July 10, 1962 J. A. MEREDITH 3,043,382

DOZER SCRAPER ATTACHMENT

Filed Feb. 2, 1959

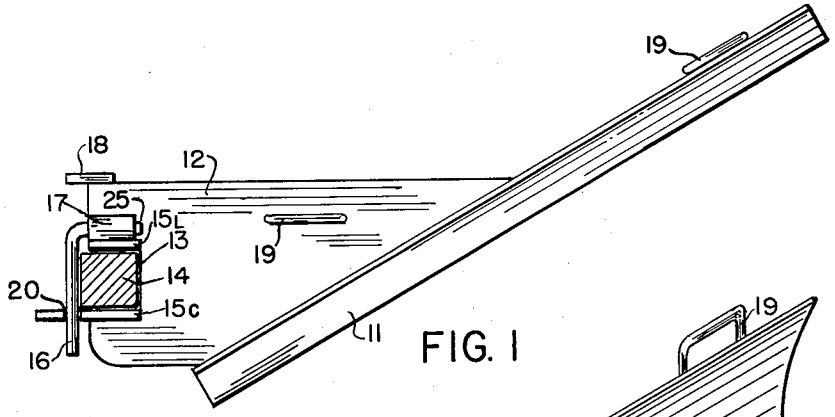


FIG. 1

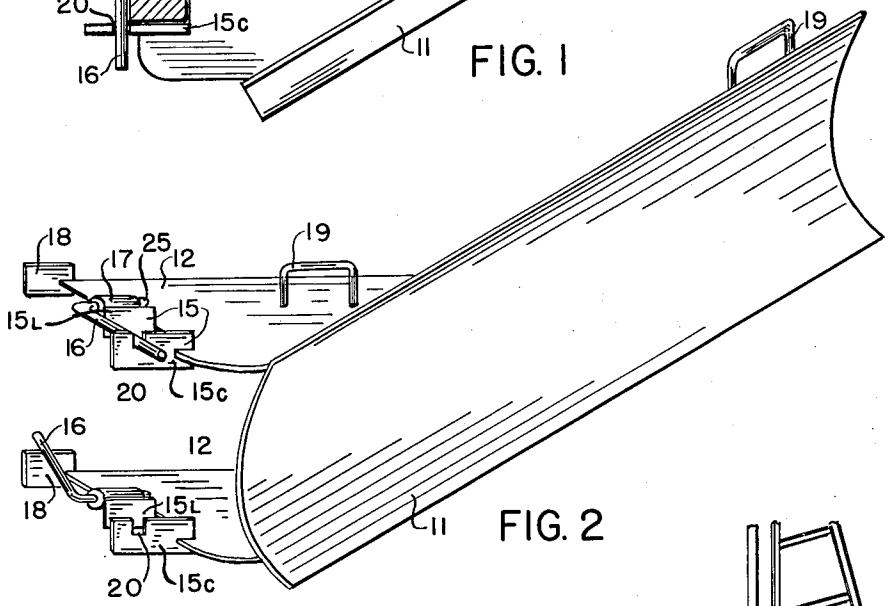


FIG. 2

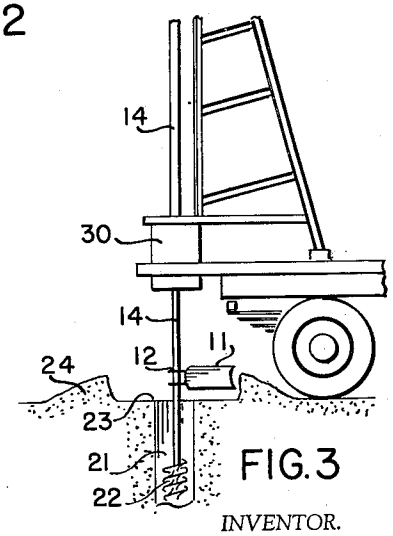


FIG. 3

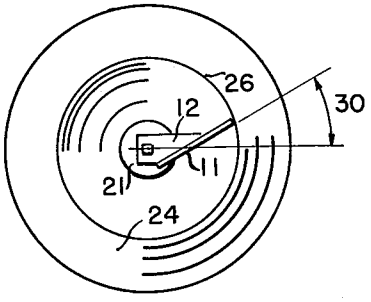


FIG. 4

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DOZER SCRAPER ATTACHMENT

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The present invention relates to a scraper attachment for earth augers.

Previously, it has been noted that in the operation of earth augers a mound of earth is built up closely adjacent to the top opening of the hole being drilled. In order to keep the mounded materials from falling back into the hole opening, it has previously been necessary to employ separate mechanical means or laborers with shovels to scope the dirt away from the hole. The extra expense represented by employment of additional operators or laborers is considerable, and such expense has heretofore been unavoidable. Again, where mechanical means, such as tractor driven bulldozers, have been used, the results have not been altogether satisfactory, inasmuch as part of the material that is being cleaned away will be dumped into the hole during such a mechanical cleaning operation.

In order to avoid the added expense involved in previously used cleaning operations, the present invention has been developed to satisfiy the following objectives:

First, to provide a cleaning attachment for earth augers which may be readily secured to or removed from the earth auger drive bar;

Second, to provide a dozer blade type of attachment for earth augers that may be mounted on the auger or on the drive bar to scrape loose materials away from the top of the hole being drilled by the earth auger;

Third, to provide an attachment for earth augers which may be driven by the same power source as the earth drilling apparatus to scrape loose materials away from the excavation;

Fourth, to provide an attachment of rugged construction which may be easily handled to facilitate engagement or disengagement from the Kelly drive bar of an earth boring machine;

Fifth, to provide a dozer blade attachment for earth augers, inclusive of support mechanisms for holding and maintaining the blade at a rake angle with respect to the drive bar so that materials will be scraped outwardly away from the free lip of the hole being drilled by the auger.

Further objects and advantages of the present invention will be apparent from the appended description and drawings, in which

FIG. 1 is a top plan view showing the dozer attachment as secured to the Kelly drive bar of an earth auger;

FIG. 2 is a perspective view showing further general construction features and the lock attaching mechanism of one embodiment of the present invention;

FIG. 3 is a side elevation in partial section showing the manner of use of the present invention; and

FIG. 4 is a plan diagram useful in describing the functions of this invention.

Briefly stated, the present invention provides a dozer blade attachment for earth augers. The attachment includes a mounting structure for holding the dozer blade at an angularly disposed rake angle with respect to the rotative pattern of the earth auger so that loose materials engaged by the dozer blade will be moved outwardly away from the free lip of the hole opening. The structural features of the invention further include a simple type locking mechanism for facilitating the quick attachment or removal of the dozer structure from the Kelly drive bar of the earth auger.

The detailed structural features of one embodiment of the invention is shown in the accompanying drawings, in which the dozer blade **11** is shown as being supported in near vertical plane by flange plates **12** which extend away from the dozer blade **11** at an angle so that when the recess notch **13** formed in the plates **12** is engaged with the Kelly drive bar **14**, the dozer blade **11** will be positioned at an angle with respect to the direction of circular motion of the Kelly drive bare **14** and of the dozer attachment **11**.

In order to hold the dover attachment **11** and its flange plates **12** in the desired position of contact with the Kelly bar **14**, reinforcing brackets **15** are positioned along the lateral sides of the notch **13** for close engagement with the exterior faces of the Kelly bar **14**. As shown, one of the reinforcing brackets **15***c* provides a catch **20** adapted to receive the latch member **16** which is an L-shaped bar having its short end **25** received in a socket member **17** welded to the flange plate **12** and to reinforcing bracket **15L**. With this arrangement, the latch **16** may be moved into engagement with the catch **20** so that the Kelly bar **24** will be closely confined on all of its four sides. When in this engaged arrangement, the dozer attachment **11** will be securely supported on the Kelly bar **14**.

Since identical recess notches **13** and associated locking members are provided on each of the plates **12**, the dozer attachment **11** will be bound to the Kelly bar, and any tendency of the attachment to raise or lower with respect to the bar will be opposed by frictional resistance. With the dozer attachment in place, the Kelly bar of the earth auger **30** may be raised or lowered at will to bring the dozer attachment into engagement with mounded loose materials that have been removed from the hole **21** being drilled by the earth auger **22**. Thereafter, rotation of the earth auger will cause the loose materials to be engaged by the dozer blade and to be moved outwardly away from the lip **23** of the hole **21** until it is mounded in the position **24** as shown in FIG. 3.

After the loose materials have been moved to an out-of-way position, as shown, the dozer attachment **11** may be removed from the Kelly bar by pivoting the latch **16** to its alternate position, as shown in FIG. 2, where the bottom latch **16** is disposed against the stop member **18**. With both latches held in this convenient out-of-way position, the operator may easily move the dozer attachment away from the hole being drilled by picking the entire unit up through use of the handle grips **19**. In the embodiment shown, these grips **19** are positioned so that the unit will be balanced when held by the support grip handles **19**.

The angular positioning of dozer blade **11** with respect to the Kelly bar **14** is of special importance because of the fact that it is highly desirable that the loose materials be prevented from falling back down into the drilled hole **21**. In practice it has been found that if a following or rake angle of approximately thirty degrees from the radial direction is used, as shown in FIG. 4, the loose materials will be scooped outwardly and away from the hole **21**. Necessarily, the actual angular placement with respect to radial lines of reference may be varied to provide an increased or decreased rake angle. In addition to the angle of attack, the speed of rotation of the Kelly bar also tends to vary the cleaning characteristics of the attachment. If the entire unit is rotated rapidly, the loose materials will be distributed over a wide area outside the circle of revolution **26** of the dozer attachment **11**. The rake angle shown, together with high rotational speeds, can be used to distribute the removed materials over a wide area if it is desired to

eliminate the need for later rough grading of the earth surface adjacent the top of the drilled hole **21** or of a plurality of drilled holes **21**.

While one embodiment of the invention has been shown and described, it will be apparent that the features of this invention are adaptable to various modifications and changes. All such modifications and changes as come within the scope of the hereunto appended claims are deemed to be a part of this invention.

What is claimed is:

1. A dozer scraper attachment for earth boring machines having a power driven Kelly drive bar having a plurality of flat faces on its external surface to which earth augers and the like may be attached when it is desired to excavate earth structures to provide cylindrical holes comprising a frame support, a socket receptacle on said frame support adapted to receive and engage a plurality of the flat faces of said drive bar, a dozer scraper blade having a straight blade cutting edge mounted on and supported by said frame support, said dozer scraper blade when in the operative position being disposed tangent to a circle larger than and concentric with the said Kelly drive bar but of lesser diameter than the excavated hole, and a quick attaching lock member mounted on said frame support for selectively engaging a further side of said drive bar to hold said drive bar and socket in frictional engagement each to each whereby said dozer scraper attachment may be readily engaged with said drive bar for rotation therewith when it is desired to move loose materials away from said excavation.

2. A dozer scraper attachment for earth boring machines having a power driven rotary drive bar having a plurality of flat faces on its external surface to which earth augers and the like may be attached when it is desired to excavate earth structures to provide cylindrical holes comprising a frame support providing a socket receptacle adapted to receive and engage a plurality of the flat faces of said rotary drive bar, a dozer scraper blade having a straight blade cutting edge mounted on and supported by said frame support, said dozer scraper blade when in the operative position being disposed tangent to a circle larger than and concentric with the said Kelly drive bar but of lesser diameter than the excavated hole, a pivotally mounted latch member on said frame support for selectively engaging a further side of said drive bar to hold said drive bar and socket receptacle in frictional engagement, and a catch member cooperatively arranged with respect to said socket receptacle and latch for selectively maintaining said drive bar and said socket receptacle and latch member in frictional engagement each to each whereby said dozer scraper attachment may be readily engaged with said drive bar for rotation therewith when it is desired to move loose materials away from said excavation.

References Cited in the file of this patent

UNITED STATES PATENTS

2,061,218	Watson	Nov. 17, 1936
2,147,193	Durr	Feb. 14, 1939
2,321,680	Houston	June 15, 1943