Mar. 13, 1923. 1,448,579

P. G. TIDEMAN

ROTARY PLOW OR SOILCUTTER

Filed July 31, 1922

Fig. 1.

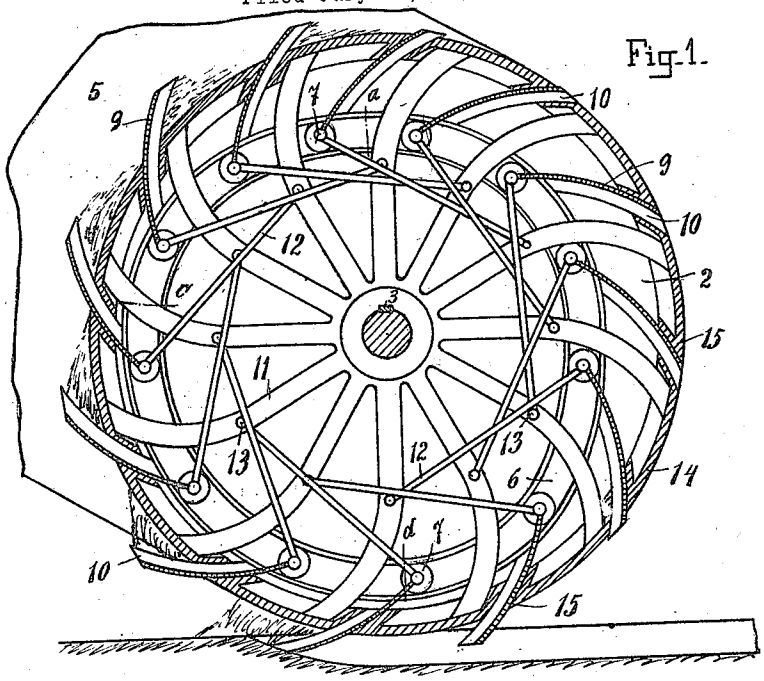
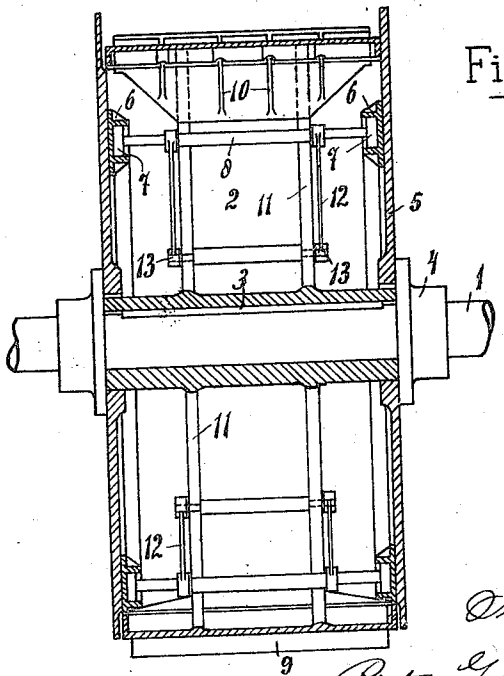


Fig. 2.



Inventor:
Pieter Gerard Tideman,
By Wm. E. Boulter,
attorney

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UNITED STATES PATENT OFFICE.

PIETER GERARD TIDEMAN, OF RUMPEN, NETHERLANDS.

ROTARY PLOW OR SOIL CUTTER.

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To all whom it may concern:

Be it known that I, PIETER GERARD TIDEMAN, a citizen of the Kingdom of the Netherlands, residing at Rumpen, Province of Limburg, Netherlands, have invented certain new and useful Improvements in Rotary Plows or Soil Cutters, of which the following is a specification.

The object of my invention is an improved rotary plow or soilcutter adapted to be used for digging furrows as well as ditches and the like, and having circular shaped blades arranged in a drum, said blades being movable during the rotation of the same about a central point and guided by slots in the rim of the drum in such a way that these blades may move outwardly beyond the rim and be drawn back into the drum.

According to my invention I construct a rotary plow or soilcutter wherein each blade is fixed to an axle having a bearing at both ends in a guideway, consisting of two concentric parts connected by curved portions which guideway is so arranged, that the blades during the digging period do not move with respect to the rim.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the figures.

Fig. 1 is a side elevation of the rotary plow or soilcutter and

Fig. 2 is a cross section through the axle.

A plow or cutter drum 2 is fixed to an axle 1 by means of a key 3. The axle 1 rotates in bearings 4 secured to two plates 5, the latter being hingedly connected to a motor tractor. I provide two immovable gutter-shaped guides 6, each consisting of two inwardly-projecting concentric flanges, the flanges *a*, *b*, secured to one of the plates 5 constituting one of the guides and the flanges *c*, *d*, secured to the other plate 5 constituting the other guide. The grooves within the guides form irregular or cam-shaped tracks, as shown, the shape being such that during the time the blades are digging they do not move with respect to the drum. In these guides 6 move rollers 7 mounted on the axles or shafts 8 carrying the blades 9 each of the blades being provided with four knives 10. These knives are arranged perpendicularly to the surface of the blade and may be arranged as well at the front as at the rearside of the blades.

These knives not only loosen the soil to facilitate the digging by the blades, but they also strengthen the blades. 11 indicates the spokes of the plowdrum 2, and the axles 8 of the blades 9 are movably connected to the spokes by rods 12 at the points 13. The blades and knives are so curved that the point 13 forms the centre of the arc of the blade. By this construction the blades will only move in a circular arc, and therefore the slots 15 in the rim 14 may be curved so as to correspond exactly with the shape of the blades.

In this manner a rigid guide of the blade is obtained, which is of very great importance for good working of the plow.

The rotary plow or cutter operates as follows:

The motor driving the tractor and the plow is adjusted so that by means of a suitable transmission mechanism the plow will be first rotated.

The plow connected hingedly by the plates 5 to the tractor rotates alone until the predetermined depth is reached. Then the plates are locked in this position so that the plow will not be able to dig to a greater depth, and then the tractor is started, drawing forwards the rotating plow or cutter with the result that furrows or ditches are dug. By using different transmissions the rotary speed of the drum as well as the speed of the tractor may be varied.

When on the road the drum is raised and the transmission adjusted for driving the tractor only.

Having fully described my invention, what I claim is:

1. In an apparatus of the character described, the combination with a rotatable axle, of a drum fixedly mounted on said axle, the rim of said drum being provided with a plurality of slots, plates supporting the said axle, guides carried by said plates and comprising irregular shaped grooves, blades adapted for movement within the slots in the rim of the drum, as described, shafts carried by the blades, rollers carried by the said shaft and adapted to travel in the said grooves, and rods pivotally connecting the said shafts with the drum, all arranged for cooperation in the manner and for the purpose set forth.

2. In an apparatus of the character described, the combination with a rotatable axle, of a drum fixedly mounted on said axle,

the rim of said drum being provided with a plurality of slots, plates supporting the said axle, guides carried by said plates and comprising irregular-shaped grooves, blades adapted for movement within the slots in the rim of the drum, as described, knives carried by the blades and movable therewith, shafts carried by the blades, rollers carried by the said shafts and adapted to travel in the said grooves, and rods pivotally connecting the said shafts with the drum, all arranged for cooperation in the manner and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

PIETER GERARD TIDEMAN.

Witnesses:

HENRY W. GRADY,

H. VERHEÜ.