(No Model.)

E. P. FORD & A. B. MOFFITT.

HARROW.

No. 485,623. Patented Nov. 8, 1892.

Fig. 1.

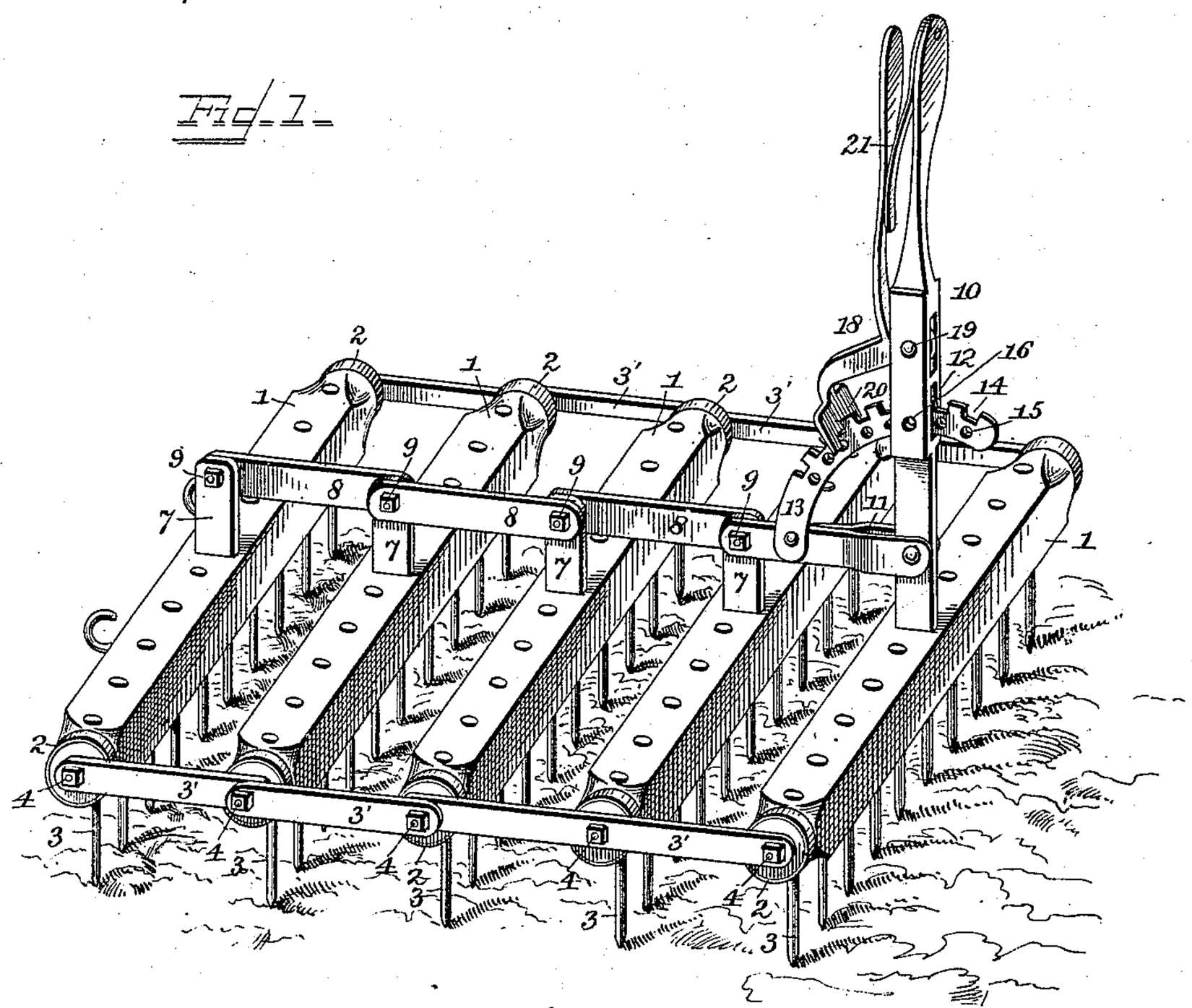
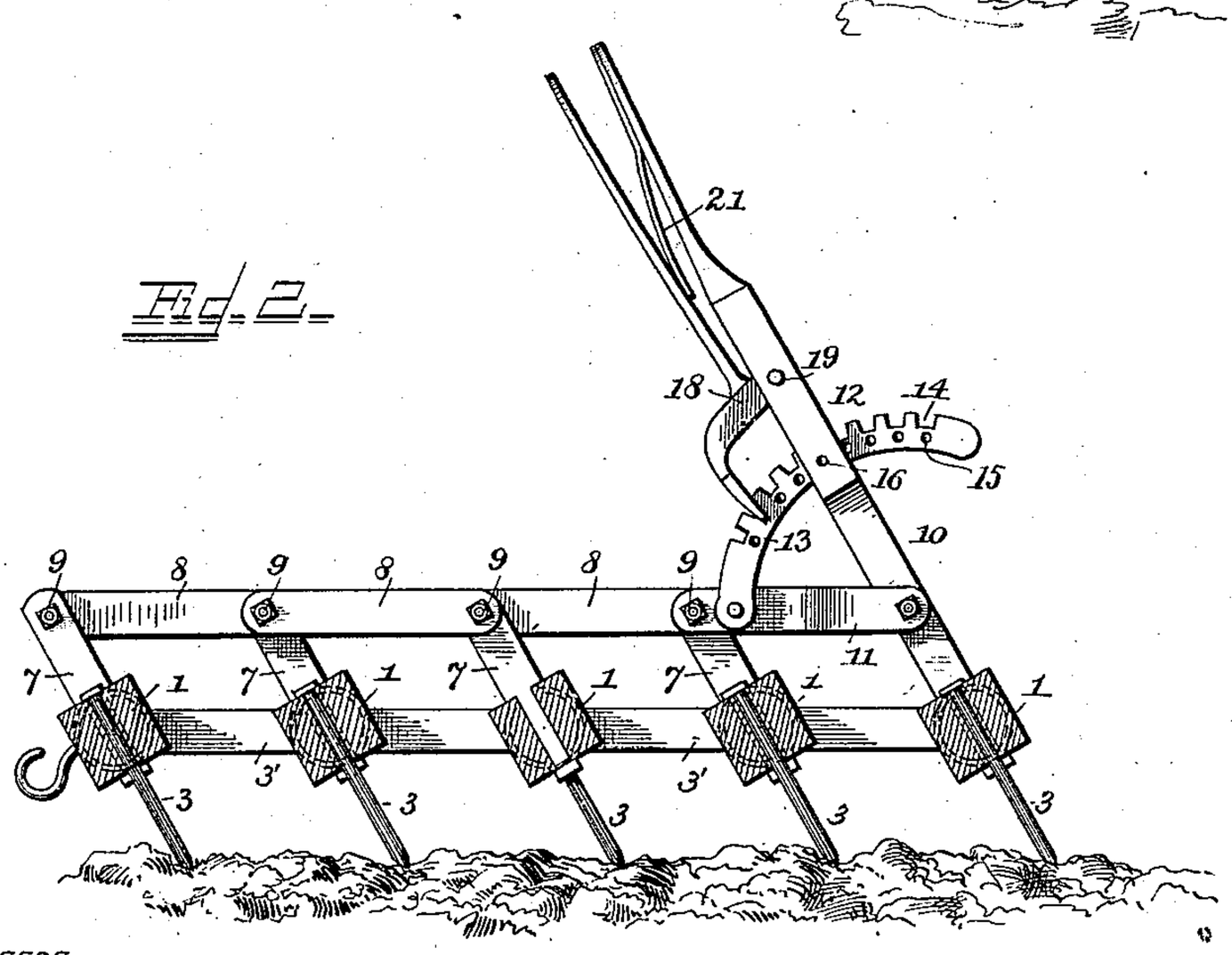


Fig. 2.



Witnesses

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EDWARD P. FORD AND AARON B. MOFFITT, OF IRVING COLLEGE, TENNESSEE.

HARROW.

SPECIFICATION forming part of Letters Patent No. 485,623, dated November 8, 1892.

Application filed February 29, 1892. Serial No. 423,239. (No model.)

To all whom it may concern:

Be it known that we, EDWARD P. FORD and AARON B. MOFFITT, citizens of the United States, residing at Irving College, in the county of Warren and State of Tennessee, have invented a new and useful Harrow, of which the following is a specification.

This invention relates to improvements in harrows, the objects in view being to provide a cheap and simple construction of the same, and by such construction to adapt the harrow to be operated by a person following thereafter, so as to regulate or adjust the teeth, whereby they are presented at such angles as best adapt the harrow to operate upon the peculiar character of soil.

A further object is to so construct the harrow that the teeth may be thrown to the rear while the harrow is in motion, and thus rid the teeth of any collection of trash.

With these objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claim.

Referring to the drawings, Figure 1 is a perspective of a harrow embodying our improvements. Fig. 2 is a vertical transverse section of the same.

Like numerals of reference indicate like parts in both the figures of the drawings.

In practicing our invention we employ a series of transverse parallel, preferably wooden, harrow-bars 1, which harrow-bars will constitute one section of a harrow, there being one or a series of sections employed, as may be desired, one only being herein described.

The ends of the harrow-bars have applied thereto metal binding rings or ferrules 2 and are provided throughout their lengths with a series of harrow-teeth 3 of any desired construction. The ends of the harrow-bars are connected by metal straps 3′, the ends of which overlap, as shown, and are pivoted to the ends of the bars by bolts 4, passed through said overlapping ends and into the ends of the bars, the metal rings serving to prevent the bars from splitting by reason thereof. To the front harrow-bar ordinary draft appliances are secured.

From the center of each harrow-bar, except the last one of the series, rise short posts 7, the lower ends of which terminate in tenons passed through the harrow-bars, the same being threaded and having nuts applied thereto for the purpose of securing the posts rigidly upon the bars. These posts are connected by short links 8, pivoted by bolts 9 to alternately-opposite sides of each pair of posts. From the rear bar rises a rigid handle or standard 10, and the same is connected by a link 11 to the adjacent post 7. The standard terminates at its upper end in a handle and below the same is provided with a transverse recess 12. A curved locking-standard 13 has its upper end passed through the recess and its lower end pivoted to the link. The outer edge of the locking-bar is notched at intervals, as shown at 14, and, corresponding with the notches, said bar is perforated, as at 15, any one of which may be thrown into alignment with the transverse perforations 16, formed in the standard 10, whereby the two may be locked together. A bell-crank lever 18 is pivoted, as at 19, to the standard 10 and has its lower end bifurcated, as at 20, to engage a convenient notch of the locking-bar, a spring 21 being interposed between the upper or handle end of the lever and that of the standard 10, whereby the locking-lever is forced into engagement with the notches of the locking-bar.

This being the construction, the operation is as follows: By withdrawing the bolt from the perforations in the standard and locking-bar, so that the latter will move in and out through the former, and employing the standard 10 as a lever it will be seen that it may be either swung to the rear or to the front. When swung to the rear, its teeth will be presented toward the line of travel of the harrow and may be inclined to any desired degree in accordance with the character of the soil in which the harrow is operated. When the teeth become clogged with trash collected during the operation of the harrow, the standard may be swung to the front, so that the teeth will drag, and thus rid themselves of the trash. When the standard has been moved to secure the desired inclination of the teeth, the bolt or pin is reinserted through the perforations in the standard and locking-bar. It will be seen that the locking-lever may be used to retain the locking bar and standard in proper relative position during the inser-

tion of the locking-bolt and also during the period that the teeth are dragging in ridding themselves of trash.

Having described our invention, what we claim is—

The combination, with the series of transverse harrow-bars, the independent metal straps pivotally connected to the end of the bars and having their ends overlapping, and the bolts passed through the straps and into the ends of the bars, of the series of vertical posts rising from the centers of the bars, loose links connecting each pair in a pivotal manner and applied to alternately-opposite sides thereof, a vertical rigid standard rising from the center of the rear bar and provided with a recess having a transverse perforation, a link pivotally connecting the standard with an adjacent post, a curved locking-bar pivoted to the link and having its free end extending rearwardly through the recess of the standard, said locking-bar having its outer edge notched and below the same provided with corresponding bolt-openings registering with the transverse perforation in the standard, a removable locking-bolt for said perforations of the locking bar and standard, and the bell-crank lever pivoted to the standard, the lower end of the same being notched to engage the notches of the locking-bar and embrace said bar, and a spring interposed between the upper end of the lever and standard, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

EDWARD P. FORD.
AARON B. MOFFITT.

Witnesses:
I. L. RHEAY,
I. W. WARE.