

PULVERIZER.

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**INVENTOR**

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PULVERIZER.

951,138.

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To all whom it may concern:

Be it known that I, FRANCIS D. MALTMAN, a citizen of the United States, residing at Geyserville, in the county of Sonoma and State of California, have invented new and useful Improvements in Pulverizers, of which the following is a specification.

The present invention relates to improvements in pulverizers.

Pulverizers which are provided with teeth dragging along the ground are generally objectionable in this respect that, if their teeth are set too far apart, they permit clods to pass between the several rows of teeth in succession, so that they are not properly broken up, and if the teeth are set closer together, so that a clod cannot pass between them, the clods accumulate between the teeth and clog up the pulverizer. Again, a pulverizer formed of corrugated rollers will pulverize only the soil on the top, and, in case the clod is not broken up, it is, by such rollers, forced down into the ground as a hard mass. Moreover such pulverizers can only be used when the ground is perfectly dry.

One object of the present invention is to avoid the above objections.

A further object is to provide an improved pulverizer which will pulverize the soil to a sufficient depth below the surface, say from 3 to 6 inches.

A still further object is to provide one which will be cheap and simple in construction, of great durability in use, and which cannot get out of order.

In the accompanying drawing, Figure 1 is a bottom plan view of my improved pulverizer; Fig. 2 is a side view of the same.

Referring to the drawing, the main portion of my improved pulverizer consists of a single casting comprising a flat plate or table 1, preferably rectangular in form, and at the front end having an upwardly sloping extension 2, which may be of the same thickness as the plate, to which extension are secured the means for drawing the pulverizer along the ground, which may be either a tongue or tongues, or, as herein shown, chains 3 attached to a whiffle-tree 4. The upward slope of this extension enables the pulverizer to ride over very rough ground. Depending from said plate 2 are breaker pieces 5, which are arranged in rows, there being here shown only two rows, al-

though the rows may be of any desired number. Each breaker piece is at the front end wide and thin or shallow, and at the rear end narrow and deep, that is, at the front end the breaker piece is formed with a horizontal sharp edge, so that its lower surface is at the front end practically continuous with the lower surface of the plate 2, whereas at the rear end it is formed with a vertical sharp edge 6 depending at right angles from said plate. The under surface of each breaker piece, therefore, tapers from front to rear. It is also made concave, for the reason that, if made perfectly flat, the clods would too easily slip from under the breaker pieces without being crushed thereby; however, it is desirable not to make the under sides of these breaker pieces too curved as otherwise they would have the same disadvantages as the hooks at present used, and be clogged up by the clods. As a breaker piece rides upon the top of a clod, the weight of the pulverizer is applied to said clod on a pressure surface narrowing as the clod approaches the rear end of the breaker piece, until finally, when the point at the bottom of the vertical edge 6 of the breaker piece passes on to said clod, the pressure, due to the weight of the pulverizer, being concentrated at that point is sufficient to penetrate and break up the clod.

It will be observed that the breaker pieces of the two rows are staggered with reference to each other so that the front edge of each rear breaker piece is exactly behind the opening between two of the front breaker pieces; consequently the pulverizer cannot pass over any clod without its passing under and being broken by one or the other of the breaker pieces.

As shown at 9, the lateral edges of the forward and upward extension 2 incline inward to the front. This is an advantage in that, if the pulverizer be drawn close past a tree, stump, or other obstruction, said sloping edge, impinging against the obstruction deflects the pulverizer, and thereby enables it to pass the obstruction.

A further important result achieved by my improved pulverizer is that the sharp rear ends of the breaker pieces penetrate the ground to a depth of several inches, and thus the soil is pulverized not only on the surface but below the surface, to a sufficient extent, in general, for agricultural purposes.

Extending transversely across the top of

the casting, and bolted thereto as shown at 7, are a number of planks 8. These planks withstand any jar, or shock which would tend to break the casting. Moreover, even if the casting be broken, the efficiency of the pulverizer is practically unimpaired, as its parts still remain attached to the planks, and the bolts for so attaching them are in general found sufficient to retain the several parts in place, although, if necessary, it is easy to bore additional bolt holes and thus additionally secure the pieces to the planks.

It will be readily seen that this pulverizer can be used efficiently on damp soil as well as in dry.

An important advantage possessed by this invention is its great simplicity and cheapness in construction, there being only one main part, which can easily be formed in a single casting, no machine work being necessary, and the planks being attachable thereto very quickly and readily and without requiring the use of skilled labor. It can thus be placed upon the market at a much lower price than the present forms of pulverizer.

A further advantage of this pulverizer as compared with many others is that it is not necessary to go to the expense of placing a spring seat thereon, as the driver can readily stand upon the platform formed by the

planks. However, a spring seat can be added if desired.

It is evident that the plate of the pulverizer may be made of sheet steel, the breaker pieces being riveted or otherwise attached thereto.

I claim:—

1. A pulverizer comprising a plate, and a series of breaker pieces depending from said plate, each breaker piece being of greater depth but of less thickness at the rear than at the front end, substantially as described.

2. A pulverizer comprising a plate, and a series of breaker pieces depending from said plate, each breaker piece diminishing in thickness and increasing in depth gradually to its rear end, substantially as described.

3. A pulverizer comprising a plate, and a series of breaker pieces depending from said plate, each breaker piece diminishing in thickness and increasing in depth gradually to its rear end and the under surface of each breaker piece being concaved, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANCIS D. MALTMAN.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.