

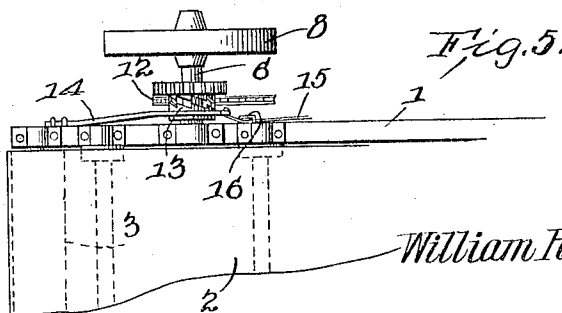
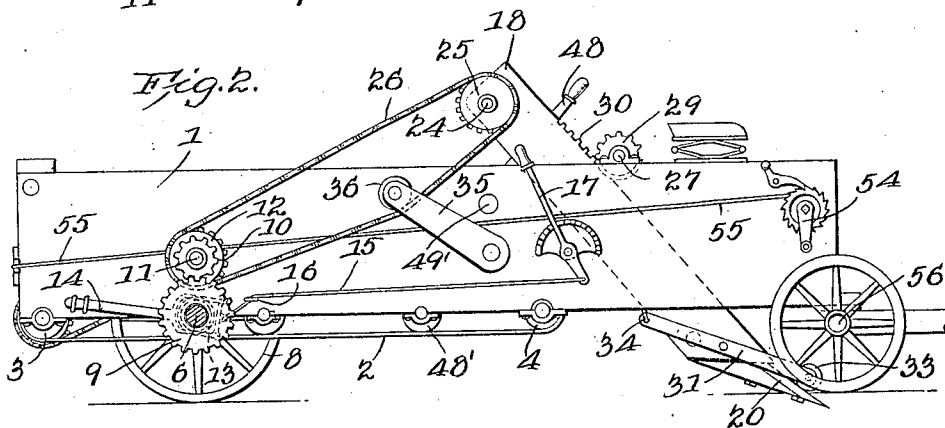
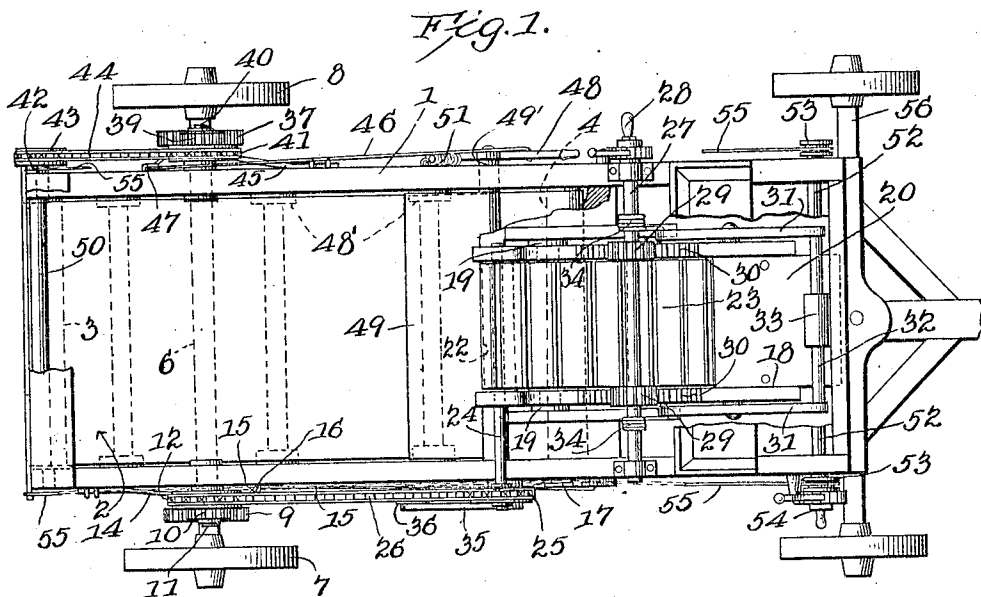
No. 852,131.

PATENTED APR. 30, 1907.

W. R. MARTIN.
EXCAVATOR.

APPLICATION FILED JUNE 19, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

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2 SHEETS—SHEET 2.

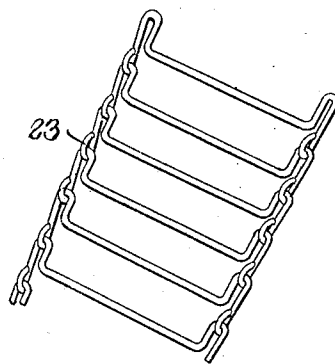
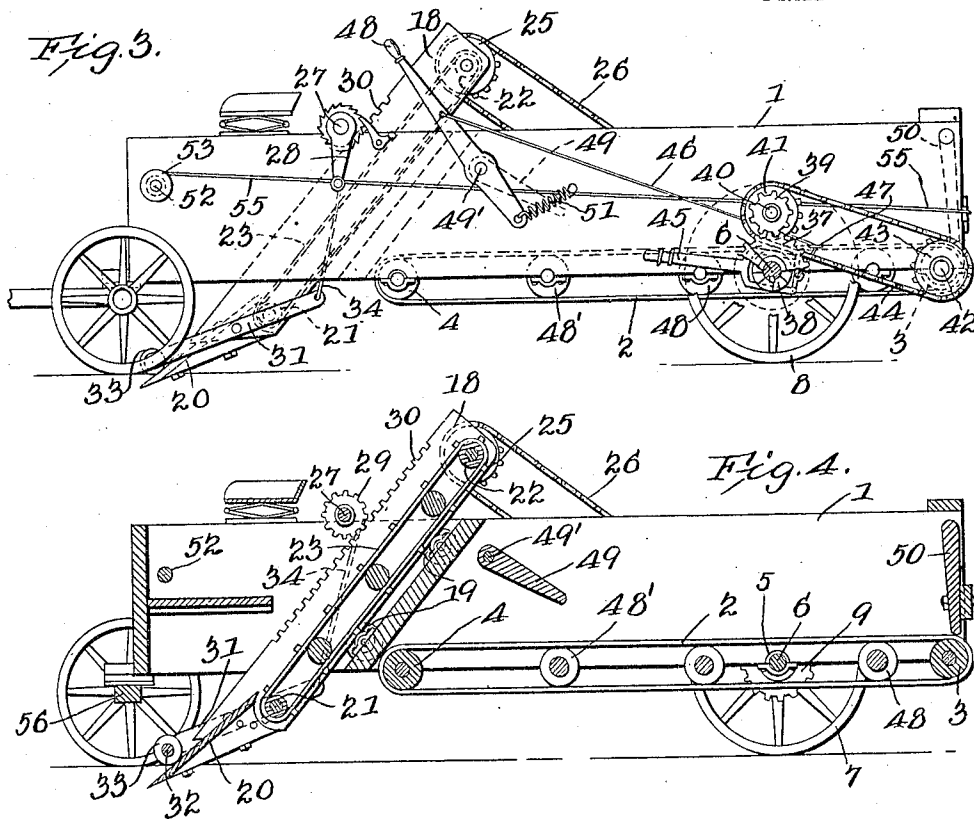


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM R. MARTIN, OF IDAHO FALLS, IDAHO.

EXCAVATOR.

No. 852,131.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed June 19, 1906. Serial No. 322,458.

To all whom it may concern:

Be it known that I, WILLIAM R. MARTIN, a citizen of the United States, residing at Idaho Falls, in the county of Bingham and State of Idaho, have invented a new and useful Excavator, of which the following is a specification.

This invention has relation to excavators and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide an excavator especially adapted for ditch digging purposes and which is provided with a vertically adjustable plow associated with a conveyer. The plow loosens the earth and shunts the same upon the conveyer which in turn elevates the earth and deposits it in the body of the excavator. A conveyer is arranged in the bottom of the body of the excavator and when a certain amount of earth has been deposited in said body, a hinged flap is depressed by means of which a clutch is permitted to engage one of the traction wheels whereby rotary movement is transferred from the said wheel to the shaft operating the conveyer in the body of the excavator. The earth is therefore conveyed out of the said body of the excavator. A pivoted tail gate is provided at the end of the body and means is associated with said tail gate for limiting the swing thereof. The earth elevating conveyer is operatively connected with one of the traction wheels.

In the accompanying drawings:—Figure 1 is a top plan view of the excavator. Fig. 2 is an elevation of one side of the excavator. Fig. 3 is an elevation of the opposite side of the excavator. Fig. 4 is a longitudinal sectional view of the excavator. Fig. 5 is a detail bottom plan view of a clutch used upon the excavator. Fig. 6 is a detail perspective view of a portion of belt that may be used upon the excavator.

The excavator consists of the body portion 1 in the bottom of which is located the endless belt or apron 2. The apron passes around the roller 3 located at the rear end of the body 1 and around the roller 4 located at an intermediate point of said body 1. The sleeve 5 is attached to the under side of the body 1 and the axle 6 passes through the said sleeve. The traction wheel 7 is attached to one end of the shaft 6 and the traction-wheel 8 is attached to the other end of said shaft. The wheel 7 is adapted to operate the earth

elevating conveyer while the wheel 8 is adapted to operate at intervals the conveyer 2. The gear wheel 9 is located upon the axle which is adjacent the traction wheel 7. Said gear wheel 9 is in mesh with the gear wheel 10 which is journaled upon the stub shaft 11. The sprocket wheel 12 is attached to the side of the gear wheel 10. The clutch 13 is feathered upon the axle 6. The spring arm 14 is attached at one end to the side of the body 1 and is provided with an elongated loop which receives the clutch 13. The tension of the spring of arm 14 is such as to have a tendency to force the clutch away from the body 1 and into engagement with the gear wheel 9 whereby the said gear wheel 9 is made to rotate with the axle 6.

The flexible connection 15 is attached at one end to the free end of the spring arm 14 and passes through the eye 16 located upon the side of the body 1. The forward end of the connection 15 is attached to the working end of the lever 17 which is fulcrumed to the side of the body 1 in the vicinity of the front end thereof. It is obvious that by throwing the free end of lever 17 to the rear that the flexible connection 15 will be moved longitudinally toward the front end of the excavator and that the clutch 13 will be drawn out of engagement with the wheel 9 and that by reversing the movement of the lever 17, the spring arm 14 will carry the clutch 13 into engagement with the gear wheel 9. The conveyer casing 18 is adapted to move longitudinally in up and down directions. The said casing 18 is mounted upon the wheels 19 which are suitably journaled to the body 1. The cutting plow 20 is attached to the lower end of the conveyer casing 18. The roller 21 is journaled near the lower end of said casing and the roller 22 is journaled at the upper end thereof. The belt 23 passes around the said rollers 21 and 22 and serve as an earth elevating conveyer. The shaft of the roller 22 is provided with the lateral extension 24 to the end of which is attached a sprocket wheel 25. The sprocket chain 26 surrounds the sprocket wheels 25 and 12 and is adapted to transmit rotary motion from the wheel 12 to the wheel 25 and its attached shaft. It will thus be seen that wheel 7 is employed for supplying motion to the conveyer 23.

A means for raising and lowering the conveyer casing 18 is provided and which consists of a shaft 27 journaled in the body 1 and having at one end the handle or lever 28.

The gear wheels 29, 29 are fixed to the shaft 27 and mesh with the gear bars 30, 30 located upon the edges of the casing 18. It is obvious that by rotating the shaft 27 by means of the handle or lever 28 that the gear wheels 29, 29 in mesh with the gear bars 30, 30 elevate or depress said casing 18. The arms 31, 31 are pivotally attached to the sides of the casing 18 and the shaft 32 is journaled between the lower ends of said arms 31. The roller 33 is fixed to the said shaft 32 and is adapted to travel upon the bottom of the ditch and limit the depth of cut of the plow 20. The flexible connections 34, 34 are attached at their lower ends to the ends of the arms 31 behind their pivotal points and the upper ends of said connections 34 wind about the shaft 27. The arm 35 is pivotally attached at one end to the outer side of the body 1 and carries at its rear end a pulley 36 which rests upon the chain 26 and is adapted to take up the slack in the same. Such slack will occur when the casing 18 is elevated.

The gear wheel 37 is located upon the axle 6 adjacent to the traction wheel 8. The clutch 38 is feathered upon the axle and is adapted to engage and disengage the gear wheel 37. The gear wheel 39 meshes with the gear wheel 37. Said gear wheel 39 is located upon the stub shaft 40. The sprocket wheel 41 is attached to the side of the gear wheel 39 and rotates with the same. The shaft of the roller 3 is provided with the lateral extension 42 upon the end of which is located the gear wheel 43. The sprocket chain 44 passes around the gear wheels 41 and 43. The clutch 38 is attached to the spring arm 45 and the flexible connection 46 is fixed at its rear end to the said spring arm 45 and passes through the eye 47 and is attached at its forward end to the working end of the lever 48. It will thus be seen that as the upper end of the lever 48 is moved toward the rear, that the spring of arm 45 will permit the clutch 38 to engage the side of the wheel 37 and thus cause the same to rotate with the axle 6 and transmit rotary motion to the roller 3 which in turn will move the conveyer 2. The said conveyer 2 is supported at its edges by the rollers 48', 48' which are journaled to the inner faces of the sides of the body 1. The flap 49 is pivoted at its upper corners between the sides of the body 1 and the shaft 49' is fixed to an extension of one of the pivots of said flap.

It will be observed that as the flap 49 is depressed, that the lever 48 is correspondingly moved and the flexible connection 47 moves so as to permit the clutch 38 to engage the wheel 37. Consequently when sufficient earth has been deposited upon the flap 49 to depress the same, the conveyer 2 is automatically started in motion and the earth is carried to the rear end of the body 1 and

passes out of the same under the pivoted tail gate 50.

The spring 51 is attached at one end to the side of the body 1 and at its other end to the lever 48. The tension of said spring is such as to have a tendency to maintain the flap 49 in an elevated position. Consequently as soon as the earth is passed away from the flap, the same will swing up upon its pivots. The shaft 52 is journaled in the forward portion of the body 1 and is provided at each end with a drum 53, 53. The lever 54 is attached to the said shaft 52 and is adapted to be used for rotating the same. The flexible connections 55, 55 wind at their forward ends about the drums 53, 53 and extend back and are attached to the pivoted tail gate 50. It is obvious that by rotating the shaft 52 and through the flexible connections 55, the swing of the tail gate 50 may be limited. The forward end of the body 1 is mounted upon the pivoted axle 56.

As above stated, the excavator is especially adapted to be used for cutting ditches but it may be used for other purposes, for instance, a conveyer 23 of the pattern as illustrated in Fig. 6 of the drawing may be used and when so used, the machine may be used to advantage for digging potatoes. The horizontal portions of the conveyer 23 carry the potatoes up and the earth is permitted to fall from the same through the space between said horizontal portions.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. An excavator comprising a body portion, traction wheels supporting said body portion, a conveyer horizontally located in said body portion, means operatively connecting said conveyer with a traction wheel whereby the said conveyer is moved at intervals, an earth elevating conveyer attached to said body portion, an earth cutting means attached to the last said conveyer, and a means operatively connected with a traction wheel for imparting movement to the earth elevating conveyer.

2. An excavator comprising a body portion, traction wheels supporting the same, a conveyer horizontally located in the body portion, means operatively connecting said conveyer with a traction wheel whereby the conveyer is moved at intervals, a flap pivoted in the body portion above the conveyer, a lever connected to the pivot end of said flap, means operatively connecting said lever with a clutch mechanism associated with the means for transmitting motion to the conveyer, an earth conveyer attached to the body portion, an earth cutting device attached to the last said conveyer, and means connecting said earth elevating conveyer with a traction wheel whereby the last said conveyer is operated.

3. An excavator consisting of a body, a
conveyer horizontally located therein, means
for operating said conveyer, an earth elevat-
ing conveyer disposed at an angle to the lon-
gitudinal axis of said body, an earth cutting
device carried by the earth elevating con-
veyer, means for regulating the depth of cut
of said cutting device consisting of arms at-
tached to the earth elevating conveyer, a
shaft connecting the end of said arms, and a
roller located upon said shaft above the earth
cutting device and adapted to run upon the
surface of the earth.

4. An excavator comprising a load carry-

ing receptacle having an endless conveyer
bottom, a flap pivoted in said receptacle and
operable by the load accumulating in the re-
ceptacle for intermittently actuating said
endless conveyer and means attaching the
pivot of the flap and connecting with the end-
less conveyer actuating means.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature
in the presence of two witnesses.

WILLIAM R. MARTIN.

Witnesses:

O. A. JOHANNESSEN,
L. A. HARTERT.