

May 21, 1946.

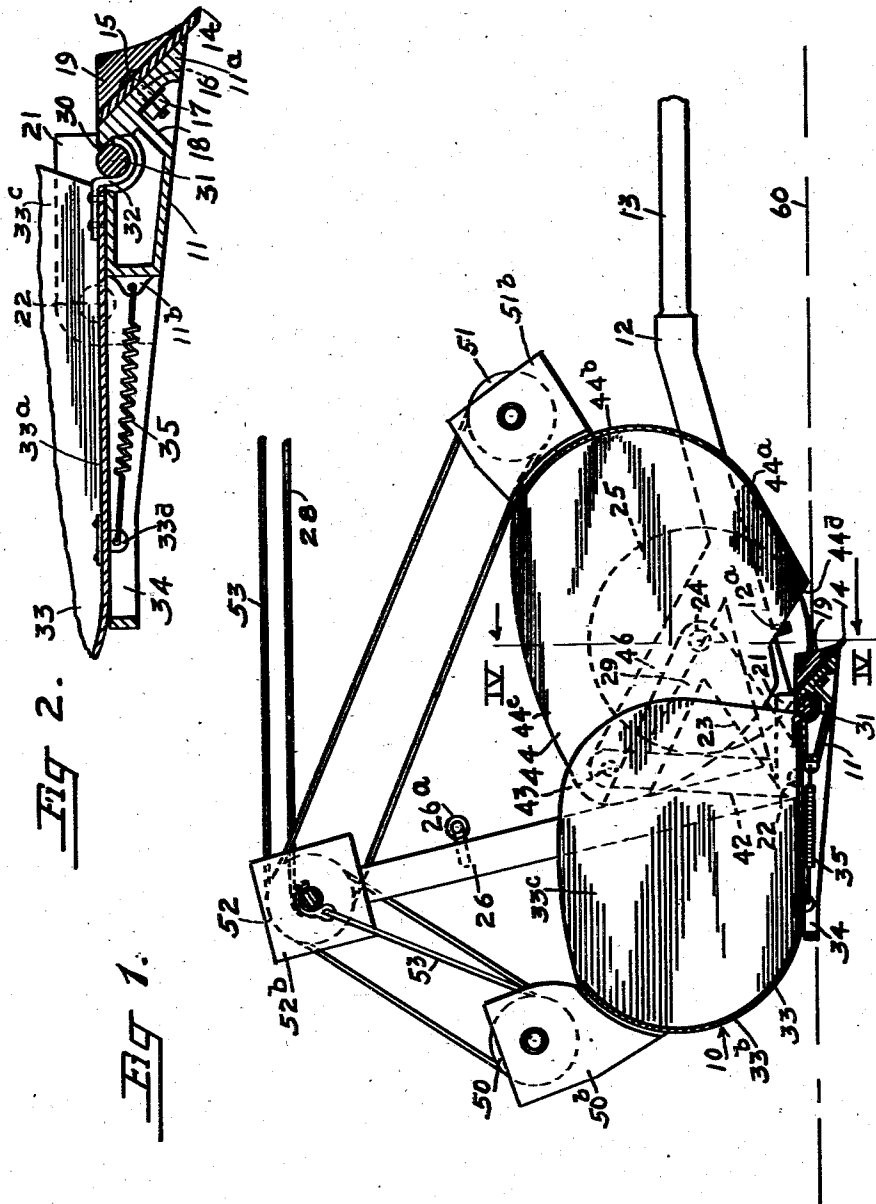
W. KUSZ

2,400,760

SCRAPER

Filed Aug. 26, 1943

3 Sheets-Sheet 1



Inventor
WILLIAM KUSZ

by *Charles Hill* Attys

May 21, 1946.

W. KUSZ

2,400,760

SCRAPER

Filed Aug. 26, 1943

3 Sheets-Sheet 2

Fig 3.

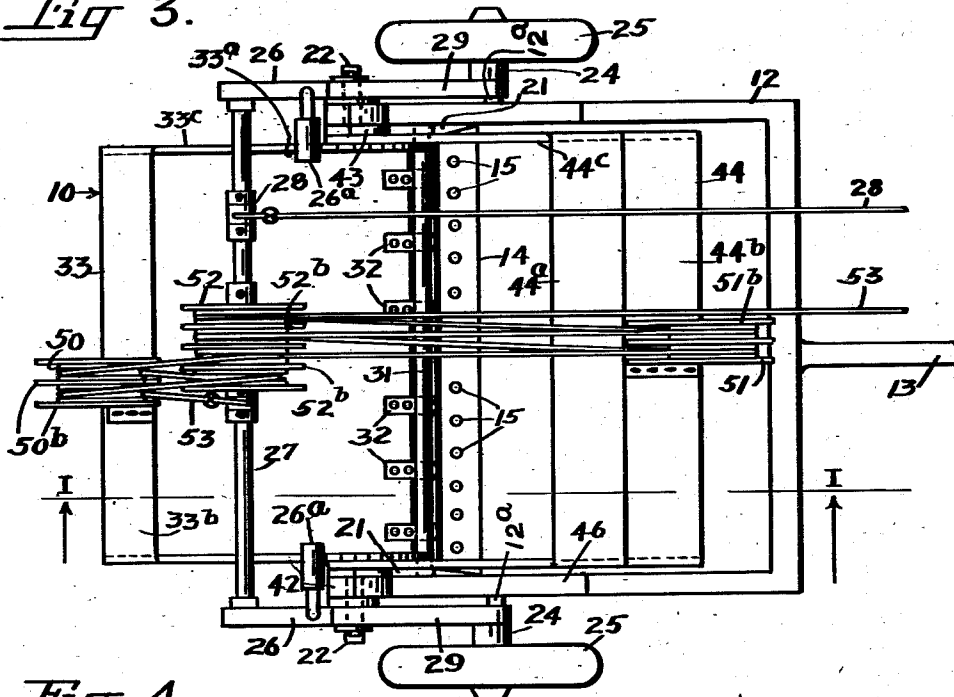
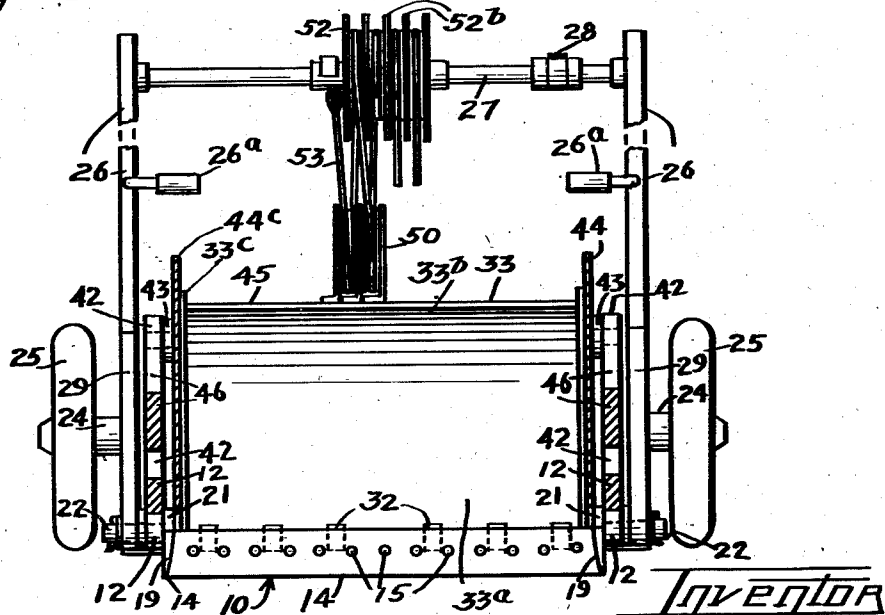


Fig 4.



Inventor
WILLIAM KUSZ.

by *Charles Miller*
Attys

May 21, 1946.

W. KUSZ

2,400,760

SCRAPER

Filed Aug. 26, 1943

3 Sheets-Sheet 3

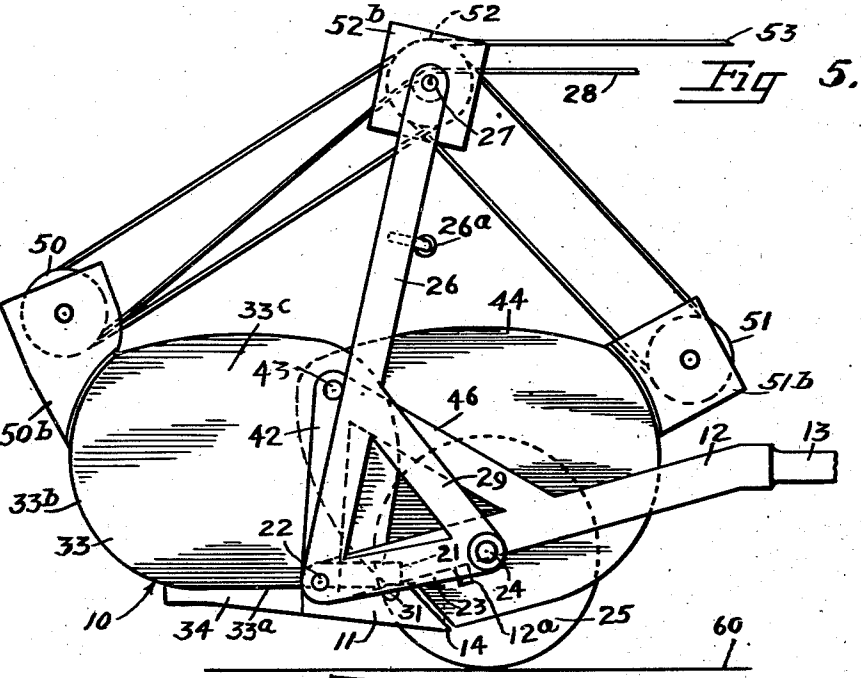


Fig 5.

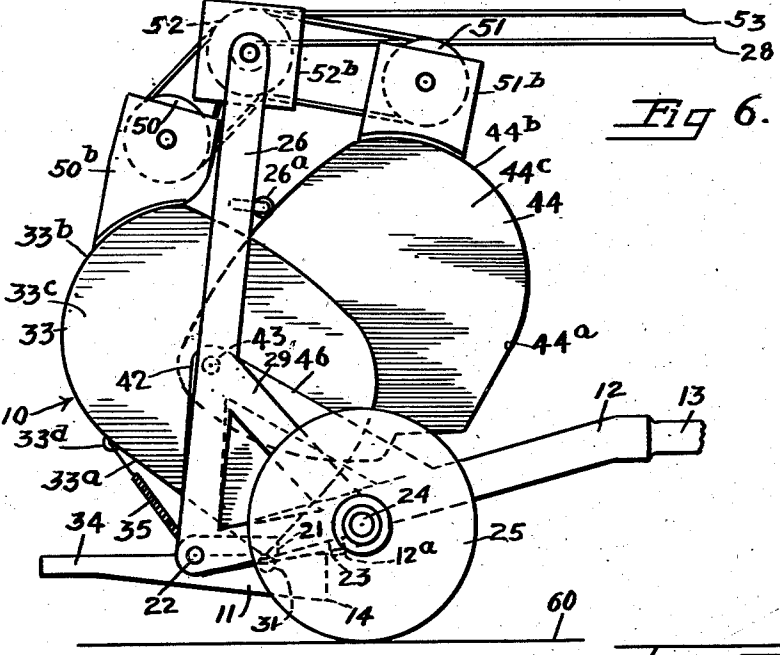


Fig 6.

Inventor
WILLIAM KUSZ.

by *Charles H. Hill* Attys

UNITED STATES PATENT OFFICE

2,400,760

SCRAPER

William Kusz, Peoria, Ill.

Application August 26, 1943, Serial No. 500,045

5 Claims. (Cl. 37—129)

This invention relates to trailer scoops or scrapers, and more particularly to tractor drawn scrapers designed to dig, carry, dump and spread dirt, gravel and the like.

One object of the present invention is to provide an exceedingly simple, inexpensive and efficient trailer scraper or scoop capable of being controlled by cables extending from a tractor or the like.

Another object of the present invention is to provide a scraper having a rigid main frame and a pair of wheels mounted on a pair of supporting arms swingingly supported from the rigid frame, whereby the rigid frame may be raised and lowered with respect to the wheels without tilting about the frame the scraper or any structures associated therewith, for instance, the scraper blade, the scraper bowl and the bowl closing apron.

Another object is to provide a scraper including a rigid main frame together with a load carrying bowl and a bowl closing apron swingingly supported from the rigid frame for adjustment into digging, load carrying or dumping positions by means of a cable operated from a tractor by means of a winch or the like.

A further object of the present invention is to provide a scraper having the swingingly mounted bowl and apron disclosed hereinabove wherein the bowl is biased to carrying position, whereby a single cable may be used partially to open the apron into digging position without moving the bowl from its load carrying position.

Another object of the present invention is to provide a load carrying scraper as disclosed hereinabove and including an upright transverse yoke rigidly connected to the two swingingly mounted arms supporting the wheels, which yoke can support both a cable for controlling the digging position of the scraper and the above mentioned cable controlling the position of the bowl and apron.

Other and further objects and features of the present invention will become apparent from the following detailed description of an example of a scraper according to this invention shown in the accompanying drawings, in which:

Figure 1 is a longitudinal cross-sectional view, with parts shown in elevation, of a scraper according to this invention, taken along line I—I of Figure 3;

Figure 2 is a fragmentary enlarged cross-sectional view through the bottom part of the scraper of Figure 1;

Figure 3 is a plan view of the scraper of Figure 1;

Figure 4 is a transverse cross-sectional view, with parts shown in elevation, of the scraper of Figure 1, taken along the line IV—IV of Figure 1;

Figure 5 is a side elevational view, with parts broken away, of the scraper in carrying position; and

Figure 6 is a side elevational view of the scraper in dumping position.

As shown on the drawings:

A scraper according to the present invention is generally designated by the reference numeral 10 in Figures 1 and 3 to 6. This scraper includes a rigid frame formed by a transverse blade base 11 and a yoke 12 having a tongue 13 extending forward for attachment to a tractor or the like (not shown). As best shown in Figure 2, the blade base 11 may take the form of a flat hollow beam having a front wall 11a inclined at a suitable angle to receive a scraper blade 14. The scraper blade 14 may be affixed to the inclined front wall 11a of the blade base 11 by means of a series of bolts 15 piercing spaced apertures 16 through the blade base and held in position by nuts 17 disposed in wells 18 formed in the underside of the blade base 11 in alignment with the apertures 16. Moldboards 19 may be provided at the ends of the scraper blade 14.

As shown in Figures 2 to 4, a rearwardly extending rectangular plate 21 is affixed to each end of the blade base 11. On its outside, each one of these plates 21 carries a trunnion 22. On each of these trunnions 22 is mounted a forwardly extending arm 23 spaced from the plate 21 and carrying a trunnion 24 for supporting a pair of wheels 25. Rigidly connected to the rear ends of the wheel arms 23 are the legs 26 of an upright yoke having a cross member 27. The arms 23 are suitably connected to the legs 26 by tie members 29. A cable 28 is anchored to the cross member 27 and extends forwardly for connection to a winch (not shown) on the tractor. Stop members 12a are provided on the outsides of the legs of the yoke 12 for limiting the downward movement of the wheel arms 23.

As best shown in Figure 2, the blade base 11 is formed with a groove 30 extending lengthwise over the top of the base for receiving a pivot shaft 31. The pivot shaft 31 is confined within the groove 30, which further accommodates a series of spaced hooks 32 rotatable about the shaft 31 and having straight ends projecting outside the groove 30 and attached to the bottom of a dirt carrying bowl 33, for permitting swinging movement of the bowl 33 about the pivot shaft 31. The bowl 33 is formed with a flat bottom

33a, a curved back wall 33b and two flat side walls 33c, being open in front. A U-shaped frame member 34 attached to the rear of the base blade 11 supports the bowl 33 in load carrying position. A spring 35 having one end attached to an apertured lug 33d on the bottom of the bowl 33 and the other end attached to an eye 11b on the rear wall of the blade base 11 urges the bowl 33 against the frame 34.

From the rear end of each leg of the pulling yoke 12 there extends, inside the yoke 26, 27, an upright post 42 provided at its inside top with a trunnion 43 on which the top rear part of an apron 44 is swingingly mounted behind the scraper blade 14 so as to be urged by gravity against the scraper blade. More particularly, the apron 44 includes a flat bottom 44a, a rounded front wall 44b and flat side walls 44c which are recessed at their bottom corners at 44d to fit against the scraper blade 14 and the blade base 11. The apron 44 is open at its rear, and its side walls 44c can slide over the outsides of the bowl side walls 33c. Upward movement of the apron 44 is limited by stop members 26a.

Tie members 46 may suitably connect the legs to the yoke 12 and the upright post 42.

As shown in Figure 3, two sheaves 50 may be mounted side by side in upright position within a shielding box 50b attached to the top of the rear wall 33b of the bowl 33, and two sheaves 51 may similarly be mounted within another shielding box 51b attached to the top of the front wall 44b of the apron 44. Four sheaves 52 are mounted side by side on the cross member 27 of the upright yoke. Five shields 52b attached to the cross bar 27 protect the sides of the sheaves 52. A cable 53 is anchored on the cross member 27 of the upright yoke and extends therefrom around one of the sheaves 50, then around one of the sheaves 52, then around the remaining sheave 50, then around another sheave 52, then around one of the sheaves 51, then around another sheave 52, then around another sheave 51, and finally around the last sheave 52 forwardly to a winch (not shown) on a tractor.

In operating the scraper of the present invention, the distance of the scraper blade 14 from the ground is regulated by means of the cable 28. By pulling this cable, the yoke 26, 27 is moved in a forward direction for a distance limited by the stops 12a, and the wheel arms 23 are depressed relative to the blade base 11, so that the scraper blade 14 is lifted off the ground. Figures 5 and 6 show the scraper lifted off the ground, indicated by the reference numeral 60. Releasing the taut cable 28 permits lowering of the scraper blade 14 into digging position, as shown in Figure 1. Any intermediate position of the scraper blade can be effected by suitable adjustment of the cable 28. As shown in Figures 1, 3, 5 and 6, the length of the wheel arms 23 and the position of the trunnion 24 on the wheel arms 23 is such that the wheels 25 always are a short distance ahead of the scraper blade 14. Thus the wheels 25 will always be supported by ground that has not been disturbed by the scraper blade 14 or by the dumping of collected dirt.

When the scraper is in digging position, the cable 53 is pulled sufficiently to open partially the apron 44, whereby the bottom rear edge of the apron 44 is removed a substantial distance from the scraper blade 14 to permit entry of scraped up dirt into the bowl 33 and the apron

44, as shown in Figure 1. Such slight opening of the apron 44 can be effected without moving the bowl 33, since the bowl 33 is urged by the spring 35 against the support 34. When, after the apron and the bowl have been filled with dirt, it is desired to haul away the collected dirt, the cable 28 should first be pulled, to lift the scraper off the ground. The cable 53 is then slackened, and the apron 44 will then assume the bowl closing position shown in Figure 5 under the influence of the weight of the collected dirt. For dumping, the cable 53 is pulled sufficiently to raise first the apron 44 and then the bowl 33 to tilt the bottom surfaces of these two receptacles and to swing the rear edge of the apron away from the scraper blade, as shown in Figure 6. The apron 44 is first swung against the stops 26a, and the bowl 33 is then tilted against the force of the spring 35. Slackening of the cable 53 will cause first the bowl 33 and then the apron 44 to assume their former positions.

It will thus be seen that I have provided a novel scraper of improved construction capable of convenient and easy operation. Many details of construction may be varied within a wide range without departing from the principles of this invention, and it is therefore not my purpose to limit the patent granted on this invention otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A trailer scraper including a rigid frame, a transverse scraper blade mounted on said frame, forwardly extending arms pivotally mounted on each side of said frame, a wheel mounted on each of said arms, a dirt receiving open ended bowl swingingly mounted on said frame behind said scraper blade, means biasing said bowl into dirt receiving position, a bowl closing apron swingingly mounted from said frame in front of said bowl, an erect transverse yoke rigidly connected to said wheel arms, a cable anchored on said yoke for pulling the same forward to depress said wheels with respect to said frame, and another cable anchored on said yoke operatively connected to said bowl and said apron for tilting said bowl and said apron.

2. A trailer scraper including a rigid frame, a transverse scraper blade mounted on said frame, forwardly extending arms pivotally mounted on each side of said frame, a wheel mounted on each of said arms, a dirt receiving open ended bowl swingingly mounted on said frame behind said scraper blade, means biasing said bowl into dirt receiving position, a bowl closing apron swingingly mounted from said frame in front of said bowl, an erect transverse yoke rigidly connected to said wheel arms, a cable anchored on said yoke for pulling the same forward to depress said wheels with respect to said frame, sheaves attached, respectively, to said bowl, to said apron and to said yoke, and another cable anchored on said yoke operating through said sheaves on said bowl and said apron for tilting said bowl and said apron.

3. A trailer scraper including a rigid frame comprising a transverse beam having an inclined front wall for supporting a scraper blade, rearwardly extending erect plates attached to each end of said beam and having trunnions on their outsides, and means extending rearwardly from said beam for supporting a load receiving bowl, said scraper further comprising forwardly extending arms pivotally mounted on each of said

trunnions, a wheel rotatably mounted at the free end of each of said arms, a pivot shaft extending lengthwise of said beam and attached thereto, a dirt receiving open ended bowl swingingly mounted on said pivot shaft behind said scraper blade, spring means attached to said bowl and to said beam for biasing said bowl into dirt receiving position, a yoke rigidly connected to said beam and extending forwardly thereof for attachment to a tractor, posts extending upwardly from each side of said yoke behind said scraper blade, a bowl closing apron swingingly mounted on said posts in front of said bowl, an erect transverse yoke rigidly connected to said wheel arms, a cable anchored on said erect yoke for pulling the same forward to depress said wheels with respect to said frame, sheaves mounted, respectively, on said erect yoke, on said apron and on said bowl, and another cable anchored on said erect yoke operatively connected to said sheaves for tilting said bowl and said apron.

4. A trailer scraper including a rigid frame, a transverse scraper blade supported on said frame, a wheel carrying arm pivotally mounted on each side of said frame, an open ended dirt receiving bowl having its front edge pivotally mounted on said frame behind said scraper blade, a bowl closing apron, means extending upwardly from said rigid frame to swingingly support said apron in

front of said bowl, means biasing said bowl into dirt receiving position, an erect transverse yoke rigidly connected to said wheel arms, a cable anchored on said yoke for pulling the same forward to depress said wheels with respect to said frame, another cable anchored on said yoke operatively connected to said bowl and said apron for tilting said bowl and said apron, and means for operatively connecting said trailer scraper to a tractor.

5. A trailer scraper including a rigid frame, a transverse scraper blade supported on said frame, an arm pivotally mounted on each side of said frame and extending forwardly in front of said scraper blade, wheels carried by the front ends of said arms, an open ended dirt receiving bowl having a front edge pivotally mounted on said frame behind said scraper blade, a bowl closing apron swingingly supported from said rigid frame in front of said bowl, lever means rigidly connected to said arms for swinging said arms to raise and lower said frame with respect to said wheels, a cable operatively connected to said lever means for actuating the same, a sheave supported from said lever means, and a cable running through said sheave operatively connected to said bowl and said apron for tilting of said bowl and said apron.

WILLIAM KUSZ.