

(No Model.)

W. D. ARNETT.

No. 444,417.

Patented Jan. 13, 1891.

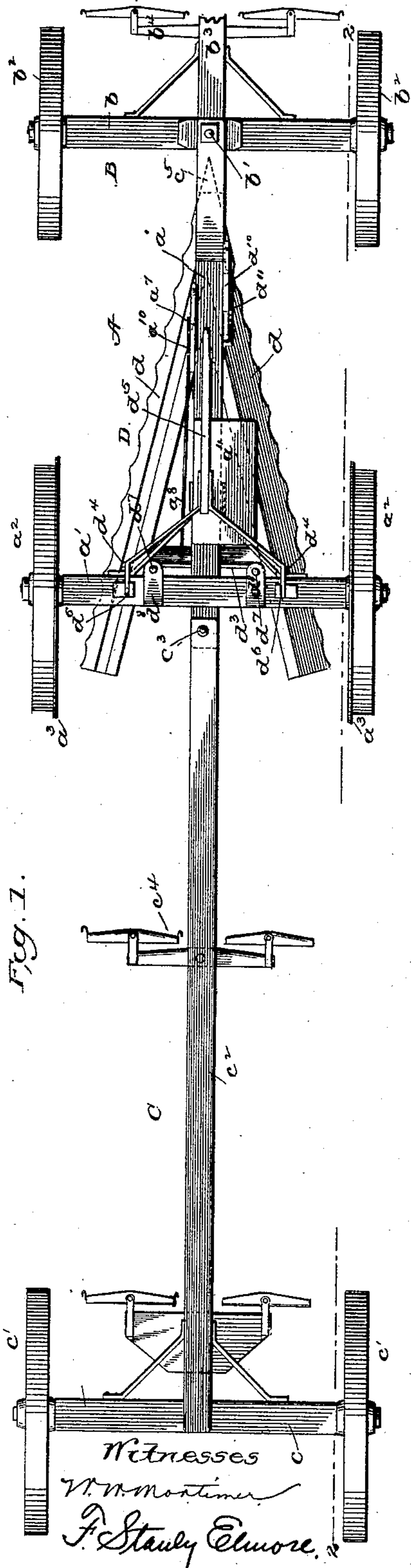


Fig. 7.

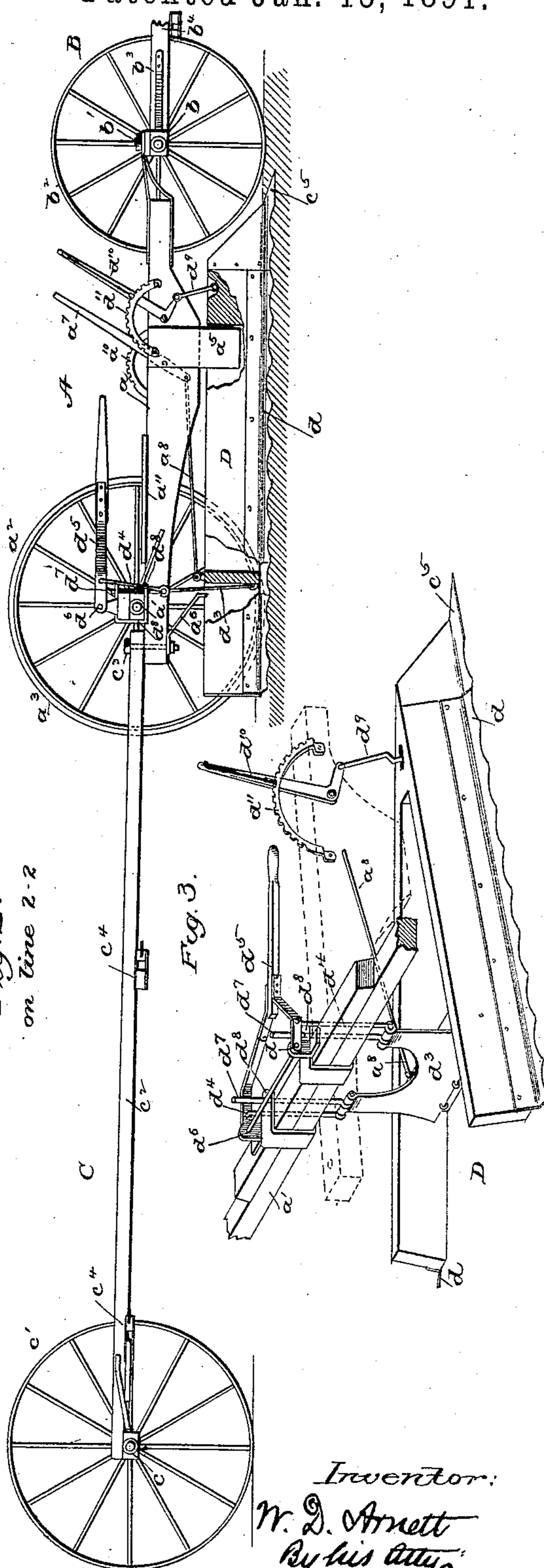


Fig. 2.
on line 2-2

Fig. 3.

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MACHINE FOR DESTROYING SAGE-BRUSH.

SPECIFICATION forming part of Letters Patent No. 444,417, dated January 13, 1891.

Application filed April 30, 1890. Serial No. 350,102. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ARNETT, of Caldwell, in the county of Ada and Territory of Idaho, have invented certain Improvements in Machines for Destroying Sage-Brush, of which the following is a specification.

This invention relates to a machine intended for cutting off, uprooting, and destroying sage-brush, and is intended more particularly as an improvement on the machine for which Letters Patent of the United States were granted to me on the 3d day of December, 1889, No. 416,661.

The present improvements are intended to overcome certain difficulties which attend the use of the original machine, and particularly to permit the proper guidance of the machine in its advance and the application of the great amount of power required to propel it.

In the present machine a frame of triangular or similar form armed with cutting-blades at the lower edge is adjustably suspended from a two-wheeled main frame, which latter is swiveled at its forward end to a wheel-steering truck provided with draft devices for the connection of a team. In rear of the main frame and swiveled thereto there is a two-wheeled pushing or propelling truck provided with devices for the attachment of draft-animals.

In the accompanying drawings, Figure 1 represents a top plan view of my machine. Fig. 2 is a section of the same on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the cutter-frame.

Referring to the drawings, A represents the main frame, consisting, mainly, of a longitudinal beam or reach a , fixed near its rear end rigidly to an axle a' , which is sustained at its ends by ground-wheels a^2 , each having a peripheral flange a^3 to enter the ground and prevent lateral motion of the frame.

B is a steering-truck, consisting, mainly, of an axle b , swiveled at b' to the reach of the main frame and provided with ground-wheels b^2 , a tongue or draft pole b^3 , and a singletree or equivalent draft devices b^4 , to permit the attachment of draft-animals.

C is a propelling-truck, consisting, mainly, of an axle c , mounted at its ends in two ground-wheels c' and fixed rigidly to the rear end of a longitudinal bar or reach c^2 , which has its forward end swiveled at c^3 to the rear end of the main frame in rear of the main axle. This propelling-truck has its reach provided with two or more eveners, with singletrees c^4 attached thereto, in order that two or more teams may be connected to the propelling-frame in order to cause it to push the main frame and cutter ahead.

D represents the cutter-frame, which viewed from above is A form, strongly built, and provided along each of its forward sides with a steel blade d , bolted firmly thereto, the lower edge of the blade being extended upward in an approximately horizontal position, and given an indented or scalloped form at the edge. The blades at the two sides merge at the front into a sharp point, which is extended downward and forward, as seen at c^5 , in order that it may enter the soil and under-ride the roots of the plants. The whole cutting mechanism must be adapted to resist heavy strains and to carry the blades forcibly against and through the roots and trunks of the plants. The cutter-frame is suspended at the rear end by a plate or frame d^3 , which is hinged at its lower end to the cutter-frame and jointed at its upper end to suspending-links d^4 , which are in turn jointed at their upper ends to the arms of a forked lever d^5 , pivoted at d^6 to bearing-plates on the main axle. By raising and lowering the lever d^5 the forward end of the cutter-frame may be raised or depressed at will, and by thus changing the inclination of the cutter its point may be given a tendency to run to a greater or less depth.

The upper end of the suspending-plate d^3 is prevented from moving forward and backward by vertical guide-rods d^7 , joined thereto and extended upward through guide plates or ears d^8 on the frame.

In order that the point of the cutter-frame may be raised and lowered at will, it is suspended by a link d^9 from one end of an angular hand-lever d^{10} , which is pivoted to the

main frame in position to be conveniently manipulated by the driver and combined with the notched locking-plate d^{11} or equivalent means for securing it in the different positions. When lowered to an operative position, the cutter-frame is carried forward in a positive manner by an arm a^5 , extending downward from the main frame, acting against a solid bearing in the forward end of the cutter-frame, as may be seen in Fig. 2. An arm a^6 , extending downward from the rear end of the main frame to encounter the plate d^3 , also assists in carrying the cutter-frame forward with the main frame.

In order that the cutter-frame may be turned forward and upward to an inoperative position clear of the ground, a hand-lever a^7 is pivoted to the reach of the main frame and connected by a link a^8 to the rear end of the cutter-frame. As the upper end of this lever is carried backward, the link pulls the cutter-frame ahead, whereupon the swinging movement of the plate d^3 and the link d^9 cause the frame to rise both at the front and rear. The locking-arm a^{10} on the frame serves to hold the lever down, and thus maintain the cutter-frame in its elevated position as the machine is being transported from place to place.

The main frame is provided with a platform a^{11} , on which the operator is carried in such position that he may conveniently operate the controlling-levers and at the same time drive and control the team attached to the steering-truck.

The operation is as follows: The teams being attached to the front and the rear trucks and the cutter-frame lowered to the position shown in Fig. 2 and left free to rise and fall in following the surface of the ground, the machine is guided in its course by directing the forward team to the right or left. The cutter-frame being carried forcibly forward, its blades act upon and sever the plants at or near the surface of the ground, at the same time throwing them to the right and left and leaving a clear lane or space for the passage of the propelling-teams attached to the rear truck.

The steering frame or truck preceding the main frame is intended mainly for the purpose of giving direction to the cutter, experience having shown that it is difficult in all cases, and in some cases impossible, to steer the machine by connections in rear of the cutter. It is also impracticable to employ in front of the cutter, where they are compelled to walk in the standing brush, a sufficient number of animals to propel the machine. It is for these reasons that I employ the front steering-truck distinct from the propelling-truck at the rear.

The employment of cutters which are indented or scalloped at the edge is of great advantage, since the effect is to cause each blade as it advances to make repeated or successive cuts upon the plant, whereby the sev-

erance of the same is the more easily and certainly effected. Owing to this form of the blades and to the fact that the cutter-frame frequently meets unequal resistance on opposite sides, the wheels having flanges to resist the lateral motion are of great advantage. These flanged wheels are also peculiarly advantageous when used in connection with the front and rear trucks, since they compel the cutter to follow the course of the steering-truck and prevent it from being thrown laterally out of position by the lateral pressure which the propelling-truck exerts as the main frame and cutter are deflected to the right or left out of line with the propelling-truck.

Having thus described my invention, what I claim is—

1. In a machine for destroying sage-brush, the main frame provided with wheels and the cutter-frame, in combination with the front steering-truck swiveled thereto and provided with draft devices, and the rear propelling-truck provided with wheels and draft devices and swiveled to the main frame.

2. A front-wheeled steering-truck provided with draft devices, a main frame provided with two wheels and swiveled to said truck, a triangular frame having fixed cutter-blades along its lower edges and connected to the main frame by devices to effect its vertical adjustment, and a rear pushing-truck provided with two wheels and draft devices and swiveled to the main frame, said elements combined substantially as described and shown.

3. Two-wheeled trucks provided with draft devices and arranged one in advance of the other, in combination with an intermediate frame connected thereto and provided with a cutter-blade lying at or near the surface of the ground.

4. In a machine for destroying sage-brush, and in combination with a wheeled frame having the rigid depending frame, the pointed cutter-frame having a rigid bearing, against which the frame acts to propel the cutter, and swinging supports whereby the cutter-frame is suspended from the main frame.

5. In combination with a wheeled frame or support, the pointed cutter-frame, the hand-lever and link at its front, the sustaining-plate d^3 at the rear, the guide-rods, links, and hand-lever controlling said plate, and the lever a^7 and link a^8 for lifting the cutter-frame to an operative position.

6. In a machine for destroying sage-brush, a main frame provided with two wheels having flanges to enter the ground and resist lateral motion, and the pointed cutter-frame suspended from the main frame and provided on opposite sides with the fixed converging blades scalloped or indented at the cutting-edge.

7. In a machine for destroying sage-brush, a rear-wheeled propelling or pushing truck, in combination with a cutter-carrying truck

or frame swiveled to its forward end and
flanged ground-wheels attached to the last-
named frame, whereby the propelling-frame is
prevented from throwing the cutter out of its
5 proper course when the two frames are turned
out of line.

In testimony whereof I hereunto set my

hand this 27th day of February, 1890, in the
presence of two attesting witnesses.

WILLIAM D. ARNETT.

Witnesses:

WM. L. GEARY,

E. R. STROHUKER.