A. BRIGDEN.

SPRING TOOTH CULTIVATOR.

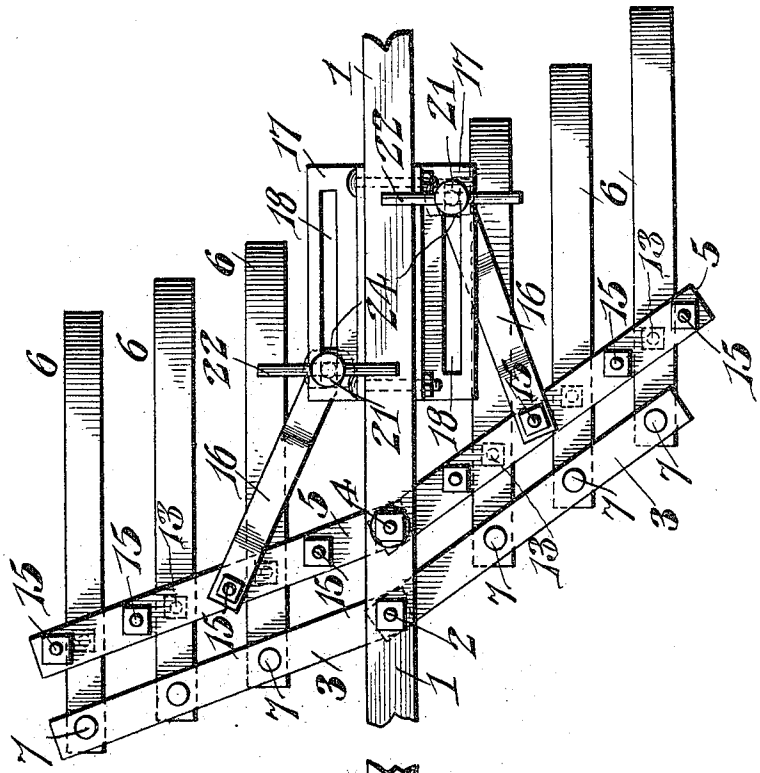
APPLICATION FILED JAN. 31, 1910.

962,001.

Patented June 21, 1910.

2 SHEETS—SHEET 1.

Fig. 2.



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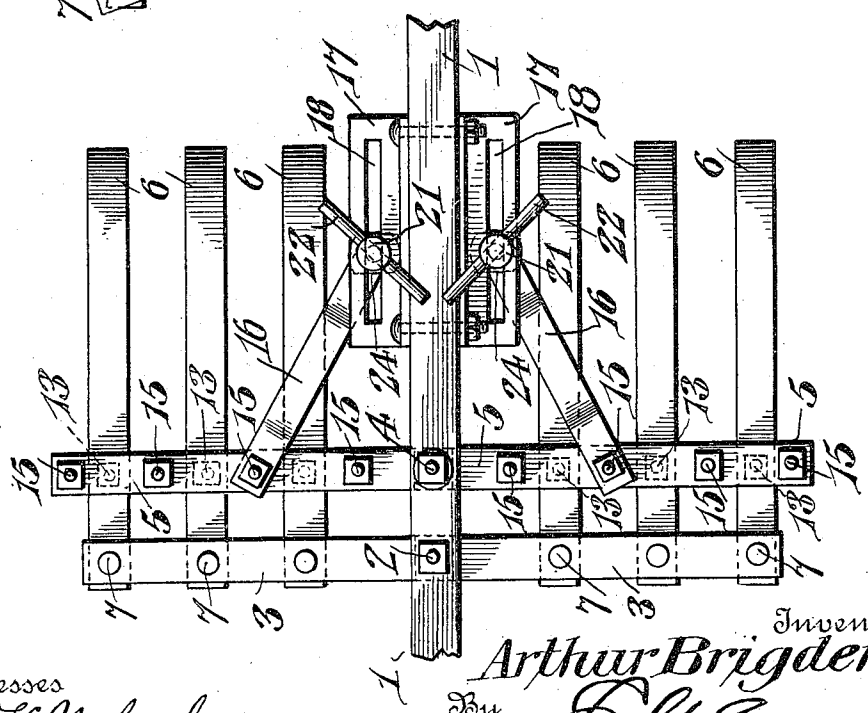

Witnesses

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Fig. 4.

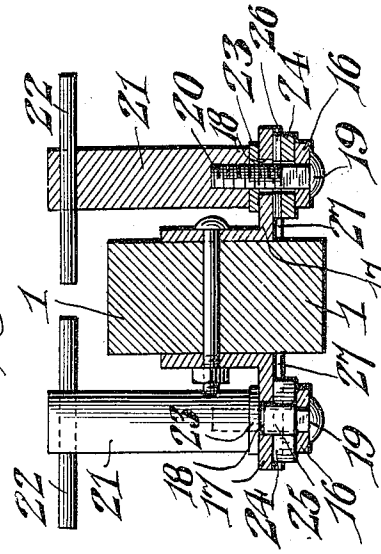


Fig. 5.

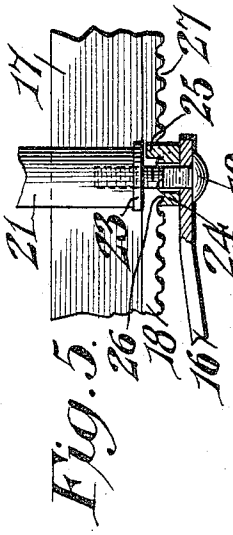


Fig. 7.

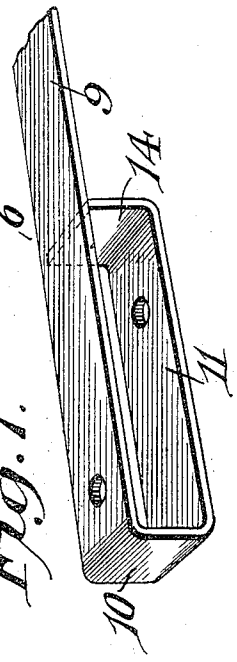


Fig. 3.

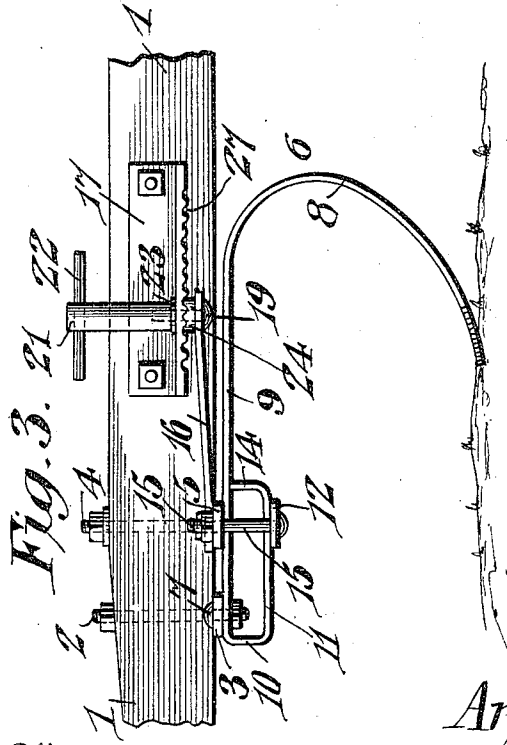


Fig. 6.

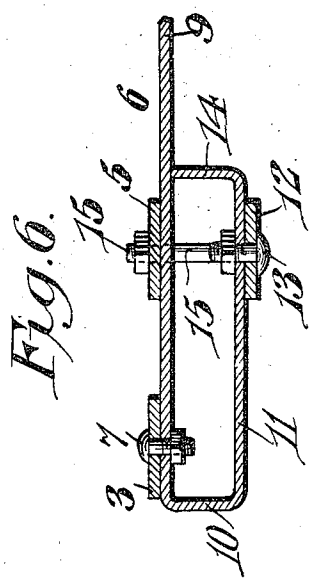
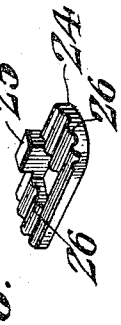


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR BRIGDEN, OF ALBERTVILLE, ALABAMA.

SPRING-TOOTH CULTIVATOR.

962,001. Specification of Letters Patent. Patented June 21, 1910.

Application filed January 31, 1910. Serial No. 541,196.

To all whom it may concern:

Be it known that I, ARTHUR BRIGDEN, a citizen of the United States, residing at Albertville, in the county of Marshall and State of Alabama, have invented a new and useful Spring-Tooth Cultivator, of which the following is a specification.

This invention relates to spring tooth cultivators of that type in which a gang of teeth is disposed on each side of the beam, and each gang is independently adjustable so as to be disposed at any desired angle to the line of travel of the cultivator while maintaining their parallel relation to the beam.

The object of the present invention is to provide a simple construction by which the gangs may be readily adjusted and secured in the adjusted position, and by which the teeth will be secured in such a manner as to have the necessary play without being so loosely supported that they are liable to become displaced.

The objects I have in view are attained by the use of such a device as is illustrated in the accompanying drawings, and the invention consists in certain novel features thereof which will be hereinafter first fully described, and then specifically pointed out in the claims.

In the drawings, Figure 1 is a plan view of a cultivator embodying my present improvements, and showing the gangs of teeth adjusted so that their front ends are in the same plane at a right angle to the beam. Fig. 2 is a similar view, showing the teeth adjusted so as to lie at a different angle transversely to the beam. Fig. 3 is a detail side elevation of the device. Fig. 4 is a transverse vertical section through the beam and the adjusting and clamping means. Fig. 5 is a detail longitudinal section of the adjusting and securing device. Fig. 6 is a detail longitudinal section of the front end of one of the teeth. Fig. 7 is a perspective view of the front end of the tooth. Fig. 8 is a detail perspective view of a clamping plate forming part of the adjusting and securing mechanism.

The beam 1 is of the usual construction and is equipped at its front end with a whiffletree or other means for the attachment of draft animals, and at its rear end is provided with suitable guiding handles, these parts being all of ordinary construction and arrangement and being omitted from the drawings for the sake of clearness. At a suitable point of the beam, in advance of the rear end thereof, a pivot bolt 2 is mounted therein, the lower end of said pivot bolt being extended below the beam and having cross bars 3 mounted thereon. A second pivot bolt 4 is mounted in the beam adjacent to and in rear of the bolt 2, and the end of this pivot bolt likewise projects below the beam and has the inner ends of cross bars 5 mounted thereon. The teeth 6 are arranged in gangs and have their front ends secured to the front cross bar 3 by means of bolts 7, as shown, the form of cultivator illustrated having three teeth arranged in each gang. The teeth are each formed with a curved spring shank 8 having its lower end resting on and adapted to take into the ground as the machine is drawn forward, while the upper horizontal portion 9 extends forward and passes under the cross bar 5 and is secured to the cross bar 3, as described, and as clearly shown in Fig. 6. The tooth is also shaped to provide a lower branch which is secured at or near its end to a lower cross bar in rear of the front extremity of the horizontal portion 9 (which may be termed the beam or drag bar), the arrangement providing two points of support for the tooth, without affecting the resiliency of the same. In the form of the invention illustrated, the drag bar is turned directly downward, as at 10, and then carried backward, as indicated at 11, parallel with the horizontal portion 9, and is secured to a lower cross bar 12 by means of a bolt 13, the portion 11 of the tooth resting on the upper side of said cross bar. The said lower branch 11 may project beyond the cross bar and have its rear extremity 14 bent upward so as to form a brace which will bear against the under side of the upper portion of the tooth and aid in supporting the same. The lower cross bar 12 is supported by bolts 15 which depend from the upper cross bar 5 between the teeth 6, as shown most clearly in Fig. 1, so that the teeth will be firmly supported and held constantly in their parallel relation by reason of their connection with the under cross bar 12, but will not be secured to the upper cross bar 5, and consequently will be free to follow the movement of the cross bar 3 and will have sufficient resiliency to prevent breaking of the teeth when striking a large stone or other obstruction in the travel of the machine over the field.

In order to adjust the gang of teeth, I employ a link 16 which is pivotally attached at its front end upon one of the bolts 15 and extends rearwardly and inwardly therefrom to a guide plate or bracket 17 which is secured to the side of the beam and is provided with an outstanding portion having a longitudinal slot 18 therein. The inner rear end of the link projects under the horizontal member of the guide plate 17 and in the said end of the link is mounted a bolt 19 having an angular shank adapted to engage an angular opening in the link, whereby the bolt will be prevented from rotation and having a threaded portion 20 above the said angular shank which is engaged by a thimble or binding post 21 arranged above the guide plate 17 and provided with any convenient form of handle 22. A washer 23 is provided between the binding post 21 and the upper side of the guide plate, and below the guide plate a nut 24 is fitted on the bolt 19, the said nut having an upstanding lug 25 adapted to engage and play in the slot 18 of the guide plate. The upper surface of the nut 24 is corrugated or notched as indicated at 26, and the under side of the guide plate is likewise corrugated or notched as indicated at 27, the corrugations on these parts being adapted to inter-engage, whereby, when the binding post is turned home, the parts will be securely clamped together and longitudinal movement of the nut upon the guide will be positively prevented. It will be readily seen that when it is desired to shift the position of the cultivator teeth, owing to the width of the furrow or the inequality of the ground, or for any other reason, it is necessary merely to turn the binding post so as to release the nut 24 from the guide plate, whereupon the binding post may be utilized as a handle to be moved forward or backward over the guide plate and thereby shift the position of the cutivator teeth through the link 16 which will necessarily follow the movement of the binding post. When the desired adjustment has been obtained, the binding post is turned home against the guide plate and the nut 24 will consequently be again locked in engagement with the guide plate and the parts firmly held in their adjusted position. The tooth or lug 25 on the nut or clamping plate 24, by fitting within the slot 18 in the guide plate, will effectually prevent twisting of the said nut or clamping plate, and consequently this element will always be in position to engage the corrugations on the under side of the guide plate to secure the teeth in any position to which they may be adjusted. Inasmuch as the binding post engages over the upper end of the clamping bolt 19, the rotation of the binding post will readily cause the bolt to ride up into the binding post or to drop therefrom so that the use of wrenches or other tools, or the necessity of employing both hands in the operation of adjusting the cultivator teeth, is obviated.

My device is very simple in its construction, the parts are compactly arranged, and the operation of the several parts is positive.

It will be noted that the shank of the tooth is doubled under on itself at its front extremity and that the doubled under portion serves to reinforce and aid in supporting the main portion of the shank. Furthermore, the doubled under portion provides a second point at which the tooth may be secured without in any way affecting the resiliency of the shank.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In a cultivator, the combination of a beam, cross bars pivotally secured thereto and arranged in pairs, a cross bar supported by the rear bar of the pair of bars and arranged below the same, and a tooth having a horizontal portion passing under the pair of cross bars and secured to the front cross bar and having a lower portion secured to the cross bar supported by the rear cross bar of the pair of cross bars.

2. In a cultivator, the combination of a beam, a plurality of teeth each having its front end formed into upper and lower branches, cross bars pivotally attached to the beam and extending over the teeth, connections between the front cross bar and the front ends of the teeth, and a supporting bar hung on the rear cross bar and attached to the lower branches of the teeth.

3. The combination of a beam, a pair of cross bars pivotally attached thereto, a plurality of teeth having their front portions formed into two horizontal branches, the rear end of the lower branch being bent upward and extending toward the upper branch to brace the same, connections between the front ends of the said upper branches and the front cross bar, suspending bolts secured in the rear cross bar between the teeth, a supporting bar carried by said suspending bolts, and connections between the said supporting bar and the lower branches of the teeth.

4. The combination of a beam, a guide plate on the side of the beam, a cross bar pivotally attached to the beam, teeth connected with said cross bar, a link pivotally attached to the cross bar, and a binding post rising from and slidably mounted in the guide plate and connected with the said link to move the same along the guide plate and clamp it thereto.

5. The combination of a beam, a guide plate on the side of the same having a longitudinally slotted outwardly projecting portion, a cross bar pivotally attached to the beam, a series of teeth connected with the

said cross bar, a link having its front end pivotally attached to the cross bar, a bolt carried by the rear end of the link and projecting up through the longitudinally slotted portion of the guide plate, and a binding post mounted on the upper end of the said bolt and rising from and adapted to bear upon the guide plate to clamp the link thereto.

6. The combination of a beam, a guide plate thereon having a longitudinally slotted projecting portion, a cross bar pivotally attached to the beam, a series of teeth connected with the cross bar, a bolt carried by the rear end of the link and projecting upward through the slot in the guide plate, a clamping plate mounted on the bolt above the link and provided with a projection engaging the slot in the guide plate, and a binding post mounted on the upper end of the bolt and adapted to be turned home against the guide plate whereby to clamp the clamping plate thereagainst.

7. The combination of a beam, a guide plate secured thereto and having a longitudinally slotted portion provided with a series of notches on its under side, a cross bar pivotally attached to the beam, a series of teeth connected with the said cross bar, a link pivotally attached to the cross bar, a bolt carried by the rear end of the said link and projecting upward through the slot in the guide plate, a clamping plate mounted on the end of the link around the bolt and provided with a notched upper surface adapted to engage the notched under surface of the guide plate, and a binding post mounted on the upper end of the bolt and adapted to be turned home against the guide plate.

8. In a cultivator, the combination of a frame, and a tooth having a shank secured to the frame and having a doubled under portion at the front end of the shank secured to the frame below and in rear of its front extremity.

9. In a cultivator, the combination of a frame, and a tooth having a shank secured to the frame and having a doubled under portion secured to the frame below its main portion, the rear extremity of said doubled under portion being turned up to bear against the under side of the main portion of the shank.

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

ARTHUR BRIGDEN.

Witnesses:
B. W. SMITH,
B. F. WILSON.