(No Model.) 2 Sheets—Sheet 1.

D. L. BARNUM.

COMBINED WHEEL CULTIVATOR AND GANG PLOW.

No. 262,726. Patented Aug. 15, 1882.

Fig. 1.

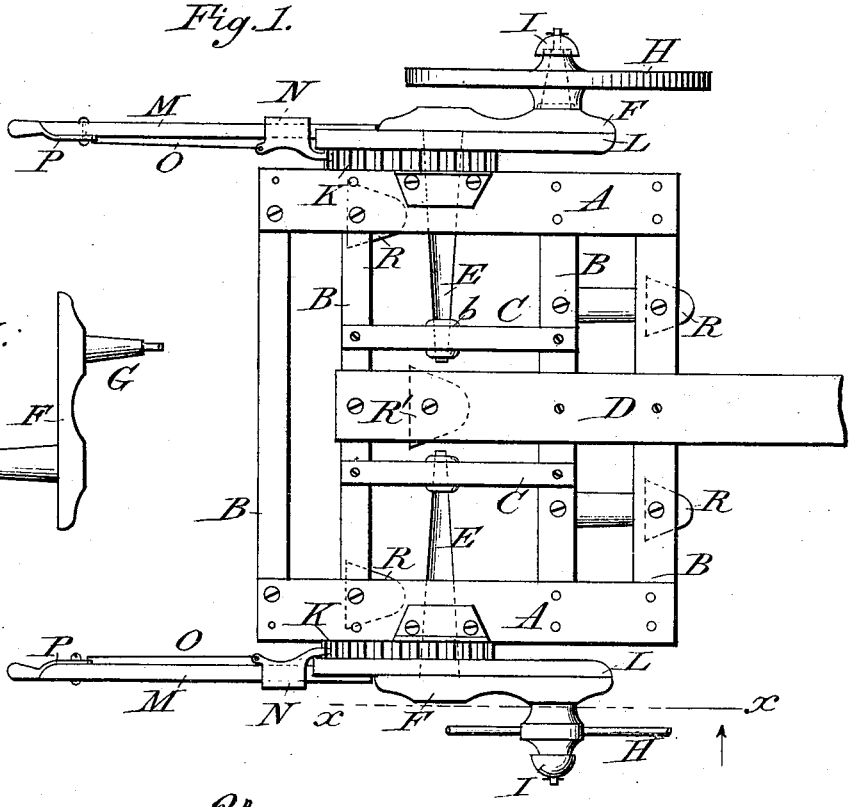


Fig. 5.

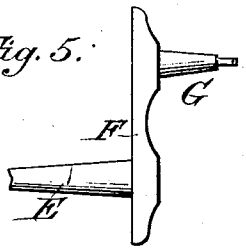


Fig. 2.

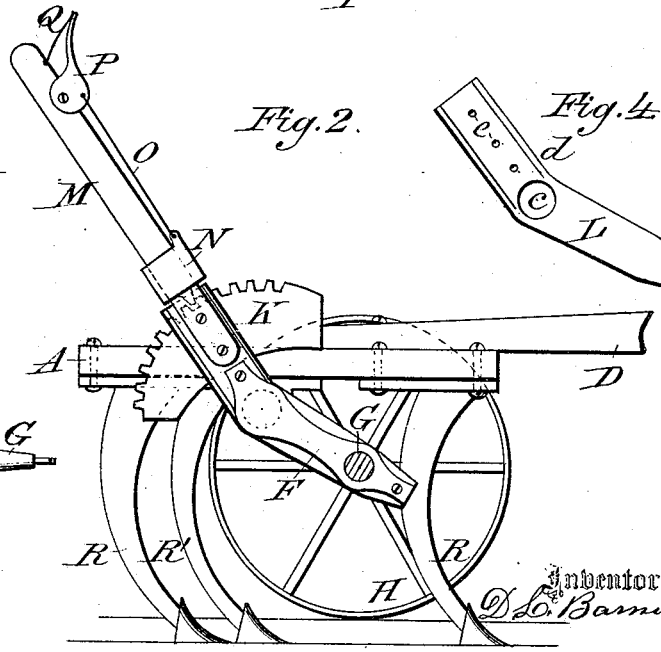


Fig. 4.

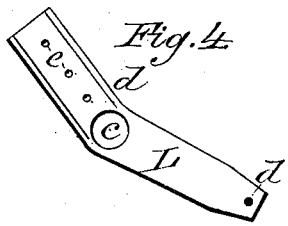
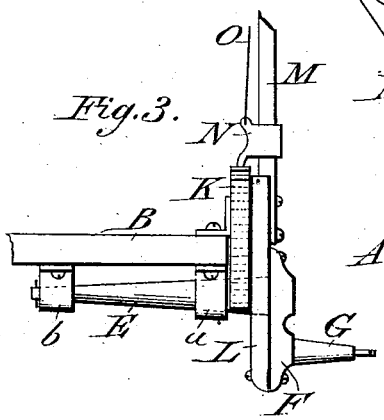


Fig. 3.



Witnesses:

H. C. Schott

A. R. Brown

Inventor

D. L. Barnum

Per C. H. Watson & Co Attorneys.

(No Model.) 2 Sheets—Sheet 2.

D. L. BARNUM.

COMBINED WHEEL CULTIVATOR AND GANG PLOW.

No. 262,726. Patented Aug. 15, 1882.

Fig. 6.

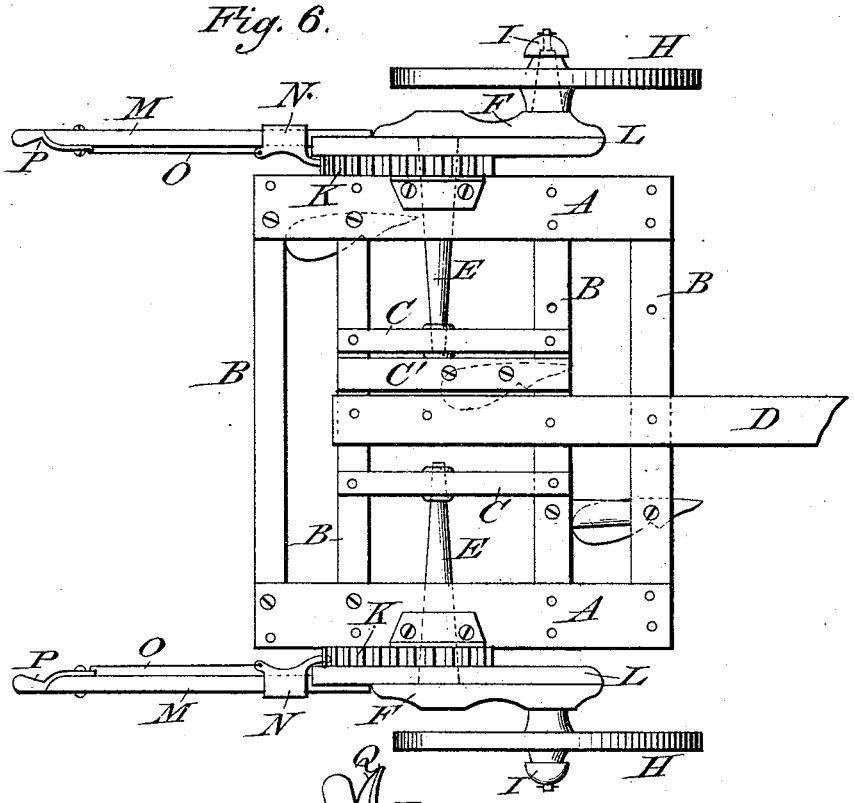
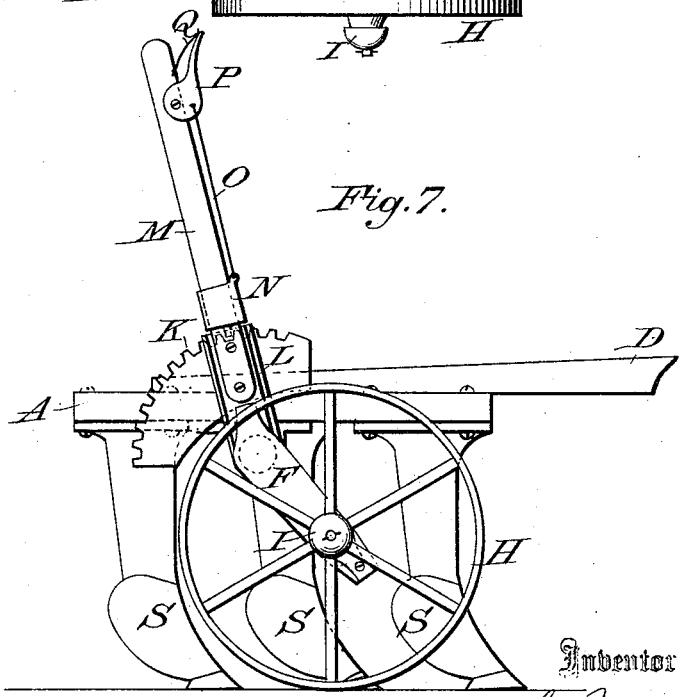


Fig. 7.



Witnesses:

H. C. Schott.

N. R. Brown,

Inventor

David L. Barnum

Per C. H. Watson & Co Attorneys.

UNITED STATES PATENT OFFICE.

DAVID L. BARNUM, OF WILSON, NEW YORK.

COMBINED WHEEL CULTIVATOR AND GANG-PLOW.

SPECIFICATION forming part of Letters Patent No. 262,726, dated August 15, 1882.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID L. BARNUM, a citizen of the United States, residing at Wilson, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Combined Wheel Cultivator and Gang-Plow; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in two-horse wheel cultivators and gang-plows; and it consists in the construction and arrangement of parts, as hereinafter more fully described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a plan of the machine arranged as a cultivator. Fig. 2 is a sectional side elevation of the same on the line *x x*. Figs. 3, 4, and 5 are details, to be hereinafter referred to. Fig. 6 is a plan of the machine arranged as a gang-plow; and Fig. 7 is a side elevation of the same.

Like letters of reference are used to designate the same parts throughout the several views.

The frame of the machine consists of the side pieces, A A, transverse pieces B B, and center pieces, C C, which are rigidly connected in any suitable manner.

D is the pole, which is connected to the transverse portion of the frame in such a manner as to be readily detached and shifted to either side, if desired.

The side beams, A, and longitudinal center beams, C, are provided with bearings *a b* for the short axles E E, which are arranged in line, though disconnected and capable of a separate rotation, as shown in Figs. 1 and 6. The axles E are each provided with an arm, F, carrying a stud, G, as shown in Fig. 5.

On the studs G G are placed the wheels H H, the hubs of which are provided with caps I, for the purpose of excluding dust and dirt.

To the outside of the frame or side pieces, A, on each side, is attached a segmental rack, K, and to the inner side of each axle-arm F, in contact with the segmental rack, is securely bolted a bearing-piece, L. (Shown in Fig. 4.) This plate or bearing-piece L is formed of metal, and is provided with an opening, *e*, for the passage of the axle E, and with perforations *d d*, through which are passed the bolts or screws by means of which it is secured to the axle-arm. It also has perforations *e e* for the passage of bolts or screws by which it is secured to the lever M, that enters a groove or recess formed in one end of said plate.

The arrangement of the bearing-plate L and lever M with relation to the axle-arm and segmental rack is clearly shown in Figs. 2, 3, and 7. The lever M is provided with a sliding pawl, N, that is adapted to engage with the segmental rack. This pawl is connected by a rod, O, with a handle, P, that is pivoted near the upper end of the lever, a spring, Q, being so arranged as to bear on the handle, thereby forcing the rod down and holding the pawl to its engagement with the rack until by pressing the handles back against the levers the said pawls are disengaged from their racks for the purpose of permitting the levers on both sides to be shifted forward or back, thus raising or lowering the machine.

When the machine is arranged for use as a cultivator it is provided with five teeth, R, two of which are placed in front on a line with each other and three in the rear, the middle rear tooth, R′, being attached to the rear end of the pole, or to the main-frame, and set a slight distance forward of the other rear teeth, as shown in Figs. 1 and 2, so as to obviate the liability of clogging.

In order to change the machine from a cultivator to a gang-plow, the teeth R R′ must be detached and the plows S substituted therefor, as shown in Figs. 6 and 7. These plows are arranged diagonally beneath the frame of the machine, to which they are secured in any suitable manner, the middle one being attached either to the rear end of the pole or to a brace or cross-piece, C′, according to the position of the pole, which may be arranged either at or near the center of the machine.

By disengaging the pawls N from the segmental racks K and throwing the levers M backward, it will be seen that the bearing plates or pieces L and axle-arms F secured thereto will

be thrown upward at their forward ends, thus raising the wheels H and forcing the plows or cultivator-teeth, as the case may be, into the soil to any desired distance, the axles A turning with the levers with which they are connected, and serving as pivots for the same. The bearing pieces or plates L afford a firm support for the levers M and impart a greatly-increased strength to the connection of said levers with the axles.

From the foregoing description the operation and advantages of my improved construction will be apparent.

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

1. In a combined wheel cultivator and gang-plow, the combination of the short axle E, having arm F and stud G, the perforated plate L, rigidly secured to the inner side of the axle-arm, and the lever M, having its lower end inserted in and secured to the grooved portion of the plate L, substantially as shown and described.

2. In a combined wheel cultivator and gang-plow, the combination, with the frame having segmental racks K, of the short axles E, supported in bearings *a b*, and having arms F, provided with studs G, the wheels H, mounted on said studs and having hub-caps I, the perforated bearings L, secured to the inner sides of the axle-arms and provided with grooves for the reception of the levers M, which are securely bolted to said plates and are provided with spring-pawls N, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID L. BARNUM.

Witnesses:

D. CLINTON BARNUM,

EDWARD F. TURK.