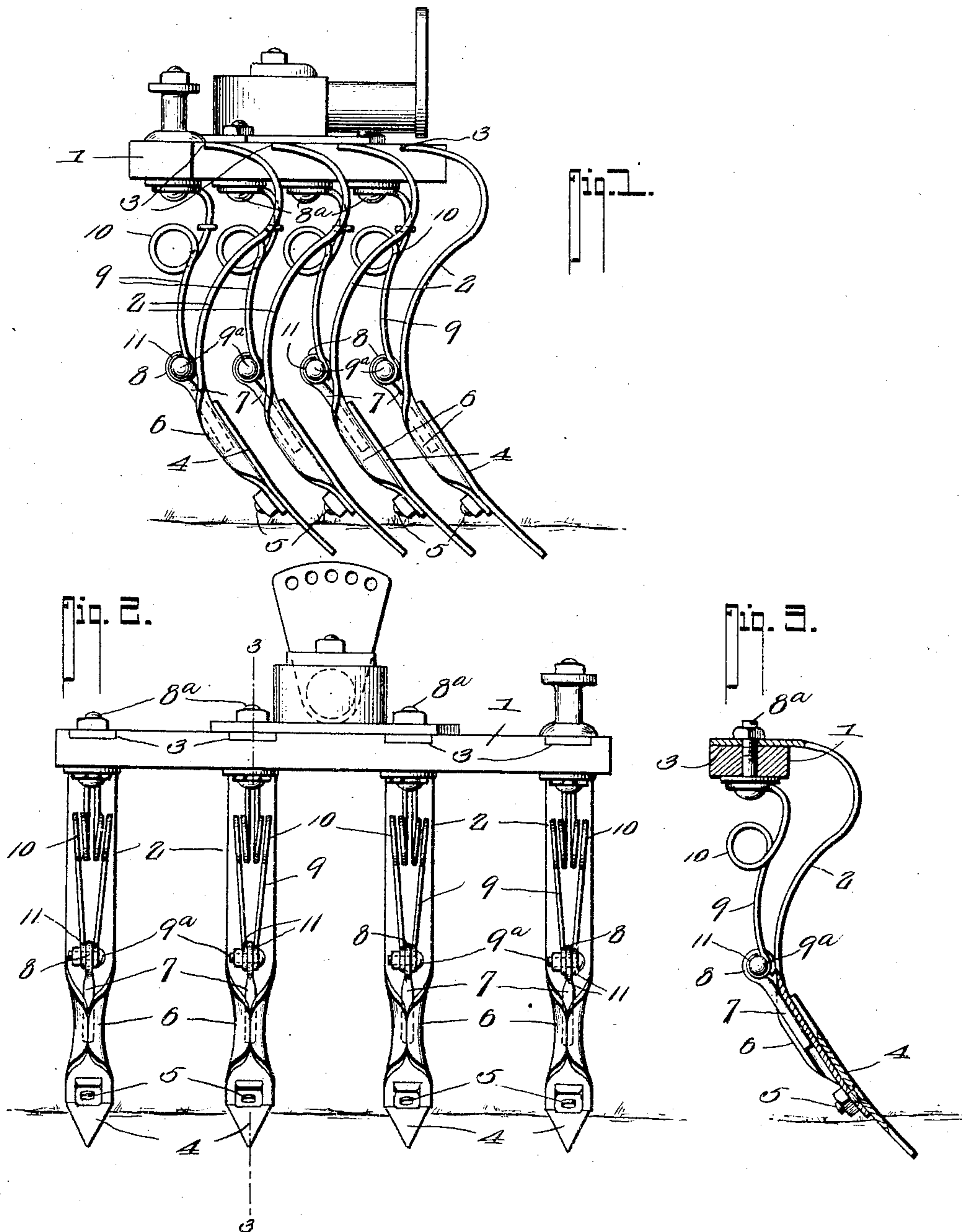


No. 779,528.

PATENTED JAN. 10, 1905.

B. P. COLLIER.
CULTIVATOR ATTACHMENT.
APPLICATION FILED OCT. 22, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN PANNELL COLLIER, OF NEW DECATUR, ALABAMA.

CULTIVATOR ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 779,528, dated January 10, 1905.

Original application filed December 14, 1903, Serial No. 185,151. Divided and this application filed October 22, 1904. Serial No. 229,596.

To all whom it may concern:

Be it known that I, BENJAMIN PANNELL COLLIER, a citizen of the United States, residing at New Decatur, in the county of Morgan and State of Alabama, have invented a new and useful Cultivator Attachment, of which the following is a specification.

This invention relates to cultivators, and especially to cultivators of the class which have been shown and described in Letters Patent of the United States No. 762,804, issued to myself on the 14th day of June, 1904, of which the present is a divisional application.

The present invention has particular reference to the cultivator-gangs; and the special object is to improve and simplify the construction of the spring-bars upon which the earth-engaging elements are mounted.

With this and other ends in view the invention consists in the combination, with a tool-supporting spring-bar, of an auxiliary spring, whereby said spring-bar is strengthened and reinforced.

The invention further consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications to which recourse may be had within the scope of the invention and without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a side elevation showing a cultivator-gang constructed in accordance with the principles of the invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a sectional view taken on the line 3 3 in Fig. 2.

Corresponding parts in the several figures are indicated by like characters of reference.

The improved cultivator-gang comprises a beam 1, supporting a plurality of tool-carrying spring-bars 2 2, each consisting of a flat

steel spring sigmoidal in shape, said spring bars or standards being supported at their upper ends upon the beam 1, where they are suitably spaced apart, each gang consisting, preferably, of four standards. It is preferred that the upper edge of the beam 1 be provided with recesses 3, affording seats for the upper ends of the standards. The plows or earth-engaging blades 4, carried by the standards, may be of any desired construction, reversible, if desired, and they may be secured to the respective standards by means of heel-bolts 5 or in any suitable manner. When the gang is used for cultivating purposes, the entire set of four plow-carrying standards is usually employed. Occasionally, however, it may be found desirable to use a gang of two standards only, and in such an event those which are not required may be readily detached.

In order to secure a high degree of flexibility and resiliency of the plow-carrying standards, the latter are preferably made of comparatively light material; but when light material is employed it follows that strengthening means are required in order to present the necessary resistance. In order to effect this, each of the flat sigmoidal standards is bent at its lower end, so as to form a tubular portion 6, in which is seated a pin 7, having an eye 8, through which extends a cross pin or bolt 9^a.

Upon the bolt 8^a, which serves for the attachment of the standard to the beam, is mounted a reinforcing-spring 9, having coils 10 and the terminal ends of the arms of which are provided with eyes 11, engaging the cross pin or bolt 9 and connected by the latter with the eye 8 of the pin or bolt 7. The reinforcing-springs, one of which is used in connection with each of the spring-standards, serve to stiffen the latter, especially at their upper ends, where they are most liable to receive injury when the machine is in operation. At the same time the spring-standards thus constructed and reinforced will be found to possess the degree of flexibility which is essential to the most successful operation of the device.

Having thus described the invention, what is claimed is—

1. In a cultivator-gang, a resilient tool-carrying bar, a socket formed upon the latter near

its lower end, an eyebolt mounted in said socket, and a reinforcing-spring having arms connected with said eyebolt.

2. In a cultivator-gang, a tool-carrying
5 beam, sigmoidal resilient tool-carrying bars or standards connected with said beam, sockets formed upon the rear sides near the lower ends of said standards, eyebolts seated in said
10 sockets, auxiliary springs mounted under the frame-bar, bolts extending through the latter and connecting it with the tool-carrying standards and with the auxiliary springs, and means connecting the arms of said auxiliary springs
15 with the eyebolts.

3. A resilient tool-carrying standard having
15 edges bent or lapped over to form a socket, a pin seated in said socket and having an eye at its upper end, and an auxiliary reinforcing-spring having arms engaging said eye.

20 4. A beam having seats formed in the upper

side thereof, sigmoidal resilient standards engaging said seats and having sockets formed upon the rear sides near their lower ends, pins engaging said sockets and having eyes at their
25 upper ends, and auxiliary reinforcing-springs having arms provided with intermediate coils and with eyes at their lower ends, said springs being connected at their upper ends with the connecting-bolts and the eyes at the lower
30 ends of the arms of said springs being connected with the eyes of the pins seated in the sockets.

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

BENJAMIN PANNELL COLLIER.

Witnesses:

JAMES H. WIGGINS,

W. A. PETTY.