

(No Model.)

G. S. McFALL.
CULTIVATOR.

No. 554,892.

Patented Feb. 18, 1896

Fig. 1.

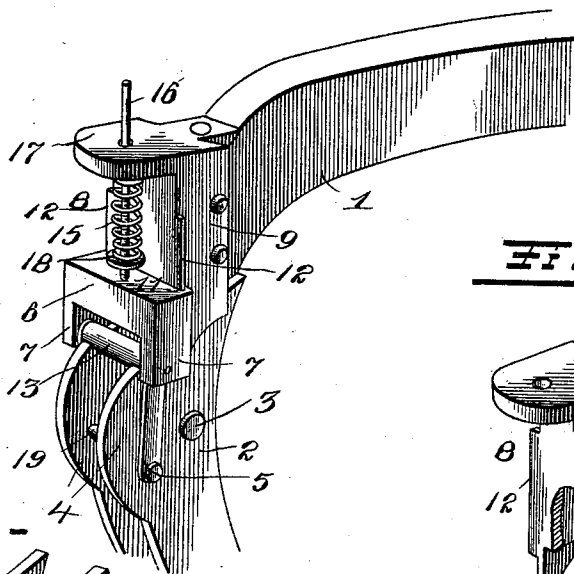


Fig. 2.

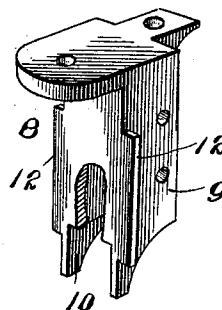


Fig. 3.

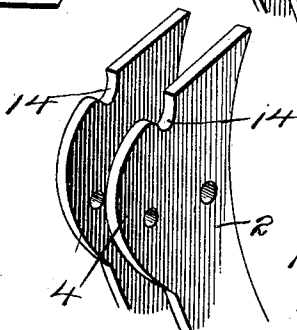


Fig. 4.

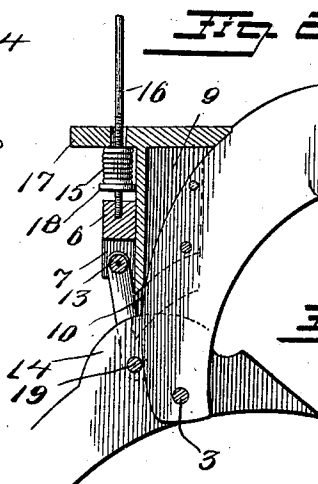
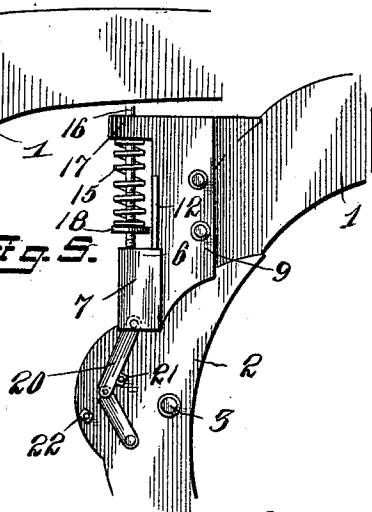


Fig. 5.



Witnesses

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

GEORGE S. MCFALL, OF CRUMP, TENNESSEE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 554,892, dated February 18, 1896.

Application filed October 5, 1895. Serial No. 564,795. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. MCFALL, a citizen of the United States, residing at Crump, in the county of Hardin and State of Tennessee, have invented a new and useful Cultivator, of which the following is a specification.

The invention relates to improvements in cultivators.

The objects of the present invention are to improve the construction of the shanks of cultivator-blades, and to enable the blades to swing rearward automatically when they come in contact with roots or other obstructions to avoid injury to them and to cause them to return automatically to their normal working position after the obstruction has been passed, thereby effectually guarding the blades and the parts of the implement connected therewith against the liability of becoming broken, bent, or otherwise injured or destroyed.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a portion of a cultivator-shank constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view, the shank being swung rearward. Fig. 3 is a detail perspective view of the upper portion of the shank. Fig. 4 is a similar view of the bracket or frame. Fig. 5 is an elevation illustrating a modification of the invention.

Like numerals of reference indicate corresponding parts in all the drawings.

1 designates a cultivator-beam, to the lower end of which is secured a cultivator-shank 2, which is substantially U-shaped and which has the upper terminals of its sides embracing the lower end of the beam 1 and perforated to receive a pivot 3, which passes through the sides of the shank and the beam. These sides of the shank are provided at their rear edges at their upper ends with segmental enlargements 4, which are connected by links 5 with a slide 6. The lower ends of the links 5 are pivoted to the segmental enlargements 4 and to the inner faces of a pair of depending lugs

7 of the said slide 6, and the latter is connected with the beam 1 by a bracket or frame 8.

The bracket or frame 8 has parallel sides 9 receiving the beam 1 between them and bolted to the same, and the lower ends of the sides of the bracket are provided with recesses 10, forming guides for the upper ends of the sides of the shank 2 and supporting the same. The slide 6 is capable of vertical movement on the bracket or frame 8 and is provided at opposite sides with inwardly-extending flanges 11, which are interlocked with vertical flanges 12 projecting laterally from opposite sides of the frame or bracket. Between the depending lugs of the slide 6 is journaled a transverse roller 13, which is held in engagement normally with shouldered notches 14 of the sides of the shank by a spiral spring 15, located above the slide 6 and arranged on a rod 16. The rod 16 is centrally secured to the top of the slide and has its upper portion passing through a perforation of a lug or arm 17 of the bracket or frame 8. The lower portion of the rod 16 is threaded and receives a nut 18, forming a bearing for the lower end of the spring and adapted to regulate the tension thereof.

When the blades (not shown) come in contact with a root or other obstruction, the shank 2 swings rearward to relieve the blade and to prevent it from being injured, and as soon as the obstruction is passed the spring operates to return the shank and its blade to their normal position.

The upper ends of the sides of the shank abut against the lower ends of the sides of the bracket or frame at the recesses 10 and limit the forward swing of the blade, and a transverse pivot 19 which connects the links to the sides of the shank operates as a stop to limit the rearward swinging of the blade.

In Fig. 5 of the accompanying drawings is illustrated a modification of the invention, wherein sectional or jointed links 20 are employed instead of the straight continuous links 5, and stops 21 and 22 of the colter-shank are located at opposite sides of the jointed links to limit the movement of the colter. The straight continuous links are specially adapted for cultivation of free soft soil, while the jointed links will be found to

operate with the greatest advantage in tough soil, which is more or less difficult to cultivate.

It will be seen that simple and efficient means are provided for enabling a cultivator-shank to swing rearward to permit the blade to pass over an obstruction, and that the blade is automatically returned to its working position. It will also be apparent that the tension of the spring may be readily regulated to secure the desired stiffness, and that the blade and shank are prevented from being bent, broken or otherwise injured.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any advantages of the invention.

What I claim is—

1. In a device of the class described, the combination of a beam, a shank having opposite sides embracing the beam and pivoted to the same and provided with shoulders, a spring-actuated slide connected with the beam and engaging the shoulders of the shank, and links connecting the sides of the shank with the slide and pivoted to the former below said shoulders, substantially as described.

2. In a device of the class described, the combination of a beam, a shank having sides pivoted to the beam and provided with rearwardly-extending enlargements, a bracket

mounted on the beam and receiving the sides of the shank and forming guides for the same and limiting the forward swing of the shank, a spring-actuated slide mounted on the bracket and provided with a roller engaging the sides of the shank, and links pivoted to the extensions of the shank and to the slide, substantially as described.

3. In a device of the class described, the combination of a beam, a bracket secured to the beam, and provided with vertical ways and having recesses at the lower ends of the sides, a shank having sides pivoted to the beam and provided with rearwardly-extending enlargements and having their upper ends arranged in said recesses, a slide mounted on the ways of the bracket and provided with depending lugs, a roller journaled between the lugs and engaging the said enlargements, links pivoted to the lugs and to the enlargements, and a spring for forcing the slide downward, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE S. McFAIL.

Witnesses:

G. C. MORRIS,

B. N. HINTON.