H. D. JONES.

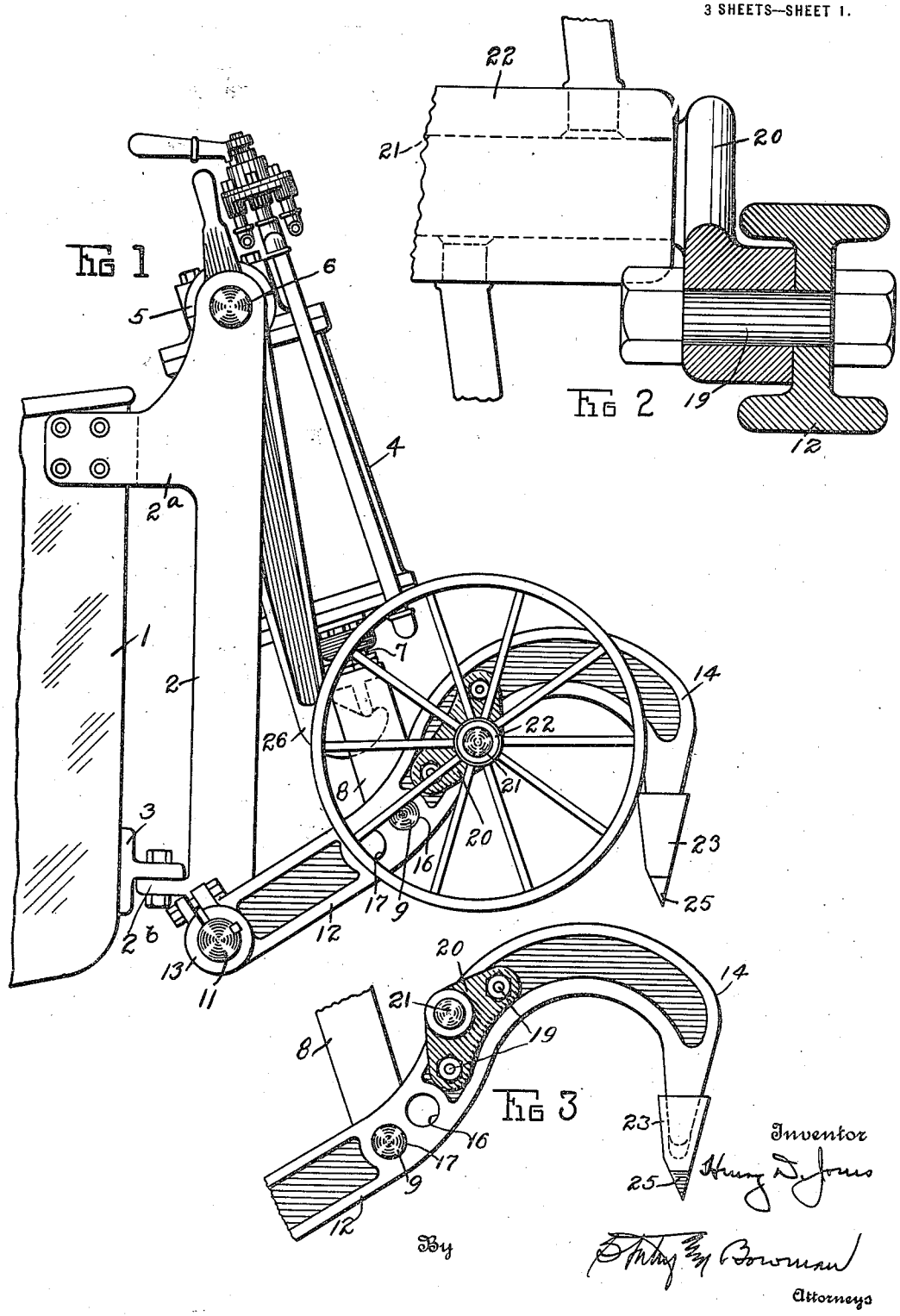
SCARIFYING DEVICE FOR ROAD ENGINES.

APPLICATION FILED NOV. 11, 1916.

1,230,302.

Patented June 19, 1917.

3 SHEETS—SHEET 1.



Inventor

Henry D. Jones

By

Attorneys

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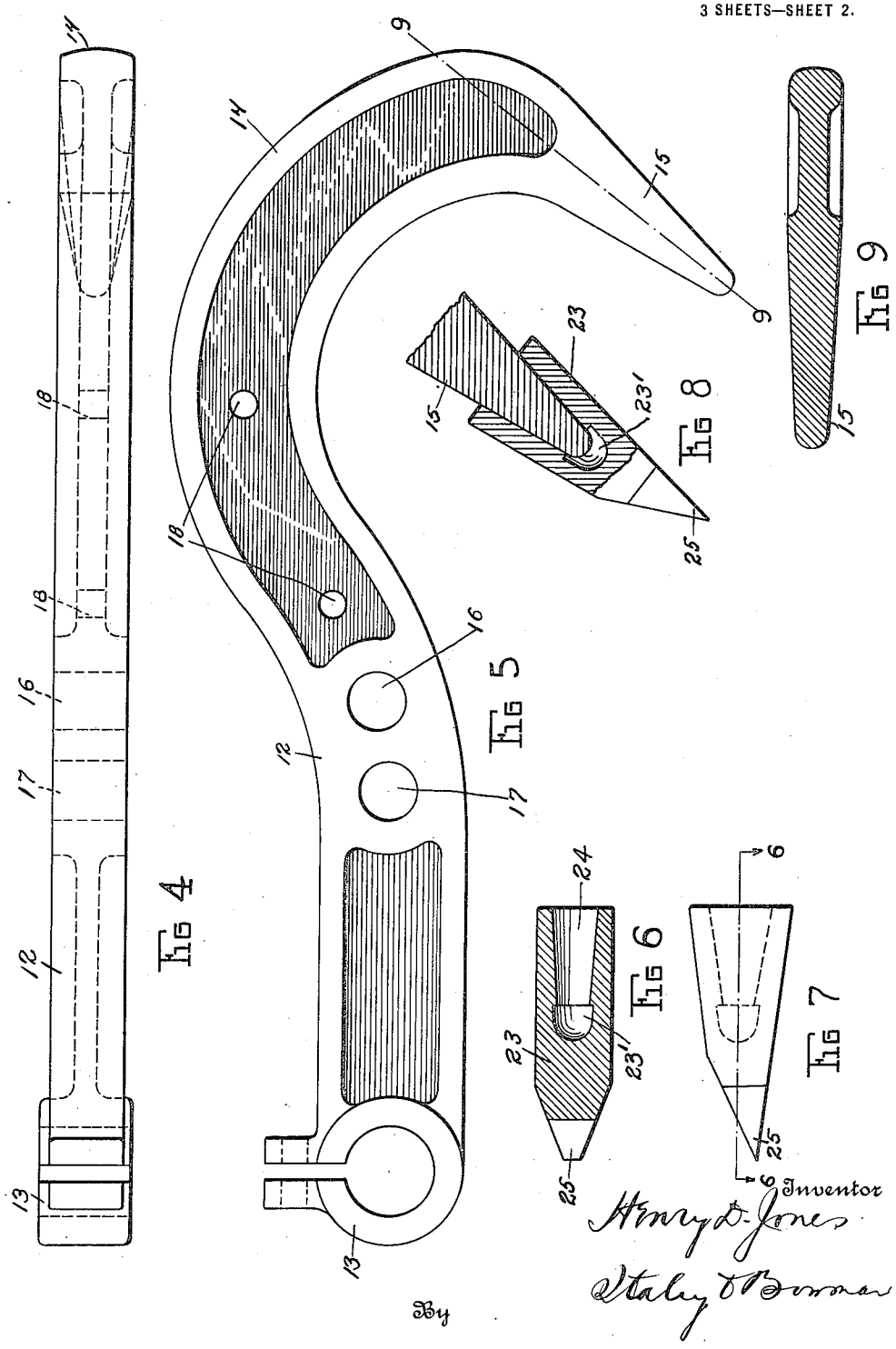


Fig 4

Fig 5

Fig 6

Fig 7

Fig 8

Fig 9

Inventor

Henry D. Jones

By Staley & Berman

Attorneys

H. D. JONES.

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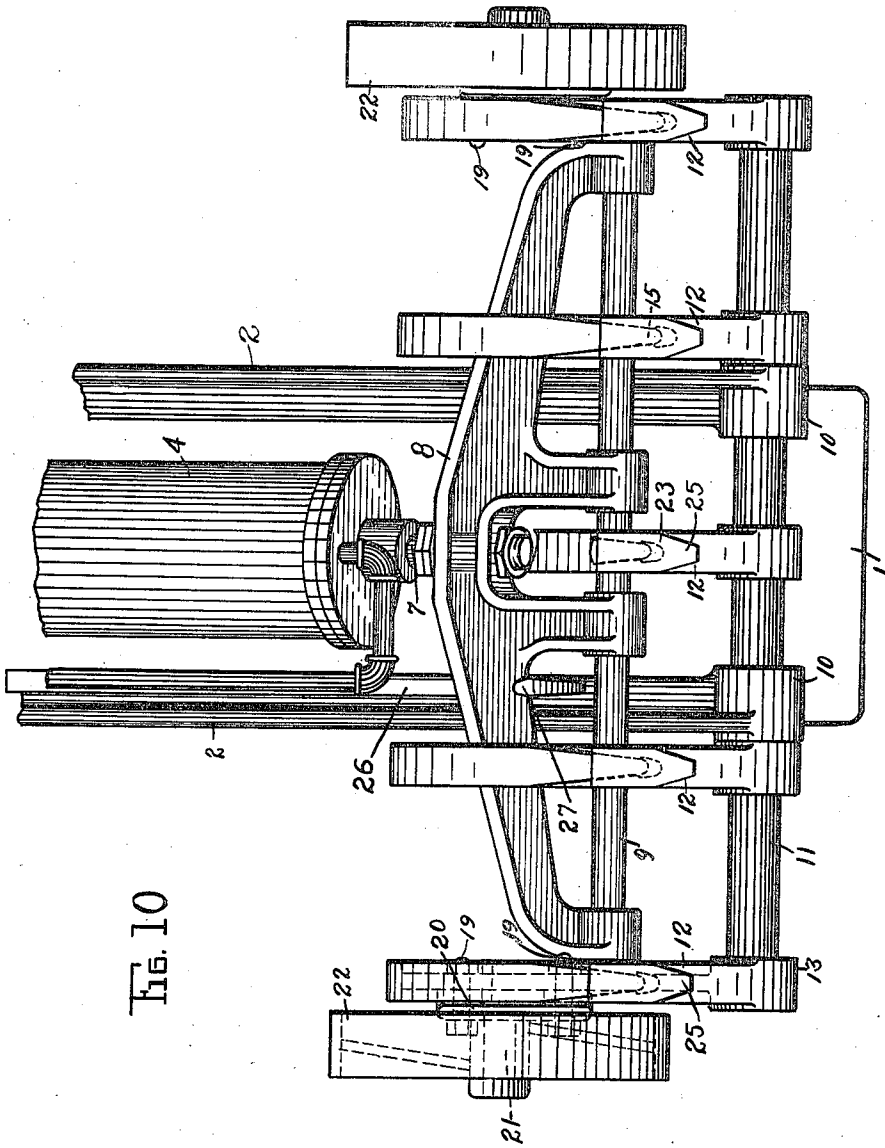


FIG. 10

Inventor

Henry D. Jones

By Haley & Bowman

Attorneys

UNITED STATES PATENT OFFICE.

HENRY D. JONES, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE KELLY-SPRINGFIELD ROAD ROLLER COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

SCARIFYING DEVICE FOR ROAD-ENGINES.

1,230,302. Specification of Letters Patent. Patented June 19, 1917.

Application filed November 11, 1916. Serial No. 130,867.

To all whom it may concern:

Be it known that I, HENRY D. JONES, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Scarifying Devices for Road-Engines, of which the following is a specification.

This invention relates to improvements in scarifying devices of the kind which are capable of attachment to road engines. It more particularly relates to the construction and adjustment of the tool holders and their gage wheels.

One of the objects of the invention is to provide a scarifying device in which the tool holders are so formed as to provide sufficient clearance to adapt them for the work of tearing up oil asphalt roads.

A further object of the invention is to provide a scarifying device of the character referred to in which provision is made for adjusting the depth of penetration of the tools.

A further object of the invention is to provide for equipping the scarifying devices with a tool point which may be readily renewed.

A further object of the invention is to provide a simple and effective means for holding the tool holders and tools in inoperative position away from the ground when the machine is at rest or being transported.

Referring to the drawings:—

Figure 1 is a side elevation of the rear end of a road roller showing my improved devices applied thereto.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a side elevation of a portion of one of the tool holders and its tool showing the adjustable features.

Fig. 4 is a top plan view of one of the tool holders.

Fig. 5 is a side elevation of the same.

Fig. 6 is a section of one of the removable tool points.

Fig. 7 is a side view of the same.

Fig. 8 is a section of the nose of one of the holders with the detachable tool point shown in position thereon.

Fig. 9 is a section on the line 9—9 of Fig. 5.

Fig. 10 is a rear elevation of the parts shown in Fig. 1 with the upper portion thereof broken away.

Referring to the drawings, 1 represents the rear end of a road engine, in the present case it being the rear end of the tank of a road roller. Upright standards 2 are secured to this tank, the upper end of each standard having an arm 2^a which is bolted to the side of the tank near the upper edge thereof and the lower portion of each standard having a lug 2^b which is bolted to the usual bed rail 3. A fluid pressure cylinder 4 has its upper end provided with a sleeve or bearing 5 which is journaled on a shaft 6 which is stationarily secured in the upper end of the standards 2. The piston rod 7 of the piston of the cylinder is rigidly secured to a yoke 8 which is pivotally mounted upon a shaft 9.

Rotatably mounted in bearings 10 integrally formed with the lower ends of standards 2 is a shaft 11 and keyed to this shaft 11 are the tool holders represented in a general way by the reference characters 12. The shaft 9 is extended through openings in these holders so that the holders may be raised and lowered and pressure applied thereto by the fluid pressure cylinder.

The forward end of each of the tool holders is provided with an integrally formed split collar 13 for the purpose of clamping it to the shaft 11 and the rear end is curved upwardly and thence downwardly and forwardly to form an arch-shaped portion 14; the extreme rear end 15 being tapered to a blunt point. Intermediate the ends of the tool there are provided two transversely extending openings 16 and 17 through one of which the shaft 9 extends. The outside holder on each side of the machine is also provided with openings 18 to receive bolts 19 which secure thereto a bracket 20 which has a stud 21 upon which a gage wheel 22 is journaled. It will be seen that this stud is at one side of a line drawn between the centers of the openings in the bracket 20 through which the bolts extend so that by reversing the bracket end for end the stud

21 may be positioned either above or below a line drawn between the centers of the openings 18 so that the gage wheel may be positioned for deep or shallow penetration of the tools as desired.

When the gage wheel is in the position indicated in Fig. 1 for shallow penetration of the tools, the shaft 9 will be extended through the series of openings 16 in the various tools, and when the gage wheel is in the position for deep penetration, as indicated by the adjustment of the bracket in Fig. 3, the shaft 9 will be extended through the series of openings 17 in order that a greater swinging movement will be imparted to the tools and gage wheels, this being necessary on account of the increased height of the gage wheels from the ground line. Further, when the gage wheels are set for deep penetration, with the shaft 9 consequently extended through the opening 17, a greater swinging movement is permitted the scarifying devices, permitting the tool holders to clear themselves more readily from the material.

The particular form of scarifying tool described is one which is especially adapted for tearing up oil asphalt roads which abound along the Pacific coast, particularly in California, in the process of which the asphalt tears up in large sheets which accumulate in and eventually clog the ordinary form of scarifying tools. By placing these tools comparatively far apart as shown in Fig. 10 and forming each tool with the arch described so as to afford a large clearance space, this peculiar construction allows the material to readily clear itself from the tools.

In order to increase the life and preserve the effectiveness of the tools, I have provided for each holder a removable tool point 23 provided with a tapering socket 24 to fit the tapered nose 15 of the holder; this point 23 being provided with a sharp pointed end 25 to allow it to more readily penetrate into the material. No fastening devices are necessary to hold this point 23 in position on the nose 15, since the pressure applied to the tools by the pressure cylinder tends to more firmly force the same in position on the tapered nose. When it is desired to remove the same, this may be readily accomplished by the use of a hammer or similar tool to drive the same from the nose, the point 23 having the bottom of its socket 24 enlarged as indicated at 23′ to allow the point to be driven more firmly in position on the tapered nose.

In order to hold the holders and their tools in inoperative or raised position I have provided a latch 26, the upper end of which is pivotally connected to the shaft 6 and the lower end of which is formed with a hook 27 to engage the under side of the yoke 8. For releasing the latch it is only necessary to raise the holders slightly to allow the hook to become disengaged from the yoke, the latch then swinging out of the path of the yoke by gravity. Further, by forming the tapered nose of oval shape, or thicker or wider in one direction than in the other, as shown in Figs. 5 and 9, and forming the socket of the point of a similar shape, as shown in Figs. 6 and 7, the point is prevented from turning upon the nose.

Having thus described my invention, I claim:—

1. In a scarifying attachment for road engines, a series of pivoted scarifying devices, means for raising and lowering and applying pressure thereto, a bracket secured to each of the outside devices by removable attaching means, a stud on each of said brackets and a gage wheel journaled on said stud, said stud being so positioned with respect to the attaching means that by reversing the bracket end for end the gage wheel may be adjusted relative to said scarifying devices.

2. In a scarifying attachment for road engines, a series of pivoted scarifying devices, means for raising and lowering and applying pressure thereto, a gage wheel bracket secured to each of the outside devices so that each of said brackets may be reversed end for end, and a gage wheel journaled on each of said brackets at a point at one side of a line drawn between the centers of the securing means for the same so that said gage wheels may be adjusted relative to the scarifying device to regulate the depth of penetration.

3. In a scarifying attachment for road engines, a series of pivoted scarifying devices, said devices being provided with a plurality of series of alined openings, one series of openings being closer to the pivotal point of said scarifying devices than the other series of openings, a shaft arranged to be extended through any one of said series of openings, a mechanism connected with said shaft for raising and lowering and applying pressure to said scarifying devices, gage wheels connected with said devices, and means for adjusting said gage wheels with respect to said devices to correspond to the position of said shaft.

4. In a scarifying attachment for road engines, a series of pivoted scarifying devices, mechanism for raising and lowering and applying pressure thereto, the connection between said mechanism and said devices being adjustable with respect to the pivoted point of said devices, and gage wheels connected with said devices, the connection of said gage wheels being also adjustable to correspond to the adjustments of the connection for said mechanism.

5. In a scarifying attachment for road engines, a series of pivoted scarifying devices,

said devices being provided with two series of alined openings, a shaft arranged to be extended through either one of said series of openings, one series of openings being closer to the pivotal point of said devices than the other series of openings, a bracket secured to each of the outside devices by removable attaching means, and a stud on each bracket, a gage wheel journaled on said stud, said stud being so positioned with respect to the attaching means that by reversing the bracket end for end the gage wheel may be adjusted to correspond to either series of alined openings.

In testimony whereof, I have hereunto set my hand this 6th day of November 1916.

HENRY D. JONES.

Witness:
CHAS. I. WELCH.