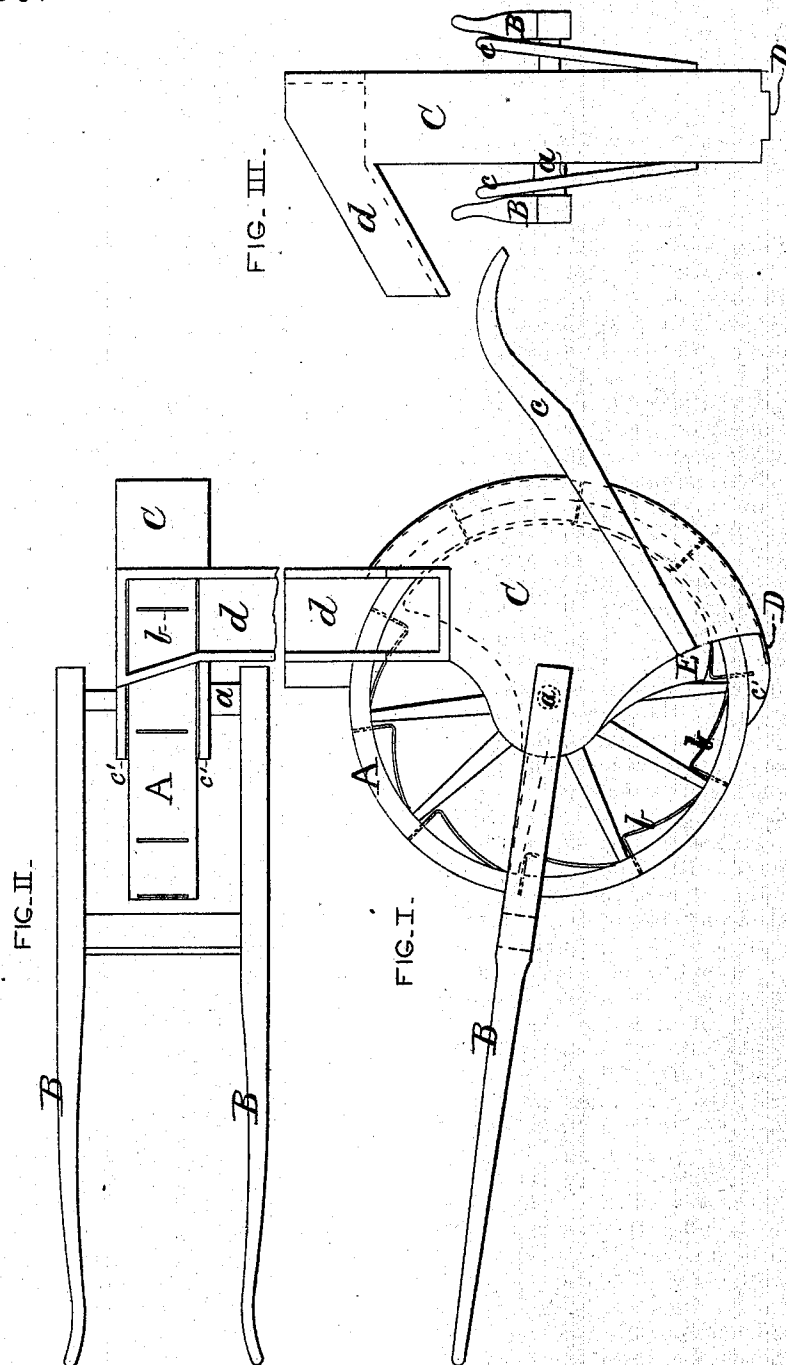


C. M. BROWN.
Ditching-Machines.

No. 139,765.

Patented June 10, 1873.



WITNESSES.

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att'y

UNITED STATES PATENT OFFICE.

CHARLES M. BROWN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN DITCHING-MACHINES.

Specification forming part of Letters Patent No. **139,765**, dated June 10, 1873; application filed April 11, 1873.

To all whom it may concern :

Be it known that I, CHARLES M. BROWN, of Baltimore, in the State of Maryland, have invented certain Improvements in Ditching-Machines, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to certain improvements upon that class of ditching-machines in which the blade is attached to the casing of the traveling or rolling wheel or wheels of the machine, and the dirt carried up within the casing by the wheel, as an elevator, to the upper part of the said casing and a spout joining therewith, against the forward part of which spout the dirt is thrown, whence it falls, of its own weight, down the spout and out from the machine. The nature of my invention consists, first, in the combination of a series of spring-cutters with the rolling-wheel and a cam or equivalent device, suspended fixedly from the stationary axle of the rolling-wheel, the said spring-cutters so operating in relation to the cam and ditching-blade that as soon as the blade has dug a certain quantity of earth one of the said spring-cutters is caused, by coming in contact with the cam, to descend and project from the periphery of the rolling-wheel, and cut off the earth into a section inclosed between the rolling-wheel and the sides of the casing. As the rolling-wheel revolves the cam forces out other of the spring-cutters, and keeps them in such position, they carrying up the several sections of the earth, until the upper end of the cam is reached; and the foremost spring-cutter, being released, starts back, allowing the earth confined between it and the one next following to fall from the machine through the spout. The cam, as will be understood from the foregoing, has the greater part of its periphery concentric with that of the rolling-wheel. My invention further consists in the combination of the rolling-wheel, spring-cutters, and cam with the exterior casing, spout, and ditching-knife, producing the result above named.

In the further description of my invention which follows due reference must be had to the accompanying drawing, in which—

Figure 1 represents a side view of my invention; Fig. 2, a plan of the same; and Fig. 3 a back view of the same.

Similar letters of reference indicate similar parts of the invention in all the views.

A is the rolling-wheel, revolving upon the fixed axle *a*, to which the shafts B are attached. C is the casing, having the handles *c* and spout *d* secured thereto. The casing is suspended loosely from the axle *a* in such a manner that the operator at the handles can regulate at pleasure the cut of the ditching-blade. The blade is attached to the lower part of the casing, and shown by D. The spring-cutters are represented by *b*, and formed of stout steel plates bent at a right angle, the cutting part passing through slots in the rim of the rolling-wheel, and the other being securely attached to the inner part of the wheel-rim. E is the cam, suspended fixedly from the axle *a*, the lower front portion of the cam being curved somewhat differently from the rest of its edge surface in order to give the spring-cutters the proper downward movement at the required time.

The mode of operation of the machine is easily seen. As the machine advances the earth is first inclosed between the projecting parts *c'* of the casing, then dug by the blade D, cut transversely by the first spring-cutter, and conveyed between it (the cutter next in front) and the surfaces of the rolling-wheel and casing to the spout *d*, whence it leaves the machine.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. The combination of the series of spring-cutters *b* with the rolling-wheel A and cam E, the wheel being loose and the cam fixed upon the axle *a*, substantially as and for the purpose specified.

2. The combination of the rolling-wheel A, spring-cutters *b*, and cam E with the casing C, ditching-blade D, and spout *d*, substantially as and for the purposes specified.

In testimony whereof I have hereto subscribed my name this 10th day of April, in the year of our Lord 1873.

CHARLES M. BROWN.

Witnesses:

EDW. HAYES,
WM. T. HOWARD.