

(No Model.)

C. B. COOK.
HARROW.

No. 433,518.

Patented Aug. 5, 1890.

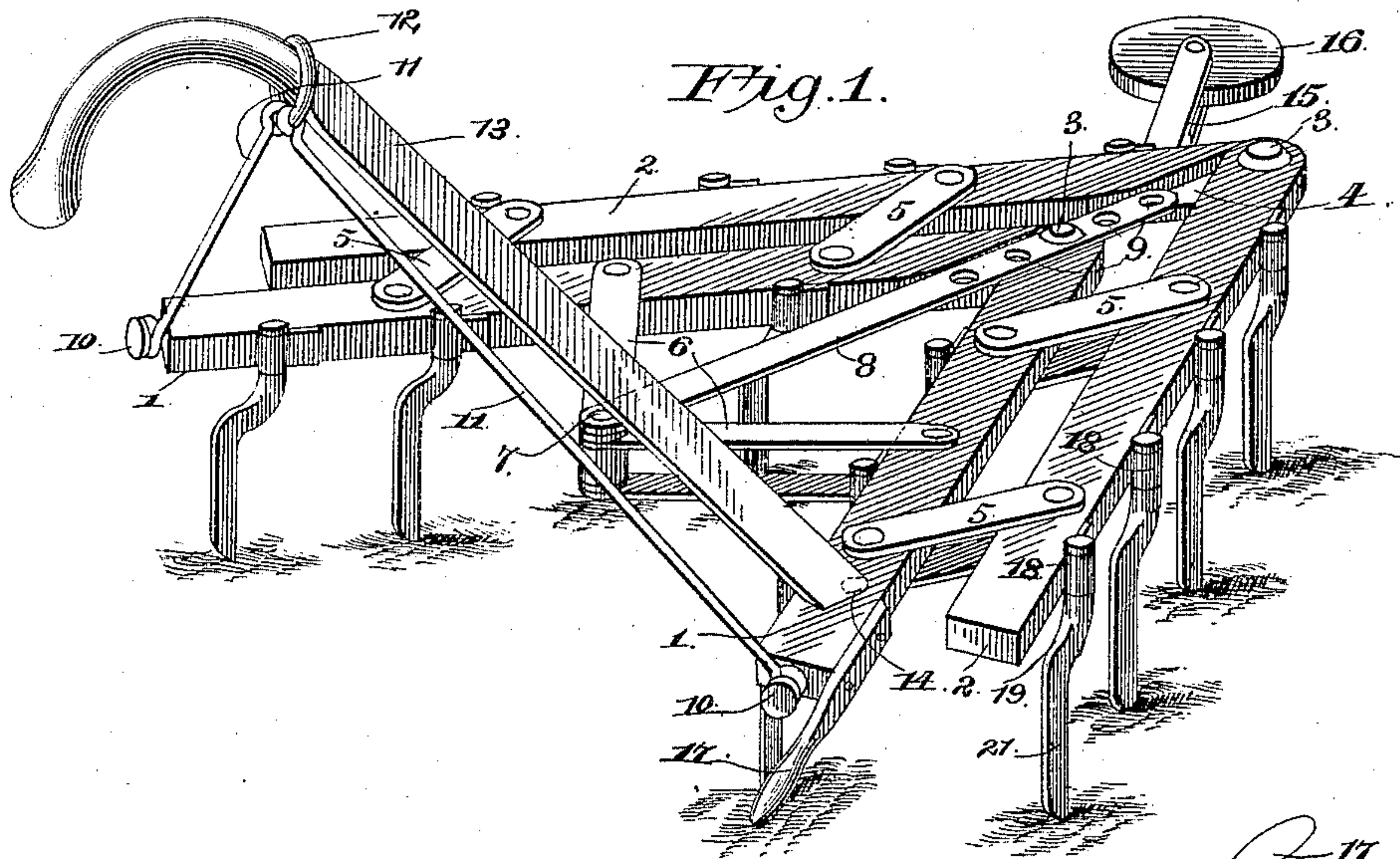


Fig. 2.

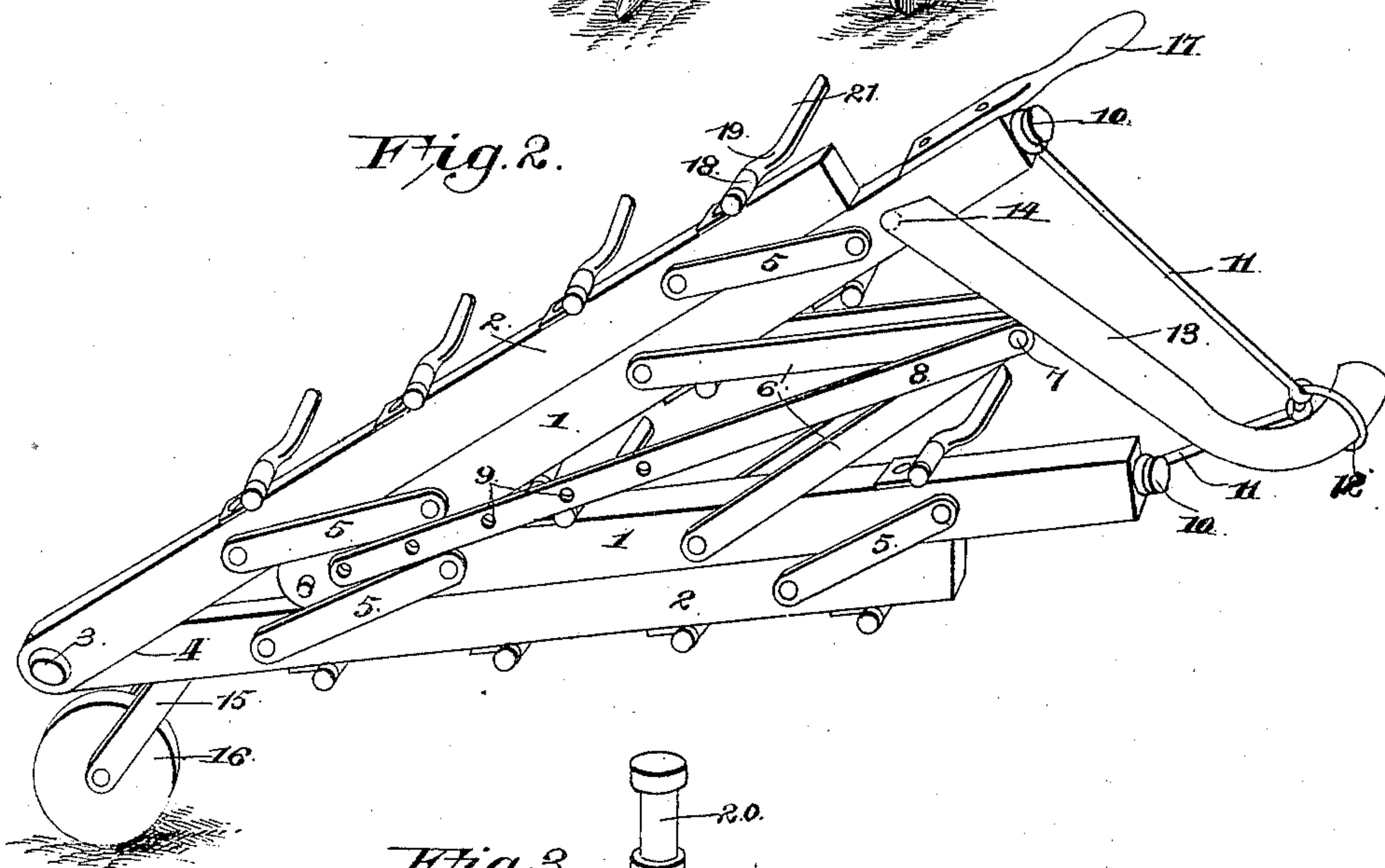
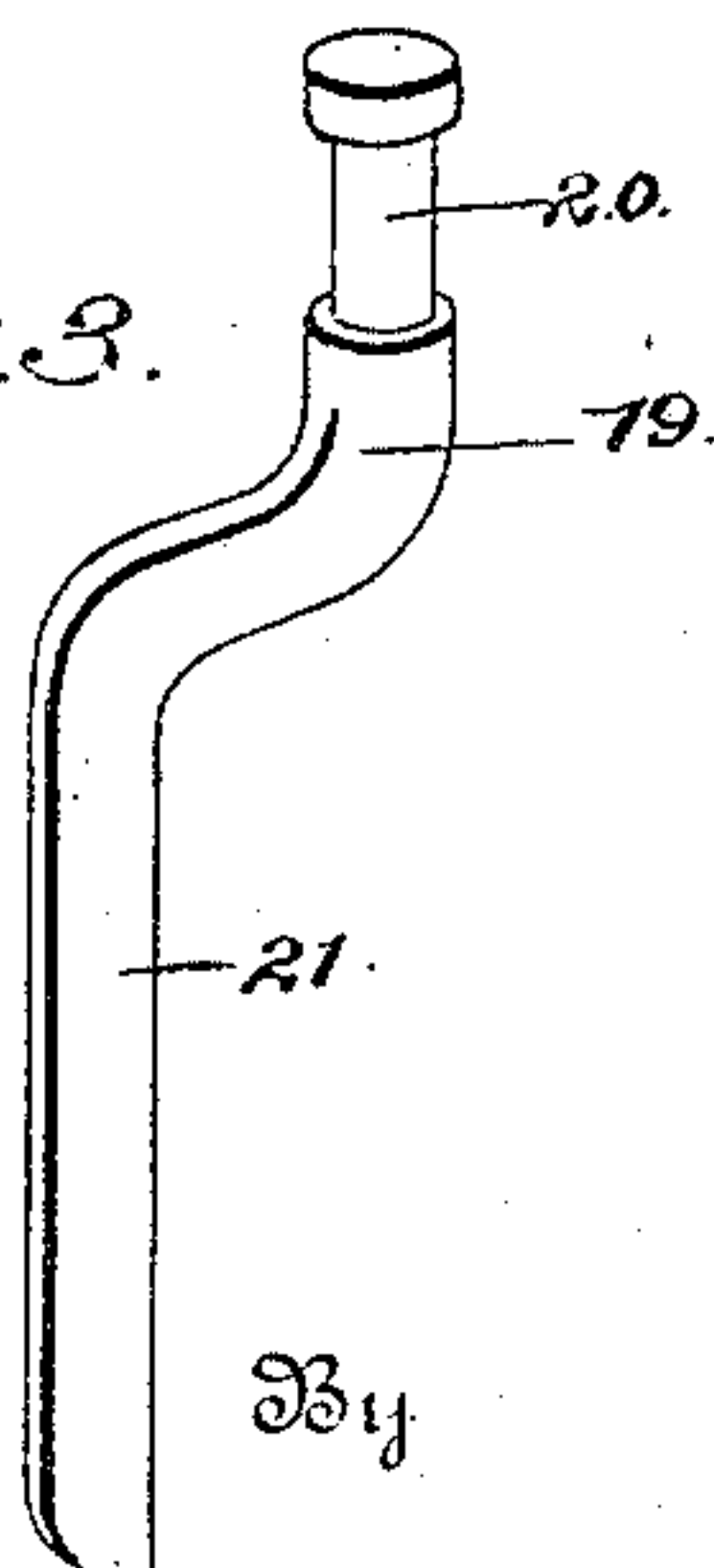


Fig. 3.



Witnesses

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CHARLES B. COOK, OF ERIE, KANSAS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 433,518, dated August 5, 1890.

Application filed October 24, 1889. Serial No. 328,011. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. COOK, a citizen of the United States, residing at Erie, in the county of Neosho and State of Kansas, have invented a new and useful Harrow, of which the following is a specification.

This invention relates to harrows; and it has for its object to provide a harrow for general use which shall be simple in construction and durable, which may be readily adjusted to any desired width or folded for transportation, and which shall be provided with teeth so constructed and arranged that they shall not be liable to become clogged.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of one section of my improved harrow. Fig. 2 is a perspective view showing the same folded and in position for being transported over the road. Fig. 3 is a detail view, on a larger scale, of one of the harrow-teeth.

Like numerals of reference indicate like parts in all the figures.

A section of my improved harrow is composed of two pairs of bars 1 1 and 2 2, which are hinged together in pairs at their front ends by means of bolts 3, the front ends of said bars being shouldered or tenoned, as shown at 4, to enable them to be folded compactly together. The bars 1 and 2 on each side are connected by links 5, and the inner or rear bars have pivoted inwardly-extending braces 6 6, which are connected at their inner ends by means of a bolt 7, upon which is also pivoted a forwardly-extending brace 8, the front end of which is provided with a series of perforations 9 9, any one of which may be adjusted upon the upper end of the hinge-bolt 3, which connects the front ends of the bars 1 1.

The rear ends of the bars 1 1 are provided with studs 10 10, upon which are mounted a pair of braces 11 11, the ends of which are suitably connected to a ring or collar 12.

13 designates a handle, the lower end of which is inserted into an opening 14 in the

rear end of one of the bars 1. The upper end of the said handle extends through the ring or collar 12, in which it may slide. It will be seen that the braces 11 serve to sustain the handle in position. At the same time, when the harrow-section is folded or expanded, the collar 12 will slide loosely upon the handle, which will therefore not interfere with the adjustment of the harrow.

Projecting obliquely in a forward direction from one of the bars 2 is an arm or bracket 15, the outer end of which is bifurcated and carries a wheel or roller 16, which is horizontally disposed with relation to the harrow when the latter is in position for operation. One of the bars 1 is provided with a rearwardly-extending handle 17. When the harrow is folded, as in Fig. 2 of the drawings, it may by grasping the handle 17 be tilted over upon the wheel or roller 16, and it may thus be conveniently transported from one place to another.

To the front sides of the harrow-bars, at suitable distances apart, are secured vertical sockets 18, in which are swiveled the harrow-teeth 19, which are provided with vertical shanks 20, extending through the said sockets and provided at their upper ends with nuts or heads or other suitable devices to retain them in position. The blades 21 of the harrow-teeth are curved downwardly and rearwardly from the lower ends of the shanks and have downwardly-extending straight blades provided with sharp front edges, so as to cut readily through the soil. Owing to the peculiar shape of the harrow-teeth they will in operation be found to have a peculiar vibrating motion, which is very useful in ridding them automatically of accumulations of trash and weeds, which would otherwise seriously interfere with the operation.

The operation and advantages of my improved harrow will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The V-shaped frames of which the harrow is composed may be readily adjusted to any desired width and will be retained at the adjusted position by means of the brace 8, the front end of which is engaged by one of its perforations 9 with the hinge-bolt 3, connecting

the front ends of the bars 1 1. The adjustment may be effected without interfering with the handle 13. When desired, two sections, both constructed alike, may be coupled together side by side, and both sections may then be easily guided in operation by their respective handles. When it shall be desired to transport the harrow from one place to another, the sections may be folded, as shown in Fig. 2 of the drawings, when by grasping the handle 17 the device may be readily tilted over upon the roller or wheel 16, enabling the harrow to be conveniently transported. The wheel 16 may also be conveniently used to support the harrow while it is being turned at the end of the row. A lever may, when desired, be added for the purpose of adjusting the brace 8.

I claim as my invention, and desire to secure by Letters Patent of the United States—

1. The combination of the V-shaped frames, composed each of a pair of bars connected pivotally at their front ends, the pivoted links connecting the bars of the front with those of the rear frame, the braces connected pivotally to and extending inwardly from the rear

frame-bars and having their inner ends connected pivotally, and a brace connected pivotally with the pivoted meeting ends of the said braces and having a series of perforations adapted to engage an upward extension of the pivoting-bolt at the front ends of the rear frame-bars, substantially as and for the purpose set forth.

2. In a harrow, the combination of the V-shaped frames composed of bars connected pivotally at their front ends, the pivoted connecting-links, the adjusting-braces, the braces connected pivotally to the rear ends of the rear frame-bars, the link or collar connecting the ends of said braces, and a handle secured or mounted in a socket in one of the rear frame-bars and extending through the said link or collar, substantially as and for the purpose herein set forth.

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

CHARLES B. COOK.

Witnesses:

C. A. COX,
W. P. HAZEN.