May 24, 1932. A. B. WILSON 1,859,350

SCARIFYING TOOTH

Filed Feb. 27, 1931

Fig. 1

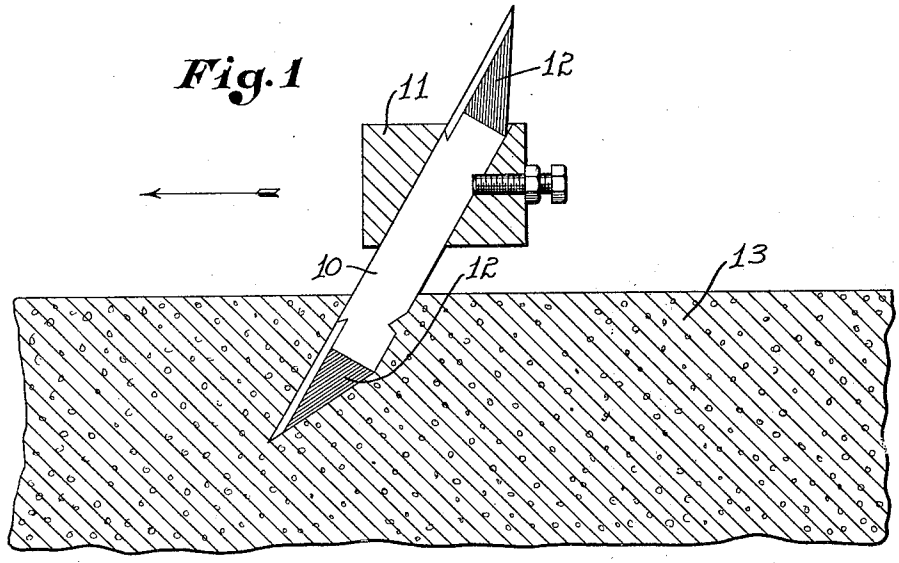


Fig. 2

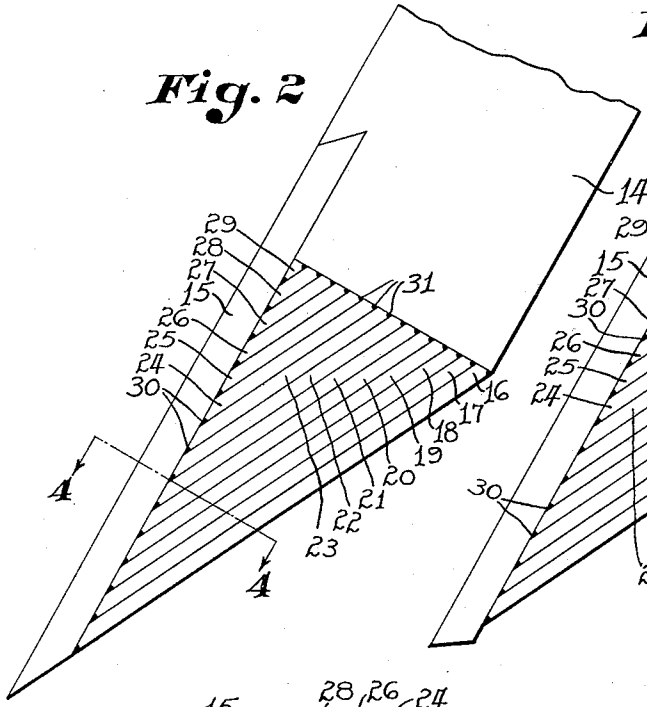


Fig. 3

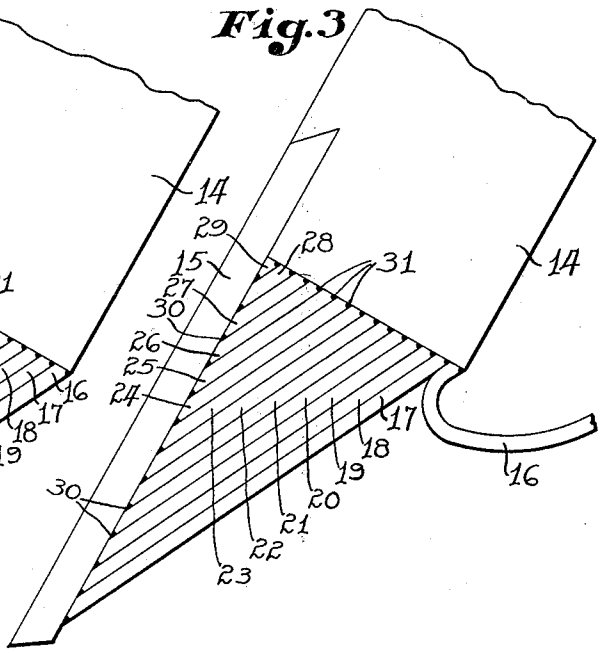
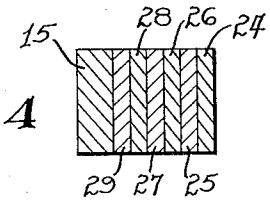


Fig. 4



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UNITED STATES PATENT OFFICE

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SCARIFYING TOOTH

Application filed February 27, 1931. Serial No. 518,656.

This invention relates to a scarifying tooth and has for its purpose to provide a scarifying tooth which will be self sharpening for a considerable period of time to a sufficient extent so that it will continue to operate.

The specific use for which the new tooth has been employed is to scarify or dig up the surface of a road preparatory to smoothing the road. This is particularly applicable to gravel roads, gravel and tar, and similar roads. In such cases the surface frequently becomes roughened and it is necessary, in order to produce a smooth surface which will remain smooth for any appreciable length of time, to dig into the surface of the road so that the smooth surface will be properly bonded with the road bed therebeneath.

When the compacted surface of the road was thinner and when traffic was lighter, it was customary to perform this operation by driving teeth below the compacted or hardened crust of the road, so that the points of the teeth moved in comparatively soft dirt beneath the hard surface of the road, most of the work being performed by the front face of the tooth. Under such circumstances there was not excessive wear upon the point of the tooth.

It has now become customary, because of the increased depth of the compacted surface, to dig only part way through the compacted portion when merely smoothing the road surface. Under such circumstances the point of the tooth is moving through dense compacted material. This wears the point of the tooth very rapidly. Aside from the point that the wear on the tooth causes great expense in resharpening or renewing the tooth at frequent intervals, it also happens that the workmen performing the scarifying operation frequently become negligent and do not resharpen or renew the teeth as promptly as they should. The dull teeth do not enter into the surface of the road sufficiently to dig up enough of the surface to result in a lasting smoothing job. The present invention has been used to provide a tooth that will continue to operate at approximately maximum efficiency for at least half a day, so that the temptation to continue operating with excessively dull teeth is not so great. Also the invention reduces the cost of sharpening and renewing the teeth.

The particulars of the invention will be understood from the accompanying drawings showing one embodiment thereof.

Figure 1 illustrates the new tooth in use;

Fig. 2 is an enlarged detail of the end of the tooth as it first appears;

Fig. 3 is a view similar to Fig. 2, but illustrating the appearance of the end of the tooth after it has been in use for a while, and

Fig. 4 is a section on the line 4—4 of Fig. 2.

In the embodiment of the invention illustrated there is a tooth 10 of common general shape mounted in a holder 11 of suitable construction, the holder being adapted to be moved over the surface of a road bed by any suitable means. The lower end 12 of the tooth is forced downward into a road bed 13, which is shown to be compacted for a greater depth than that reached by the tooth.

The tooth is constructed of a body portion 14 and a point 12 at either end thereof. Each point 12 is constructed of a wear plate 15, which is positioned upon the front side of the point and is fastened to the front side of the body portion 14. A series of brace plates 16, 17, 18 and up to any desired number are provided between the end of body portion 14 and the back side of wear plate 15. These brace plates are preferably separate from each other, but are attached at their ends to the wear plate and to the body portion by any suitable means. In the construction illustrated, each brace plate is connected to the wear plate by spot welding at the lowest point of contact 30 and is also spot-welded at 31 to the lower end of the body portion.

The operation of the device is as follows:

The tooth is forced into the road bed by suitable means and moved along therein. The result is to rapidly wear off the bottom end of plate 15. As soon as the projecting point of wear plate 15 is worn off, wear begins to take place on the bottom end of brace plate 16. When the wear has proceeded far enough to erode away the weld line 30 con-

necting brace plate 17 to face plate 15, the lower end of brace plate 16 is bent backward by its contact with the road bed until it is moved out of the way. This leaves the lower end of face plate 15 projecting slightly below brace plate 17, as shown in Fig. 3. The wear will then continue until plate 17 in its turn is loosened at its lower end, when that also will be bent backward out of the way. In this way the wear may continue until a considerable length of plate 15 has been worn off without the back of the tooth interfering seriously with the entry of the tooth into the road bed.

When so much of wear plate 15 has been worn away that it will no longer operate efficiently, the tooth may be resharpened by removing wear plate 15 and any remaining portions of the brace plates and replacing them with new plates. If preferred, portion 15 might be made integral with body portion 14, but in that case the point of the tooth could not be so readily renewed.

From the above description the construction and operation of the new tooth will be evident. It will also be evident that departures may be made from the exact form of the tooth while utilizing the principle thereof within the scope of the appended claims, and that while this tooth is intended primarily for scarifying road beds, it might be employed for other operations where similar qualities are desirable.

What I claim is:

1. A tooth comprising a wear plate portion forming the point and the wearing side of the tooth, and a brace plate slanting backward and upward from the rear side of the wear plate portion and attached to the wear plate portion at its lower end and to the body of the tooth at its upper end so that when the wear plate portion has worn off sufficiently to release the attachment of the brace plate at its lower end, the brace plate may be bent backward and upward.

2. A digging tooth having a body portion, a wear plate extending downward from the front side of the body portion, and a brace plate attached to the rear side of the wear plate near the bottom end thereof and slanting upwardly and rearwardly and attached at its upper end to the body portion, said brace plate being unattached except as specified.

3. A digging tooth comprising a body portion having a shoulder on its end and a wear plate extending downward from the front of said shoulder, and a plurality of brace plates attached to the rear face of said wear plate, slanting upwardly and rearwardly, and attached at the upper end to said shoulder, said brace plates being laid face to face across the longitudinal direction of said tooth and being unattached to each other between their ends.

4. A digging tooth comprising a face plate adapted to receive wear on its lower end and front face and a laminated structure bracing the back of said face plate, the lamina of said structure slanting backward and upward from the back of the lower end of said tooth to a rigid abutment and being unattached to each other between the ends of said bracing structure.

In testimony whereof I have hereunto signed my name to this specification.

ARTHUR B. WILSON.