

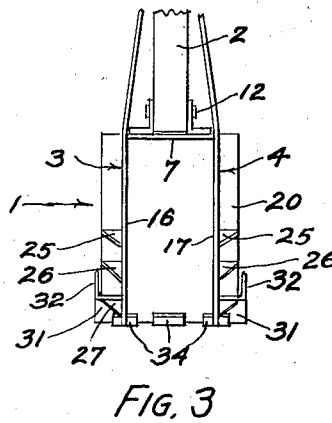
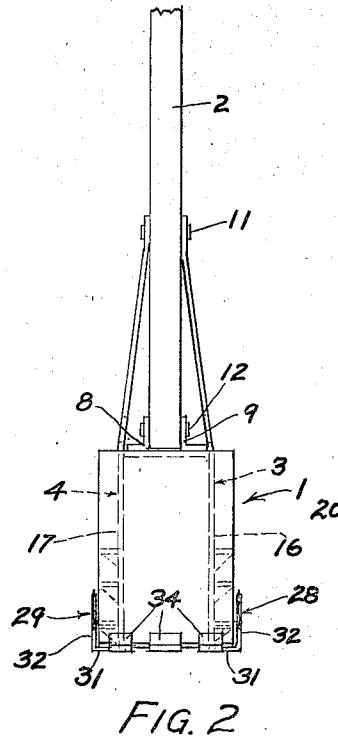
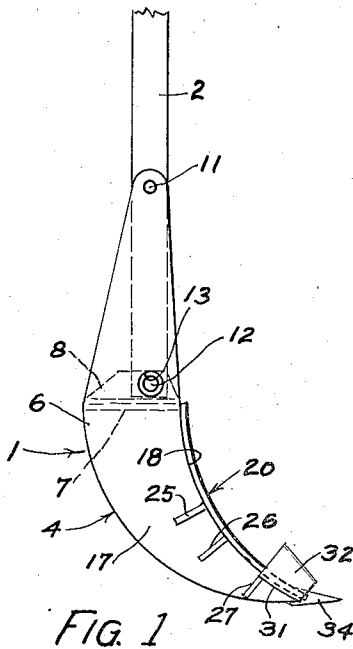
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V. L. SCHIELD

2,416,409

TRENCH HOE AND THE LIKE

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2,416,409

TRENCH HOE AND THE LIKE

Vern L. Schield, Waverly, Iowa

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9 Claims. (Cl. 214—145)

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This invention relates generally to earth excavating apparatus and has particular relation to ditch digging machines and the like.

A primary object of this invention is the provision of a sturdy bucket or scoop for digging ditches, making water channels, trenches, as for receiving tile or the like, and for other operations. It is a particular object of this invention to provide a bucket or scoop that is practically self-cleaning and is therefore much more efficient in handling muddy and sticky soils and the like than prior buckets. By making the scoop or bucket open at the sides, sticky and muddy soils are freed easily from the scoop. It is a further object of this invention to provide a bucket or scoop of the trench hoe type, especially adapted for digging trenches, leaving the sides sharp and smooth.

Other and further features and objects of this invention will be more apparent to those skilled in the art after a consideration of the accompanying drawings and following specification, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claims, without departing from the spirit of the invention.

In said drawings:

Figure 1 is a side view, Figure 2 is a front view, and Figure 3 is a rear view of an excavating bucket or scoop in which the principles of the present invention have been incorporated.

The bucket or scoop is indicated in its entirety by the reference numeral 1 and is shown as mounted on or fixed to a dipper stick 2 which may form a part of an excavating machine, such as the one shown in my copending application, Serial No. 550,938, filed August 24, 1944, for Shovel. The bucket or scoop 1 includes a pair of side bars or supports arranged in laterally spaced apart relation, as best shown in Figure 3. The bars or supports are indicated by the reference numerals 3 and 4, and each is formed of flat stock and tapers both upwardly and downwardly from a wider central section 6. The wider central sections 6 of the bars 3 and 4 are connected by a transverse plate 7 to which a pair of angle brackets 8 and 9 are fixed, as by welding, on the upper side thereof.

As best shown in Figure 2, the upper portions of the bars 3 and 4 converge upwardly and are apertured at their upper ends to receive a bolt or other fastening means 11 connected to or extending through the dipper stick 2. Also, the

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vertical flanges of the angle brackets 8 and 9 are apertured to receive a bolt or other fastening means 12 receiving the lower end of the dipper stick 2. The side bars or supports 3 and 4 are apertured, as at 13, to accommodate the insertion and removal of the fastener 12 when necessary.

The lower portions 16 and 17 of the supports or bars 3 and 4 are parallel and their forward edges 18 are curved, as best shown in Figure 1. A curved face plate 20 is secured, as by welding, to the forward edges 18 and to the forward edge of the transverse reinforcing plate 7. The curved face plate 20 overhangs the two supports 3 and 4 at the sides of the bucket or scoop, as best shown in Figures 2 and 3, and the plate 20, particularly the lower half, is reinforced by a plurality of generally triangular brackets 25, 26 and 27, at each side of the plate 20.

The sides of the plate are unobstructed except for a pair of lower angle members 28 and 29, each having a leg or flange 31 underlying and secured, as by welding, to the adjacent side of the plate 20, and a vertical cutter blade 32 extending perpendicularly to the lower portion of the plate 20, substantially at the lower edge thereof. Digging teeth 33 are fixed to the lower edge 34 of the plate 20.

Although I have described a specific embodiment of my invention, it is apparent that modifications thereof may be made by those skilled in the art without departing from the spirit and scope of my invention as set forth in the appended claims.

I claim:

1. A bucket or scoop for excavating apparatus or the like, comprising a curved plate, a pair of frame bars arranged in laterally spaced apart relation, the said curved plate being affixed to the forward edge of said frame bars, and a pair of side cutter flanges affixed at the sides of said plate adjacent the lower edge thereof.

2. A bucket or scoop for excavating apparatus or the like, comprising a pair of laterally spaced supports having curved forward edges, a curved plate fixed to said edges, the sides of said plate overhanging said supports, and generally triangular reinforcing brackets secured to said supports and the laterally overhanging sides of said plate.

3. A bucket or scoop for excavating apparatus or the like, comprising a pair of laterally spaced apart bars having upwardly converging portions, a transverse plate fixed to said bars adjacent the lower portions of said converging portions, a

curved plate fixed to the forward edges of said bars below said converging portions, the sides of said curved plate extending laterally beyond said bars and a dipper stick fixed to the converging portions of said bars and to said transverse plate.

4. A bucket or scoop as defined in claim 3, further characterized by said curved plate being unobstructed along its sides from the top thereof down to a point adjacent the bottom thereof, and side pieces fixed to said curved plate adjacent the lower edge thereof.

5. A bucket or scoop as defined in claim 3, further characterized by angle members fixed, respectively, to the marginal portions of said curved plate adjacent its lower edge, each of said angle members having a first section secured to the under side of said curved plate and an earth-engaging edge extending generally perpendicularly to said curved plate.

6. A bucket or scoop for excavating apparatus or the like, comprising a pair of laterally spaced supports, a transverse plate secured to said supports between their upper and lower ends, a spade-like face plate, having a substantially unobstructed forward working face, fixed to the forward edges of the lower portions of said supports and said transverse plate, brackets fixed to the upper sides of said transverse plate, and a dipper stick detachably secured at the upper end to said brackets and at an intermediate point to the upper ends of said supports.

7. A bucket or scoop for excavating apparatus or the like, comprising a pair of laterally spaced apart bars, a transverse plate fixed at its side edges to said bars between the ends thereof, a plate, having the working face thereof substantially unobstructed, fixed to the forward edges of said transverse plate and the lower forward edges of said spaced bars and overhanging the latter at the sides thereof, and reenforcing brackets fixed to said overhanging portions of said face plate and the lower portions of said spaced bars.

8. The invention set forth in claim 7, further characterized by dipper stick receiving means on

said transverse plate and the upper ends of said spaced bars.

9. A bucket or scoop for excavating apparatus or the like, comprising a pair of laterally spaced apart bars tapering in width from a central wider portion to relatively narrow end portions, a transverse plate connecting said central portions, the forward edges of the lower portions of said bars below said transverse plate being curved, a curved face plate fixed to said forward edges, and extending downwardly to the lower ends of said spaced bars, said curved plate overhanging said bars at the sides of the bucket or scoop, one or more generally triangular brackets fixed to the outer sides of said bars and to the adjacent overhanging portions of said curved face plate, the latter being unobstructed at its sides from the top thereof downwardly to substantially the lower portion thereof, and relatively short angle members fixed to the under side of said face plate at its lower edge and having earth-engaging sections extending forwardly and upwardly in generally parallel relation and generally normal to the lower part of said face plate.

VERN L. SCHIELD.

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