

No. 620,198.

Patented Feb. 28, 1899.

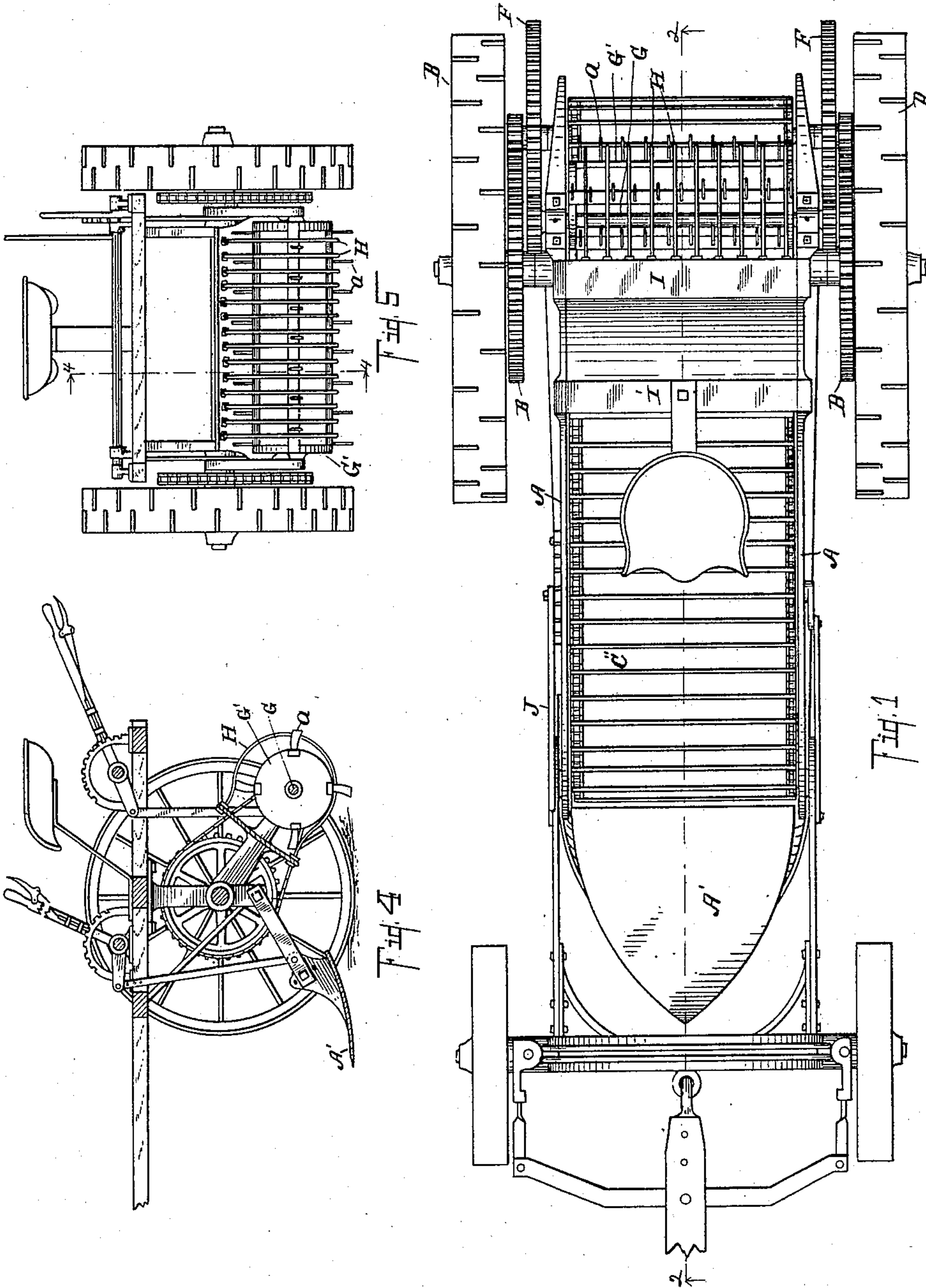
A. M. TODD.

MACHINE FOR DIGGING AND HARVESTING ROOTS OF PEPPERMINT.

(Application filed Feb. 10, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
Walter S. Wood  
D. G. Lored Hood.

Inventor,  
Albert M. Todd  
By Fred L. Chappell  
Att'y.

No. 620,198.

Patented Feb. 28, 1899.

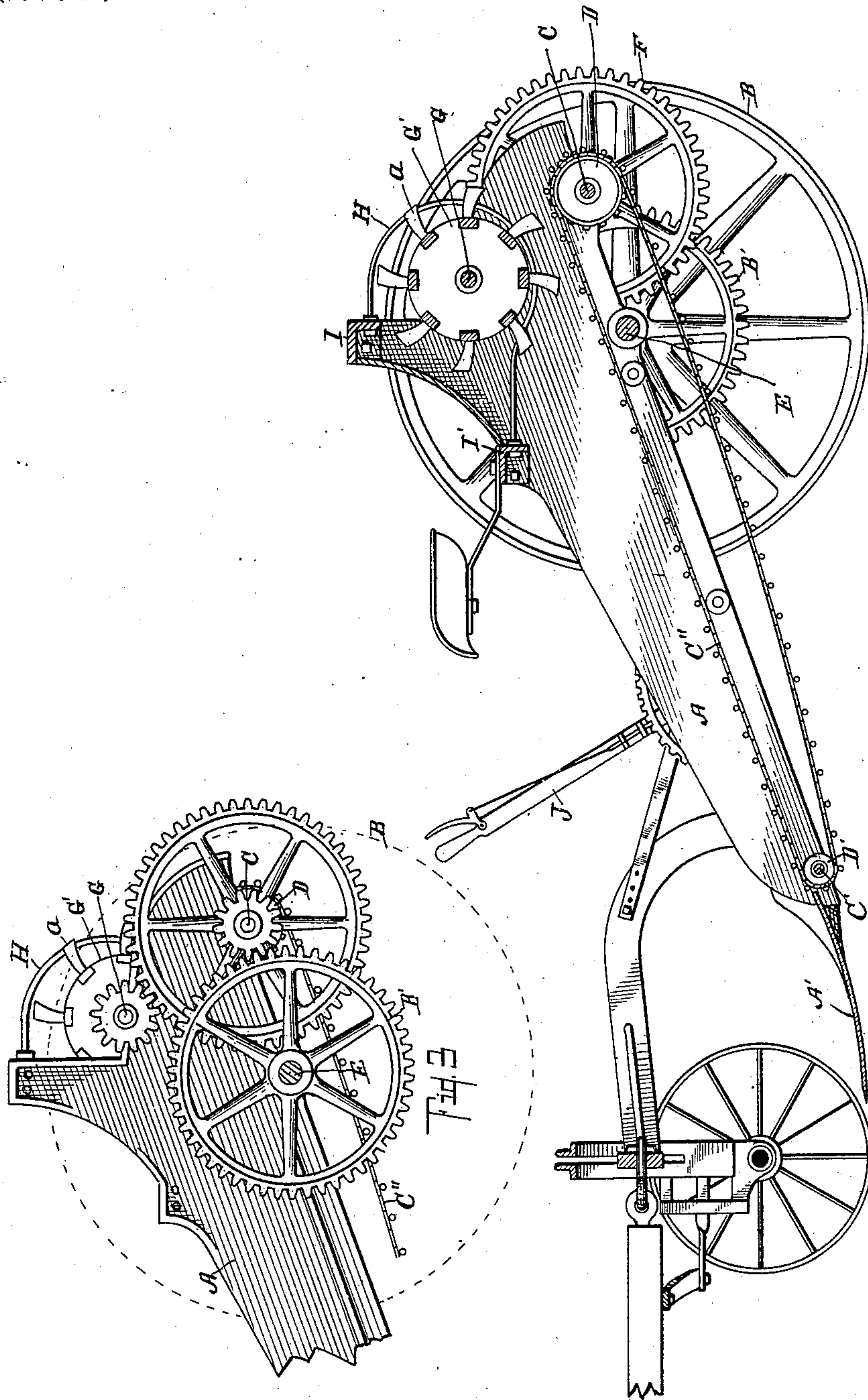
A. M. TODD.

MACHINE FOR DIGGING AND HARVESTING ROOTS OF PEPPERMINT.

(Application filed Feb. 10, 1896.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

*Walter S. Wood*  
*W. E. Wood*

Inventor,

*Albert M. Todd*  
By *Fred L. Chappell*  
Att'y.



# UNITED STATES PATENT OFFICE.

ALBERT M. TODD, OF KALAMAZOO, MICHIGAN.

MACHINE FOR DIGGING AND HARVESTING ROOTS OF PEPPERMINT.

SPECIFICATION forming part of Letters Patent No. 620,198, dated February 28, 1899.

Application filed February 10, 1896. Serial No. 578,788. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT M. TODD, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a certain new and useful Machine for Digging and Harvesting the Roots of Peppermint, of which the following is a specification.

My invention relates to a new and improved machine for digging, cleaning, and tearing apart the roots of peppermint or the roots of similar plants.

The objects of this invention are to provide a machine which shall not only dig the roots from the ground, but will shake the soil from them and break the mass of the roots apart so that they can be easily gathered, handled, and stored to preserve the same and prepare them in convenient form for future planting, further minor objects appearing definitely in the detailed description. I accomplish these objects of my invention by the devices and means described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a machine embodying all the features of my invention. Fig. 2 is a sectional view on line 2 2 of Fig. 1. Fig. 3 is a detail elevation of a part of the machine, the driving-wheel being removed. Fig. 4 is a sectional view, on line 4 4 of Fig. 5, of a modified construction of the machine. Fig. 5 is a rear elevation of the modification of the machine.

All of the sectional views are taken looking in the direction of the little arrows at the ends of the sectional lines.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, B represents the driving-wheels, which carry the main parts of the machine. In the preferred construction a suitable carrier or conveyer is supported on the axle of the driving-wheels and terminates in a broad blade A' below and in front. A suitable pivoted running-gear carries the front end of the machine. The height of the forward end of the machine is adjusted by the adjusting-lever J. A suitable conveyer C'', consisting of transverse rods carried on suitable chains, extends the entire length of the carrier. It passes over the roller

D' at the front, which is supported on the shaft C'. It also passes over the larger roller D at the rear, which is supported on an axle C. There should be one or more intermediate supporting-rollers for the upper portion of the conveyer. Extending transversely across the upper portion of the sides of the carrier, which also constitute the main frame of the machine, are angle-iron pieces I I', on the forward one of which a suitable seat for a driver is attached. Above the conveyer, on a transverse shaft G, is supported a suitable cylinder G', bearing a series of teeth *a*, somewhat resembling the teeth on a threshing-machine cylinder, though their form is not very material. These teeth project down in close proximity to the upper side of the conveyer C'' at its rear end. On the axle E is secured a cog-wheel B'. On the transverse shaft C, which carries the upper roller D of the conveyer, is a small pinion, which meshes with the gear-wheel B'. On the same shaft is a larger gear-wheel, which meshes with a pinion which is keyed or otherwise secured to the shaft G to rotate the toothed cylinder G' at a high rate of speed compared with the motion of the conveyer C''. This is for the purpose of tearing the roots asunder and beating dirt off them as they come along up the conveyer C''.

Without any protection to the toothed cylinder the teeth *a* would soon become clogged with the roots and necessitate a cleaning of the same at frequent intervals. To avoid this contingency and delay, I extend guards H from the cross-piece I' around close to the under side of the cylinder between the teeth *a* and upwardly and rearwardly into the cross-piece I, which upper parts project beyond the points of the teeth *a*. These rods, being comparatively close to the teeth *a*, will, as the cylinder rotates, clear any obstructions from the teeth.

When the machine is in operation, the digger-blade A' will cut under the row of peppermint, and the conveyer C'' will carry the roots up between the sides of the carrier A, allowing loose earth and debris to fall from them down between the transverse rods of the conveyer until they pass up to the toothed cylinder G', which will beat the roots violently, tearing them apart and allowing them to pass over the rear of the conveyer with the earth



well beaten off from them and the tangled mass of roots broken into comparatively small pieces, which can be easily gathered in any well-known way and are in proper condition for planting, as they will be in small pieces, as I said before.

The carrier, with its conveyer C', while it is of great advantage, is not absolutely necessary to the successful working of the machine, and I show a modification of my invention in Figs. 4 and 5 in which this carrier is dispensed with and a toothed cylinder G', with the guarding-rods H, is placed so that it can be adjusted close to the ground just back of the cutting-knife A', where it will be found to be quite effective after the roots have been cut loose from the ground by the knife in tearing them apart and shaking the earth from them.

In very loose soil the digger-blade A' is not absolutely necessary, and the cylinder alone, properly guarded, will tear the roots from the soil, shake the earth from them, and leave them in condition to be easily gathered.

It will be seen from this and I am aware that my improved machine for digging the roots of mint can be considerably varied in its details without departing from my invention, and, as I said before, it can be used on a great variety of roots of this class.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for harvesting the roots of peppermint and similar plants, the combination of a suitable carriage; a digger-blade A' for cutting beneath the row of roots; a conveyer C' extending upwardly and rearwardly therefrom carried on suitable cylinders; or rollers; a toothed cylinder G' supported on a suitable axle G above and to the rear of said conveyer with the teeth thereof projecting into close proximity with the conveyer; a train of gears operated from the axle of the driving-wheels to operate the conveyer and rotate the toothed cylinder at a higher rate of speed than the motion of the conveyer so that the teeth on the under side will travel in the same direction as the conveyer, and tear the roots asunder; cross-pieces I, I' with the guard-rods H extending therefrom close beneath the body of the cylinder and expanding upwardly and outwardly beyond the ends of the teeth at the top of the cylinder to prevent a tangling of the roots upon the same, all

coacting together substantially as described for the purpose specified.

2. In a machine for harvesting the roots of peppermint and similar plants, the combination of a suitable carriage; a digger-blade A' for cutting beneath the row of roots; a conveyer C' extending upwardly and rearwardly therefrom carried on suitable cylinders or rollers; a toothed cylinder G' supported on a suitable axle G above and to the rear of said conveyer with the teeth thereof projecting into close proximity with the conveyer; a train of gears operated from the axle of the driving-wheels to operate the conveyer and rotate the toothed cylinder at a higher rate of speed than the motion of the conveyer to move the teeth on the under side in the direction of the conveyer to tear the roots asunder, coacting together substantially as described for the purpose specified.

3. In a machine for harvesting the roots of peppermint and similar plants, the combination of a suitable carriage, a digger-blade A' for cutting beneath the row of roots, and a toothed cylinder G' supported to the rear of said digger-blade in position to engage and tear the roots apart; power connections from the driving-wheels to the toothed cylinder to operate it at a comparatively high rate of speed to tear the teeth asunder; guard-rods H extending close to the body of the cylinder on the under side and expanding outwardly and upwardly beyond the ends of the teeth of the cylinder to protect the same from becoming entangled with the roots as specified.

4. In a machine for harvesting the roots of peppermint and similar plants, the combination of a suitable carriage, a toothed cylinder supported upon said carriage, power connections from the driving-wheels to the toothed cylinder to operate it at a comparatively high rate of speed to tear the roots asunder, guard-rods extending close to the body of the cylinder on its under side and expanding upwardly and outwardly beyond the ends of the teeth of the cylinder to protect the same from becoming entangled with the roots, as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ALBERT M. TODD. [L. S.]

Witnesses:

WALTER S. WOOD,  
CORA W. FULFORD.