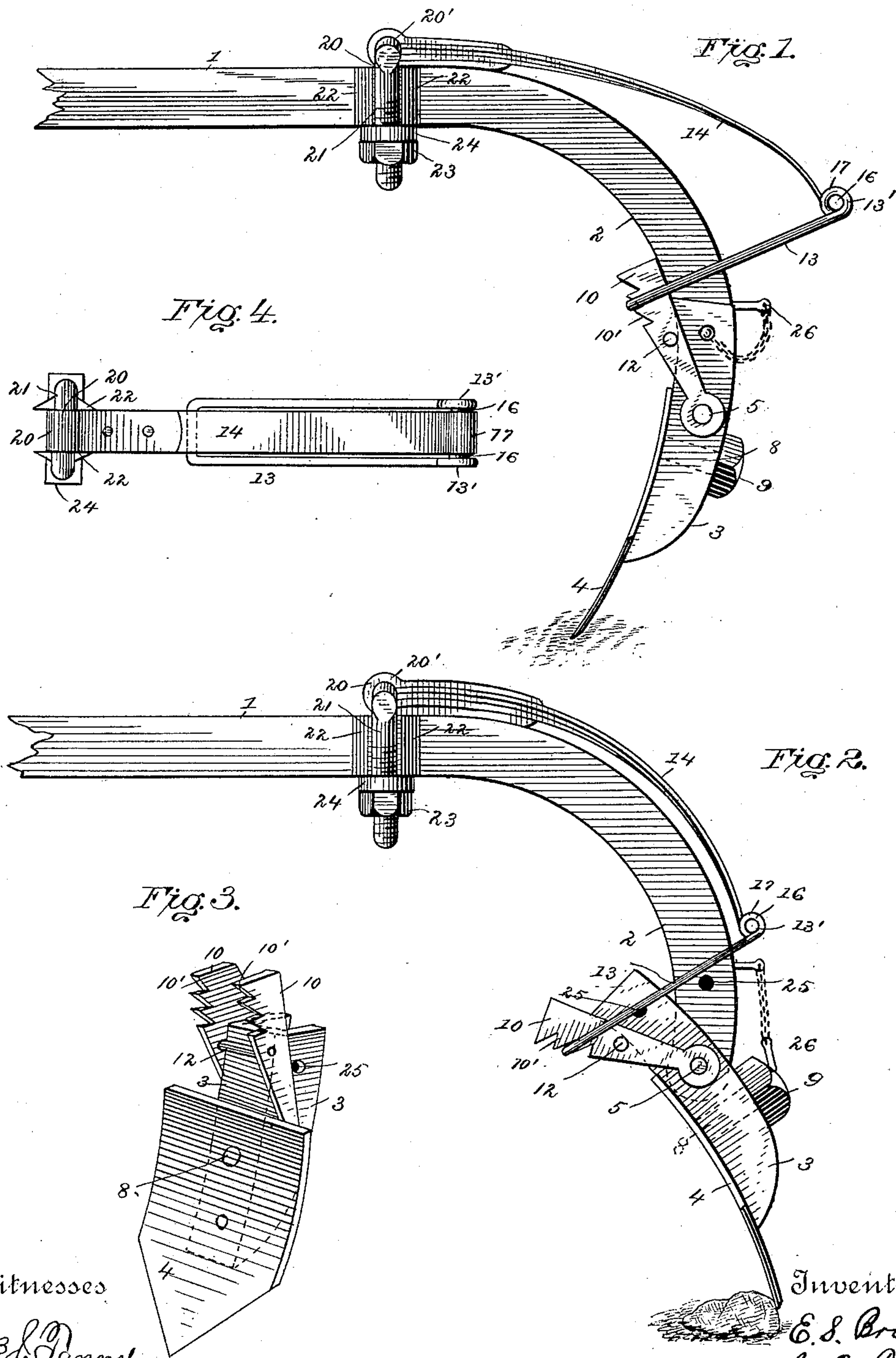


(No Model.)

E. S. & C. R. BROWN.
CULTIVATOR.

No. 358,013.

Patented Feb. 22, 1887.



Witnesses

Wm. J. Pannet

Marvin A. Curtis

Inventors:

E. S. Brown

C. R. Brown

By their Attorney

W. L. Dick

UNITED STATES PATENT OFFICE.

ELISHA S. BROWN AND CHARLES R. BROWN, OF SANTA ROSA, MISSOURI.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 358,013, dated February 22, 1887.

Application filed December 27, 1886. Serial No. 222,528. (No model.)

To all whom it may concern:

Be it known that we, ELISHA S. BROWN and CHARLES R. BROWN, of Santa Rosa, in the county of DeKalb and State of Missouri, have
5 invented certain new and useful Improvements in Cultivators, of which the following is a specification.

The object of the present invention is to provide simple and effective means for attaching
10 cultivator-shovels to their beams or standards, and to permit said shovels to yield or vibrate when obstructions are encountered in the performance of the work.

It has heretofore been proposed to attach a
15 cultivator-shovel to a foot-piece which is pivotally connected with the stock or standard termination of the beam, and has a curved plate-spring made to bear upon such pivoted foot-piece, so as to hold the shovel properly to
20 its work so long as no obstacles are met in its path, and allow it to turn or yield when a stone, root, or other object strikes against the shovel. A mode of attachment of the character mentioned is set forth in Patent No. 338,709,
25 granted to us March 30, 1886.

Our invention is designed as an improvement upon the construction shown in such patent; and it consists in the general construction, arrangement, and combination of
30 parts, which will be hereinafter more fully described, and then specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a cultivator-beam, showing
35 our means of attaching the shovel thereto and holding it to its work. Fig. 2 is a similar view representing the shovel swung backward to clear an obstruction. Fig. 3 is a detail view of the shovel foot or support with its projecting ratchet-plates. Fig. 4 is a detail view of the
40 spring and pivoted stirrup or loop.

The reference-numeral 1 denotes a metal beam, which is designed to be attached to the frame of a cultivator and has its rear portion
45 curved downward, so as to form a standard or stock, 2, as is common in cultivators of many types. This standard portion of the beam carries a foot or holder, 3, for the shovel 4. This foot 3 is composed of plate-metal bent to
50 form two side cheeks and a front wall, and open at the back. The side cheeks embrace the standard 2, and the front wall of the foot

rests upon the front edge of such standard. A bolt, 5, passes through the standard and the side cheeks of the shovel-bearing foot at or
55 near the middle of the length of said foot, and this bolt constitutes the fulcrum upon which the foot 3 can turn or work. The shovel 4 rests upon the front wall of the foot 4, and is secured thereto by a bolt, 8, which passes through
60 the foot at a point below the end of the standard 2, and receives a nut, 9, at its rear end. This nut rests upon the rear edges of the side cheeks of the shovel-holder, and hence the bolt is securely held in place. 65

A lug or projection on the shovel may also pass through a slot in the shovel-holder and serve as an additional fastening medium. Fitted upon the ends of the bolt 5, which pivotally connects the shovel-holder to the standard, 70
75 are oblique projecting plates 10, which bear against the side cheeks of the shovel-holder, and are connected by a pin or rivet, 12, passing through the plates 10, and resting upon the front surface of the shovel-holder. These
80 plates 10 are provided with ratchet-teeth 10' on their front edges, and, as already stated, they extend obliquely in a forward direction from the shovel-holder. The plates 10 are also made tapering, the widest portion being at the
85 top and the narrowest at the bottom. A stirrup or metal loop or link, 13, carried by a plate or leaf spring, 14, embraces the standard and the toothed plates 10, and the cross-bar of
90 said stirrup bears upon the front edges of the untoothed portion of the plates 10, or it can be made to engage either of the notches formed by the teeth on the plates. The stirrup 13 has the ends of its side bars shaped into eyes 13', and these fit on a pintle or bolt, 16, inserted in a tube-
95 shaped terminal, 17, of the spring 14. The ends of the pintle or bolt 16 are riveted or otherwise fastened upon the eyes on the stirrup 13, so that the latter will be retained in place, but can also swing or turn upon the pintles. 95

The spring 14 is preferably made of several superposed leaves or plates, similar to a carriage-spring, and at its thicker or re-enforced portion these leaves are retained between a clip, 20, having an eye, 20', through which
100 passes a clevis-bolt, 21. This bolt embraces the beam 1 and rests upon grooved filling-blocks 22 at the sides of such beam. The screw-threaded ends of the branches of the clevis-

bolt receive nuts 23, which bear upon a plate, 24, fitted on the clevis-bolt and resting against the under side of the beam. By such means the spring 14 is firmly secured to the beam, and is effectually prevented from slipping thereon, no matter what may be the strain to which the spring is subjected in the use of the cultivator.

It will be understood that the swinging stirrup carried by the free end of the spring rests upon the plates 10, and that consequently the shovel-holder is forcibly drawn toward the standard or stock. During the performance of work in loose ground, or in the soil free of obstructions, the shovel becomes practically a rigid or fixed body, since the spring and stirrup operate in the manner already stated. When, however, a resistance-body is encountered, liable to stop the progress of the cultivator and injure the parts, the pressure of the spring is overcome and the shovel-foot will swing backward and throw the shovel into the position shown in Fig. 2. By such movement the obstacle is passed, and immediately after such passage the shovel swings again into its normal or working position, as is shown in Fig. 1. It becomes necessary to adjust the pressure of the spring upon the shovel according to the nature of the ground in which it is to work, and for other reasons. This adjustment is effected by shifting the stirrup along the toothed plates, it being understood that when the stirrup is straight or nearly straight, by reason of its engagement with some of the upper teeth

on the plates, the pressure of the spring will be greater than if the stirrup is inclined and rests upon the narrowest portions of the plates 10. A hole, 25, may be made in the shovel support and standard for the passage of a bolt, 26, to rigidly lock the said parts together, if desired.

Having thus fully described our invention and the best way known to us for carrying the same into effect, what we claim, and desire to secure by Letters Patent, is as follows:

1. The combination, with the beam, standard, and spring carrying a pivoted stirrup, of the shovel-holder pivotally connected with the standard, the toothed plates projecting obliquely from said shovel-holder, and the stirrup engaging with said plates, substantially as herein set forth.

2. The combination, with the beam and standard, of a pivoted shovel-holder having teeth or projections, the spring secured to the beam, the stirrup or loop hung on the spring and engaging with the teeth or projections on the shovel-holder, substantially as herein set forth.

In testimony whereof we have hereunto set our hands this 24th day of December, 1886.

ELISHA S. BROWN.
CHARLES R. BROWN.

Witnesses:

CHAS. E. HILL,
LESTER C. CARPENTER.