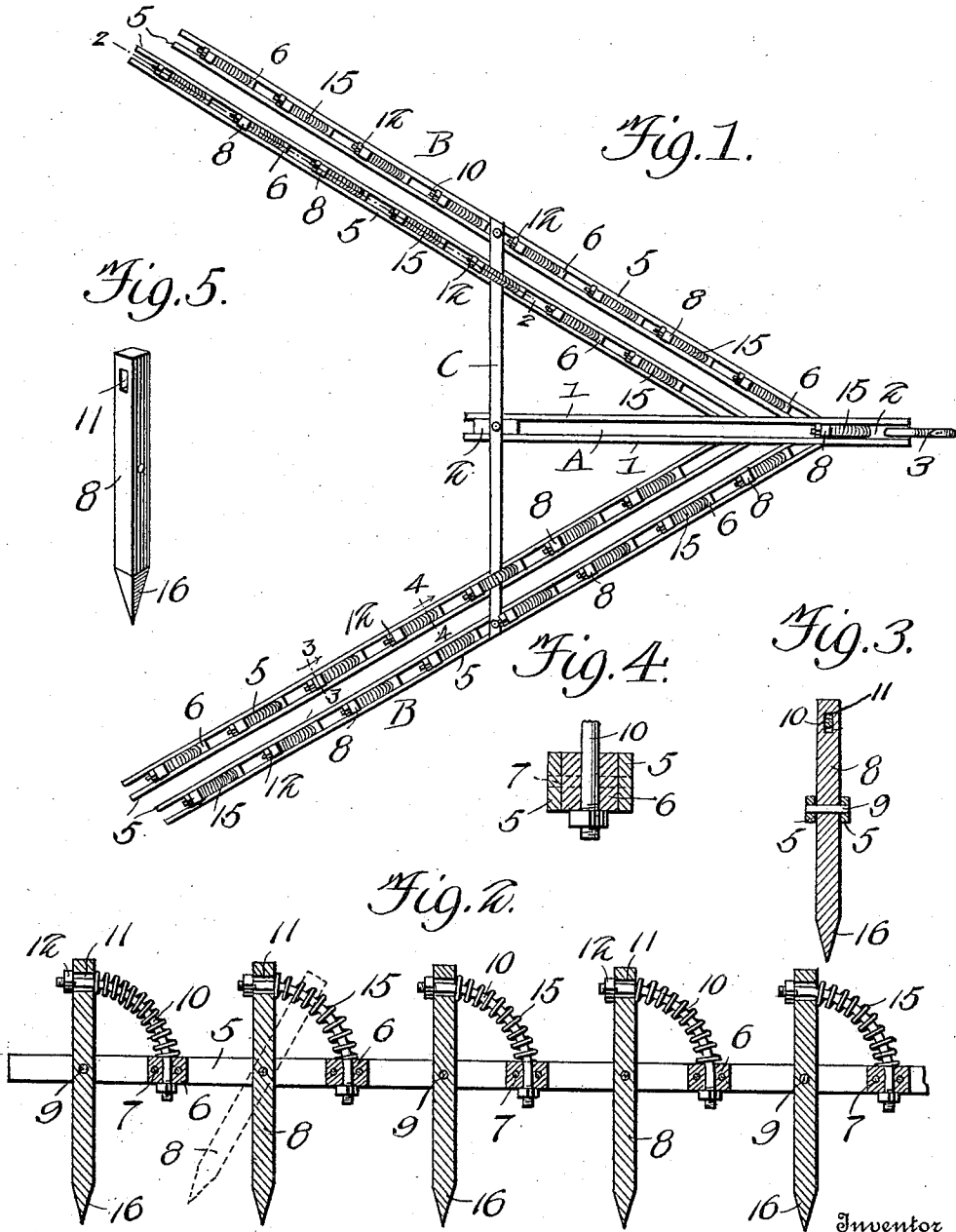


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HARROW.
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1,059,832.

Patented Apr. 22, 1913.



Witnesses

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LEVI CHAMBERS, OF BICKNELL, INDIANA.

HARROW.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEVI CHAMBERS, a citizen of the United States, residing at Bicknell, in the county of Knox and State of Indiana, have invented new and useful Improvements in Harrows, of which the following is a specification.

This invention relates to harrows, and it has for its object to produce a spring tooth harrow of simple and improved construction.

A further object of the invention is to produce a simple and improved harrow frame in which spring actuated teeth may be pivotally mounted.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same 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 drawing has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawing,—Figure 1 is a top plan view of a harrow constructed in accordance with the invention. Fig. 2 is a sectional view taken on the line 2—2 in Fig. 1. Fig. 3 is a transverse sectional detail view taken on the line 3—3 in Fig. 1. Fig. 4 is a transverse sectional detail view taken on the line 4—4 in Fig. 1. Fig. 5 is a perspective view of one of the teeth detached.

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

The frame of the improved harrow is composed essentially of a center bar A, and rearwardly diverging side bars B, B, said side bars being connected at their front ends with the center bar. Said side bars are also connected with the center bar by means of braces C.

The center bar is composed of side members consisting of metallic straps or bars 1, 1 which are spaced apart at intervals by means of blocks 2, one of which, at the front end of the center bar, is provided with a draft hook 3. The side members 1, 1 are connected together at intervals by fastening members, such as rivets or bolts. The di-

vergent side bars B, B are likewise composed each of a pair of metallic straps or side members 5 which are spaced apart at intervals by blocks 6 and connected together by fastening members, such as bolts or rivets 7. Harrow teeth 8 are supported pivotally at the front end of the center bar A and at suitable intervals on the side bars B, said teeth being pivotally supported on pins or bolts 9. A spacing block 2 or 6, as the case may be, in front of each harrow tooth is provided with an upwardly and rearwardly extending arcuate guide member 10 which is guided through a slot 11 of the harrow tooth in rear thereof and is provided with a stop member 12 to limit the movement in a rearward direction of the upper extremity of the harrow tooth. The arcuate guides 10 are to be approximately concentric with the pivots 9 on which the harrow teeth are thus capable of swinging. Each of the guide members 10 serve to support a coiled spring 15, the tension of which is exerted in a rearward direction against the upper end of a harrow tooth which will thus be normally maintained in an upright position. The stop members 12 may consist of nuts threaded on the guide members 10, and said nuts may be adjusted for the purpose of correcting any deviation of the harrow tooth from the desired position.

In the operation of this invention, when the harrow is dragged over the ground, the downwardly extending ends of the teeth which are provided with sharp points will yield in a rearward direction, thus tensioning the springs 15, the tendency of which is to restore the teeth to normal position. The resilient action of the teeth will be found extremely effective in breaking and pulverizing the soil, and the yielding action of the teeth makes the harrow more easily and effectively operated than harrows having rigid teeth. The strain on the operator, as well as on the draft animals, will be minimized, and the operation of the device will be found to be thoroughly effective.

Having thus described the invention, what is claimed as new, is:—

1. In a harrow, a frame bar comprising two side members, spacing blocks interposed therebetween, and connecting bolts extending therethrough, a harrow tooth pivoted in rear of a spacing block and having a slot at its upper end, an arcuate guide member extending from the spacing block through the

slot and having a stop member, and a spring on said guide member engaging the harrow tooth.

2. In a harrow, a frame bar including two
5 spaced side members, a harrow tooth pivoted therebetween and having a slot, a guide member supported in front of the harrow tooth and extending through the slot therein, and a tooth engaging spring coiled on the
10 guide member.

3. In a harrow, a frame bar including two spaced side members, a harrow tooth pivoted therebetween and having a slot, a guide

member supported in front of the harrow tooth and extending through the slot therein, and a tooth engaging spring coiled on the guide member; and a stop member adjustable on the guide member to limit the movement of the tooth under the tension of the spring. 15

In testimony whereof I affix my signature
in presence of two witnesses. 20

LEVI CHAMBERS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
