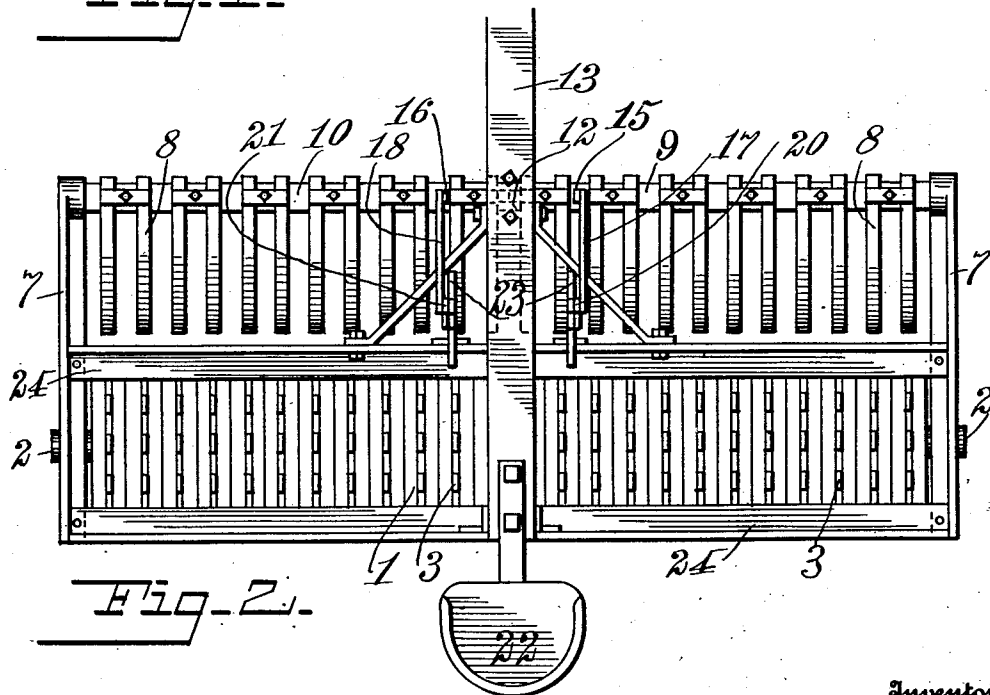
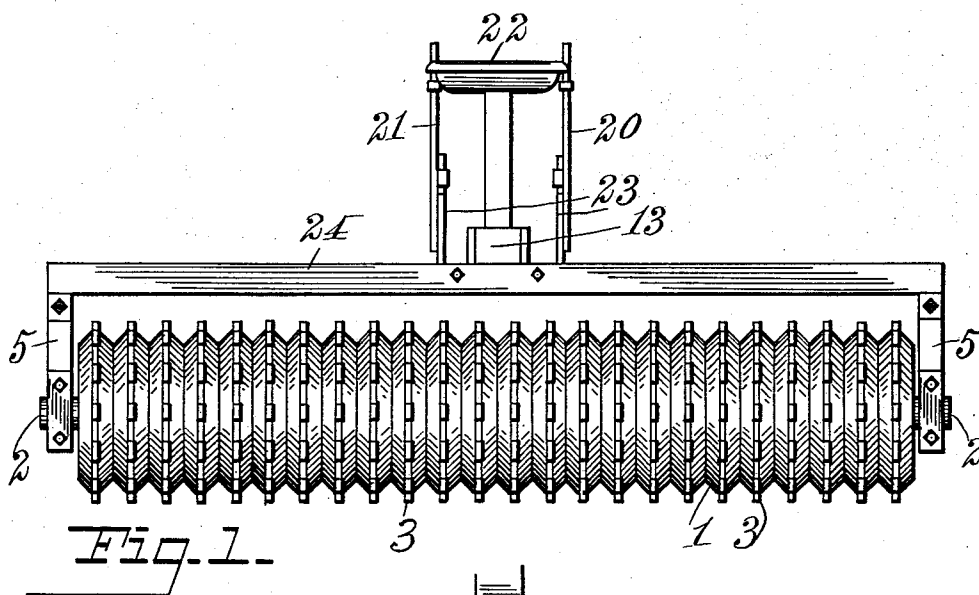


S. H. GARST.
SOIL SURFACE PULVERIZER.
APPLICATION FILED OCT. 28, 1916.

1,304,871.

Patented May 27, 1919.

2 SHEETS—SHEET 1.



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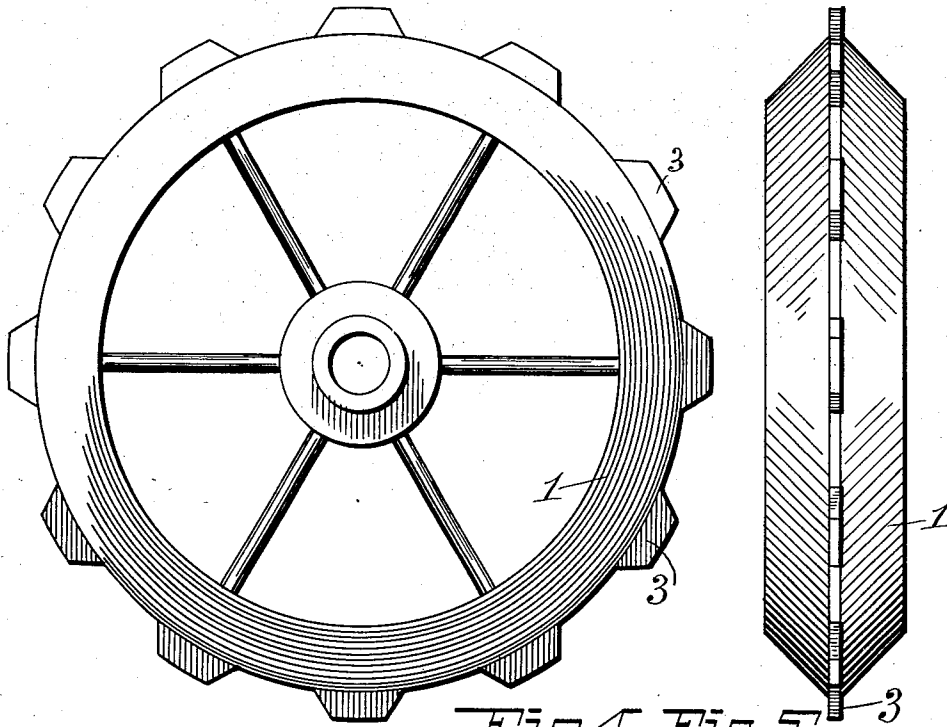


Fig. 4. Fig. 5.

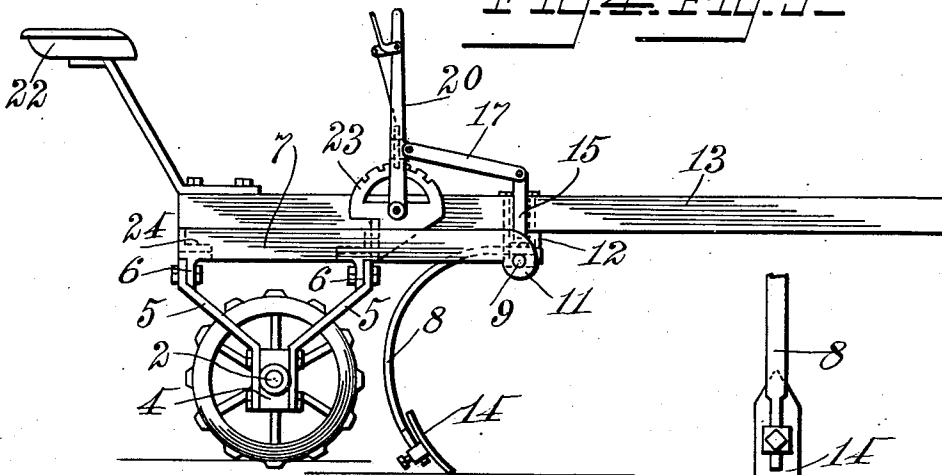


Fig. 3.

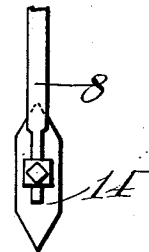


Fig. 6. Inventor

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UNITED STATES PATENT OFFICE.

STEPHEN H. GARST, OF MOLINE, ILLINOIS.

SOIL-SURFACE PULVERIZER.

1,304,871.

Specification of Letters Patent.

Patented May 27, 1919.

Application filed October 28, 1916. Serial No. 128,155.

To all whom it may concern:

Be it known that I, STEPHEN H. GARST, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Soil-Surface Pulverizers; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in soil surface pulverizers. The object and purpose of the present invention is to provide a pulverizing wheel which will not slide or pass over the surface of the ground in a sliding or non-rotatable way but which is provided with means to prevent such movements as hereinafter described, as will hereinafter more fully appear.

Referring to the accompanying drawings, Figure 1 is a rear elevation of a gang of pulverizer wheels made in accordance with my invention; Fig. 2 is a top plan view of the same; Fig. 3 is a side elevation; Figs. 4 and 5 are side and edge elevations respectively of one of the pulverizer wheels; and Fig. 6 is a detail perspective view of one of the shovel bars and the shovel supported thereon arranged in front of one of the pulverizing wheels.

In a detail description of my invention, similar reference characters indicate corresponding parts.

Referring more particularly to the drawings, 1 designates my improved soil pulverizing wheel, a suitable number of which is arranged in a gang upon a shaft 2 to freely revolve thereon. These pulverizing wheels are all of a common construction and a particular description of one will suffice for the entire assemblage, as shown in Figs. 1 and 2 of the drawings. Heretofore it has been common practice to construct soil pulverizing wheels of a V-shape with the crown or highest point of the periphery uniform throughout. The objections found with this form of pulverizing wheel have been hereinbefore referred to and to overcome such objections I provide each of said pulverizing wheels with a series of spurs or lugs 3

that are spaced and project uniformly from the highest point of the periphery of the wheel. These spurs or lugs 3 grip the soil as it were regardless of its condition and the pulverizer wheels are thereby caused to revolve and the periphery of the wheels together with the peripheral lugs or spurs act to pulverize the surface of the soil which they pass over. The spurs or lugs referred to enable the wheel to break through any crust of the earth and to split clogs or lumps of soil and to prevent the wheels from slipping when they come in contact with an obstruction such as would otherwise compel the wheel to slide over it. The shaft 2 upon which the gang of pulverizing wheels are mounted is journaled in suitable bearings 4 which are supported in depending frame members 5 which in turn are suitably united to brackets 6 which are rigidly secured to side members 7 of the pulverizer frame. This frame consists of the side bars 7 and lateral bars 24. It is well known that the pulverizing soil is difficult to be accomplished effectively. In some cases it becomes so hard and crusted that the penetration thereof by means of a rotating wheel is made with great resistance. In order to overcome any possible resistance that such soil might present to a proper operation of my improved pulverizing wheel, I provide an attachment therefor which is arranged in the front of the gang of pulverizing wheels and the purpose of which is to tear up and disintegrate the packed and crusted soil in front of the pulverizing wheels wherever the condition renders it necessary. This attachment consists of a series of bars 8 which are curved and of a resilient character as shown in the drawings but may be of a rigid character. These bars are arranged in two gangs in front of the pulverizing wheels on rock shafts 9 and 10. The upper ends of said shovels as shown are fixed to rock shafts 9 and 10 which in turn are provided with end bearings 11 and inner bearings 12, the inner bearings being attached to the underside of the draft pole 13. One of these bars 8 is mounted in front of each of the pulverizing wheels 1 and upon the lower end of each of said bars an adjustable shovel 18 is mounted. These shovels 14 are in positions to tear up the packed soil in front of the pulverizing wheels and to prepare it for the subsequent action of said wheels. The shovels 14 are

preferably pointed at both ends and may be reversible upon their supporting bar 8. They are directly in front of the pulverizing wheels and in positions so that the centers of the peripheries of said wheels will run in the grooves made thereby. This relative arrangement of the pulverizing wheels and the shovels provides for letting the pulverizing wheels down into the ground to cause the concave between the wheel centers to pulverize the soil in a ridge between the grooves cut by the shovels. This is accomplished in an effective manner. The rock shafts 9 and 10, before referred to, at their inner ends have rigidly attached thereto arms 15 and 16 which are connected to links 17 and 18 which in turn are connected to levers 20 and 21 within reach of the driver who sits upon the seat 22 at the rear end of the machine. The levers 20 and 21 are provided with the usual toothed sectors 23 which are properly secured to the frame of the machine. By manipulating the levers 20 and 21 in a well known manner, the shovels 14 may be depressed to make proper contact with the soil, the depth of the shovels being regulated thereby and when the

use of the shovels is not required they may be raised clear from the ground.

Having described my invention, and the manner of its use and the advantages arising therefrom, I claim:—

In a machine of the character specified, the combination with a carrying frame and a transverse shaft mounted thereon, of a gang of soil pulverizer and packing wheels mounted upon said shaft, the periphery of each of said wheels being tapered on both sides of the center of the circumference thereof to provide packing surfaces, and the circumference of each of said wheels between the tapered surfaces being provided with relatively thin and wide blades which are adapted to penetrate the crust or clods of earth and to shear their way through the same as the wheel rotates, substantially as specified.

In testimony whereof I affix my signature, in presence of two witnesses.

STEPHEN H. GARST.

Witnesses:

HUBERT BURGIS,
CHARLOTTE BURGIS.