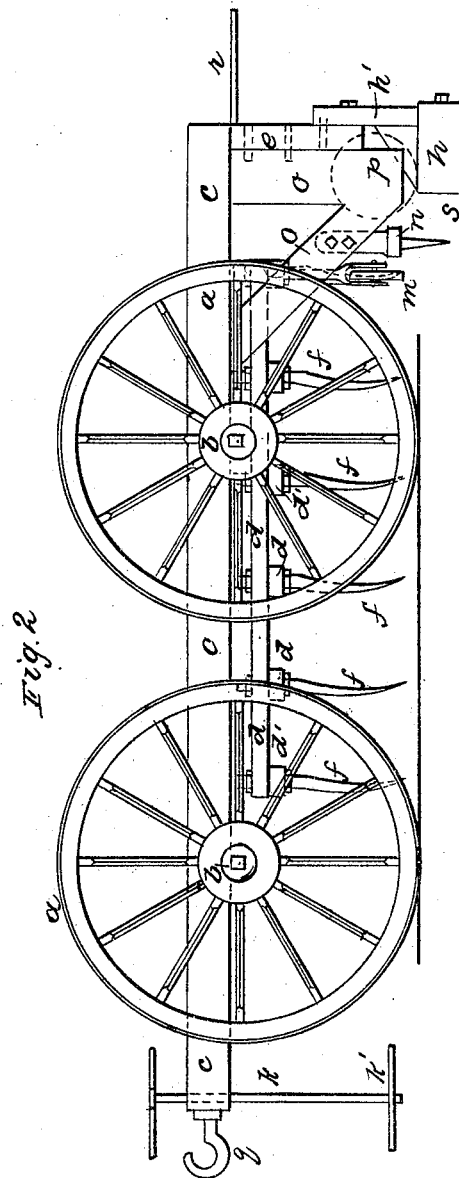
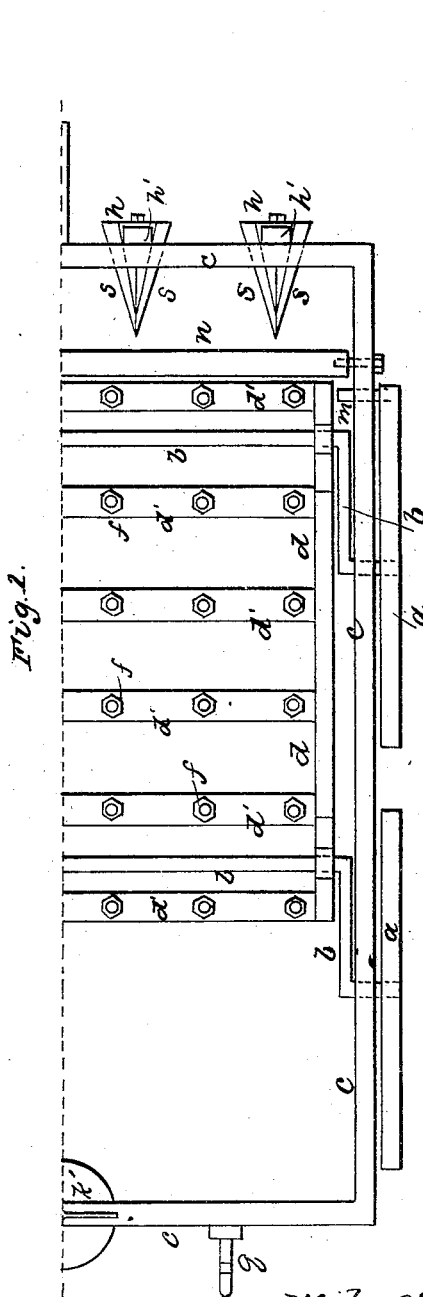


H. BELMONT.
Wheel Cultivator.

No. 110,109.

Patented Dec. 13, 1870.



Witnesses
W. T. Gilman
J. F. Cooper

Inventor
Henry Belmont

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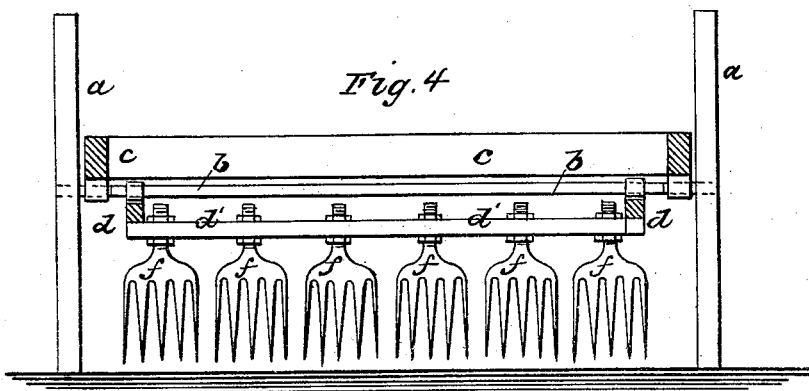
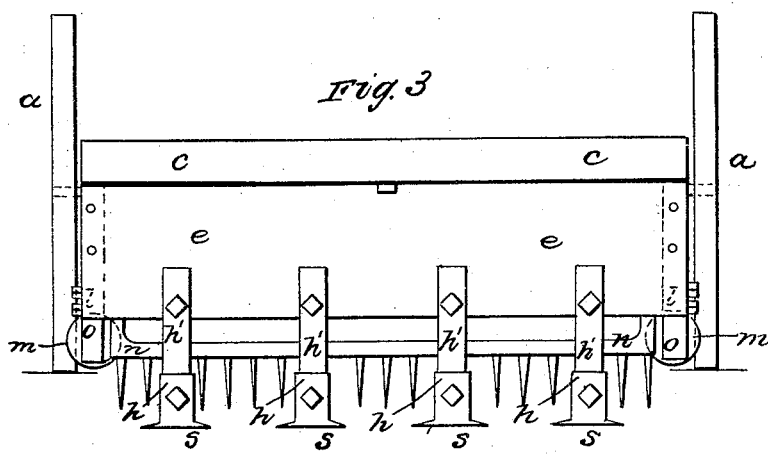


Fig. 5.

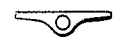


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY BELMONT, OF ROMFORD, ENGLAND.

IMPROVEMENT IN MACHINES FOR TILLING OR CULTIVATING.

Specification forming part of Letters Patent No. 119,169, dated December 13, 1870.

To all whom it may concern:

Be it known that I, HENRY BELMONT, of Romford, in the county of Essex, England, have invented an Improved Machine or Apparatus for Tilling or Cultivating; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same.

This invention consists in the construction of an improved machine or apparatus for tilling or cultivating, by which the land is dug, broken up, plowed, harrowed, and rolled, the machine being also applicable for digging or excavating land for other purposes.

To make my invention better understood, I will proceed to describe the same by reference to the accompanying drawings, in which—

Figure 1, Sheet 1, is a half plan, Fig. 2 a side elevation, and Fig. 3, Sheet 2, a back elevation, of my improved machine or apparatus; Fig. 4, Sheet 2, transverse section of same.

I employ two pairs of wheels, *a a*, mounted on the crank-axes *b b*, so as to turn with them. These axes carry in suitable bearings—such as that shown in Fig. 5—a wooden frame, *c c*. Within the arms of the axes is suspended a second and smaller frame, *d d*, also made of wood, and furnished with cross-bars *d'*, as shown.

Fig. 6 shows the elevation of the bearing I prefer to employ for suspending the frame *d d*. The bearing is hinged at one end, so that one-half may be raised when the frame is to be detached from or applied to the axes. The cross-bars of the frame *d d* carry a number of strong forks, *f f f f*, (or picks, spades, or other suitable digging implements may be employed.) The handles of these forks pass through holes in the cross-bars, and are cut with a screw-thread, so that they may be fixed and adjusted by nuts at top and bottom.

At the back of the machine or apparatus are a number of cutters or colters, *h h h h*. They are made hollow, of wrought or cast iron, with a sole-plate and a cutting-edge, *s s*, at the sides, and are fitted with wooden pieces *k' k' k' k'*, by which they are fixed, by means of bolts, to the end-board *e*, attached to the frame by pins, as shown, or by other suitable means, so that it may be easily removed when required. The colters may be made of wood cov-

ered with sheet-iron. In all cases the colters are attached to the end-board *e* in such a manner that they may be adjusted to different heights.

n n is a harrow, fixed by bolts between the side pieces, *o o*, of the frame, and *p* is a roller, (shown in dotted lines,) which may be used, if required, when the colters are not in use.

The machine is drawn by horses drafted by the hooks *q q*, or otherwise; and for turning I employ a lifting-jack, by which the front of the machine is raised, and the rod *k*, furnished with a flat piece, *k'*, at the bottom, is screwed down, and the lifting-jack is then placed at the back under the bar *r* to raise the machine, when the side rods, *l l*, carrying the small wheels *m m*, may be lowered, and the main wheels of the machine being thus raised a short distance from the ground, the machine can be turned easily. The side wheels, *m m*, are kept in position by pins or bolts passing through their rods.

By this improved machine it will be seen that each turn of the wheels will cause the forks *f f*, by means of the crank-axes, to be forced into and brought out of the ground, digging and breaking it up thoroughly, it being necessary to go twice over the ground, as the forks only act on the ground during half a revolution of the wheels. In this second labor the harrow *n* and shares *h h h h* are, if required, applied to the machine for harrowing or collecting the weeds and plowing the ground; or the roller is applied in lieu of the colter-shares if the ground is to be rolled. The vertical cutting or digging being first performed, the ultimate furrowing is effected with comparative ease.

When the machine is to be moved without working, I employ a pair of wheels, the axle of which supports the back of the frame carrying the forks, which is detached from the crank-axes, and the front of the frame is supported on the back of the large frame, so that the forks do not touch the ground.

The machine may also be rendered serviceable for builders, brick-makers, and railway contractors, and in all cases where excavation is to be performed, it being merely necessary to substitute suitable digging or cutting implements for the forks *f f f*, and detaching the harrow, colters, and roller, which would not be required.

If the frame carrying the forks, the harrow, the colter-shares, and roller is removed, the large frame will serve to receive the body of a cart, which could be used for agricultural and other purposes.

I would observe that by making the circumference of the main wheels *a a* of the same dimension as the length of the frame *d*, carrying the forks, it would not be necessary to go twice over the ground; but I prefer the dimensions shown in the drawings.

Instead of wooden wheels, I sometimes employ solid cast-iron wheels, especially for small machines.

Having now described my invention, what I claim is—

1. An improved cultivating or digging machine constructed substantially as described, having a number of strong forks, *f f f f*, fixed in a frame, *d*, which is suspended within another frame, *e*, upon the arms of crank-axes

b b of carriage-wheels *a a*, arranged so that at each turn of the wheels with the machine moving forward the forks *f f* are, by means of the crank-axes, forced into and brought out of the ground to break up the soil.

2. The digging-forks *f f*, in combination with the suspended frame *d* and the crank-axes *b b*, arranged and operating as and for the purpose described.

3. The cultivating-machine so constructed as to allow the use of interchangeable parts, as described.

In testimony whereof I, the said HENRY BELMONT, have hereunto set my hand and affixed my seal this 3d day of June, in the year of our Lord 1870.

HENRY BELMONT. [L. s.]

Witnesses:

W. A. GILBEE,

G. F. REDFERN.