

Sept. 6, 1938.

M. ARIENS

2,129,298

ROTARY PULVERIZER

Filed Feb. 20, 1937

2 Sheets-Sheet 1

Fig. 1.

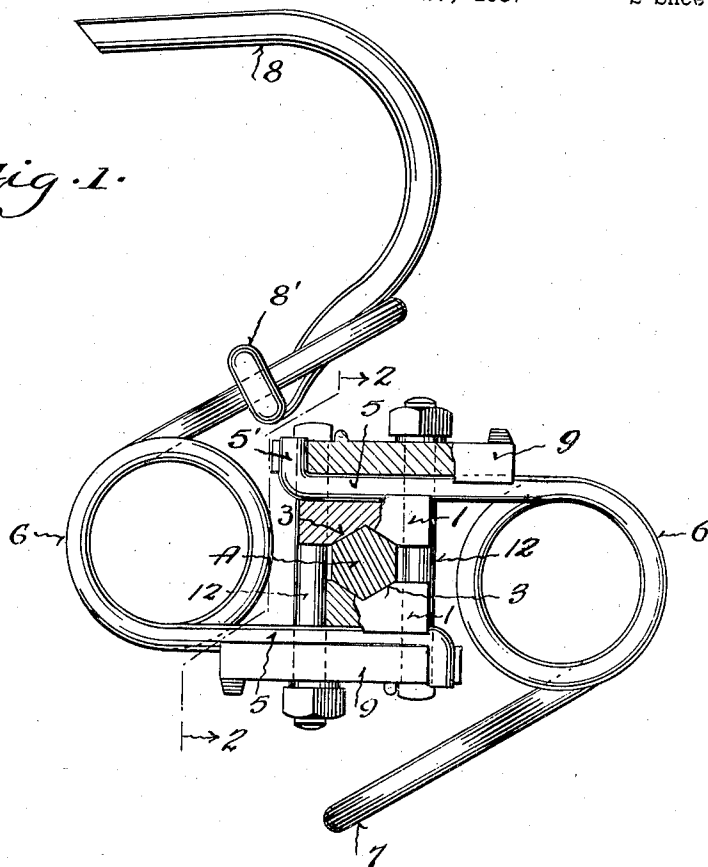
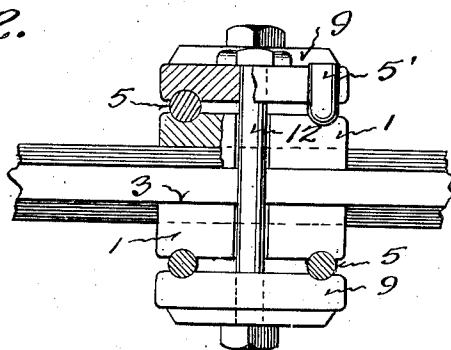


Fig. 2.



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Fig. 3.

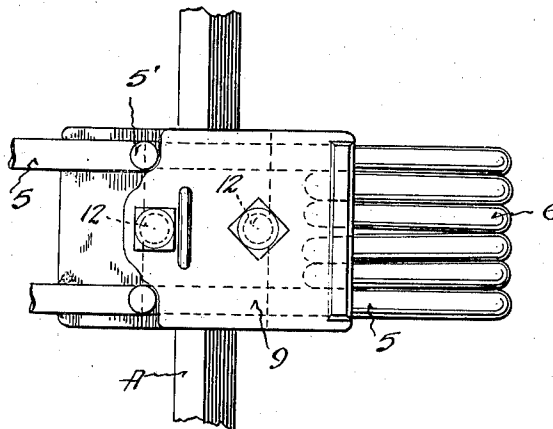


Fig. 4.

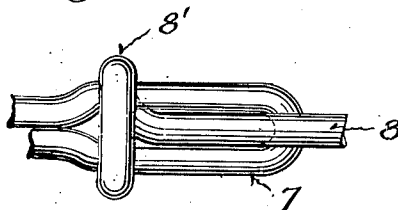


Fig. 5.

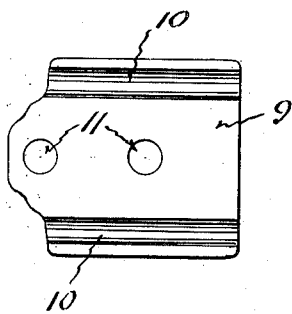
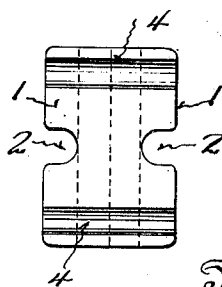


Fig. 6.



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UNITED STATES PATENT OFFICE

2,129,298

ROTARY PULVERIZER

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Application February 20, 1937, Serial No. 126,846

2 Claims. (Cl. 97—216)

My invention refers to rotary pulverizers of various types, as, for example, such as disclosed in my Patent No. 2,025,494, issued December 24, 1935.

5 The object of my present invention is to provide a simple, economical, and effective holder for the diggers or tines of a pulverizer, and, obviously, this tine-holder can be applied to any type of rotary pulverizer.

10 The tine-holder comprises essentially a companion group of clamping units for a shouldered or polygonal rotatable shaft, the assembly being such that it can be readily adjusted to the shaft, whereby the tines are firmly locked in their working position, with groups of such units positioned equidistantly apart about said shaft.

15 Another object of my invention is to provide terminal spurs associated with the shanks of the spring tines, whereby the tines are held from stripping with relation to the clamping mechanism.

20 Another specific object of the invention is to provide companion sets of shaft clamping blocks, and associated clamping plates, for nested engagement with the shaft and tine shanks, whereby the entire assemblage is firmly locked by a pair of bolts.

30 With the above and other objects in view, the invention consists in certain peculiarities of construction and combination of mechanical elements, as will be hereinafter set forth with reference to the accompanying illustrations and subsequently claimed.

In the drawings:

35 Figure 1 represents a side elevation of a holder embodying the features of my invention, illustrating the tines, with parts broken away and in section to more clearly illustrate the structural features.

40 Figure 2 is a partly sectional end elevation of the same, the section being generally indicated by the line 2—2 of Figure 1.

Figure 3 is a plan view of the holder unit, with parts broken away.

45 Figure 4 is a detailed plan view of the looped portion of a tine coil spring, having detachably mounted thereon the crown-engaging digger or toothed portion.

Figure 5 is an inverted face view of one of the clamping plates.

50 Figure 6 is a face view of the companion shaft gripping block.

Referring by characters to the drawings, A indicates the polygonal driving shaft for a pulverizer, the corners of which constitute shoulders

for receiving the tine-holder unit. Fitted to the shaft are pairs of gripping blocks 1—1, which are provided with bolt-receiving openings 2 at opposite edges, and the bottom faces of these blocks are provided with V-shaped, longitudinal channels 3—3, which conform to faces of the polygonal shaft to thereby constitute matched shaft-receiving seats for the same. The upper faces of these blocks are formed with grooves 4—4, positioned transversely of the shaft seats. Into these grooves are nested the shank ends 5—5 of double coil spring units 6—6, which springs are similar to that described in my previous patent, being double coiled inwardly, and at the center portion the said coils are flared outwardly, forming center loops 7 for the reception of the removable bowed cultivator teeth 8, which engage the ground for digging or pulverizing the same.

The inner end of the teeth 8 pass through the loop 7 of the coil springs, and said ends terminate with an eye 8', which engages companion coil spring stretches, whereby the parts form a simple coupling arrangement, permitting replacement of the toothed end, which, in conjunction with the coil springs, constitute the tines. The shank ends 5 of the coil spring portion of the tines terminate with upturned spurs 5', and, as best shown in Figures 1 and 3 of the drawings, these upturned ends engage the adjacent edge surface of companion clamping plates 9.

The lower faces of the clamping plates 9 are formed with grooves 10—10, for nested engagement with the shank ends 5, which shank ends are preferably circular in cross section to correspond with the same circular grooves 4 and 10 of each block and plate. The plates 9 are also formed with bolt-receiving openings 11—11, which are alined with the openings 2 of the blocks, and when the companion parts are assembled upon the polygonal shaft, as best shown in Figure 1, a pair of clamping bolts 12—12 are fitted through the openings upon opposite sides of the shaft, whereby the assembled tine-holding unit is firmly locked both to the polygonal shaft and the shanks of the tines, to hold all of the parts securely in working position.

It is manifest that when it is desired to replace any of these parts, by simply loosening the bolts the assemblies will be freed. It will also be observed owing to the upturned spur ends 5 of the tine shanks, these elements will be held against pulling out or displacement under working strain. It will also be observed that the lower surface of the clamping plates serves to resist whipping

strain incidental to movement of the coil spring units.

Particular attention is called to the simple and economical tine-holding units, due to the fact that the entire structure embodies a single pair of blocks and gripping plates, which are assembled upon opposite sides of the shaft, and the entire assemblage can be secured or dismantled by manipulation of two bolts.

It will also be noted that the units can be quickly assembled upon the polygonal shaft longitudinally of the same at different points radially to complete the pulverizer rotary tool.

While I have shown and described all of the structure in minute detail, it is understood that I may vary the elements within the scope of the claims.

I claim:

1. A clamping unit for a rotary pulverizer comprising a polygonal shaft, a pair of flat gripping blocks having polygonal channels for engagement with the companion shaft surfaces and alined bolt openings, each block being provided with tine-receiving grooves upon its outer surface at a right angle to its shaft-receiving channel, a companion pair of tine shanks fitted to the block grooves terminating in outwardly turned spurs, a pair of clamping plates having grooves fitted to the tine shanks, the clamping plates being provided with bolt openings in alinement with the bolt openings

of said blocks, said clamping plates having end edges in abutting engagement with the tine spurs, whereby the tines are held against displacement in one direction, and companion pairs of bolts extending through the openings of the blocks and clamping plates whereby the entire assemblage is snugly secured to confine the aforesaid blocks, clamping plates, and tine shanks to the shaft.

2. A clamping unit for a rotary pulverizer comprising a shaft, a pair of flat gripping blocks having channels for engagement with the companion shaft surfaces and alined bolt openings, each block being provided with tine-receiving grooves upon its outer surface at a right angle to its shaft-receiving channel, a companion pair of tine shanks fitted to the block grooves terminating in outwardly turned spurs, a pair of clamping plates having grooves fitted to the tine shanks, the clamping plates being provided with bolt openings in alinement with the bolt openings of said blocks, said clamping plates having end edges in abutting engagement with the tine spurs, whereby the tines are held against displacement in one direction, and companion pairs of bolts extending through the openings of the blocks and clamping plates whereby the entire assemblage is snugly secured to confine the aforesaid blocks, clamping plates, and tine shanks to the shaft.

MANDO ARIENS.