June 23, 1931. W. K. McMILLAN 1,811,275

SLIP TONGUE FOR SCRAPERS

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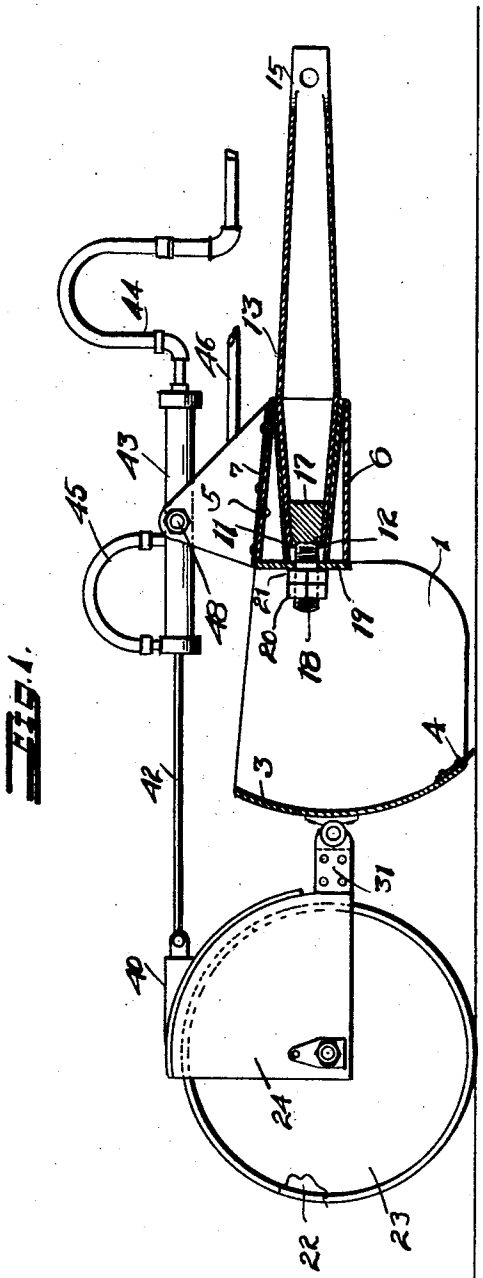


Fig. 1.

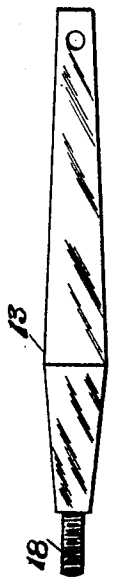


Fig. 3.

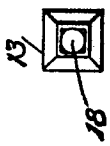


Fig. 2.

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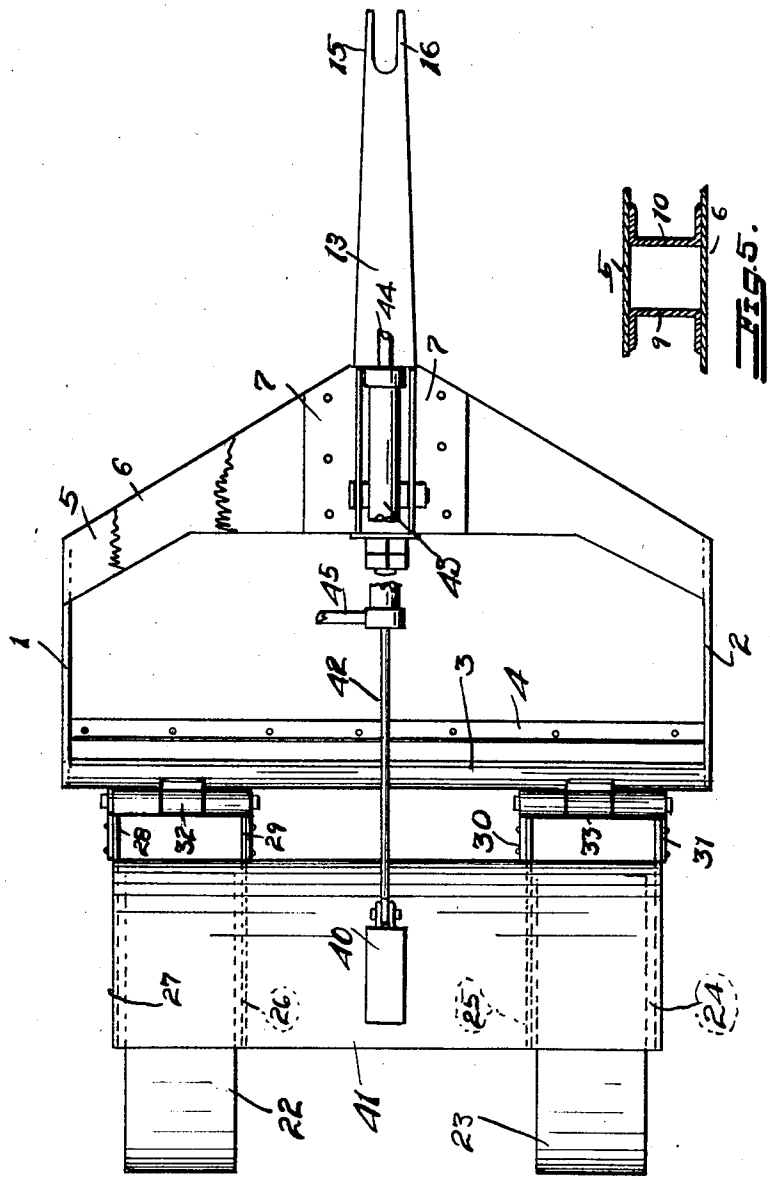


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE

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SLIP TONGUE FOR SCRAPERS

Application filed July 30, 1928. Serial No. 296,200½.

This invention relates to a slip tongue scraper, and its object is to provide a power scraper with a sufficiently heavy connection to the tractor engine or Caterpillar tractor by which it is pulled, to enable it to work with certainty and efficiency while at the same time providing means for readily replacing the tongue in the event that it is broken.

It will be understood by those skilled in the art that with scrapers of this character a Caterpillar tractor or other tractor of from 30 to 75 h. p. or more is frequently used to carry the dirt picked up, and while theoretically all of the load is supposed to be due to the dragging effect on the tongue, it frequently happens that in turning or in backing that severe strains are put upon the tongue which not only destroy it, but ruin the scraper itself if it is not made of sufficiently heavy material to transmit whatever shocks it is likely to receive.

With this object is view the tongue is not only made very heavy, but the means for connecting it to the scraper is also made sufficiently heavy and strong to permit exceedingly rough usage without injury thereto.

Other objects of the invention will be apparent as the description proceeds.

An embodiment of the invention is shown in the accompanying drawings in which the same reference numeral is applied to the same portion throughout the several figures of the drawings and of which there may be modifications.

Figure 1 is a longitudinal sectional view through the scraper and tongue,

Figure 2 is an end view of the tongue looking from the left of Figure 3,

Figure 3 is a side elevation of the tongue,

Figure 4 is a plan view of the scraper showing the tongue applied thereto, and

Figure 5 is a transverse sectional view of the track plates at the socket in which the tongue is secured.

The scraper is of a well known type having end plates 1 and 2 with a bowl 3 at the lower edge of which is a hardened steel knife 4. Two plates 5 and 6 are connected to the end plates of the scraper, and these plates are additionally stiffened at the center by means of a plate 7 riveted to the top plate.

The plates 5 and 6 are about six to eight inches apart in actual practice, and are connected near the center by two short channel bars 9 and 10, which are riveted to the top and bottom plates in a position so that their rear ends are closer together than their front ends, and in order to give the structure greater strength two other plates 11 and 12 are either welded or riveted to the plates 9 and 10 to produce a tapered socket to receive the tongue 13.

The tongue 13 is of heavy boiler iron welded together at its corners to form a structural member about six to eight inches square at its largest portion the largest portion being located about 3 feet from one end and tapering both ways to the ends, which are about 3″ to 4″ square, and eight to ten feet long. At the front the tongue has an opening to receive the track pin for connection to the tractor, this track pin passing through the two tongue members 15 and 16.

At the rear end of the tongue there is a tapered block 17 with a threaded stud 18 projecting therefrom, which stud passes through a vertically extending member 19 welded, or otherwise secured to the back of the two members 5 and 6, and lock nuts 20, 21 serve to secure the tongue in place in the socket. The block 17 is preferably welded in place.

This scraper is of a power operated type, heretofore in use, and is raised or lowered with the aid of the two wheels 22, 23, which are pivotally connected at the rear by four plates, 24, 25, 26 and 27, which plates have forwardly projecting lugs 28, 29, 30 and 31 to connect the wheels to the hinge members 32, 33 on the rear of the scraper bowl.

In order to raise or lower the scraper bowl with respect to the wheels there is a bracket 40 on the top of the cylindrical hood 41 over the wheels 22, 23 and to which all of the members 24 to 27 inclusive are connected. The rod 42 passes into the piston cylinder 43 and serving to shift the position of the scraper bowl so as to make it run lightly over the surface or dig into the ground as may be desired.

The operating mechanism for the cylinder 43 forms no part of the present apparatus, it being sufficient to note that the power delivered through the pipe 44 will later be delivered into the pipe 45 to raise or lower the scraper, and then to be passed through the pipe 46 to a suitable place of discharge.

The cylinder 43 is pivotally mounted on two trunnions 48.

It will be seen that the plates of the sheet metal are either welded together or fastened with rivets as may be most desirable, but in any event the shape of the tongue and its manner of assembly produces such a strong connection with the scraper itself that there is practically no danger of injury thereto even though subjected to the hardest usage of traction members.

Having thus described my invention, what I desire to secure by Letters Patent of the United States is as follows, but modifications may be made in carrying out the invention as shown in the drawings and in the above particularly described form thereof, within the purview of the annexed claims.

1. A scraper of the class described comprising a scraper member having end plates and a hardened knife at its lower edge, a pair of horizontal plates spaced apart and fixed to the end plates and extending across the front of the scraper, other plates secured thereto forming a square tapering pocket, and a square tapering tongue secured in said pocket to operate the scraper.

2. A scraper of the class described comprising a pair of end plates, a rear plate carrying a cutting knife, a hollow square tapered tongue for holding the scraper, a pair of plates spaced apart to act as a draw bar to the scraper and connected to the end plates of the scraper, other plates forming with said draw bar a hollow square tapered pocket, a cross plate back of said pocket, an opening in said plate, a threaded tail piece carried by said tongue, adapted to pass through said opening, and a threaded nut on said tail piece to secure said tongue in said pocket.

3. A slip tongue for scrapers, comprising a square hollow metal member tapering from an intermediate point to the end, a tapered block fixed inside the small end of said member, a threaded stud projecting from said block beyond the end of said member, a cross plate fixed to a scraper, an opening in said plate to receive said stud, a tapered socket to receive said tapered member on said plate, and a threaded nut to draw said tapered member into said socket.

In testimony whereof I have hereunto set my hand.

WESLEY K. McMILLAN.