

Feb. 17, 1953

T. E. KEMPLING
ROD WEEDER

2,628,546

Filed Nov. 7, 1949

2 SHEETS—SHEET 1

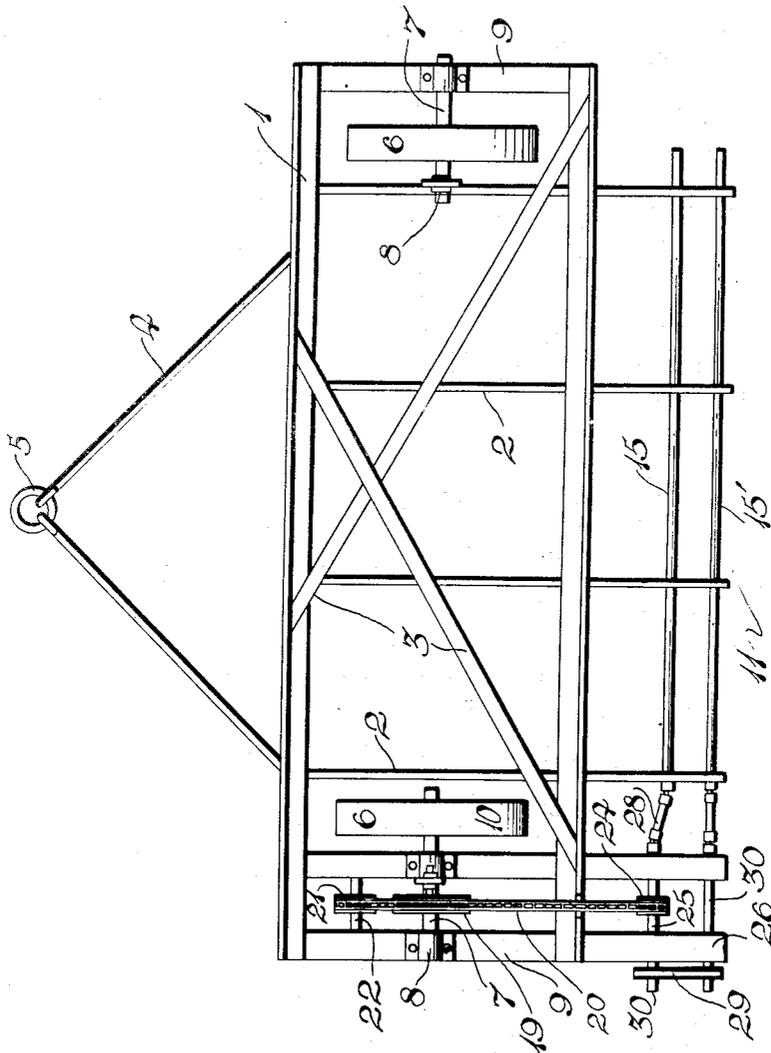


FIG 1

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his Atty's.

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2 SHEETS—SHEET 2

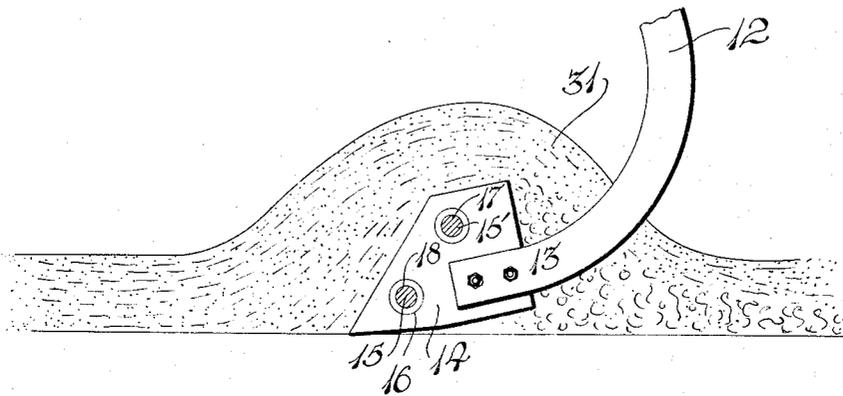


FIG 3

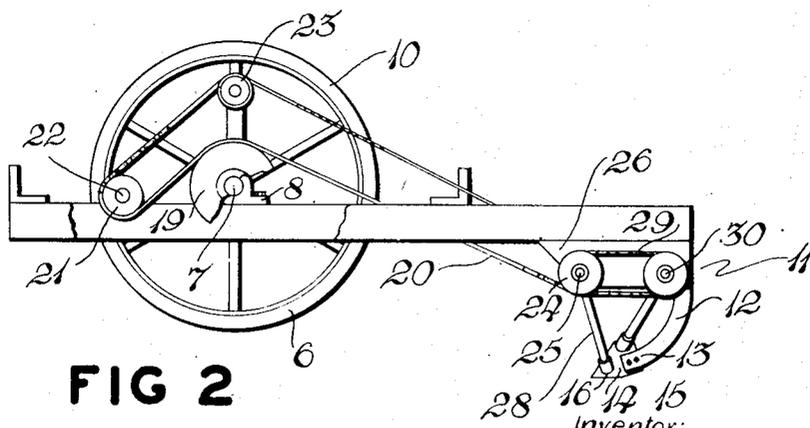


FIG 2

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UNITED STATES PATENT OFFICE

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ROD WEEDER

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In Canada November 15, 1948

1 Claim. (Cl. 97-42)

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My invention relates to new and useful improvements in rod weeders, an object of the invention being to provide a device of the character herewithin described whereby both deep and shallow rooted weeds may be severed from their roots.

A further object of my invention is to provide a device of the character herewithin described which leaves the soil in a well packed condition and at the same time deposits and maintains the majority of lumps and trash upon the surface thereof, thus assisting materially in the prevention of erosion.

A further object of my invention is to provide a device of the character herewithin described which is particularly adaptable to post-seeding cultivation.

Another object of my invention is to provide a device of the character herewithin described which operates with the minimum trench formation therebehind.

A still further object of my invention is to provide a device of the character herewithin described whereby the additional rods may readily be attached or detached for seeding or other purposes.

Another object of my invention is to provide a device of the character herewithin described which is readily adaptable for use with a conventional single rod weeder or which may be used to advantage with any elongated subsoil cultivator.

A further object of my invention is to provide a device of the character herewithin described which is economical in manufacture, efficient in operation and which, due to the relatively small number of working parts, requires the minimum of maintenance thereto.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a plan view of my rod weeder showing the location of the rods.

Figure 2 is a side elevation of Figure 1.

Figure 3 is a fragmentary cross-sectional view of my rod weeder in use illustrating the operation of my device within the sub soil.

In the drawings like characters of reference indicate corresponding parts in the different drawings.

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In the science of agriculture, the use of rod weeders, particularly for post seeding cultivation, is becoming increasingly practical. The conventional single rod weeder, while operating efficiently under specific circumstances, has been found to be unsatisfactory in the majority of cases. This is particularly noticeable when the land includes both deep and shallow rooted weeds, under which circumstances it has been observed that the rod weeder, while serving the deep rooted weeds, merely passes underneath weeds having shallow roots, thus leaving them comparatively undisturbed.

Therefore I have designed the rod weeder hereinafter to be described which incorporates one or more additional weeding rods situated to the rear and in most instances, above, the primary rod which have the effect of disturbing the top soil to a greater extent (although having the same draft as a regular weeder) thereby completely severing the weed roots and depositing them upon the surface of the soil behind the machine.

Proceeding therefore to describe my invention in detail, it will be seen upon reference to the accompanying drawings that the same comprises a rectangular chassis 1 constructed of angle iron or the like and having the transverse supporting members 2 rigidly bolted thereto. Diagonally disposed bracings 3 supply rigidity to the assembly and V-shaped members 4 converge forwardly to a conventional tractor hitch assembly 5 by which the unit may be drawn behind a tractor or team.

Two ground engaging wheels 6 are carried upon the axle 7 supported in suitable bearings 8 mounted upon the relatively short members 9 of the aforementioned rectangular chassis 1. The right-hand ground wheel with relation to Figure 1 in this embodiment acts merely as a supporting wheel, whereas the left-hand wheel specifically designated 10 supplies the drive for the rod weeder assembly collectively designated 11.

The aforementioned transverse supporting members 2 extend rearwardly of the rectangular chassis 1 and are adapted to support the downwardly curved depending standards 12. The lowermost ends 13 of these standards are drilled to receive removable shoes 14 which carry the transversely situated elongated and slender under surface members 15 and 15' as will hereinafter be explained. The shoes 14 consist of drilled plates, pointed and sharpened upon the forward portions thereof, and contain suitable

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drillings in the rearward portions complementary to drillings in the aforementioned standards 12 to which they may be attached by bolts or similar means.

The members 15 in this embodiment comprise rods of cylindrical or square (or other polygonal) configuration rotatably mounted within suitable bearings 16 within the aforementioned shoes 14 and reference to Figure 3 of the accompanying drawings will show that the two rods are situated in parallel spaced relationship with what I designate as the superior surface 17 of the upper or rearwardly disposed rod occupying a horizontal stratum of space above the superior surface 18 of the lowermost rod.

Rotation of these rods is provided by the ground wheel 10, there being a chain sprocket wheel 19 mounted integrally upon the ground wheel axle 7 between the said wheel and the outer member 9 of the rectangular chassis. In order to obtain the desired direction of rotation of the rods 15 and 15' the run of the chain 20 is routed around the forwardly disposed jockey sprocket 21, supported upon its own axle 22, and thence over the chain adjusting sprocket 23 situated superjacent the aforementioned main sprocket wheel 19. The forwardly situated rod weeder sprocket 24, supported by the axle 25 extending between convenient frame members 26, receives the chain 20 and reference to Figure 2 of the accompanying drawings will show that this sprocket will rotate in a clockwise direction by virtue of the lower run of chain passing over the superior surface of the sprocket 19. In this connection it is assumed of course that the ground wheel is rotating in a counterclockwise direction due to the forward motion of the rod weeding assembly in the direction of the arrow 27.

The drive from the axle 25 is transmitted to the forward or lower weeding rod 15 by means of the universal coupling assembly 28, the rear rod 15' receiving the drive in the same direction as the forward rod, by means of the sprocket and chain assembly 29 extending between the outboard end of the axle and the rear rod weeder axle 30 as clearly shown in Figure 1 of the accompanying drawings.

Having therefore explained my invention in detail, its method of application will now be presented.

With the rod weeder unit travelling in the forward direction, the drive is transmitted to the rods 15 and 15' as hereinbefore described, both rods rotating below the topsoil layer 31 in a clockwise direction with reference to the drawings and which I have designated in at least one of the accompanying claims as, rotating rearwardly. The aforementioned shoes 14 will control the draft or depth at which the rods operate, the soil being displaced first by the forward or lower rod thus severing the roots of the rela-

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tively deep weeds, and then being further disturbed by the rear or upper rod operating in a different stratum, which has the effect of severing the relatively shallow-rooted weeds which otherwise would be permitted to grow. It is to be appreciated of course that the draft control hereinabove described may be replaced by other conventional methods such as a pair of wheels and adjusting levers or a form of screw adjustors, without detracting from the operation of my device.

Under certain circumstances it may be desirable to incorporate a further rotating rod or member to the rear of the two rods mentioned in this embodiment, which would have the effect of still further disturbing the topsoil layer during the weeding operation, and which would be driven in a similar manner as hereinbefore described.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claim without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

A cultivator characterized by the combination with an elongated and slender undersurface member for elevating a topsoil layer during its passage through the ground, of another member also of elongated and slender proportions situated in parallel relationship to the first herein mentioned member, and with at least the superior surface area thereof lying in a horizontal stratum of space above that occupied by the superior surface area of the first mentioned member, and to the rear of said first mentioned member, said members being located in such propinquity that they both treat the undersurface of a topsoil wave created by the implement before the disintegration of the soil at the underside portion of said wave and before the mass-cohesion of the soil at said underside portion thereof has disintegrated so that it does not fall between said members, and means for effecting the rotation of said members so that the superior surfaces thereof move rearwardly when the weeder is in a state of forward motion.

THOMAS E. KEMPLING.

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