J. V. & T. E. BOYETT.

MOTOR PLOW.

APPLICATION FILED OCT. 11, 1909.

996,559. Patented June 27, 1911.

3 SHEETS—SHEET 1.

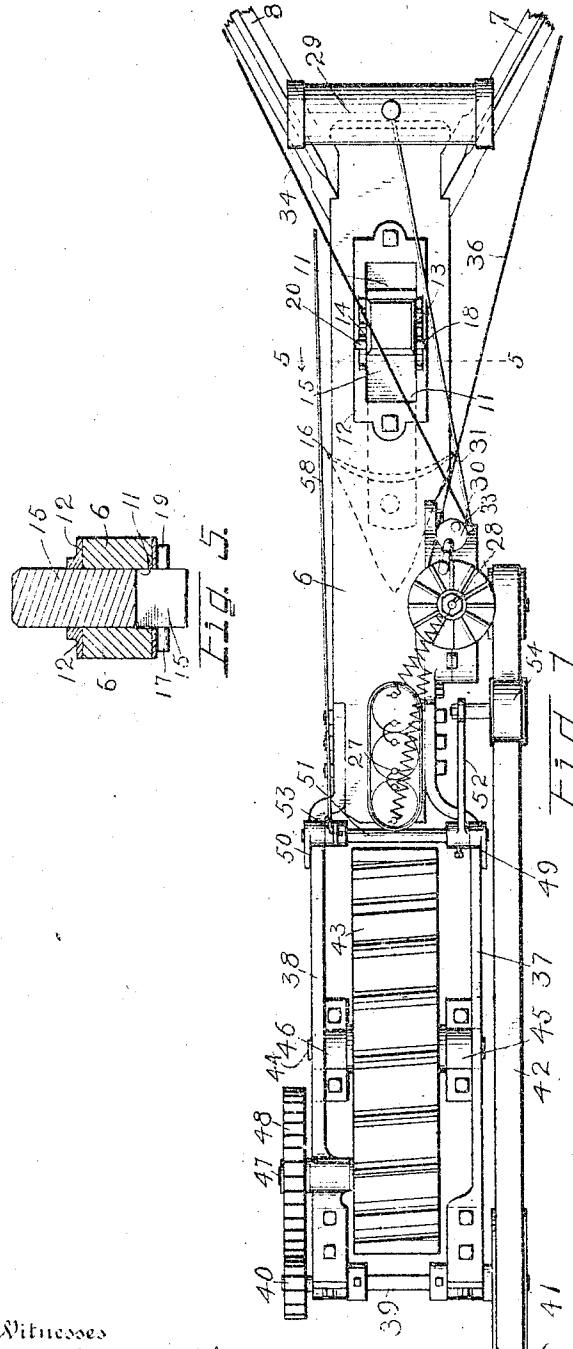

Fig. 1.

Fig. 5.

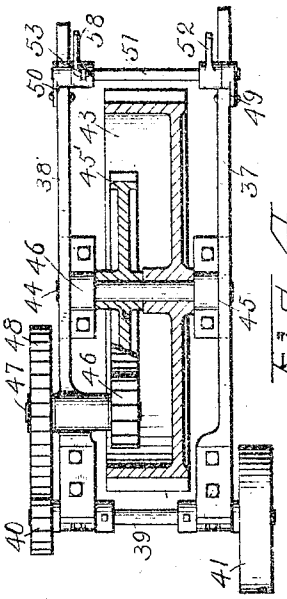

Fig. 4.

Witnesses

S. P. Buck.

Henry T. Bright

Inventors,

James V. Boyett.

Thomas E. Boyett.

By Munday, Evarts & Co.

Attorneys

J. V. & T. E. BOYETT.

MOTOR PLOW.

APPLICATION FILED OCT. 11, 1909.

996,559.

Patented June 27, 1911.

3 SHEETS—SHEET 2.

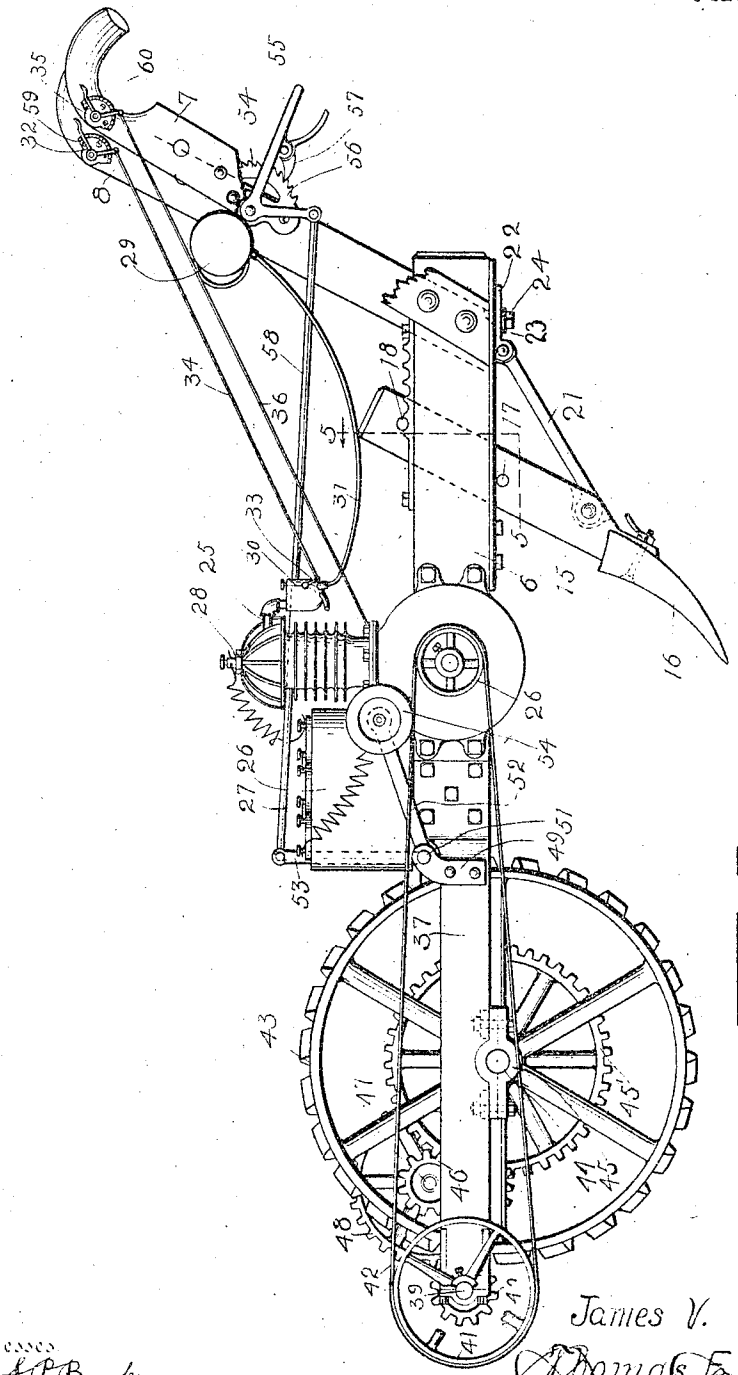

Fig. 2.

Witnesses
S. P. Buck.
Henry T. Bright

Inventors
James V. Boyett.
Thomas E. Boyett.
By Marshall & Marshall
Attorneys

J. V. & T. E. BOYETT.

MOTOR PLOW.

APPLICATION FILED OCT. 11, 1909.

996,559.

Patented June 27, 1911.

3 SHEETS—SHEET 3.

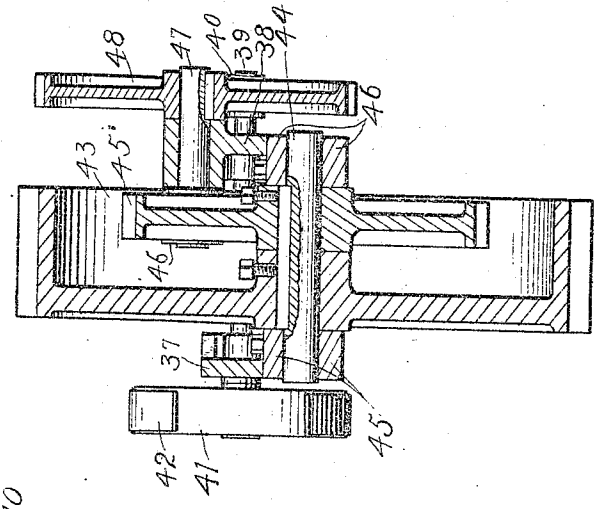

Fig 6

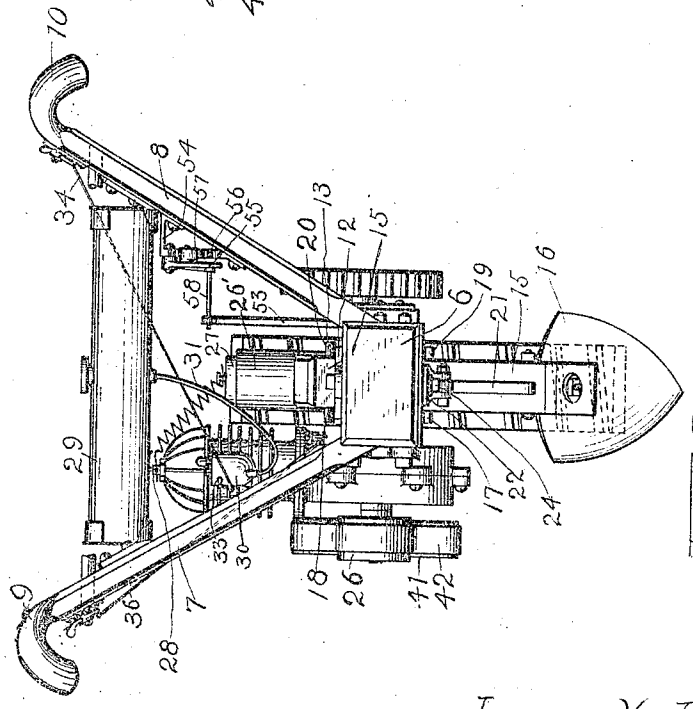

Fig 2.

Witnesses

J. P. Buck.

Henry T. Bright

Inventors,

James V. Boyett,

Thomas E. Boyett.

By Dodge & Dodge

Attorneys.

UNITED STATES PATENT OFFICE.

JAMES V. BOYETT AND THOMAS E. BOYETT, OF MORRIS STATION, GEORGIA.

MOTOR-PLOW.

996,559. Specification of Letters Patent. Patented June 27, 1911.

Application filed October 11, 1909. Serial No. 522,037.

To all whom it may concern:

Be it known that we, JAMES V. BOYETT and THOMAS E. BOYETT, citizens of the United States, residing at Morris Station, in the county of Quitman, State of Georgia, have invented certain new and useful Improvements in Motor-Plows; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to plows and particularly to that type which are motor operated.

The object of the invention is to provide a plow of the type indicated which will be simple in construction and easy of operation and in which the movement thereof in plowing is had through the agency of a suitable motor mounted upon the beam of the plow which operates by the instrumentality of suitable connections, a traction wheel disposed forward of said beam, the actuation of the motor and the depth of the cut of the plow being under the control of the operator who follows the plow afoot.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be herein more fully described and set forth in the claims.

In describing the invention in detail reference will be had to the accompanying drawings in which like characters of reference denote corresponding parts in the several views and in which,

Figure 1 is a top plan view of a plow constructed in accordance with the invention; Fig. 2, a side elevation of same with one of the handles of the plow having its intermediate portion broken away; Fig. 3, a rear elevation of the invention; Fig. 4, a top plan view partly in section of the traction mechanism of the plow; Fig. 5, a section on the line 5—5 of Fig. 1, looking toward the front of the plow; Fig. 6, a sectional view taken on different transverse vertical planes looking from the rear of the plow, showing the mounting of certain of the gear connections between the belt wheel and the traction wheel and the construction of the traction wheel.

In these drawings, 6 indicates the beam of the plow which is of a size and strength to suit the requirements which it is designed to serve. Secured to the rear end of said beam on opposite sides thereof in any suitable manner, are the handles 7 and 8 which are provided respectively with gripping ends 9 and 10. A slot 11 extends vertically through said beam near its rear end and a plate 12 surrounds said slot and has its longitudinal sides provided with corresponding toothed portions 13 and 14. Projecting through the slot 11 is a standard 15 which carries at its lower end the plow blade 16 in the usual manner. The standard 15 is provided on a pair of opposite sides with the laterally extending studs 17 and 18, and 19 and 20, the studs 18 and 20 being disposed above the beam 6 and the studs 17 and 19 below said beam. Having one end pivoted in the recess of the rear face of the standard 15 is a bar 21, the other end of said bar having swiveled thereto a slot plate 22 through which projects a threaded stud 23 having a nut 24 mounted thereon. By the construction just described an adjustment of the standard 15 longitudinally of the beam 6 may be had. To effect such adjustment it is only necessary to release the nut 24 when it will be possible to shift the standard either forward or rearward and position the studs 18 and 20 between any corresponding pair of teeth 13 and 14 in the sides of the plate 12 and when said studs are so positioned the nut 24 can be again tightened and the plate 22 locked against movement.

Mounted upon the forward end of the beam 6 in any suitable manner is a gasolene engine 25, the crank shaft of which is provided with a pulley 26 for utilization in transmitting motion to the traction mechanism of the plow which will be presently described. Mounted upon the top of the beam 6 is a battery box 26′ which carries the batteries 27 for effecting the ignition of the engine 25 through the agency of the spark plug 28. Supported between the handles 7 and 8 is a fuel supply tank 29

which is connected to the carbureter 30 of the engine by the pipe line 31. The flow of fuel from the tank 29 to the carbureter 30 is controlled by a pivoted bell crank 32 mounted on the handle 8 and a valve 33, said valve and bell crank being connected by a reach rod 34. In a like manner the spark of the engine is controlled by a bell crank 35 pivoted to the handle 7 and connected to a suitable controlling device (not shown) by the rod 36.

Secured to opposite sides of the beam 6 and projecting forwardly of the plow are the parallel spaced bars 37 and 38. Journaled in said bars at the extreme forward end is a shaft 39 which carries at one end a gear 40 and at the other end a belt pulley 41 which alines with the pulley 26 on the crank shaft of the engine and a belt 42 serves to connect said pulleys 41 and 26. A traction wheel 43 which supports the forward end of the plow and supplies the draft thereto during its rotation, is disposed between the arms 37 and 38 and mounted upon a shaft 44, which in turn is journaled in the trunnions 45 and 46 secured to the arms 37 and 38 respectively. The shaft 44 also has fixed thereto a gear wheel 45′ which is rotated by the movements of a gear 46 in mesh therewith, mounted upon a shaft 47 journaled in the arm 38. Said shaft 47 also carries a gear 48 which meshes with the gear 40 of the shaft 39. By the system of gearing just described it will be evident that when the motor 25 is operated the traction wheel 43 will be rotated and the movement of the plow effected.

Secured to the arms 37 and 38 are the brackets 49 and 50 respectively which form the journals for a shaft 51. Extending radially from said shaft at one end is an arm 52 while another radially disposed arm 53 is secured to the other end of said shaft. Journaled to the free end of the arm 52 is a wheel 54 which is so disposed that the belt 42 is adapted to be engaged thereby when the arm 52 is moved in one direction by the rotation of the shaft 51. Secured to the handle 8 is a bracket 54 which has pivoted thereon a bell crank 55 and also forms a support for a toothed segment 56, the teeth of which are adapted for engagement by the pawl 57 carried by the bell crank 55, whereby said bell crank may be held in a desired adjusted position. A reach rod 58 connects one arm of the bell crank 55 with the arm 53 of the shaft 51 whereby a movement of the bell crank 55 on its pivot will effect a rotation of the shaft 51. It will thus be apparent that any slack which may arise during operation of the belt 42 may be at once taken up by the operator through the medium of the structure just described; a movement of the bell crank 55 in one direction on its pivot serving to rotate the shaft 51 and rock arm 52 so that the wheel 54 is pressed into engagement with the belt 42, while a movement of the bell crank 55 in the opposite direction will lift the wheel 54 out of engagement with the belt 42.

It will be noted that the compactness of the draft mechanism of the plow is greatly enhanced by reason of the fact that the spokes of the traction wheel 43 are disposed to one side of its vertical diameter and the gears 46 and 45′ located within the rim of said wheel. It will be further noted that the bell cranks 32 and 35 have associated therewith the usual toothed segments 59 and 60 respectively, the teeth of which are adapted to be engaged by pawls mounted on said bell cranks, whereby they may be held in any desired position.

What is claimed is:—

1. In a machine of the class described, the combination with a beam, of a motor supported on said beam, parallel spaced bars projecting from the forward end of the beam, a shaft journaled between said bars, a traction wheel fixed on said shaft and having its rim extending laterally in one direction, a gear fixed to said shaft and disposed within the transverse limitation of the extended rim of said traction wheel, a second shaft journaled in the bar adjacent the extended portion of the rim of the traction wheel, a gear on the inner end of said shaft in mesh with the gear on the first named shaft, a gear on the outer end of said second named shaft, a drive shaft journaled between said bars forward of the traction wheel, a gear on one end of the drive shaft in mesh with the gear on the outer end of the second named shaft, a belt wheel on the other end of said drive shaft and a belt connection between said wheel and motor.

2. In a machine of the class described, the combination with a beam, of a motor supported on said beam, parallel spaced bars projecting from the forward end of the beam, a shaft journaled between said bars, a traction wheel fixed on said shaft and having its rim extending laterally in one direction, a gear fixed to said shaft and disposed within the transverse limitation of the extended rim of said traction wheel, a second shaft journaled in the bar adjacent the extended portion of the rim of the traction wheel, a gear on the inner end of said shaft in mesh with the gear on the first named shaft, a gear on the outer end of said second named shaft, a drive shaft journaled between said bars forward of the traction wheel, a gear on one end of the drive shaft in mesh with the gear on the outer end of the second named shaft, a belt wheel on the other end of said drive shaft, a belt connection between said wheel and motor, an arm pivotally sup-

ported on said beam adjacent said belt connection, a wheel journaled on the outer end of said arm adapted for engagement with said belt connection and means for moving said arm on its pivot, whereby the wheel journaled thereon may be forced into engagement with the belt connection to tighten the latter.

In testimony whereof, we affix our signatures in presence of two witnesses.

JAMES V. BOYETT.
THOMAS E. BOYETT.

Witnesses:
J. W. BOYETT,
E. M. BOYETT.