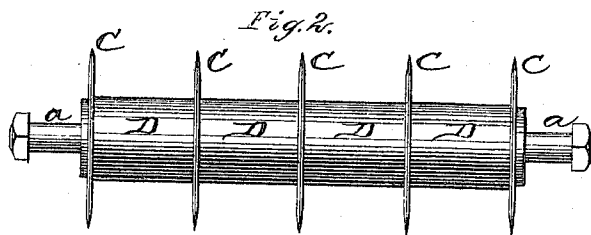
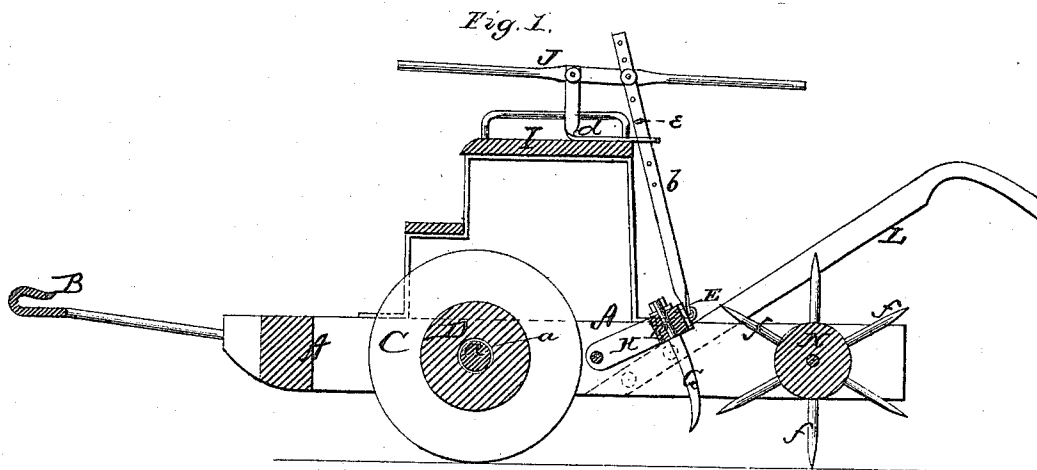


J. B. McCLEAN & C. A. MAYES.

Combined Crushers, Cultivators, and Harrows.

No. 134,388.

Patented Dec. 31, 1872.



Witnesses
John A. Ellis.
Wm. L. Ellis

Inventor
James B. McClean & Charles A. Mayes
Per.
J. H. Alexander & Co.
Attys.

UNITED STATES PATENT OFFICE.

JAMES B. McCLEAN AND CHARLES A. MAYES, OF FRANKLIN, KENTUCKY.

IMPROVEMENT IN COMBINED CRUSHERS, CULTIVATORS, AND HARROWS.

Specification forming part of Letters Patent No. 134,388, dated December 31, 1872.

To all whom it may concern:

Be it known that we, JAMES B. McCLEAN and CHARLES A. MAYES, of Franklin, in the county of Simpson and State of Kentucky, have invented certain new and useful Improvements in Combined Crusher, Cultivator, and Harrow; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of our invention consists in the construction and arrangement of a combined crusher, cultivator, and harrow, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of our invention, and Fig. 2 is a side view of the crushing mechanism.

A represents a rectangular frame, of any suitable dimensions, to the front end of which is fastened a hook, B, or other suitable device for attaching the team. In the frame A is placed a stationary rod or shaft, *a*, upon which are alternately placed a series of circular cutters, C C, and rollers D D, a cutter being at each end of the shaft on the inside of the frame. The cutters should be about sixteen and the rollers eight inches in diameter, and they all revolve independently of each other on the shaft *a*. G G represent the cultivators, which are attached, as shown in Fig. 1, to a cross-beam, E. This beam is pivoted, by means of the arms H at each end, to the inside of the frame A, about two feet in rear of the shaft *a*. To the beam E is attached an upright perforated bar, *b*, which passes through a slot in an L-shaped bar, *d*, which is attached to the driver's

seat I. A pin, *e*, is passed through one of the holes in the bar *b* above the bar *d*, and by this means the depth of the cultivators is readily regulated. They are raised out of the ground at one time by means of a lever, J, pivoted to the upright part of the bar *d* and also to the bar *b*. This lever extends both in front and rear, so that the operator, whether riding on the seat I or walking behind, can use the same. The pivot-points of said lever to both the bars *b* and *d* may be changed up and down to accommodate the size of the operator. About one foot in rear of the cultivators G G is a revolving cylinder, K, provided with any desired number of harrow-teeth *f f*, alternating in distance in irregular rows for the purpose of leveling and pulverizing after the cultivators. The cutters C C and rollers D D form the fulcrum upon which the machine may be raised or lowered by means of the handles L L in passing obstructions or in turning, &c.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The cutters C C and rollers D D, arranged alternately and revolving independently of each other, upon a common shaft, *a*, in the frame A, substantially as herein set forth.

2. The lever J, pivoted to the L-shaped bar *d* and combined with the bar *b*, cutters G, and arms H, allowing the depth of the cutters to be regulated and operated from the front or rear, substantially as and for the purpose described.

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

JAMES B. McCLEAN.
CHARLES A. MAYES.

Witnesses:

JAMES S. PROCTER,
I. H. SMITH.