A wheel-tractor scraper comprises a scraper bowl attached to a tractor by a pair of laterally-spaced draft arms positioned on either side of the scraper bowl. A rock guard is attached on each of the draft arms to extend substantially the entire length thereof and has inner edges positioned closely adjacent to a respective side of the scraper bowl to prevent the wedging of rocks or the like between the draft arm and the scraper bowl.

7 Claims, 4 Drawing Figures
ROCK GUARD FOR SCRAPER DRAFT ARM

BACKGROUND OF THE INVENTION

Wheel-tractor scrapers are employed in the earth-working industry to remove and transport materials to a remote location for filling or other construction purposes. The scraper bowl is normally loaded to a heaped condition to maximize the economic efficiency thereof during each cycle of operation. In conventional practice, rocks and the like normally fall between each draft arm and the scraper bowl and sometimes become wedged therebetween. Such wedging action not only causes undue wear to the draft arm and adjacent side of the scraper bowl, but also unduly loads the hydraulic system utilized for raising and lowering the scraper bowl.

SUMMARY OF THIS INVENTION

An object of this invention is to overcome the above, briefly described problems by providing an economical and efficient guard means for the draft arms of a tractor scraper combination. A guard means is attached on each draft arm to extend substantially the entire length thereof and has inner edges thereof spaced a predetermined distance from a respective side of the scraper bowl to prevent large rocks and the like from wedging between each draft arm and a sidewall of the scraper bowl.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects of this invention will become apparent from the following description and accompanying drawings wherein:

FIG. 1 is a side elevational view of a wheel-tractor scraper having a guard means of this invention mounted on each draft arm thereof;

FIG. 2 is a cross-sectional view through a draft arm and attached guard means, taken in the direction of arrows II—II in FIG. 1;

FIG. 3 is a top plan view of the draft arm and attached guard means of FIG. 2; and

FIG. 4 is a view similar to FIG. 2, but showing a modified embodiment of the guard means.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 illustrates a wheel-tractor scraper 10 comprising a tractor portion 11 attached to a scraper portion 12 by a conventional gooseneck 13 and a pair of laterally-spaced draft arms 14. The scraper portion comprises a scraper bowl 15 adapted to be selectively raised or lowered by a pair of conventional lift cylinders 16 (one shown). When the scraper bowl is lowered to a scraping position, raised to a hauling position or transported to a dump site, relative vertical motion occurs between the scraper bowl and draft arms 14.

Normally, such relative motion is of small concern. However, should a large rock R (FIG. 2) or the like become wedged between a draft arm 14 and a sidewall of the scraper bowl, undue wearing of the draft arm and scraper bowl will occur. In addition, components employed in the hydraulic circuit utilized to effect such raising and lowering may become adversely affected.

The above problem may be overcome by attaching a guard means or rock guard 17 on each draft arm so that it extends substantially the entire length thereof (FIG. 1). In the FIGS. 1–3 embodiment, the guard means comprises a flat plate 18 releasably attached to an underlying block 19, welded or otherwise suitably secured on the upper surface of draft arm 14. The plate is attached thereon by releasable fastening means, such as cap screws 20, each extending through an elongated slot means 21 to selectively adjust the distance d, between an inner edge 22 of the plate and a sidewall 23 of scraper bowl 15.

Thus, edges 22 may be prepositioned in substantial parallel relationship with respect to sidewall 23 at a first predetermined distance d which is substantially less (preferably at least one-half) than a second predetermined distance D, between the inner side of draft arm 14 and sidewall 23. Thus, as the bowl is being loaded with material to a heaped condition, the spill-off will fall onto guard means 17. The smaller sized materials will fall through the opening formed between edge 22 and sidewall 23, whereas larger rocks and the like will be prevented from falling therethrough. Otherwise stated, the wedging condition indicated by rock R in FIG. 2 is prevented since distance d is substantially smaller than distance D.

FIG. 4 illustrates a modified guard means 17a wherein block 19 (FIG. 2) has been eliminated. Like numerals depict corresponding structures with the numerals appearing in FIG. 4 being accompanied by a small “a”.

The modified guard means comprises a plate 18a which is releasably attached directly on a draft arm 14a by means of cap screws 20a. Each cap screw extends through an elongated slot 21a to precisely set the distance d between inner edge 22a of plate 18a and a sidewall 23 of the scraper bowl. Such distance is substantially less than distance D, between the inner side of draft arm 14a and sidewall 23.

What is claimed is:

1. In a tractor scraper combination having a scraper bowl pivotally attached to a tractor by a pair of laterally-spaced draft arms each positioned adjacent to a respective side of said scraper bowl, the invention comprising guard means attached on each of said draft arms to extend substantially the entire length thereof and each further extending between an upper surface of a respective draft arm and a respective side of said scraper bowl, and having inner edges thereof spaced a first predetermined distance from a respective side of said scraper bowl which is substantially less than a second predetermined distance between each draft arm and the side of the scraper bowl.

2. The combination of claim 1 wherein each of said guard means comprises a flat plate attached on the upper surface of a respective draft arm by a plurality of releasable fastening means.

3. The combination of claim 2 wherein each of said fastening means projects through an elongated slot means formed through said plate for permitting adjustment of said fast first predetermined distance.

4. The combination of claim 1 wherein said first predetermined distance is less than one-half of said second predetermined distance.

5. The combination of claim 1 wherein each of said guard means is attached on a block, secured on an upper surface of a respective draft arm.

6. The combination of claim 1 wherein each of said guard means is attached directly on the upper surface of a respective draft arm.

7. In a tractor scraper combination having a scraper bowl pivotally attached to a tractor by a pair of lateral-
ly-spaced draft arms each positioned adjacent to a respective side of said scraper bowl, the invention comprising guard means attached on each of said draft arms to extend substantially the entire length thereof, and having inner edges thereof spaced a first predetermined distance from a respective side of said scraper bowl which is substantially less than a second predetermined distance between each draft arm and the side of the scraper bowl, each of said guard means comprising a flat plate attached on a respective draft arm by a plurality of releasable fastening means and each of said fastening means projecting through an elongated slot means formed through said plate for permitting adjustment of said first predetermined distance.

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