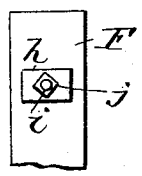
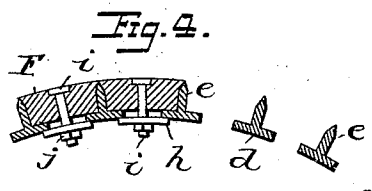
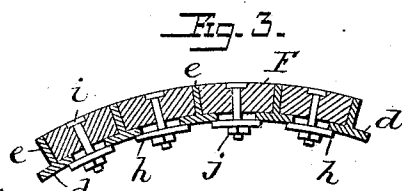
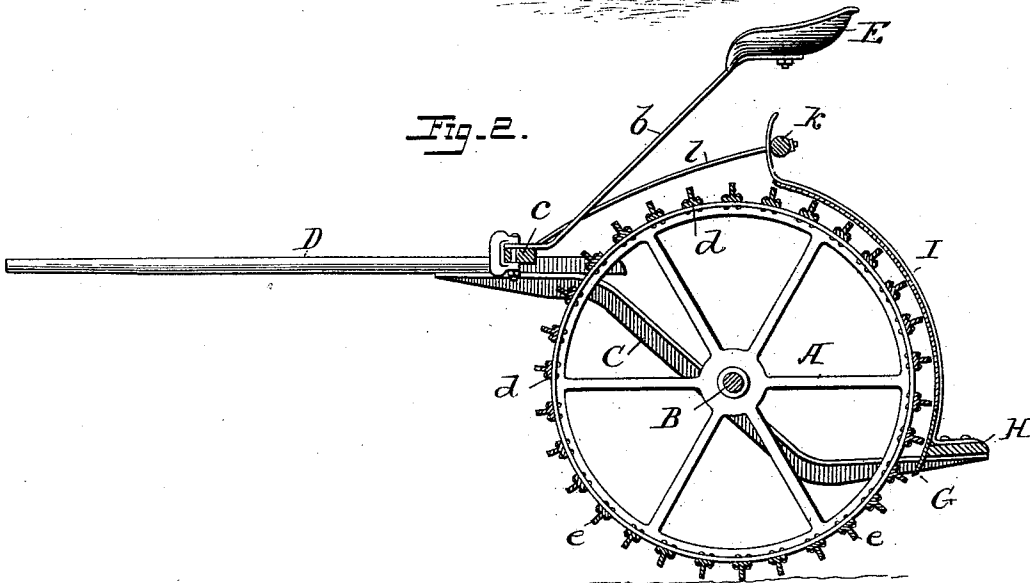
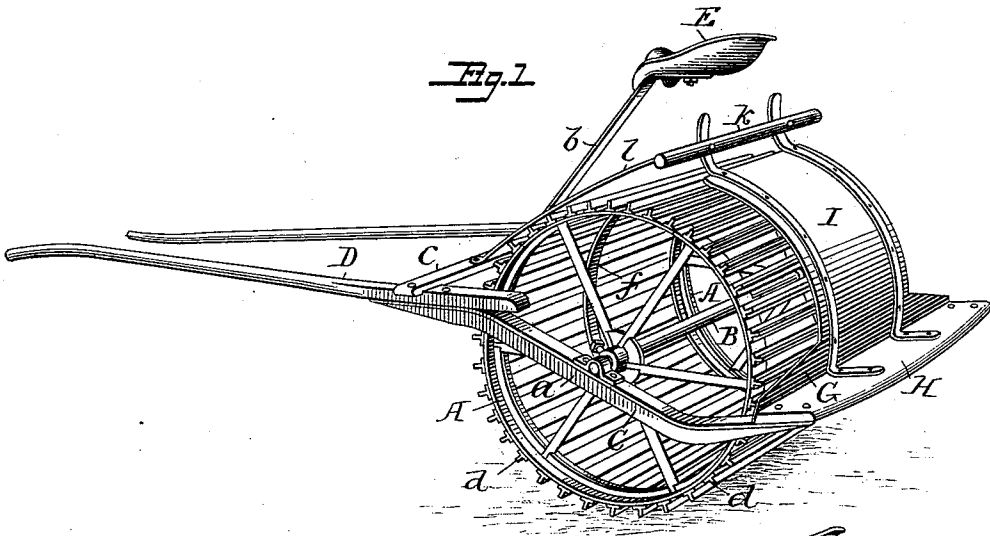


(No Model.)

H. F. DERNELL.  
COMBINED CLOD CRUSHER AND LAND ROLLER.

No. 487,722.

Patented Dec. 13, 1892.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HERMAN F. DERNELL, OF ATHENS, NEW YORK.

## COMBINED CLOD-CRUSHER AND LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 487,722, dated December 13, 1892.

Application filed September 17, 1891. Serial No. 406,028. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN F. DERNELL, a citizen of the United States, residing in the village of Athens, county of Greene, and State of New York, have invented certain new and useful Improvements in a Combined Clod-Crusher and Land-Roller, of which the following is a specification.

This invention is an improvement in combined clod crushers or pulverizers and land-rollers of that class in which the implement is interchangeable from one form into the other, so as to be used for either purpose, as desired.

The invention consists in a device of this character constructed, as hereinafter set forth, so as to simplify and strengthen the parts, render the conversion of the apparatus from either form to the other more easy and convenient, and generally increase its efficiency.

In the drawings, Figure 1 is a perspective view of my improved apparatus ready for service as a clod-crusher. Fig. 2 is a cross-section. Fig. 3 is a similar view, enlarged, of part of the device when converted into a land-roller; and Figs. 4 and 5 are detail views.

In carrying the invention into effect I employ two wheels A A, preferably of metal, mounted on a shaft B, having its ends journaled in bearings a a, carried by side frames C C, to which shafts D for the draft-animal are connected, a seat E for the driver being supported at the upper end of a spring-arm b, secured to the cross-bar c of the shafts, as usual. The wheels, as shown, are connected by separated but close-spaced metal bars d, of T shape in cross-section, the bars being riveted or otherwise securely attached to the wheels with the web portions e of the bars projecting outward, the wheels and bars thus arranged constituting a pulverizing-drum with radiating teeth or cutters. The portions e of the bars may, if desired, be beveled off at one or both sides adjacent to the outer edge, as shown in Fig. 4, so as to provide sharp cutting-faces, and while said portions e serve as teeth or cutters, as stated, they also effectually brace or stiffen the bars against inward thrusts, as will be apparent, thereby rendering the structure very strong and rigid and not liable to breakage or distortion in passing over stones or other hard objects. In some instances the

bars may also be supported midway of their length by an interior ring f, although ordinarily this is not necessary.

To render the device serviceable as a land-roller, the open spaces between the teeth or cutters of the adjacent bars d are closed by boards F, closely fitting such spaces and resting on and supported throughout their length by the lateral portions of the bars, as shown in Figs. 3 and 4. These boards preferably correspond in thickness to the depth of the webs or teeth of the bars, so as to present a practically-unbroken rolling-surface, and the boards are detachably locked in place in any suitable manner. For instance, they may be secured at or near their ends by elongated cleats h, engaging the edges of the bars at the under side, bolts i, connecting the boards and cleats and passing between the bars, and nuts j on the bolts, locking the parts together. The cleats, when properly adjusted, may be passed between the bars to permit the boards to be readily applied or detached.

To dislodge any earth or other matter which may adhere to the pulverizing-teeth or the face of the roller, a scraper-blade G is employed. This blade, as shown, consists of a continuous piece of sheet metal and is secured to the forward edge of a step H, carried by the side frames C C in rear of the drum, the edge of the blade presenting an unbroken scraping-surface in close proximity to the drum. A shield or dust-guard I, also carried at its lower end by the step, extends upward from the scraper G toward the driver's seat and is attached at its upper end to a cross-piece k, supported by brace-rods l l, arranged as shown.

The step at the rear of the device may be used to carry ballast when operating on hard soil and additional weight is required, or the driver may stand upon it, as desired.

When in the form of a clod crusher or pulverizer, the apparatus may be used to advantage upon ice-fields for the purpose of breaking up the outer crust preparatory to scraping the ice, especially when the latter is covered with snow or hail.

It will be apparent that the usual pole for two draft-animals may be substituted for the shafts D, when desired.

The device constructed as set forth, though simple, is very strong and can be produced at

a comparatively-small cost, while at the same time it is very simple and can be easily and conveniently converted from one form of implement to the other, as occasion may demand.

5 I claim—

1. The combination, with the frame, of a drum consisting of wheels connected by T-shaped bars having their web portions projecting outward to constitute teeth or cutters, boards fitting between said web portions and supported throughout their length upon the lateral portions of the bars, and cleats adapted to engage said lateral portions and detachably secure the boards thereto, substantially as described.

2. The combination of the frame, the drum, the step in rear of the drum, the continuous scraper-blade secured to the forward edge of the step and extending entirely across the drum, and the shield supported upon the step above the scraper and secured at its upper end to a cross-bar carried by brace-rods, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN F. DERNELL.

Witnesses:

W. S. PERNIE,  
L. L. DAUS.