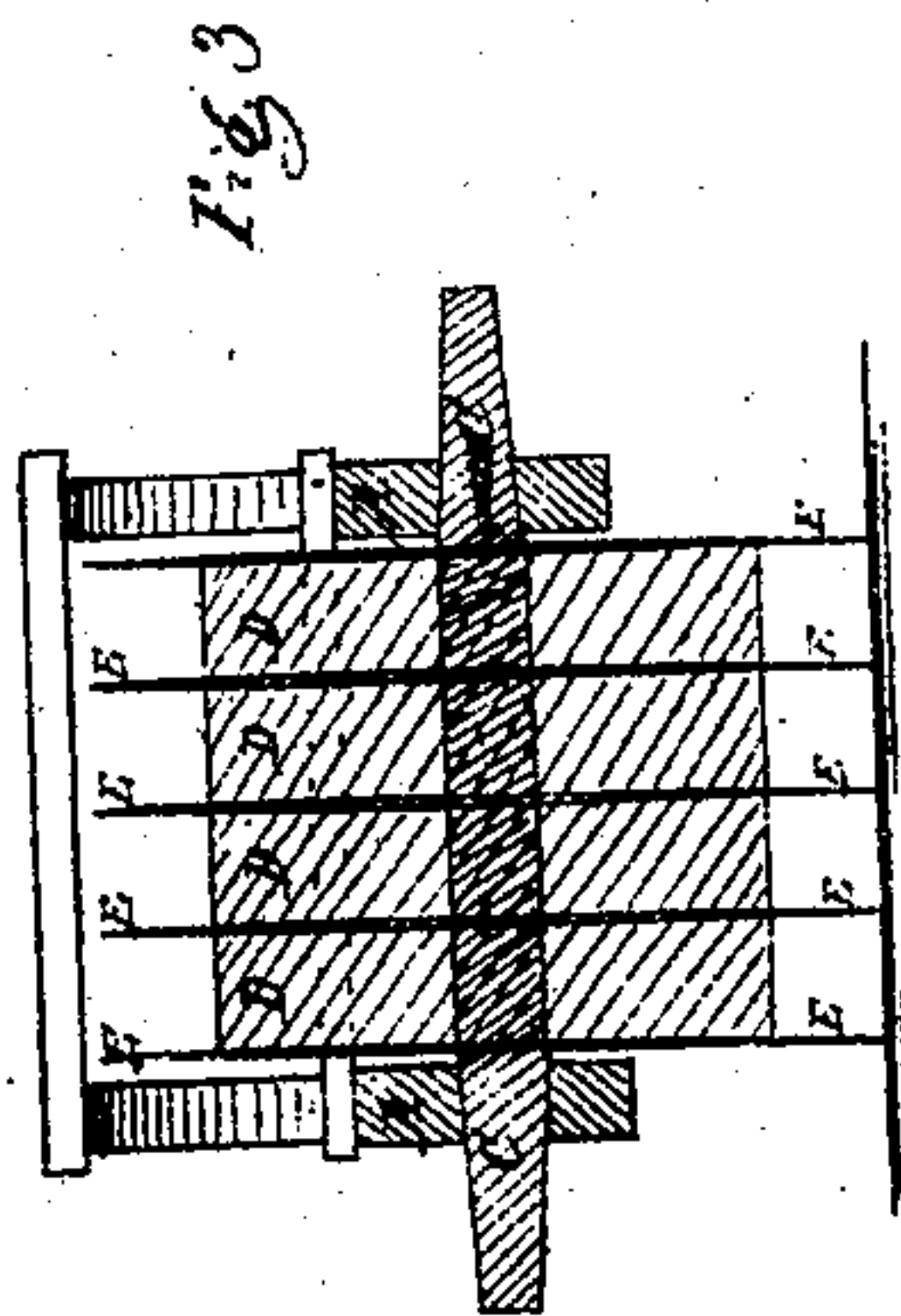
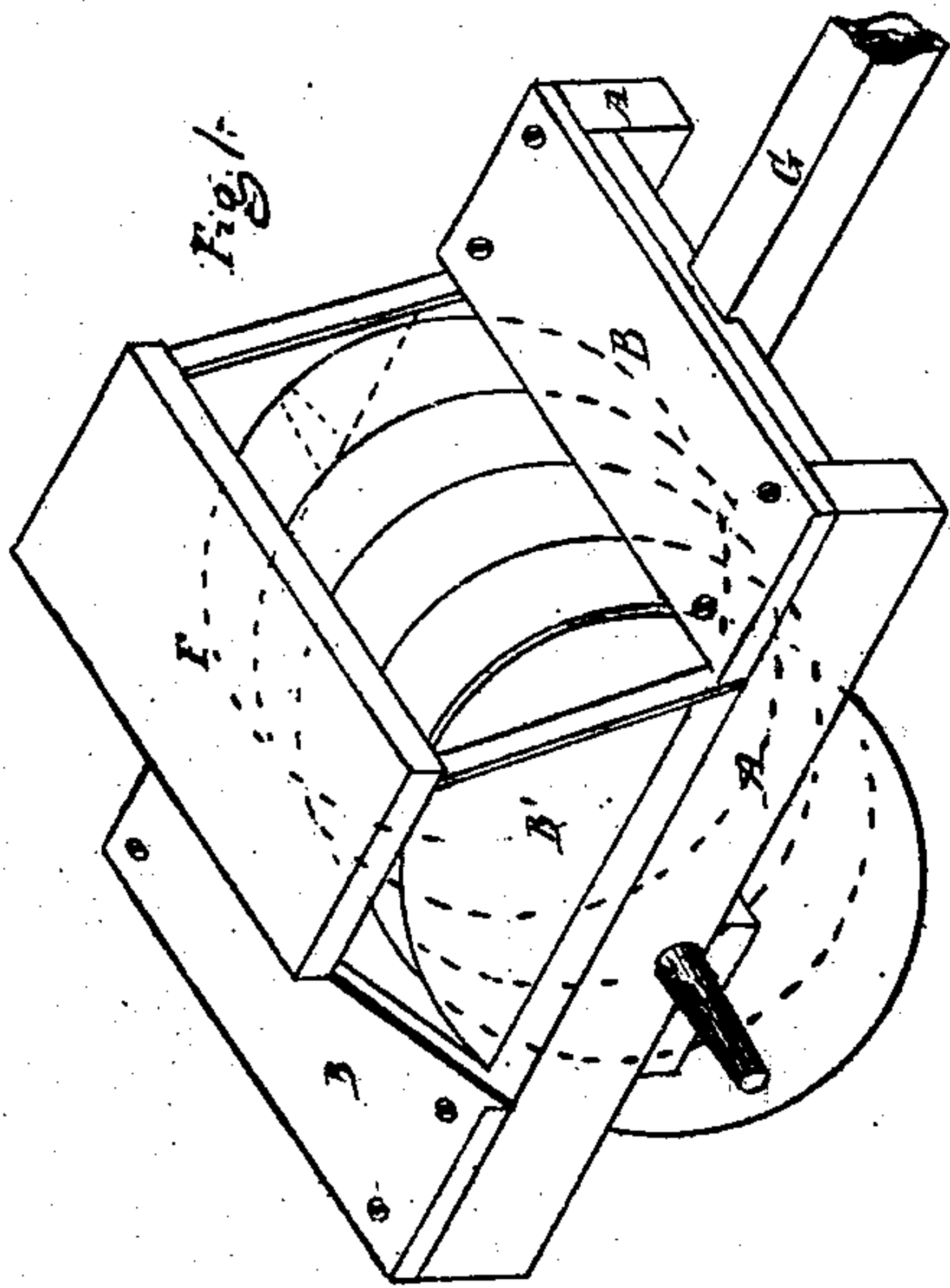
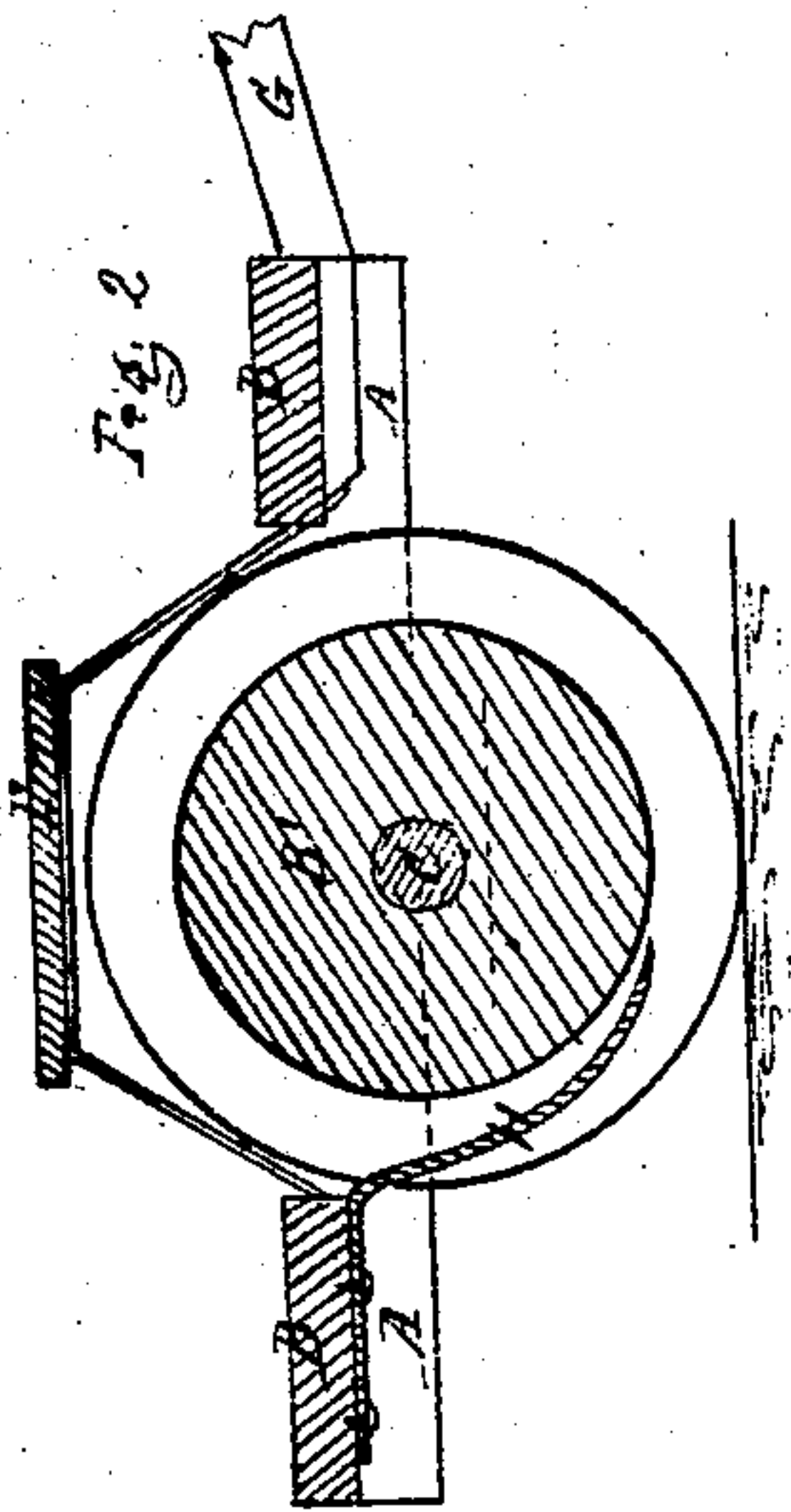


W. M. Bush,

Land Roller.

No. 85,639.

Patented Jan. 5. 1869.



Attest  
J. H. Rogers  
J. F. Clausen.

W. M. Bush  
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Atty



# United States Patent Office.

WILLIAM MARTILLOUS BUSH, OF GREENSBURG, INDIANA.

Letters Patent No. 85,639, dated January 5, 1869.

## IMPROVED MACHINE FOR PULVERIZING EARTH.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM MARTILLOUS BUSH, of Greensburg, in the county of Decatur, and State of Indiana, have invented a new and useful Machine for Pulverizing Earth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view of the machine;

Figure 2 is a central longitudinal elevation of the same; and

Figure 3 is a central cross-section at right angles to fig. 2.

Corresponding letters represent corresponding parts in the several figures.

This invention relates to that class of machines commonly called rollers, which are used for pulverizing clods or lumps of earth, which are caused by plowing the ground when it is too wet, or which occur from various other causes, and which are found to be a great inconvenience to the agriculturist in many parts of the country; and

The invention consists in constructing the roller or pulverizer of such a machine of alternate knives or cutters and disks, of wood or metal, having smooth or flat faces, with which to smooth the surface of the earth as the machine passes over it, as will be fully described hereafter.

A A are the longitudinal portions of the frame, which constitute the bearings of the roller, and which may be made thereon, or they may be made of metal, and secured thereto by bolts.

B B are the cross-beams or pieces of the frame, and are securely bolted to the pieces A, both in front and rear of the roller C.

B' is the roller or pulverizer, which is composed of alternate portions of thin sheet-metal, iron or steel being preferred, and sections of a flat-faced roller, of from six to twelve inches in length.

The method of constructing this roller is as follows:

I take a bar of iron, say of six to eight feet in length and two to two and one-half in diameter, and turn it smooth upon its surface, and after having turned two journals in the proper places to receive the bearings upon the side-pieces A A, I place, at a distance of, say, two inches from one of said journals, a circular piece of iron or steel plate, of, say, one-fourth of an inch in thickness and from two to four feet in diameter, which plate I secure firmly to the axle or shaft C. I next place upon the inner side of such plate a disk or section, of wood or metal, of from six to twelve inches in thickness or length, and of a diameter of from eight to twelve inches less than the sheet-metal knives or cutters are. This disk is also secured to the shaft, when another of the knives or cutters is placed against its inner side, and then another of the thick disks, and so on alternately, until the requisite length of roller or pulverizer is obtained.

D D and E E show the parts of which the roller is composed and arranged, as above described.

F is the driver's seat, and is arranged directly above the roller, as shown in fig. 1 of the drawings.

G is the tongue of the machine, to which is attached the double-tree, as is common in machines of a similar character with this.

H is a spring or scraper, one of which is placed between each two of the knives or cutters, said scrapers being secured to the rear end of the frame, and passing in between the cutters, and resting with their ends upon the flat surfaces of the sections D D, the object being to prevent any accumulation of earth upon such surfaces, and to scrape off any that may adhere and be carried up to the point at which they come in contact with the rollers. These scrapers may be secured to the beam by screws, as shown in the drawings, or by a bolt passing down through both, with a nut upon its lower end.

The operation of this machine is as follows:

It being constructed as described, the team is geared to it, and it is drawn across the field, and as the sharp edges of the cutters come in contact with the clods of earth, they are sheared or cut into pieces sufficiently small to permit of the smooth faces of the sections D D completely pulverizing them, and this I regard as one of the peculiar advantages of my invention, and as constituting its superiority over others of different construction.

It will also be found that the cutters will cut into pieces any corn-stalks which may be upon the ground over which the device may pass, and thus one great source of annoyance to the cultivator will be removed, as the length to which they will be reduced will be such that they will be found to be very little trouble after being thus reduced by my machine.

I am aware that V-shaped plates, of iron or steel, have been used upon rollers for this same purpose, but mine are made of regular thickness, and comparatively thin, serving to cut up the hard clods, and more thoroughly pulverizing the soil, than by any other means.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. A roller or pulverizer, constructed substantially as described and as shown in the drawings.

2. In combination with the disks or sections D and knives or cutters E of the pulverizer, the scrapers H, arranged substantially as shown and described.

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

WILLIAM MARTILLOUS BUSH.

Witnesses:

WILL CUMBACK,  
SAM'L A. BONNER.