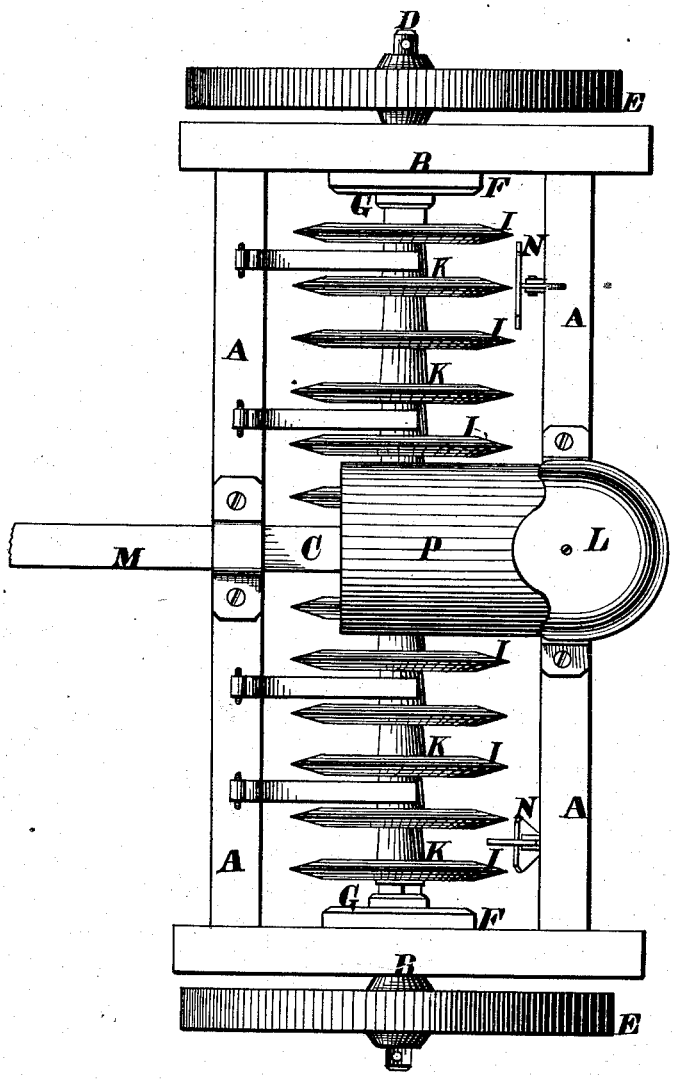
2 Sheets--Sheet 1.

J. MASTERN.

Harrow.

No. 165,108. Patented June 29, 1875.

FIG. 1.



WITNESSES:

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John R. Young

INVENTOR.

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2 Sheets--Sheet 2.

J. MASTERN.

Harrow.

No. 165,108. Patented June 29, 1875.

FIG. 2.

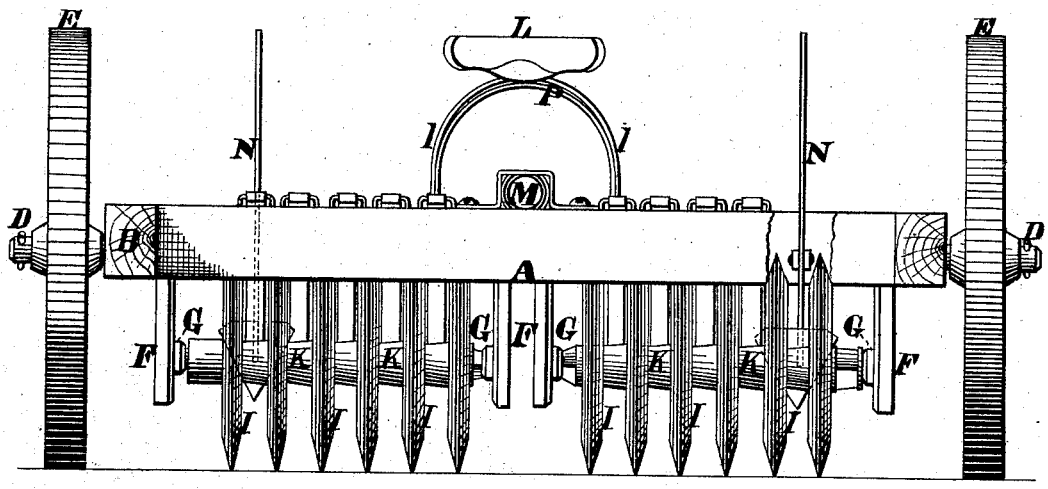


FIG. 3.

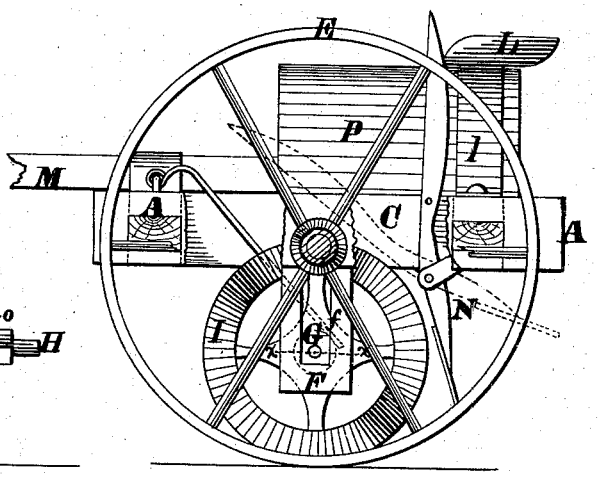


FIG. 4.

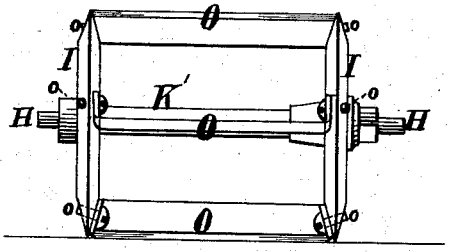
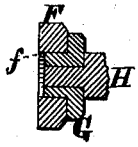


FIG. 5.



WITNESSES:

Jas. E. Hutchinson

John R. Young

INVENTOR.

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UNITED STATES PATENT OFFICE.

JOHN MASTERN, OF WEST ALEXANDRIA, OHIO.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **165,108**, dated June 29, 1875; application filed April 17, 1875.

To all whom it may concern:

Be it known that I, JOHN MASTERN, of West Alexandria, in the county of Preble and in the State of Ohio, have invented certain new and useful Improvements in Harrows; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my improved harrow. Fig. 2 is a front elevation of the same. Fig. 3 is an elevation of one end of said harrow, a portion of the rear of the frame being broken away to show the attachment of the marker. Fig. 4 is a front elevation of one of the roller-sections arranged for cutting corn-stalks; and Fig. 5 is an enlarged section of one of the journal-boxes, upon line *x x* of Fig. 3.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to furnish, in a compact and convenient form, a harrow, corn-marker, and corn-stalk cutter; and it consists, principally, in the combination of the stalk-cutters with the colter-sections, and in combining with the harrow markers for forming check-rows, substantially as is hereinafter set forth.

In the annexed drawings, A and A represent two rails, which are arranged in parallel lines, and connected together at their ends by two bars, B and B, and at their longitudinal centers by a cross-bar, C, and furnish a support or attachment for the operating mechanism. Upon each end of the frame thus formed is secured an axle-arm, D, upon which is journaled a ground-wheel, E, of usual construction, which wheels furnish a rolling support for said frame. Secured upon the inner face of each end bar B, and upon each vertical side of the cross-bar C, is a metal standard, F, which is slotted vertically, and contains a journal-box, G, that furnishes a bearing for one end of a shaft, H, said shaft being free to rotate and to move vertically at either end within the limits of the slot *f*. Upon each shaft H are journaled a number of circular coulters, I I, which correspond in size, and have converging sides, so as to cause their peripheries to form sharp cutting-edges. A thimble, K, is placed between each pair of colters around the shaft, for the purpose of insuring the relative positions of the former upon the latter. A seat, L, for the driver is secured to the rear rail A, while a pole, M, is secured to and extends forward from the longitudinal center of the frame.

As thus constructed, the device is drawn over a field, when the colters, as they roll over the ground, will cut into its surface and divide such lumps as have any considerable size. By dividing the colters into two sections and giving to each freedom of vertical motion, said colters will conform to the undulations of the ground, and perform their work in a thorough manner.

In order that check-rows may be marked upon land intended for the reception of corn, a bar, N, is pivoted upon the front side near each end of the rear rail A, in such manner as to enable it to occupy a vertical or a horizontal position, as desired. Upon the lower end of said bar is secured a V-shaped plate or marker, *n*, which, when the former is placed in a vertical position, impinges upon the ground and scores or marks the same. To remove said marker from contact with the ground, said lever is turned to the position shown by dotted lines in Fig. 3.

When it is desired to cut corn-stalks upon the surface of the ground the colters of each section, except one at each end, are removed, and a cutter, O, (shown in Fig. 4,) is secured at its ends to or upon the inner face of said remaining colters by bolts *o o*, which pass through the same—the edge of said cutter being upon the line with the peripheries of said colters. In order that the relative positions of the colters I and I may be insured when the cutter O is attached, a long sleeve or thimble, K′, is placed upon their shaft and extends between their centers. When several cutters are employed, as seen in Fig. 4, said sleeve K′ may be dispensed with. As the rolling colters throw much dirt, a metal shield, P, having an ∩ shape in cross-section, is placed within the correspondingly-shaped standard *l*, that supports the seat L, and extends sufficiently to both front and rear to effect the desired result.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the outer colters I and I of each section, the cutters O O, adapted to be secured at their ends to said colters, and having their cutting-edges upon a line with the peripheries of the same, substantially as and for the purpose shown.

2. In combination with the main frame of the harrow, the check-row markers N and N, pivoted to or upon the rear side of said frame, and capable of being brought into or removed from contact with the ground, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of March, 1875.

JOHN MASTERN.

Witnesses:
EDGAR DININGER,
E. S. SAYLOR.