Jan. 5, 1943. E. R. NEUMANN ET AL 2,307,533

WEEDER ATTACHMENT FOR CULTIVATORS

Filed June 6, 1940

Fig. 1.

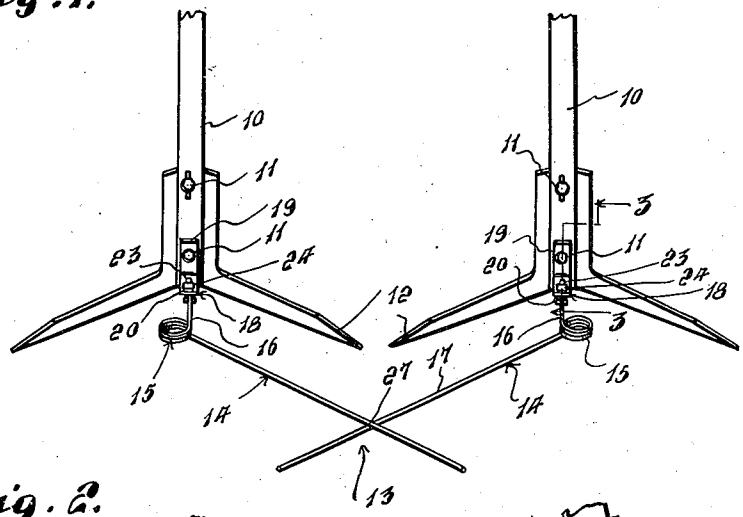


Fig. 2.

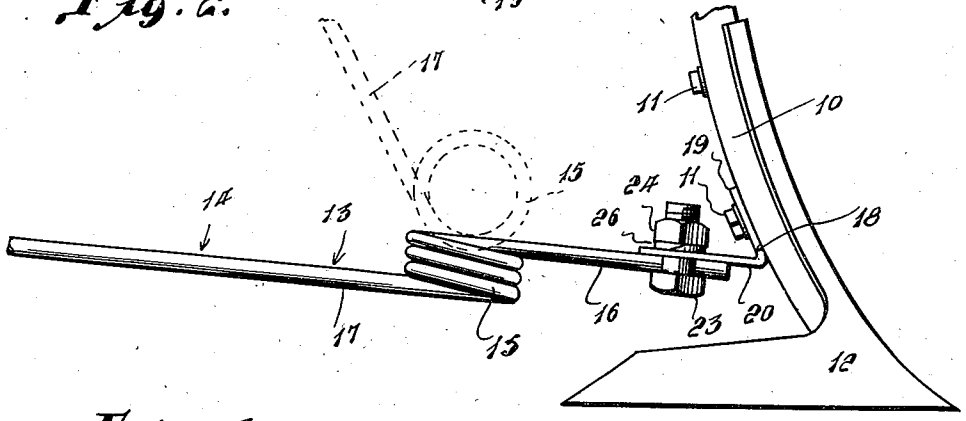


Fig. 3

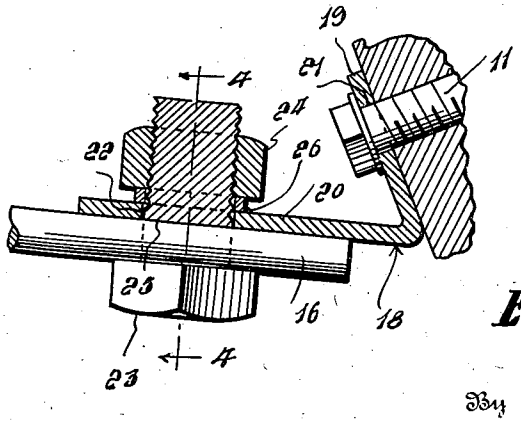
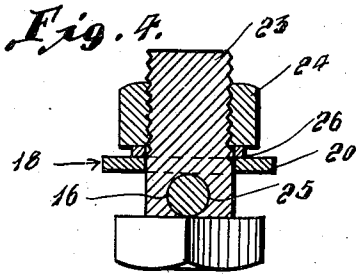


Fig. 4.



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WEEDER ATTACHMENT FOR CULTIVATORS

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5 Claims. (Cl. 97—179)

The present invention relates to improvements in cultivator attachments wherein a weeder is provided as an attachment to the forward standards of a cultivator.

In cultivating with the ordinary cultivators now on the market it is impossible to remove the small weeds, between and in line with the plants, from the earth in the regular operation of cultivating. It is therefore a particular aim of the invention to provide a device to eliminate this difficulty and to remove these weeds without in any way injuring the plants.

An object of the invention is to provide an improved means of pulling out small weeds that grow between the stalks in the drill of the row without injuring tender plants.

Another object of the attachment is the provision of means to easily secure said weeder to the rear of any common type of cultivator whereby it may be quickly swung from an operative position to an inoperative one.

With the above mentioned objects and others appearing in the specification the invention consists in the arrangements and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:

Figure 1 is a rear elevational view of a pair of cultivator standards with my weeder attachment secured thereto,

Figure 2 is a side elevation of a cultivator standard showing one of the weeder elements secured thereto by means of a bracket,

Figure 3 is an enlarged vetrical sectional view taken substantially along the plane of the line 3—3 of Figure 1, and

Figure 4 is a vertical sectional view taken substantially along the plane of the line 4—4 of Figure 3.

Referring more particularly to the drawing, wherein like reference characters designate like or corresponding parts throughout the different views, 10 designates generally portions of a pair of the forward standards of a cultivator, not shown, which are provided at their lower ends with the spaced nut and bolt fastenings 11 for detachably securing thereto a pair of cultivator shoes 12 which are adapted to cultivate the earth on each side of a row of standing plants, not shown. The parts 10, 11 and 12 are of conventional construction and are shown merely to illustrate the application and purpose of the weeder, designated generally 13, and comprising the invention.

The weeder 13 includes a pair of corresponding weeder elements 14 each of which is preferably formed from a strand of relatively heavy gage spring steel which is provided adjacent one end with a plurality of spring coils 15. One end of the strand 14 projects from the coils 15 to form a relatively short shank portion 16 and the opposite end of the strand 14 extends from the opposite end of the coils 15 to provide a relatively long rod 17 which is disposed at an oblique angle to the shank portion 16.

Each of the weeder elements 14 is adapted to be connected to one of the standards 10 by supporting means including a bracket 18, as best seen in Figure 3, having two legs which are angularly disposed relatively to each other to form a flange 19 and a base 20 provided with openings 21 and 22, respectively. The flange 19 is adapted to be positioned against the back side of one of the standards 10 and its opening 21 is sized to receive a bolt of one of the fastenings 11, when its nut is removed after which the nut of the fastening 11 is applied to detachably secure the bracket 18 thereto. When thus clamped to the standard 10, the base portion 20 projects rearwardly from the standard and is disposed in substantially a horizontal plane, as best seen in Figure 2.

A headed bolt 23 is provided with a threaded shank portion which is disposed in the opening 22 and secured to the base portion 20 by means of a lock nut 24. The lock nut 24 is disposed above the base portion 20 while the head of the bolt 23 is disposed therebeneath. The shank of the bolt 23, adjacent its headed end is provided with an opening 25 which extends diametrically therethrough for receiving the shank 16 of one of the weeder elements 14 which is clamped between the bolt head and the base portion 20 by tightening the adjusting nut 24. A spring ring 26 is preferably mounted on the shank of the bolt 23 between the adjusting nut 24 and the base 20 to assist in maintaining a clamping connection for the shank 16.

It is to be understood that the weeder element 14 is attached by means of a bracket 18, in the manner as heretofore described, to each of the standards 10 and the elevation of the weeder attachment 13 may be varied by applying the brackets 18 to either the upper or lower pair of the fastenings 11. The shank ends 16 of the weeder elements 14 are clamped to the brackets 18 so that the ends 17 will be disposed substantially in a horizontal plane and extending rearwardly and inwardly of each other to cross at 27 behind and between the adjacent ends of the shoes 12. The weeder elements 14 are so clamped that their

ends 17 frictionally engage each other at the point 27.

From the foregoing it will be obvious that when the shoes 12 are moving along on either side of a row of plants the ends 17 will be moving along slightly beneath the earth's surface with the portions thereof which contact at the point 27 moving in line with the plants for uprooting weeds growing around and between the plants of the row. The weeder elements 14, due to their own resiliency and the resiliency of the spring coils 15 will yield when the ends 17 contact the plants of the row to spread to permit the plants to pass between the free ends of the end portions 17 without damaging young or tender plants. The coils 15 are disposed behind the standards 10 and the intermediate portions of the shoes 12 to prevent trash and crop residue from collecting thereon and interfering with the operation of the weeder elements 14. The free ends of the end portions or rods 17 may be raised and lowered by turning the shanks 16 in the openings 25, assuming the nuts 24 to be loosened for this purpose, to position the portions thereof at the point 27 and therebeyond at the proper depth. When not in use, the shanks 16 can be turned in the openings 25 so that the ends or rods 17 will project upwardly and in line with the standards 10, and thus clamped in an inoperative position.

Various modifications and changes are contemplated and may obviously be resorted to as only a preferred embodiment of the invention has been disclosed.

We claim as our invention:

1. A weeder attachment for cultivators comprising brackets detachably and adjustably connected to a pair of cultivator standards by their plow shoe fastenings, weeder elements having substantially straight shank ends, clamping means associated with said brackets for detachably and adjustably connecting an end of each of said weeder elements to one of the brackets, the opposite, free ends of said weeder elements projecting rearwardly from said standards and inwardly relatively to each other to cross adjacent their free ends, and said shank ends being turnable in the clamping means, when the clamping means are loosened, for adjusting said weeder elements to arrange the free ends thereof to frictionally engage at the point of their intersection.

2. A weeder attachment as in claim 1, each of said weeder elements being provided with a plurality of spring coils intermediate of their ends for yieldably mounting their free ends relatively to their secured ends, the axis of each of said spring coils being disposed substantially at a right angle to the weeder element of which it forms a part.

3. A weeder attachment as in claim 1, said clamping means each including a nut and bolt fastening attached to one of said brackets, the bolt of said fastening being provided with an opening in its shank, adjacent its head, for receiving the shank end of one of the weeder elements, and said nut being adjustable for clamping the secured end of the weeder element between the bolt head and bracket.

4. A weeder attachment as in claim 1, the free end and shank end of each weeder element, being angularly disposed relatively to each other, and each weeder element being provided with a spring coil at the apex of its ends and normally disposed behind and in alinement with the standard on which its weeder element is mounted.

5. A weeder attachment as in claim 1, said clamping means being turnable relatively to the brackets for varying the position of the point of intersection of the free ends of the weeder elements.

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