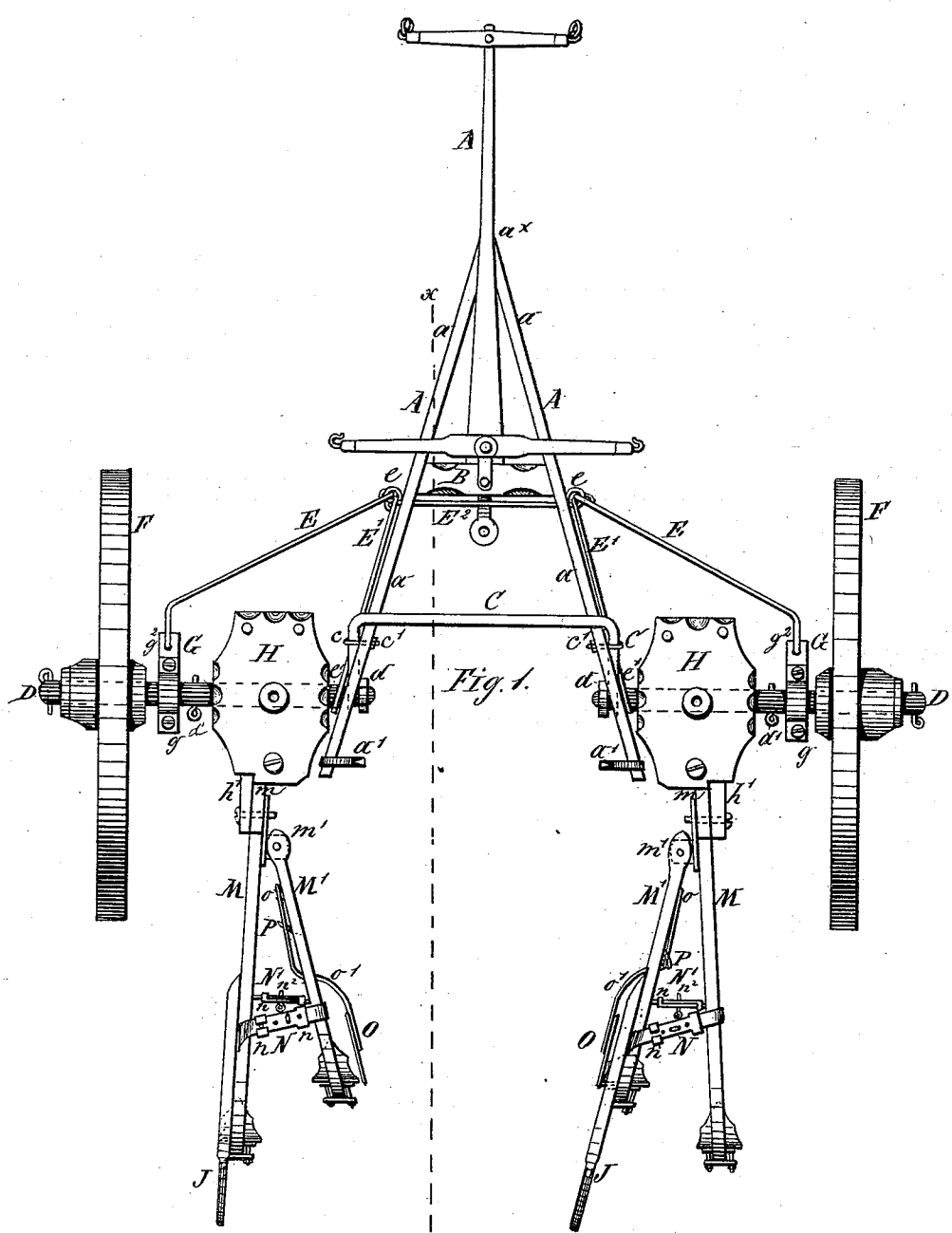


S. PURDY.
CULTIVATOR.

No. 179,133.

Patented June 27, 1876.



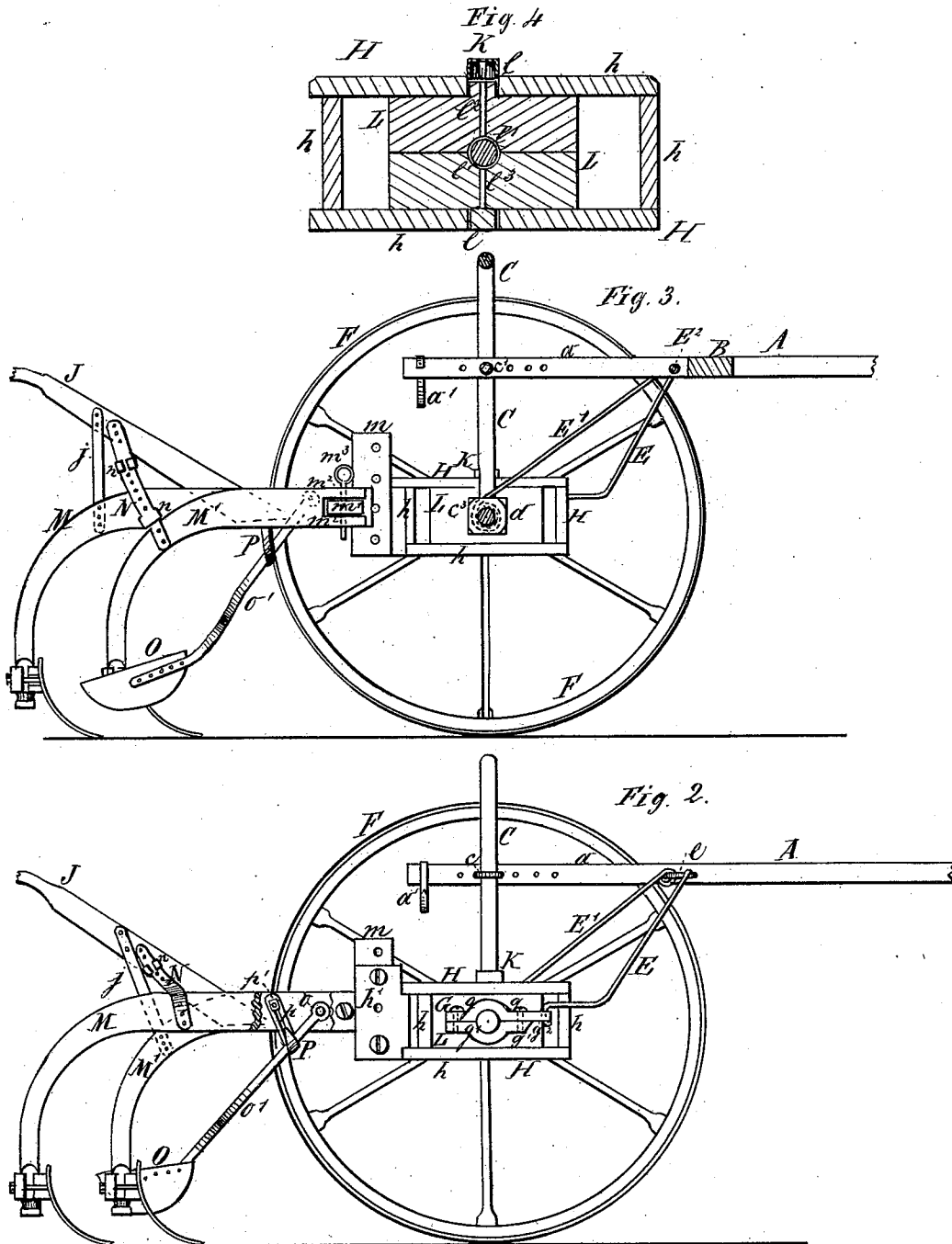
Witnesses.
C. E. Wilson
Chas. K. S. S. S. S.

Inventor.
Stephen W. Purdy

S. PURDY.
CULTIVATOR.

No. 179,133.

Patented June 27, 1876.



Witnesses.

Wm. Wilson
Chas. K. Sudd

Inventor.

Stephen Purdy

UNITED STATES PATENT OFFICE.

STEPHEN PURDY, OF KEWANEE, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **179,133**, dated June 27, 1876; application filed August 30, 1875.

To all whom it may concern:

Be it known that I, STEPHEN PURDY, of Kewanee, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification:

My invention relates to that class of cultivators commonly called "straddle-row cultivators;" and consists, first, in the peculiar construction of the journal-boxes connecting the plows with the axles of the cultivator, whereby the working parts are readily lubricated and the plows moved either in vertical or lateral direction without changing the position of the draft-frame; secondly, in the combination, with the plow-beams and journal-boxes, of vertical standards adapted to adjust the plows to the required depth of tillage, and of extensible links for the purpose of adjusting each pair of plows to the width of the rows under cultivation.

In the accompanying drawings, Figure 1 is a plan; Fig. 2, a vertical elevation, one of the driving-wheels being removed; and Fig. 3, a section through line *xx* of Fig. 1, of a cultivator constructed according to my invention; and Fig. 4 is a section through the box or bearing G, connecting the plow-beams with the driving-axles.

A is the tongue of the class or type known as the "divided tongue," said tongue being affixed to the bolster or transverse brace B in any usual or preferred manner. The tongue A is provided with dividing bars or braces *a*, affixed thereto about midway of its length, as shown in Fig. 1 at *a*^x, said braces or bars running back at an angle to the tongue A, forming a considerable enlargement at the rear hitching-point, as shown, thus effectually preventing the horse's hind feet from trampling down the growing crop. The dividing bars or braces *a* project some distance in rear of the tongue, and are connected to a bail or yoke by means of eyebolts *c* and nuts *c*¹, in such manner as to make the tongue adjustable on said bail both vertically and longitudinally, as will be more fully explained hereinafter.

The lower ends of the vertical arms *c*² of the bail C are provided with a collar or perforated enlargement, *c*³, fitting loosely over the stub-axles D, on which are mounted the

driving-wheels F. The inner ends of said axles are diminished or smaller in circumference. This diminished or smaller portion of the axles is screw-threaded to receive a nut, *d*, which prevents the yoke or bail C from coming off the axles D, as shown by Figs. 1 and 3. The divided tongue A is further secured and connected to the axles D by means of connecting-links E E¹ and a rod or brace, E². The rod or brace traverses and braces together the dividing-bars *a* at a point immediately in rear of the bolster B, as shown by Figs. 1, 2, and 3, and is provided at both ends, outside of said bars *a*, with a loop or eye, *e*, to which one end of the links E E¹ are connected by a loose or toggle joint. The other ends of the links E E¹ are connected loosely with the stub-axles D—one, E, immediately in rear of the drive-wheels F, by means of a boxing or bearing, G, mounted loosely upon the axles D, said bearing being formed of two parts, *g g*¹, and constructed in the ordinary form of bearings. The upper part *g*, however, is provided in front of the axles with a projection or ear, *g*², to which the link E is hooked or otherwise secured; the other, E¹, is provided with a loop or eye, which fits loosely upon the smaller part of the axles D, and is held in position on one side by the bail C, and on the other by the shoulder formed by the axles being reduced in diameter, as already stated.

By this peculiar arrangement the links E E¹ form an angle the apex of which is at *e*, and said links serve not only to hold the dividing tongue in position and prevent its lateral motion, but also to hold said tongue at any desired height on the bail or yoke C, thus making said tongue pivotal and adjustable, as already mentioned, not only vertically, but also longitudinally, of the bail and axles, as it will be obvious that, by moving the tongue forward or backward, the apex of the angle formed by the links E E¹ will be raised or lowered, and, consequently, the tongue with it. Hence, when the cultivator is to be moved from one place to another, the tongue is moved well forward, and, consequently, lowered considerably. The weight thereof at the forward end of the cultivator is naturally increased, and made to counterbalance the weight of the

plows when hooked to the bars *a a* for removal.

The bearing *G* is prevented from slipping too far inward on the axle by means of a pin, *d'*, passing through said axle.

H H are the journal-boxes, composed of the frame *h* and standard *h'*, to which the plow-beams *M* are adjustably connected by means of the standard *m*. The upper and lower plates of the frame are provided with central circular apertures for the reception of the trunnions *l* of the journal-bearings *L*, consisting of two half-blocks, each provided with a semicircular aperture, *l'*, forming, when united, a circular aperture for the reception and passage of the axle *D*. Each of the half-blocks has a trunnion, *l*, formed thereon, which fit and work in the apertures of the upper and lower plates of the frame *h*. The upper half-block is further provided with an oil-passage, *l²*, passing through the trunnion down to the axle *D*, while the lower half-block is provided with a similar passage, *l³*, passing through such block to the side of its trunnion. An oil-cup, *K*, fixed over the aperture of the top plate of the frame *h*, feeds the lubricating material to the trunnion *l* of the upper half-block, and passing around such trunnion to the face of the block, and through the aperture or oil-passage *l²* to the axle and lower half-block, and through such block to the side of its trunnion, keeping all these working parts constantly lubricated, without necessitating their being taken apart for the purpose.

It is evident that, by the peculiar construction of this boxing or bearing *H*, the plows, when attached to the standards *h'*, may be readily moved vertically by aid of the loose horizontal bearing on the axles *D*, or they may be moved laterally by means of the pivotal connection of the block *L* with the frame *h*, and consequently the plows may at all times be regulated to the desired tillage without changing the position of the draft-frame, or said plows may be raised up and hooked to the bars *a a*, which are provided at their rear ends with hooks *a¹*, when it is desired to move the cultivator from one place to another.

M M' are the plow-beams, arranged in pairs on either side. The plow-beam *M* is rigidly connected to a standard, *m*, and is provided at its forward end with a perforated lug or ear, *m¹*. The inner and shorter beam *M'* is provided at its forward end with a fork, *m²*, adapted to fit over the projection or lug *m¹*, and, when connected together by means of the pin *m³*, forms a pivotal or hinge connection, by means of which the plows may be readily spread apart to suit the width of the rows of the growing crop, and in order to hold the plows in the desired position I use two slides, *N N'*, the slides *N* connecting together the beams *M M'* by having one end affixed to the plow-beam *M'*, while the other is affixed to the handle *J*. The slides *N'*, on the con-

trary, connect the two beams directly together, as shown by Fig. 1. These slides are formed in two parts, and are preferably made of strong sheet metal, one end of each being rigidly and securely affixed to the beams or handles, as described, while the other or free end is provided with lugs or ears *n*, which are bent over so as to form clasps, which, when the two parts are in position, clasp them securely together in such manner that one part will slide on the other. Each portion or section is provided with a series of holes, and, when the plows are adjusted to the desired width of row, they are secured in that position by passing a pin, *n²*, through the two sections of the slides *N N'*.

It will be readily understood that, by this arrangement, the plows are easily adjusted, and the slides afford strong braces, whereby said plows are rigidly secured in the desired position.

The handles *J* are further secured to the plow-beams *M* by means of braces *j*, as shown.

The depth of tillage is regulated by raising or lowering the plows on the standards *h'*, the standards *m* and *h'* being provided with a series of holes for that purpose, and the plows are held in position by bolts and nuts *m²* or set-screws.

O O are the guards, pivoted at *o* to the plow-beam *M'*, the guard bar or handle *o'* of which rests in a loop or hook, *P*, adjustably connected with the beam *M'* by having a longitudinal slot, *p*, formed in said hook or loop *P*, which is held in the desired position by a set-screw, *p'*, as plainly shown in Fig. 2, where the outer plow-beam *M* is broken away to show the arrangement of the loop or hook *P* and the guard *O*.

It will be seen that, by this arrangement, the guard may not only be adjusted in relation to the plows, but will readily follow or drag over the surface of the ground and effectually prevent the covering up of the growing crop.

I am aware that divided tongues have been in use heretofore, but as constructed, the dividing-bars running close up to the forward end of the tongue, thereby endangering the limbs of the horses, and consequently their life, by subjecting them, when unruly and rearing, to getting their fore legs between the dividing-bars and the tongue proper, and breaking them.

Having described my invention, what I claim is—

1. The combination of the boxes *H* and the pivot-block *L*, formed in two parts, each having a trunnion, *l*, and provided with suitable oil-passages *l² l³*, with the axles *D*, constructed to operate substantially as and for the purposes specified.

2. The combination, with a pair of cultivator plow-beams, pivoted together substantially as described, of the standards *h' m* of the plow-beams and journal-boxes, and the adjustable or extensible links *N N'*, consist-

ing, essentially, of two metallic plates having a series of bolt-holes formed therein and provided with ears or projections at their extremities, which, when bent over, clasp the two plates together, as described, all arranged and constructed to admit of a vertical and lateral adjustment of the plows, substantially as and for the purposes set forth.

In witness that I claim the foregoing I have hereunto set my hand this 23d day of July, A. D. 1875.

STEPHEN PURDY.

Witnesses:

CHAS. K. LADD,
C. C. WILSON,
J. C. RICE.