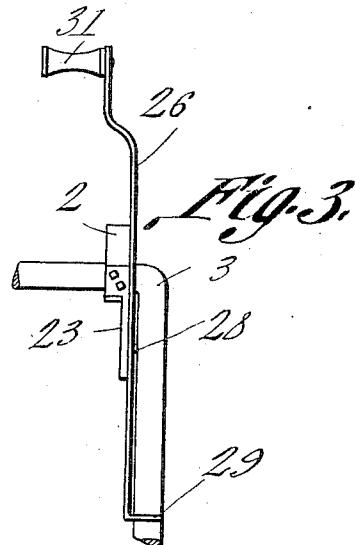
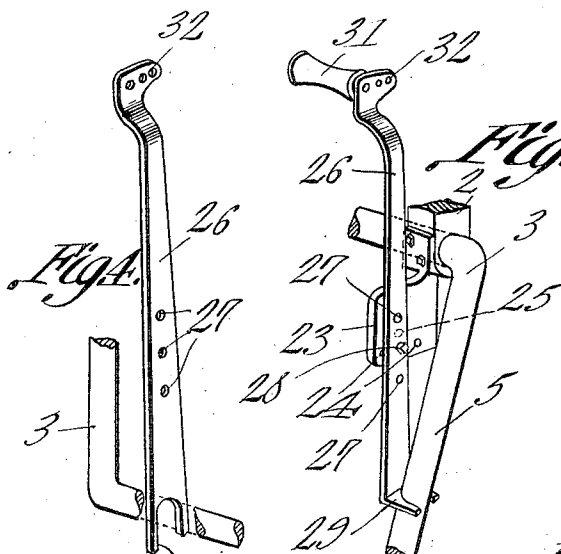
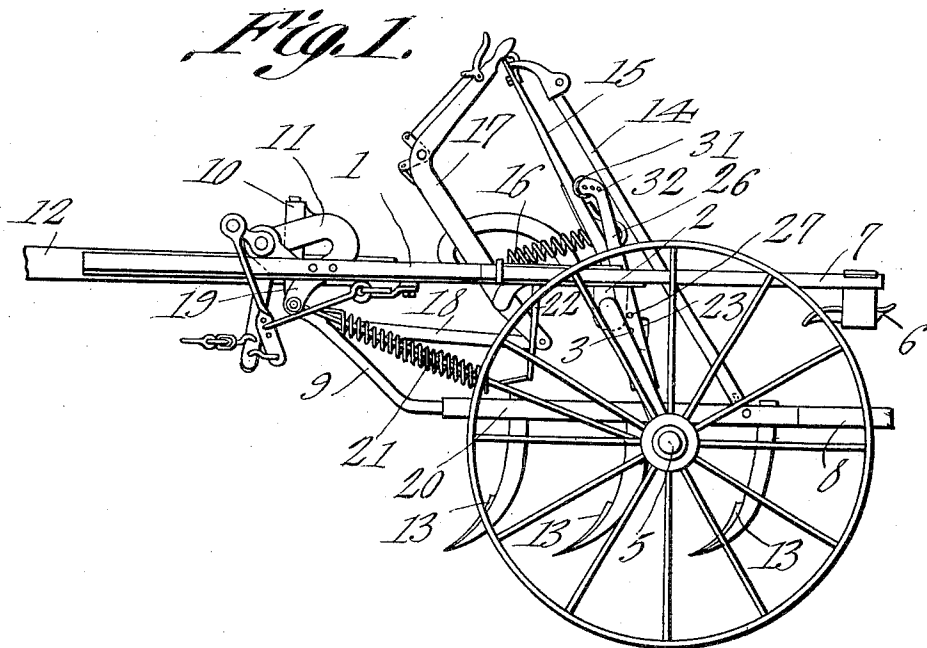


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CULTIVATOR.
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1,051,253.

Patented Jan. 21, 1913.



Witnesses 30

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UNITED STATES PATENT OFFICE.

HENRY PETERSEN, OF MOUNT AUBURN, IOWA.

CULTIVATOR.

1,051,253.

Specification of Letters Patent.

Patented Jan. 21, 1913.

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To all whom it may concern:

Be it known that I, HENRY PETERSEN, a citizen of the United States, residing at Mount Auburn, in the county of Benton and State of Iowa, have invented a new and useful Cultivator, of which the following is a specification.

This invention relates to cultivators and is more particularly an improvement upon the structure disclosed in Patent No. 1,012,221, issued to me on December 19, 1911. Said patented machine or cultivator, is of the sulky type, and an upstanding mast and a depending pendulum bar are utilized as part of the mechanism for raising and lowering the gang frame of the device and an arm is connected fixedly to the arched axle of the machine and is utilized for engaging the mast when moved in one direction so as to shift it and thereby raise the rear end of the gang, said arm when moved in the opposite direction, being designed to engage the pendulum bar and thus cause the mast to swing downwardly and lower the rear portion of the gang. It has been found, however, that where an arm is fixedly connected to or rigid with the arched axle, it is not possible to get as wide a range of movement as is desired in order to actuate the mast and pendulum for the purposes intended, unless the axle is adjusted angularly to an objectionable extent.

One of the objects of the present invention is to provide means, actuated by the arched axle when adjusted angularly, for swinging the mast and pendulum bar in either direction desired, said means being so mounted relative to the axis of rotation of the axle, as to have greater movement, at its upper end, than is possible where the arm is rigidly attached to the axle as heretofore.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, with-

out departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:—Figure 1 is a side elevation of a cultivator such as disclosed in my patent hereinbefore mentioned, the same being provided with the improvement constituting the present invention. Fig. 2 is a perspective view of a portion of the arched axle and showing the arm assembled therewith. Fig. 3 is a front elevation of the parts shown in Fig. 2. Fig. 4 is a perspective view of a modified form of arm.

Referring to the figures by characters of reference 1 designates the main frame of a sulky cultivator and this frame is provided, at its sides, with bearings 2 in which is journaled an arched axle 3. Ground wheels 4 are mounted for rotation upon the ends of the depending or crank portions 5 of the axle. A seat 6 for the driver is supported back of the frame 1 by one or more bars 7. Arranged under the frame 1 and between the crank portions 5 of the axle 3 is a gang frame 8 having a beam 9 extending upwardly and forwardly therefrom and pivotally connected at its front end to a yoke 10. This yoke is journaled upon a crank 11 arranged to swing vertically and which is supported by a forwardly extending draft tongue 12 fixedly connected to the main frame 1. The gang frame 8 has soil engaging members 13 extending downwardly therefrom and the rear portion of the gang frame is pivotally connected to a pendulum bar 14 which projects through the frame 1 and is pivotally attached, at its upper end, to the upper end portion of a mast 15. This mast is pivoted, at its lower end, upon the frame 1. A coiled spring 16 is connected at its forward end with the frame 1 and at its rear end with the mast 15 at a point above the fulcrum of the mast. This spring is under tension and tends to draw the upper free end of the mast in a forward direction. A lever 17 is fulcrumed on the frame 1 and its lower end is connected, by means of a bar 18, to a crank arm 19. A rod 20 is pivotally connected at its front end to the

crank arm 19 and at its rear end to the lower end of the crank portion 5 of axle 3 and has a spring 21 thereon which tends to draw the lower end of the arm 19 toward a fixed arm 22 which depends from the frame 1.

The parts heretofore described have all been illustrated and described in detail in my patent hereinbefore mentioned and, except as broadly considered, constitute no part of the present invention. These parts are utilized in the operation of raising and lowering the gang frame 8 relative to the main frame 1.

As hereinbefore stated an arm has been heretofore rigidly connected to the arched axle for the purpose of engaging the mast 15 or the pendulum bar 14 for the purpose of swinging the mast either forwardly or rearwardly when the arched axle is swung rearwardly or forwardly respectively. This arm which is rigid with the arched axle has not, however, had as much movement as desired as a result of the angular adjustment of the axle and, therefore, a novel form of pivoted arm has been devised by me and constitutes the subject matter of this invention. This arm may be mounted in different ways and in Fig. 2 a bracket or supporting member 23 is shown depending from the bearing 2, this bracket being provided, preferably, with a transverse series of apertures 24 and an upwardly extending series of apertures 25. The mast actuating arm is in the form of a lever 26 having a series of openings 27 extending longitudinally thereof and any one of which is adapted to receive a pivot bolt 28 or the like which can be inserted in any one of the openings 24 and 25 in the bracket 23. The lower end of the lever 26 has a laterally extending fork 29 which loosely straddles the crank portion 5 of the arched axle or, if desired and as shown in Fig. 4, the forked portion can be extended downwardly as indicated at 30 so as to engage the spindle portion of the arched axle. The upper end of the lever 26 is preferably curved inwardly so as to overhang the frame 1 and has a spool 31 or any other suitable engaging element extending laterally therefrom and between the mast 15 and the pendulum bar 14. This engaging element can be adjustably connected to the lever by fastening it in any one of a series of openings 32 formed in the upper end of the lever.

Although the lower end of the lever is preferably forked so as to loosely engage the arched axle, it is to be understood that any other suitable form of loose connection may be provided in lieu thereof. Furthermore while the lever is shown pivotally and adjustably connected to a bracket or other supporting element depending from the bearing 2, it is to be understood that the

lever can be connected to any other suitable structure, such as the frame 1 or an extension thereof, it only being necessary that the fulcrum of the lever be located below the axis of rotation of the axle 3.

Inasmuch as the fulcrum of the lever 26 is arranged below the bearings 2 of the axle 3 and the lower end of the lever is in engagement with the crank portion 5 of the axle, it will be apparent that when the said crank portion is swung forward about the axis of rotation of the axle the upper end of the lever will be swung rearwardly so as to engage the pendulum bar 14 and swing it rearwardly, thereby causing a corresponding movement of the mast and the lowering of the gang frame 8. This movement of the upper end of the lever 26 will be much greater than could be obtained should a rigid arm be utilized as in the patent hereinbefore mentioned. Furthermore the extent of this movement can be regulated by adjusting the lever vertically upon its supporting structure or bracket 23 so as to lengthen or shorten the lower arm of the lever. It will be apparent of course that the reverse movement of the arched axle will result in the forward movement of the mast 15 and will cause the pendulum 14 to elevate the rear end of the gang frame. The engaging element 31 can be easily adjusted so as to lie close to the mast 15, this adjustment being effected by securing said element in any one of the openings 32.

What is claimed is:—

1. In a cultivator the combination with an arched axle, a gang frame, a supported structure, a pivoted mast, and a pendulum bar connecting the mast and gang frame, of means actuated by and movable relative to the arched axle for engaging either the mast or the pendulum bar to swing them relative to the supported structure.

2. In a cultivator, an arched axle mounted for angular adjustment, a supported structure, a gang frame, a lever fulcrumed below the axis of rotation of the axle and having its lower end movably connected to the axle, and means operated by the upper end of the lever for adjusting the gang frame upwardly or downwardly.

3. In a cultivator, the combination with an arched axle, a supported structure, and means for adjusting the axle angularly relative to the structure, of a lever, said lever having a fulcrum adjustable relative to the axis of rotation of the axle, means for connecting the lower end of the lever loosely to the axle, an engaging element carried by the upper end of the lever, and means operated by said element for raising and lowering a gang frame.

4. The combination with an arched axle mounted for angular adjustment, a supported structure, and a gang frame, of mech-

anism for adjusting said frame relative to the structure, said mechanism including a lever fulcrumed below the axis of rotation of the axle, a connection between the lower
5 end of the lever and the axle, and an engaging element adjustably connected to the upper end of the lever.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY PETERSEN.

Witnesses:

SELINA WILLSON,
ERNEST F. RILEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."