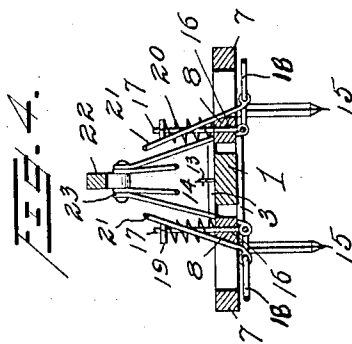
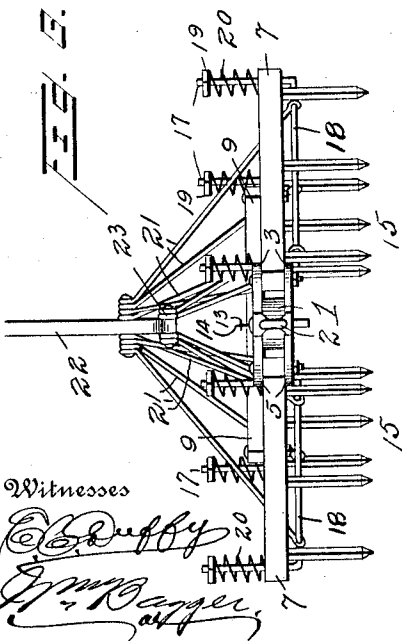
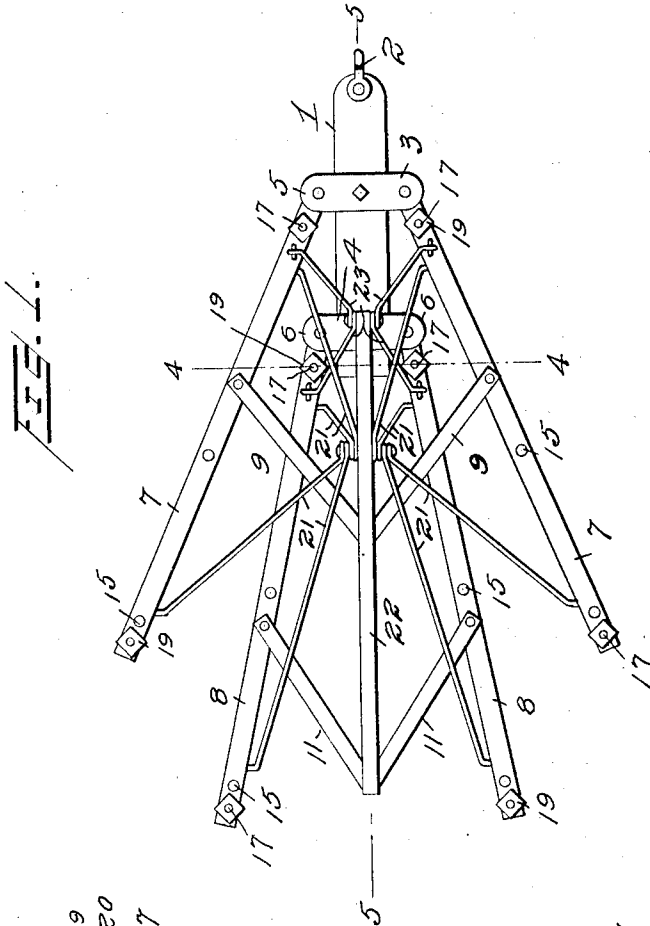


M. D. MAXWELL;
HARROW.
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1,055,202.

Patented Mar. 4, 1913.

2 SHEETS-SHEET 1.



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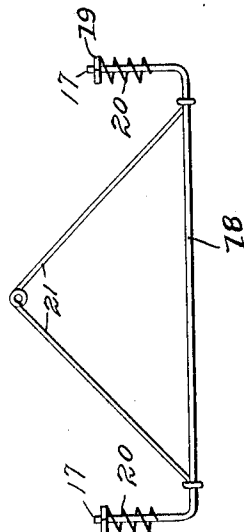
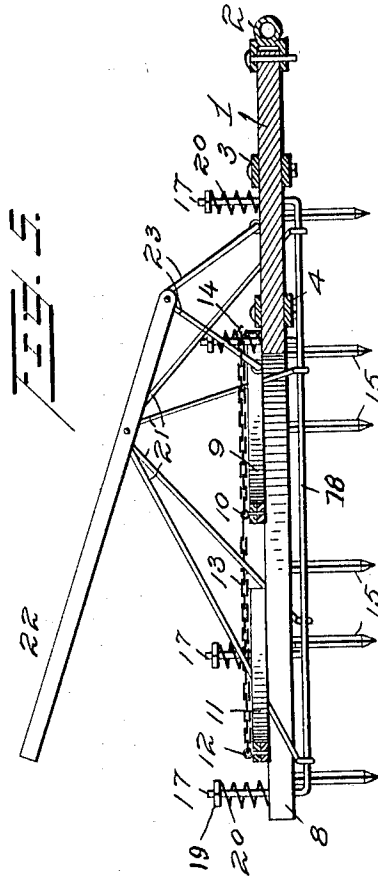
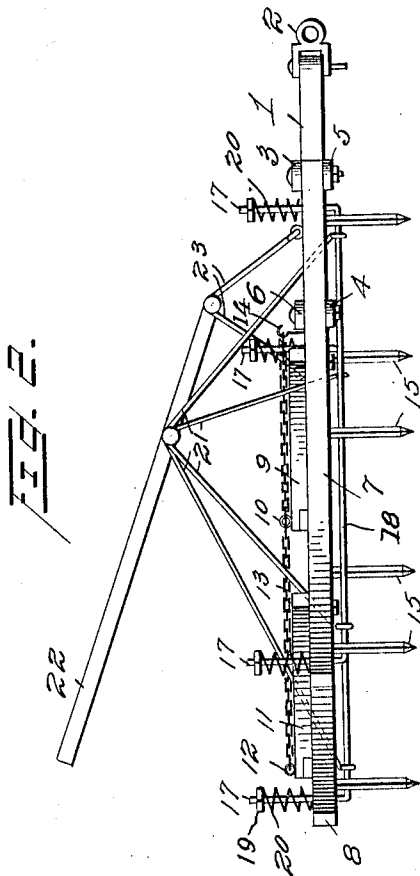
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2 SHEETS-SHEET 2.



Witnesses

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FIG. 5.

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UNITED STATES PATENT OFFICE.

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HARROW.

1,055,202.

Specification of Letters Patent.

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Application filed June 8, 1912. Serial No. 702,529.

To all whom it may concern:

Be it known that I, MATSON D. MAXWELL, a citizen of the United States, residing at Atkins, in the county of Pope and State of Arkansas, have invented new and useful Improvements in Harrows, of which the following is a specification.

This invention relates to harrows, and one object of the invention is to produce a harrow of simple and inexpensive construction which may be readily adjusted as to width so as to operate on a strip of greater or lesser width, as may be desired.

A further object of the invention is to produce an adjustable harrow of simple and inexpensive construction which shall be equipped with means whereby the teeth of the harrow may be cleared from trash.

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 claim.

In the accompanying drawings 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 claim may be resorted to when desired.

In the drawings,—Figure 1 is a top plan view of a harrow constructed in accordance with the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation. Fig. 4 is a transverse sectional view taken on the line 4—4 in Fig. 1. Fig. 5 is a longitudinal sectional view taken on the line 5—5 in Fig. 1. Fig. 6 is a detail view of one of the cleaning shoes or runners, detached.

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

A bar or body member 1 having at its front end a clevis 2 for the attachment of draft is provided with pairs of cross pieces 3 and 4 projecting laterally so as to form ears or lugs 5 and 6 between which the front and rear harrow bars or wings 7 and 8 are pivotally mounted. The wings 7, 7 and 8, 8 diverge rearwardly in substantially V-shape, as shown. Pivotally connected with the forward wings 7, 7 are the front ends of links or toggle members 9, 9 which extend rear-

wardly across the rear wings 8 and are pivotally connected together by a pivot member, such as a pin or bolt 10. Pivotally connected with the rear wings 8, 8 are the front ends of links or toggle members 11, 11, the rear ends of which are pivotally connected together by a pin or bolt 12. Connected with the bolt 12, which is preferably an eye bolt, is the rear end of a chain 13, the forward end of which is adjustably connected with a hook 14 on the bar or body member 1 by engaging one of the chain links with said hook. An intermediate link of the chain is suitably connected with the bolt or pivot member 10.

It will be readily seen that by pulling the chain 13 in a forward direction, the links or toggles 9 and 11 will spread the wings 7 and 8 apart, and that by connecting the chain with the hook 14, the links or toggles will be prevented from collapsing, thereby sustaining the wings of the harrow in extended position to take in as wide a strip of ground as may be warranted by the dimensions of the harrow. On the other hand, by detaching the chain from the hook 14, the wings of the harrow will be permitted to collapse as far as may be desired.

The harrow bars or wings 7 and 8 are provided with teeth or spikes 15, and said wings or harrow bars are also provided with apertures 16 for the passage of the upwardly extending limbs 17 of the shoes or runners 18, which latter extend longitudinally beneath the respective harrow bars adjacent to the upper ends of the teeth 15. The limbs 17 which normally project upwardly above the harrow bars are provided at their upper ends with stop members, such as nuts 19, threaded thereon, and between said stop members and the upper faces of the harrow bars are interposed springs 20 which are coiled about the limbs 17 for the purpose of maintaining the shoes or runners 18 in a raised position relatively to the wings or harrow bars. The several shoes 18 are connected by means of links or rods 21 with one arm of a lever 22 which is fulcrumed on uprights or supporting members 23 rising from the wings or harrow bars 7 and 8; the other arm of the lever 22 extends rearwardly so as to be within convenient reach of the operator who walks behind the harrow or for whom a riding attachment may be provided, when desired.

As will be readily seen from the foregoing

description taken in connection with the drawings hereto annexed, a simple adjustment of the chain 13 with reference to the hook 14 will cause the harrow to be spread 5 or collapsed to any desired extent so as to take in a strip of such width as may be desired. When enough trash has been accumulated by the harrow to interfere with its progress and effective operation, the operator by manipulating the lever 22 may 10 depress the shoes or runners 18 against the tension of the springs 19, thereby exerting a lifting action on the wings or harrow bars and causing the teeth of the latter to be dis- 15 engaged from the obstructing trash which will be left behind as the harrow moves forwardly supported by the runners. As soon as the harrow is clear of the trash, the operator by releasing the lever 22 is enabled to 20 restore the parts to initial working position.

It will be noticed that the links 21, as well as the supporting members 23 are to be connected with the shoes or runners 18, with the lever 22 and with the harrow bars or 25 wings 7 and 8 in such a manner that the ex-

panding and collapsing of the harrow will not be interfered with.

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

In a harrow, a body bar, front and rear 30 tooth carrying wings connected pivotally with each side of the body bar, means for spreading and collapsing the wings and for retaining them in adjusted position, vertically movable runners associated with the 35 wings and having upwardly extending limbs, springs whereby said runners are normally forced upwardly with reference to the wings, supporting means connected with the wings, a lever fulcrumed on the support- 40 ing means, and rods connecting one arm of said lever with the vertically movable runners.

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

MATSON D. MAXWELL.

Witnesses:

J. H. BRADLEY,
JOE ARTS.

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