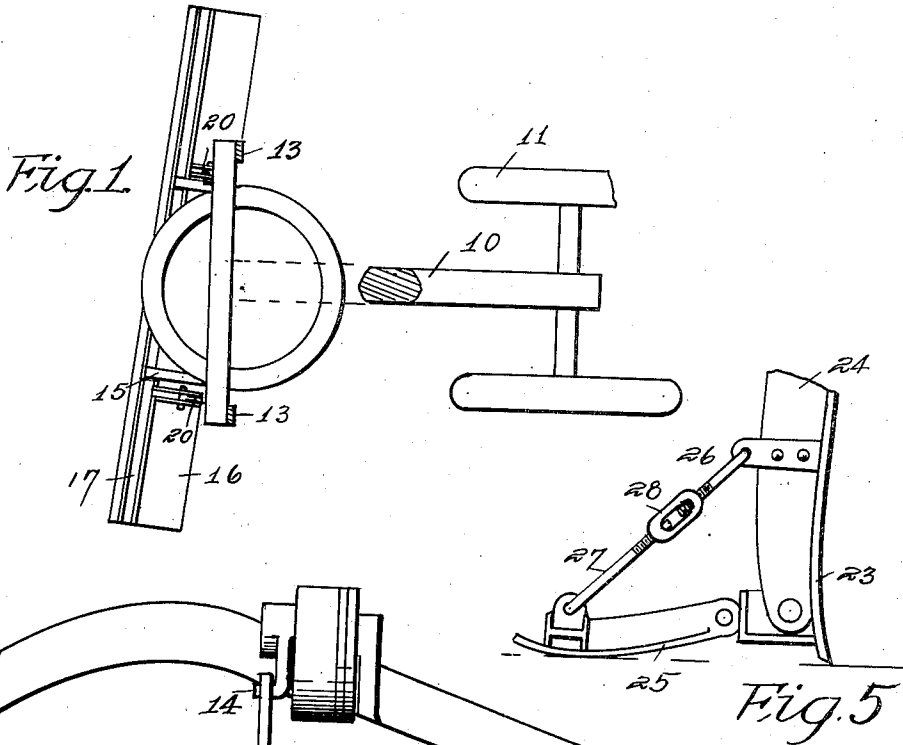


Fig. 2.

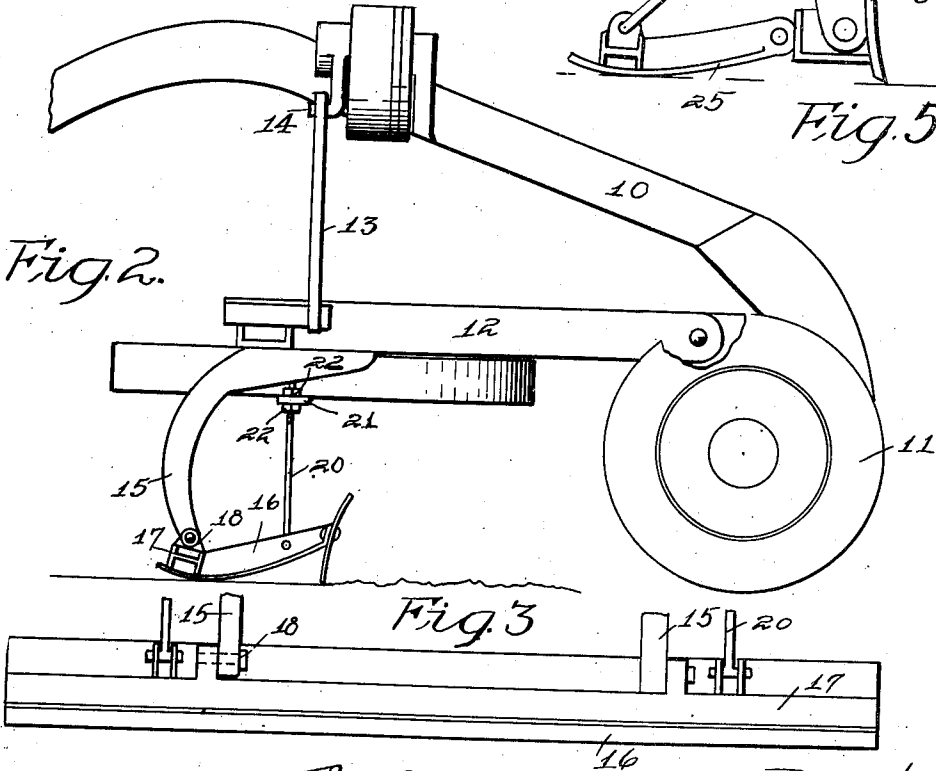


Fig. 3

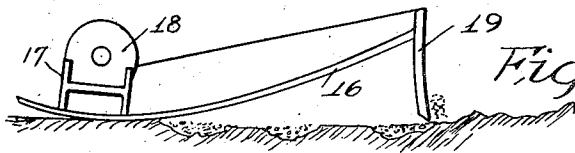


Fig. 4.

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UNITED STATES PATENT OFFICE

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ROADWAY SMOOTHER

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3 Claims. (Cl. 37—143)

Roadways of the type in which oiled gravel is used for surfacing frequently become "bumpy", some roadway portions or hills project above the normal roadway level, and there are corresponding depressions, and the oiled gravel surface is quite hard and unyielding and, therefore, difficult to smooth out.

The object of my invention is to provide a roadway smoother of simple and inexpensive construction which may be advanced by the usual tractors now in general use for roadway work.

More specifically, it is my object to provide a cutter blade to be advanced over a roadway to be smoothed and which is designed and shaped to engage only the top portions of the "hills" and cut them off, which obviously may be accomplished with a relatively small amount of tractive power, and to connect this cutter blade with a troweling blade for scraping the roadway material loosened by the cutting blade, into the roadway depressions and pressing same into bonding contact with the roadway and applying thereto a troweling operation for compacting and smoothing the road material so that it will shed rain, and further to operatively connect the two blades so that the troweling blade resting upon the roadway will support the cutting blade associated therewith at the proper elevation from the roadway surface for cutting off the tops only of the roadway hills and to prevent the cutter blade from penetrating deeply into the roadway and thereby loosening the tightly packed roadway material below the normal roadway level, and to provide means conveniently adjustable by the operator for tilting the troweling blade so that it will support the cutter blade at any desired elevation from the roadway without in any way affecting the normal operation and functioning of the troweling blade.

In the accompanying drawing—

Figure 1 shows a top or plan view of a roadway scraper embodying my invention;

Figure 2 shows a side elevation of a portion of the same on an enlarged scale;

Figure 3 shows a top or plan view of the troweling and cutting blades;

Figure 4 shows an enlarged detail view showing a vertical section of the combined cutting blade and troweling blade, and illustrating a portion of a roadway and the condition of same before and after the implement has passed over it;

Figure 5 shows a side elevation of a modified form of my invention.

Referring to the accompanying drawing I have used the reference numeral 10 to indicate gen-

erally the frame of a roadworking vehicle mounted upon wheels 11. The blade-supporting frame member 12 is pivoted to the main frame at its forward end and is supported upon the main frame by a link 13 connected to a crank 14 so that when the crank is turned, the blade-supporting frame 12 may be moved to an elevated position for transportation.

Fixed to the frame member 12 are two downwardly extended beams 15 for supporting the cutting and troweling blades. The troweling blade comprises a blade member 16 having at its rear end portion on the top of the blade a beam 17 provided with lugs 18, and the beams 15 are pivotally mounted to these lugs 18. The body of the blade is extended substantially transversely of the machine, as shown in Figure 1, and the forward edge of the blade is positioned above the roadway surface and extends downwardly and rearwardly and then slightly upwardly at its rear end, as shown in Figure 4. Fixed to the forward edge of the troweling blade 16 is a cutting blade 19. This cutting blade stands in a substantially upright position, as shown in Figure 2, and its lower edge projects below the front edge of the troweling blade.

For the purpose of adjusting the blades relative to the frame 12 I have provided rods 20 pivoted to the troweling blade and extended upwardly through lugs 21 carried by the frame 12, and nuts 22 are mounted on the rods 20 above and below the lugs 21 so that the front end of the troweling blade may be vertically adjusted relative to the frame, and securely held and locked in this position.

In the modified form shown in Figure 5 I have used the reference numeral 23 to indicate the cutting blade which is fixedly directly to the upright beams 24 carried by the frame 12, and the troweling blade which I have indicated generally by the numeral 25 is pivotally connected at its forward edge to the cutting blade. The rods 26 and 27 are pivotally connected to the beam 24 and the rear portion of the troweling blade, and a turnbuckle 28 is mounted upon the rods 26 and 27 for adjusting the position of the troweling blade.

In practical operation and assuming that the roadway to be operated on is of the ordinary type of oiled gravel roadways, then, as is well known and after a period of use the roadway material becomes what is generally called "bumpy", that is to say, certain portions of the roadway are elevated in small hills with corresponding depressions between the hills, and,

as is well known, after a considerable period of use this roadway material becomes very tough and unyielding. With my improved implement I first move the troweling blade to position resting upon the surface of the roadway. I then adjust the cutter blade by tilting the troweling blade to a position where the cutting blade will engage only the tops of the so-called "hills" of the roadway. When in this position the implement may be advanced over the roadway with the minimum of tractive power because the cutter blade is required to simply shave off the tops of said hill portions. As this is being done the portions of the roadway which are thus removed are engaged by the troweling blade and pressed into the depressions and also smoothed in the manner of a troweling operation. This movement of the implement over the roadway is repeated, and each time the cutter blade is adjusted downwardly so that it cuts off the next adjacent portions of the hill tops, and after a few operations the amount of material removed from raised portions of the roadway will have been carried into the depressed portions of the roadway and troweled in such position, and when thus troweled, the oiled gravel will present a smooth moisture-resistant surface in which the rain will not penetrate to any appreciable extent, so that after the operation of my implement has been completed the roadway is left in perfect condition.

One of the principal advantages of my improvement is, that the cutting blade is positively prevented, under all circumstances, from penetrating deeply into the roadway material; hence, after the operation has been completed with my implement the roadway has not been cut into or torn up into large sized chunks as is the case where implements of this kind are used where the cutting blade may penetrate deeply. Obviously, the same adjustment of the cutter blade relative to the troweling blade may be effected by the modified forms shown in Figure 5.

I have found in practice that the troweling blade works effectively and satisfactorily with its lower edge curved in the manner shown in the drawing, but I have also found that a straight troweling blade can be utilized and will do satisfactory work.

I also find in practical use that by having a member like my improved troweling blade, or some other road-engaging member, the cutter blade may be adjusted relative thereto, or one may be adjusted relative to the other in such a manner as to effectively cut off only the tops of the hill portions of the roadway, and not cut deeply into the roadway and I, therefore, do not wish to be understood as limiting the use of my invention to the particular form of troweling blade shown.

I claim as my invention:

1. A roadway smoothing implement comprising a vehicle, a roadway troweling blade pivotally supported by the vehicle and extended transversely thereof and being curved on its under surface downwardly and rearwardly from its front edge, a cutter blade attached to the forward edge of the troweling blade in a substantially upright position with its lower edge below the forward edge of the troweling blade, and means for adjustably fixing the troweling blade in various positions of its pivotal movement relative to the vehicle.

2. A roadway smoothing implement comprising a vehicle, a roadway troweling blade pivotally supported by the vehicle and extended transversely thereof and being inclined downwardly and rearwardly from its front edge, a cutter blade fixed to the forward edge of the troweling blade in a substantially upright position with its lower edge below the forward edge of the troweling blade, and means for adjustably fixing the troweling blade in various positions of its pivotal movement relative to the vehicle.

3. A roadway smoothing implement comprising a vehicle, a roadway troweling blade pivotally supported by the vehicle and extended transversely thereof and being inclined downwardly and rearwardly from its front edge, a cutter blade attached to the forward edge of the troweling blade in a substantially upright position with its lower edge below the forward edge of the troweling blade, and means for adjustably fixing the troweling blade in various positions of its pivotal movement relative to the vehicle.

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