3 Sheets—Sheet 1.

C. E. SACKETT.

Combined Plow and Pulverizing Harrow.

No. 222,603. Patented Dec. 16, 1879.

Fig. 1.

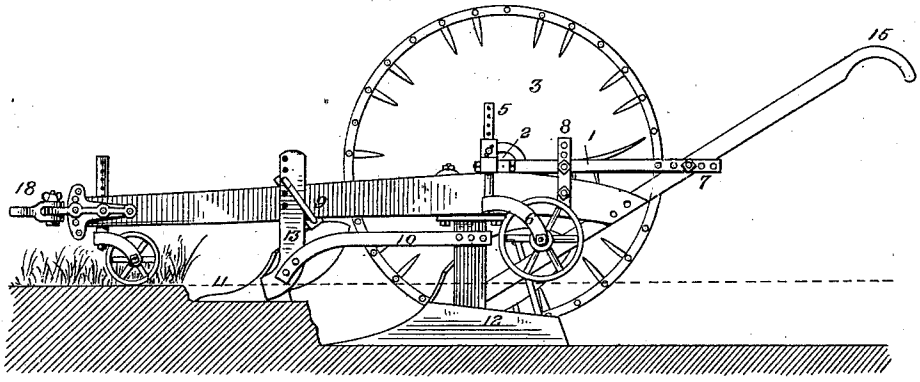


Fig. 2.

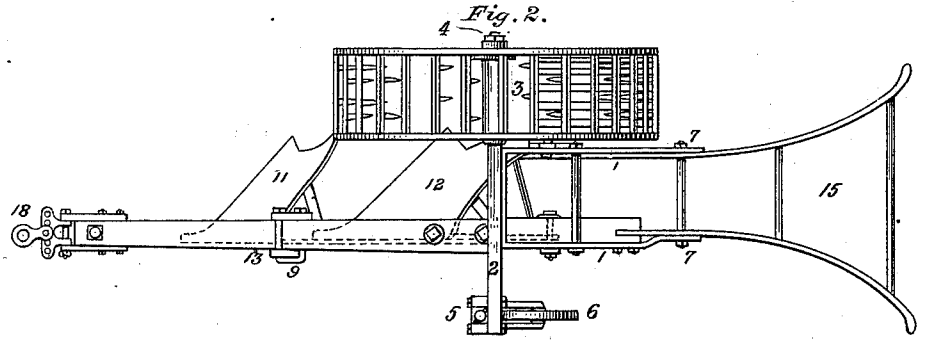
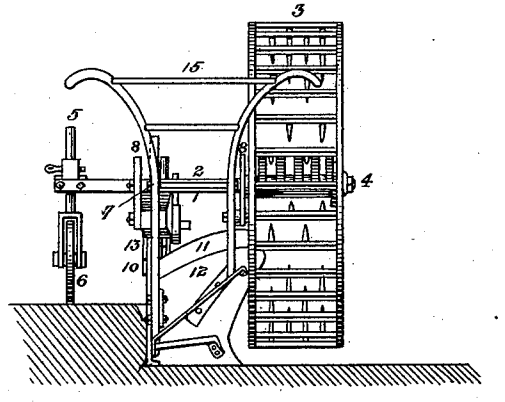


Fig. 3.



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Fig. 4.

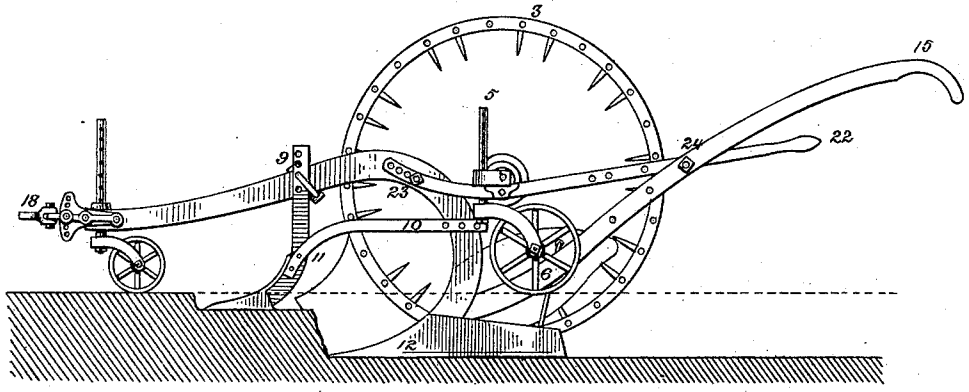


Fig. 5.

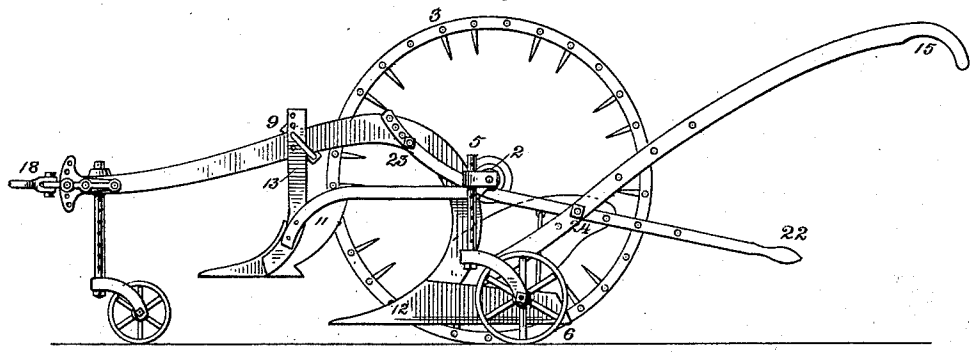
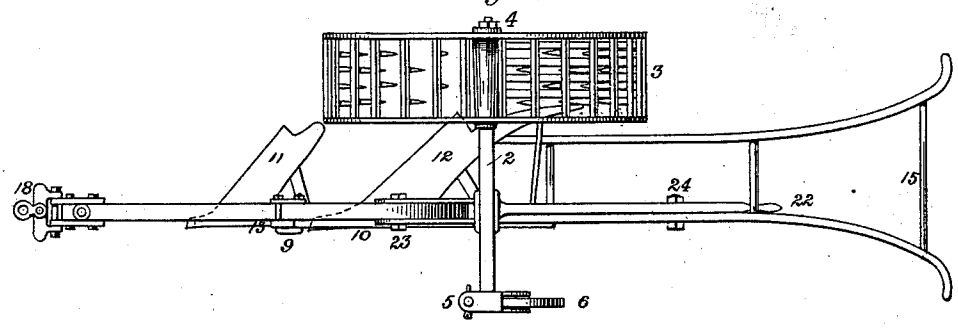


Fig. 6.



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Fig. 7.

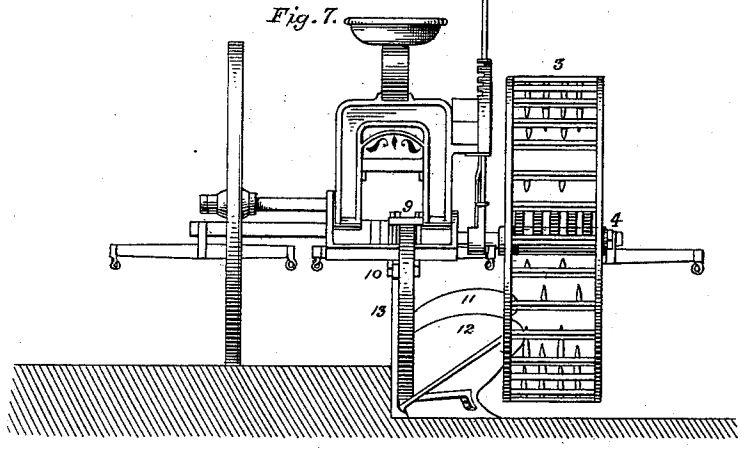


Fig. 8.

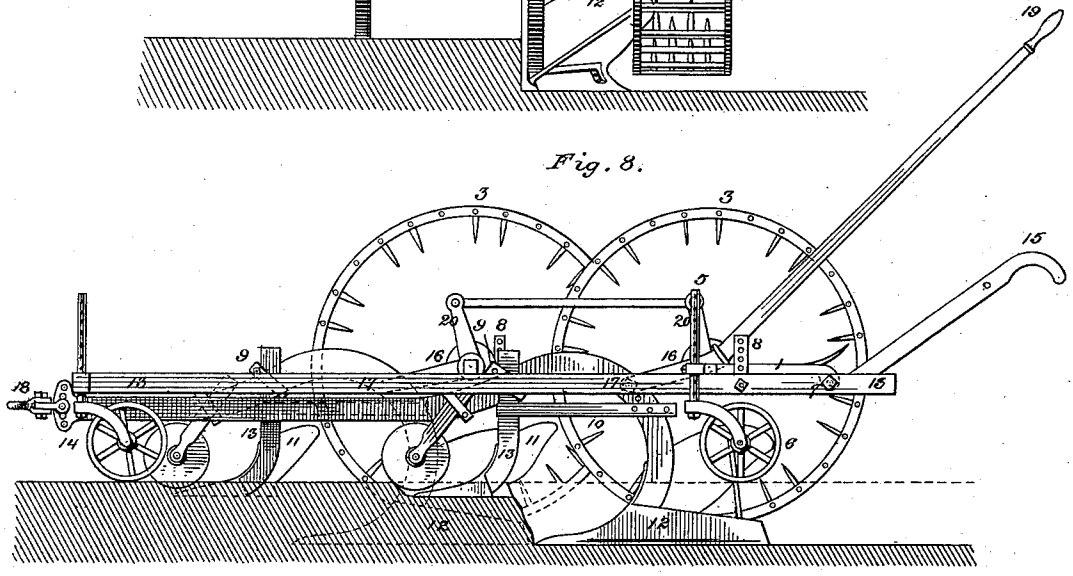
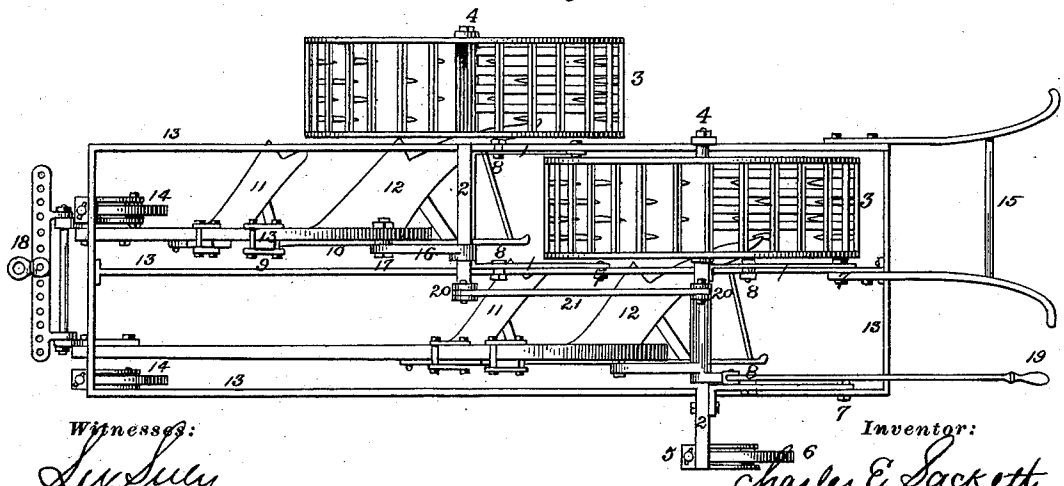


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES E. SACKETT, OF MATILDA FURNACE, PENNSYLVANIA.

IMPROVEMENT IN COMBINED PLOW AND PULVERIZING-HARROW.

Specification forming part of Letters Patent No. **222,603**, dated December 16, 1879; application filed November 4, 1879.

To all whom it may concern:

Be it known that I, CHARLES E. SACKETT, of Matilda Furnace, in the county of Mifflin and State of Pennsylvania, have invented a new and useful Combined Plow and Pulverizing-Harrow; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention consists in the combination, with single-beam plows, riding-plows, or gang-plows, of a revolving toothed harrow, whereby the earth plowed up is thoroughly pulverized, mixed with air, and made fit for immediate planting, and in one and the same continuous operation, reference being had to the accompanying drawings, which form part of this specification, and in which similar figures of reference indicate like parts.

Figure 1 is a side elevation of the pulverizing-wheel harrow, in combination with an ordinary wood-beam plow. Fig. 2 is a plan view of the same. Fig. 3 is a rear elevation of the same. Fig. 4 is a side elevation of the pulverizing-wheel harrow, in combination with an iron-beam plow. Fig. 5 is the same, the plow lifted for transportation. Fig. 6 is a plan view of the same. Fig. 7 is a rear elevation of the pulverizing-wheel harrow, in combination with a riding or sulky plow. Fig. 8 is a side elevation of the pulverizing-wheel harrow as combined with plows in gangs. Fig. 9 is a plan view of the same.

To an ordinary wood-beam plow is attached, by the strap 1, and to which it is bolted, an axle, 2, of suitable length, and lying horizontally across the beam.

At one end of the axle is the journal for the pulverizing-wheel 3, upon which it is secured by the nut and washer at 4, and therefore is easily slipped off or on. At the other end of the axle is received, in a suitable block, the movable post 5 of the gage-wheel 6. The post is perforated with holes at short distances, which intersect a similar hole in the block, and by slipping a pin through both at any hole the gage-wheel is held in that position.

The strap 1 is pivoted at its rear ends to any convenient point, as to the handles at 7, where a series of holes allow for the adjustment of the pivoted bolt, so that the pulverizing-wheel may be placed in any required relation with the plow fore and aft. Near its junction with the axle the strap is intersected vertically by two upright posts, 8 8, at either side, which posts are firmly bolted at their lower ends to any convenient point, and are provided at their upper extremities with a series of holes, which, crossing the strap, which is perforated with an intersecting hole, allow of the axle and its appendages being sustained by a bolt through any one of the intersecting holes at any height above or below the beam on the vertical line of the posts, and consequently making the plow and the pulverizing-wheel vertically adjustable in their rotation to each other.

Upon the beam of the main plow 12, and as near to it as is convenient, is secured, by an adjustable clamp, 9, and adjustable brace 10, the plow 11. The purpose of this plow is to remove such a cut of earth as will be just deep enough to carry with it all the weeds or other field growth from the path of the rear or main plow, 12, and to turn them over into the furrow, there to be rolled down beneath the pulverizing-wheel, while the rear plow raises and turns the remaining cut of earth within the pulverizing-wheel, where it is pulverized and finely distributed over the weeds passing beneath it, thus filling up and completing the furrow behind it.

The standard 13 of the front plow, 11, is provided with a series of vertical holes, by which it may be clamped to the beam securely at any height or depth of cut, and it and the pulverizing-wheel are each made vertically adjustable in their relations to each other, so that the wheel may pass beneath it whatever depth of earth or weeds it is desired to remove by the front plow, and therefore making the amount of earth thrown within the wheel to be pulverized also adjustable at the will of the operator. This construction provides for the plowing under of the tallest and heaviest weeds.

To operate the implement, the axle and its wheels being adjusted below the beam, the plow may be rolled thereon along smooth roads to the field. The axle is then adjusted above the beam, the pulverizing-wheel removed, and the first furrow opened, as in ordinary plowing; then replace the pulverizing-wheel to run in the first open furrow, and further proceed as in ordinary plowing.

Figs. 4, 5, and 6: To an iron-beam plow of

suitable curve is secured, as heretofore stated, the forward plow, 11. To the axle 2, with its appendages, as heretofore stated, is firmly bolted the yoke-lever 22, which is pivoted at the yoke extremity, as at 23, to the plow-beam, through a series of adjustable holes, and at a point, as at 24, near its other extremity, bolts to the handle 15 through a series of intersecting adjustable holes, by this construction the curve of the iron beam allowing it.

The implement may be made to adjust itself for traveling on its wheels or for plowing at any depth by a simple movement of the lever 22, and without the disconnection of any of its parts.

The block of the gage-wheel post 5 is here made to swivel upon the axle, to allow for the change in position of the latter, and when adjusted is held in position by a set-screw.

Fig. 7 shows the adaptation of the pulverizing-wheel to all riding or sulky plows, which now use one ordinary wheel traveling in the furrow last made, by replacing the ordinary spindle and wheel by a suitable journal and the pulverizing-wheel 3, and attaching to the beam the forward plow, 11, for removing the weeds from the path of the rear plow, 12, and turning them beneath the pulverizing-wheel. The earth may thus be plowed and pulverized fit for immediate planting in the one and the same continuous operation.

Figs. 8 and 9: A suitable frame, 13 13 13 13, is supported forward upon one or more adjustable gage-wheels, 14. It is provided at the rear end with handles 15. It is crossed at suitable points by the axles 2 of the pulverizing-wheels 3 and gage-wheel 6, which axles are secured to the frame adjustably by the adjustable-straps 1, pivoted to the frame at 7, and held in position by the vertical posts 8. Suspended from each axle, upon which they are hubbed, are the lifting-cranks 16, which are pivoted to the plow-beams with their respective plowing attachments at 17. The beams work independently of the frame from their clevis at 18. The plows are lifted from the earth, or lowered to and in the earth, by the operator from the hand-lever 19, attached directly to the lifting-crank of the plow nearest the land, and to all others by the connecting-cranks 20 and connecting-rod 21.

Any number of plows with these pulverizing-wheels can be coupled in this manner, and steam used as a motive power, if required, the broad tread of the pulverizing-wheels making the implement run easily and steadily.

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

1. In a tilling apparatus, the combination, with a wheel-harrow, of a plow located by its side and adapted to turn the furrow into said harrow, and of a second plow arranged in line, but on a higher plane, with the first, and forward of the harrow, as and for the purpose set forth.

2. In a tilling apparatus, the forward plow, 11, made vertically adjustable, in combination with a revolving pulverizer made vertically adjustable, so that the latter may admit the passage below it of any depth of cut or thickness of field-growth removed by the former, substantially as described and shown.

3. In a tilling apparatus, the combination, with an ordinary beam-plow, of a horizontal axle crossing the said plow-beam and supporting upon the furrow side a revolving wheel-pulverizer adapted to move in the furrow last made and to receive the earth from the said plow, and upon the other end an adjustable gage-wheel traveling upon the land, the two wheels when adjusted in combination supporting, steadying, and equalizing the movement and cut of the plow, substantially as described and shown.

4. In a tilling apparatus, the combination, with an ordinary beam-plow, of an axle connected to said plow and made vertically adjustable thereon, said axle carrying on one end a pulverizing-wheel adapted to move in the furrow and receive earth from the plow-share, and upon the other end an adjustable gage-wheel traveling on the land, as set forth.

5. In a tilling apparatus, the combination in gangs of a series of ordinary beam-plows and revolving wheel-pulverizers adapted to move in their respective furrows and to receive and pulverize the earth from their respective plows, substantially as described and shown.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHAS. E. SACKETT.

Witnesses:
L. W. SEELY,
FRANK MIDDLETON.