

G. D. MILLER.
Wheel-Cultivator.

No. 45,066.

Patented Nov 15, 1864.

Fig. 1.

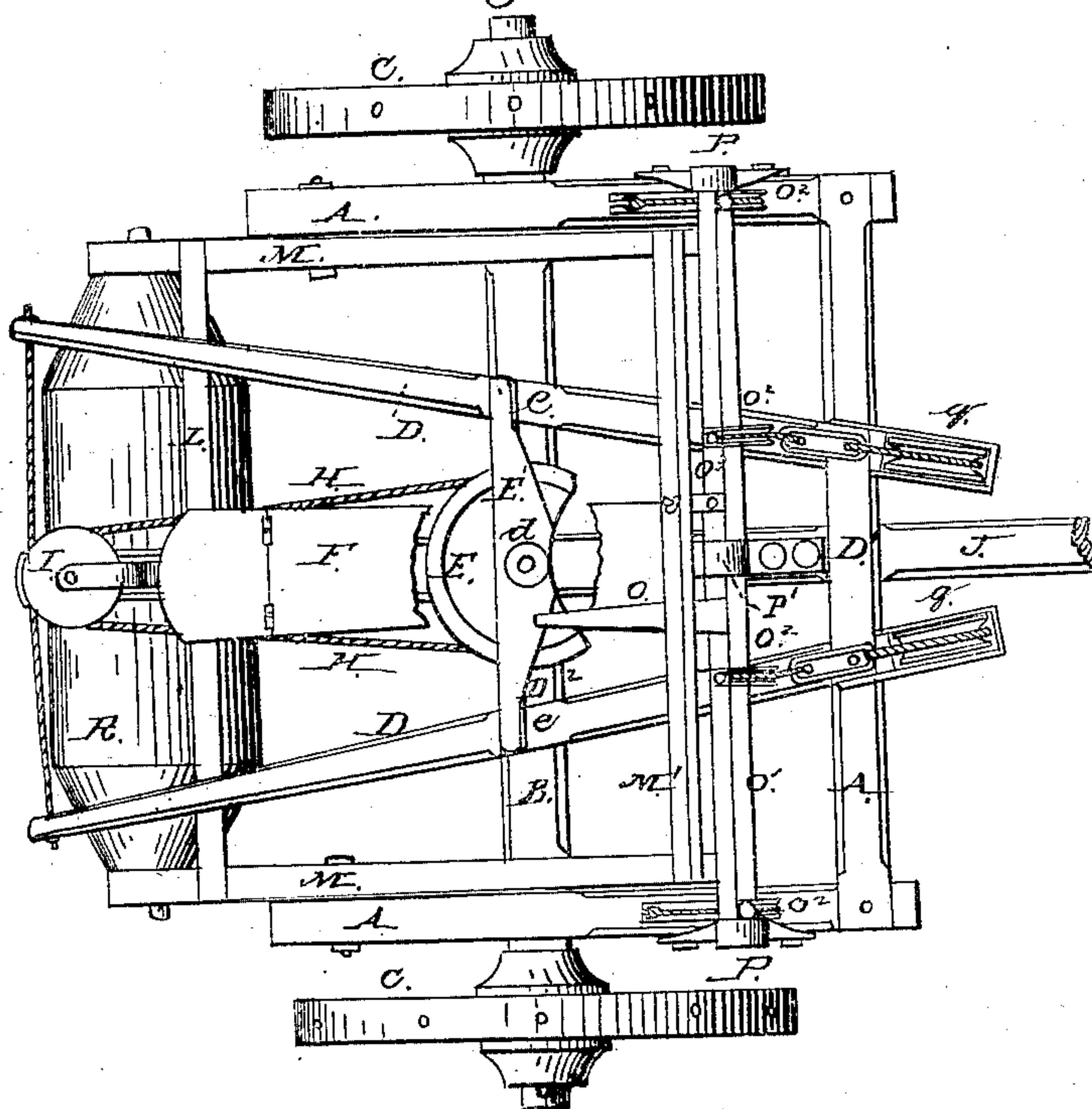
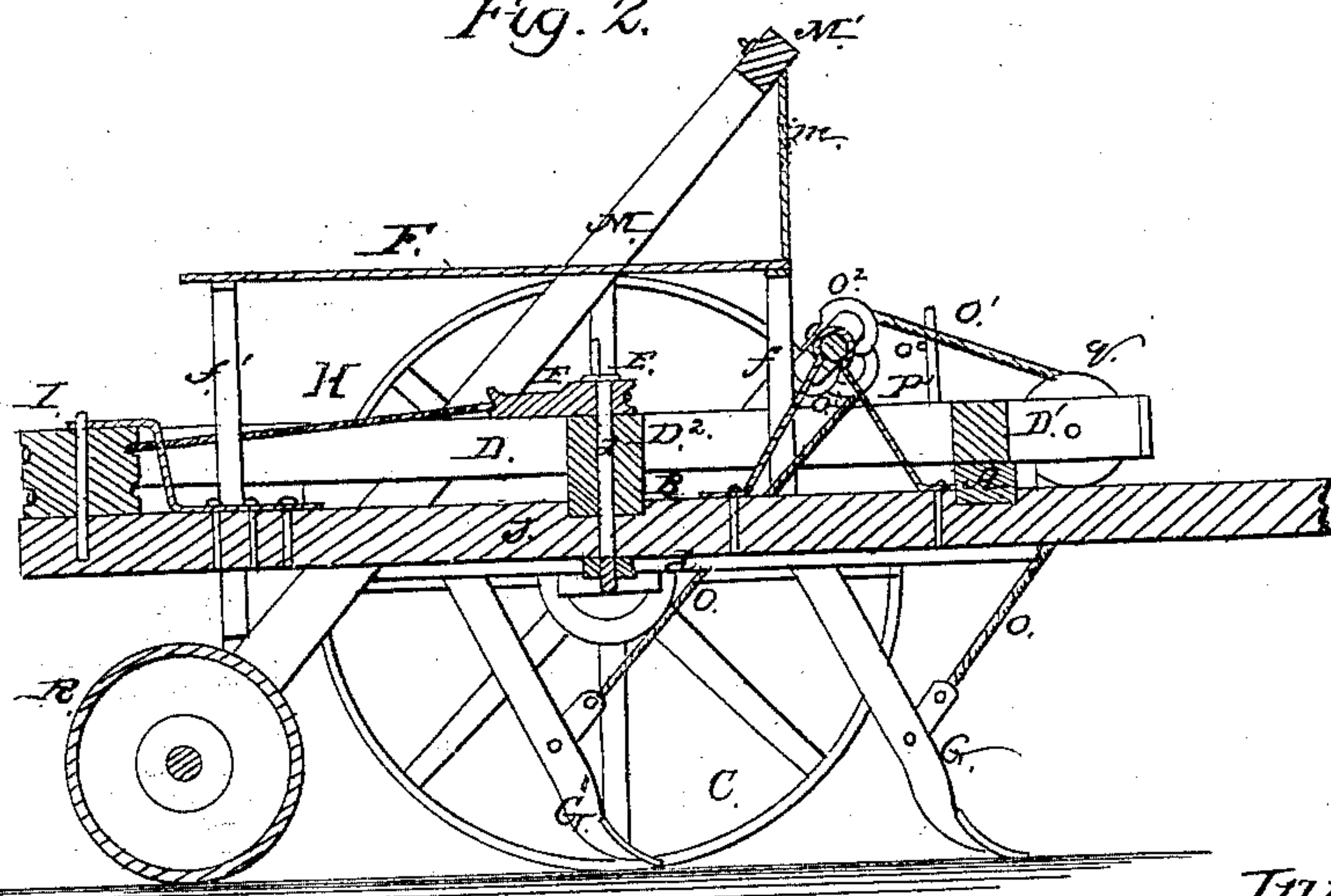


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE D. MILLER, OF LOVINGTON, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 45,066, dated November 15, 1864.

To all whom it may concern:

Be it known that I, GEORGE D. MILLER, of Lovington, in the county of Moultrie and State of Illinois, have invented a new and Improved Cultivator and Roller Combined; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of my improved machine, and Fig. 2 is a vertical longitudinal section of the same.

Similar letters of reference indicate corresponding parts in the two figures.

The objects of this invention are to facilitate the vertical and lateral adjustment of the plows, and to employ in connection therewith a roller for crushing the clods, which roller is adapted to be raised and lowered simultaneously with the plows in a novel manner, so as to not add materially to the power required to operate said plows, all as will be hereinafter fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A represents the several parts of the main frame of a cultivator, B the axle, and C C the carrying-wheels. Upon this frame is mounted a swiveled frame, D D D' D², which is secured in position and adapted to turn upon a bolt, *d*, which passes through and connects the piece D² and axle B, wherein it is retained by the nut *d'*. The bolt *d* also secures in position and constitutes the center of movement for a segmental sheave or pulley, E, upon which is secured a bar, E', having foot rests or pieces *e e* at its respective ends, to enable the driver upon the seat F, by bringing his feet into requisition, to partially rotate the pulley E, and thereby turn the frame D D D' D², near the forward ends of the side pieces of which are pivoted the shovels G, which run adjacent to the corn when the implement is employed as a corn-cultivator, the outershovels, G', being pivoted to the side pieces of the frame A. Movement is imparted from the pulley E to the adjustable cultivator-frame D D D' D² through the medium of cords H H, which, being attached to the respective sides

of the pulley E, pass around a pulley, I, which is mounted and rotates upon the rear end of the tongue J, the said cords H being fastened to the rear ends of the pieces D D. Little exertion on the part of the driver will be required to move the cultivator frame, and thus shift the plows, inasmuch as the pulley E, in connection with the bar E', serves the purpose of a lever, of which the bolt *d* is the fulcrum and the periphery of the pulley E the point of action, said periphery constituting a groove, so that the cord will be taken up or wound upon the pulley as fast as it is turned. The seat F occupies such a position that the driver, when seated upon it, will be in convenient proximity with the bar E', which may constitute a comfortable foot-rest. Said seat F is supported upon vertical arms *f f'*, rising respectively from the tongue J and from a bar, L, which is secured upon a frame, M M M'. In Fig. 1 a portion of the seat F is represented as being broken away to expose to view the pulley E and bar E'.

O is a lever joined to a transverse bar, O', the ends of which have their bearings in brackets P P, and which is supported intermediately by a bracket, P', fastened to the tongue J. The shovels G G' are connected with the bar O' by cords *o* and links *o'*, the cord working over pulleys *q q*, located at the extreme forward ends of the pieces D D of the cultivator-frame. The bar O' is provided with loops *o*², which are grooved for the reception of the cords *o*, which, passing over the loops *o*² and occupying the grooves therein, are fastened thereto at the back of the bar O'. The object in employing the loops *o*² is to cause the connecting-cords to act upon the shovels in such manner as to elevate the same to a greater extent for a given movement of the bar O' than that which would be effected if the cords were attached directly to the bar O'. The shovel-standards being pivoted, the driver may elevate the plows with facility by turning the lever O.

R is a roller journaled in the rear ends of the pieces M M, which are secured to the sides of the frame A by pivots, which may be withdrawn, so as to admit of the removal of the frame M M M', together with the roller R, when the machine is to be employed for cultivating corn, the use of the roller being to crush the

clods which resist the action of the shovels in the act of plane cultivating or stirring.

In addition to the loops o^2 , the bar O' is provided with a loop, o^3 , in connection with which is used a cord, m , which is fastened to the front piece, M' , of the frame to which the roller R is attached. Hence when the shaft O' is turned by the lever O to elevate the shovels $G G'$ the pivoted frame $M M M'$ is turned so as to describe the arc of a circle in a vertical plane, and this movement is of course attended with the elevation of the roller R , attached to the rear end of the frame. It does not require great strength to thus elevate the roller R , for the reason that the frame $M M M'$ operates in a manner similar to a lever, and that part of the frame to which the roller is attached may be supposed to be the short arm of such lever, the pivots by which the frame $M M M'$ is supported constituting the fulcrum and the piece M' at front the point of action.

I am aware that rollers have hitherto been used in combination with cultivating machines, and therefore do not claim this combination, broadly. The merit of my invention, in connection with this frame, consists in the peculiar means employed for adapting the roller to be adjusted vertically simultaneously with the adjustment of the shovel.

By reason of the peculiar manner of mounting the driver's seat F the weight of the driver is thrown directly upon the roller while the machine is in operation, and while the efficiency of the roller is thus increased the driver may

for the moment, when it becomes necessary to elevate the parts over obstacles, relieve the seat of his weight, so as to reduce the power required to depress the lever O .

The segmental pulley E , in connection with the cords H , pulley I , pivoted bar E' , and foot-rests e , adapts the cultivator-frame to be adjusted with the greatest possible facility, and without subjecting the driver to inconvenience or rendering it necessary for him to assume an uncomfortable position.

The foregoing will preclude the necessity for a special description of the operation of the machine.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The swiveled frame $D D D' D^2$, in combination with the segmental pulley E , bar or lever E' , foot-pieces $e e$, cords H , and pulley I , the whole being arranged to operate substantially as and for the purposes herein set forth.

2. The manner herein described of employing the roller R , so that it may be adjusted simultaneously with the plows by means of the lever O .

The above specification of my improved cultivator and roller signed this 22d day of June, 1864.

GEORGE D. MILLER.

Witnesses:

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