No. 833,130. PATENTED OCT. 9, 1906.

A. S. ETTINGER.

COMBINED CULTIVATOR AND PLOW.

APPLICATION FILED JULY 22, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

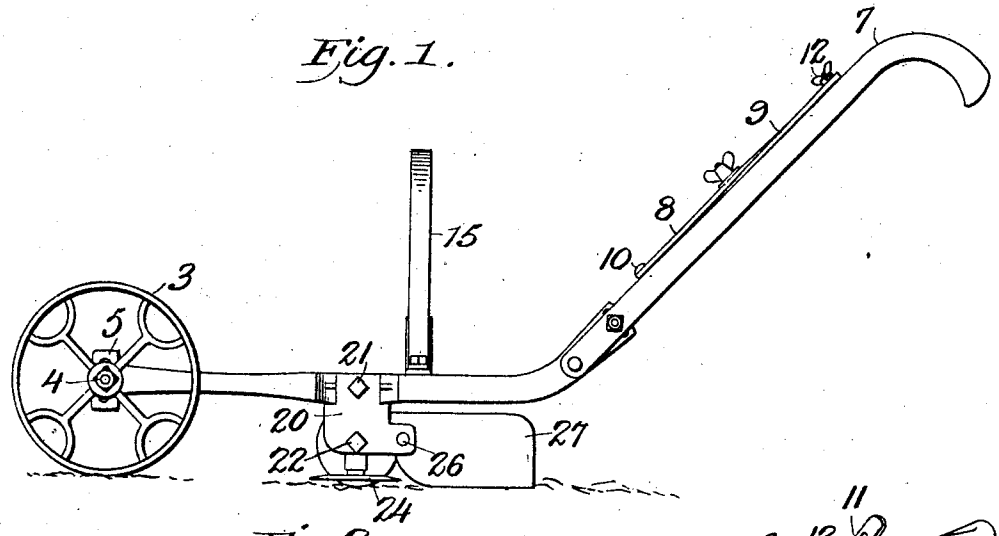


Fig. 2.

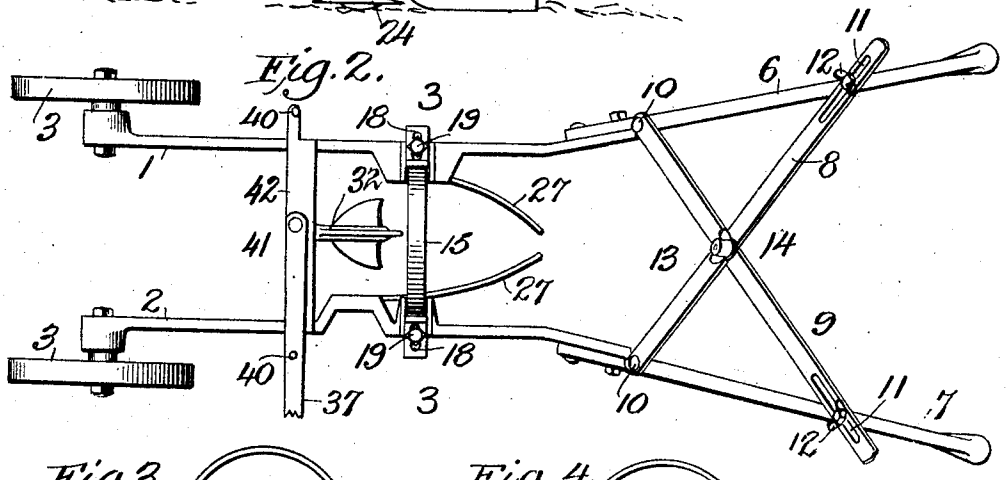


Fig. 3.

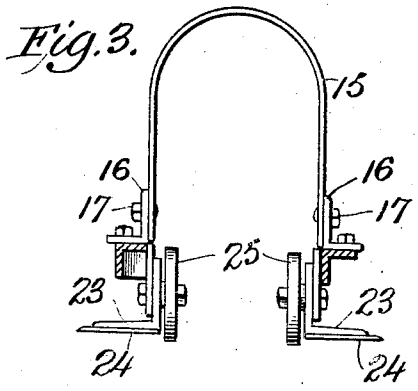
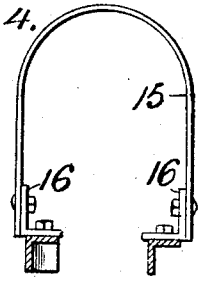


Fig. 4.



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2 SHEETS—SHEET 2

Fig. 5.

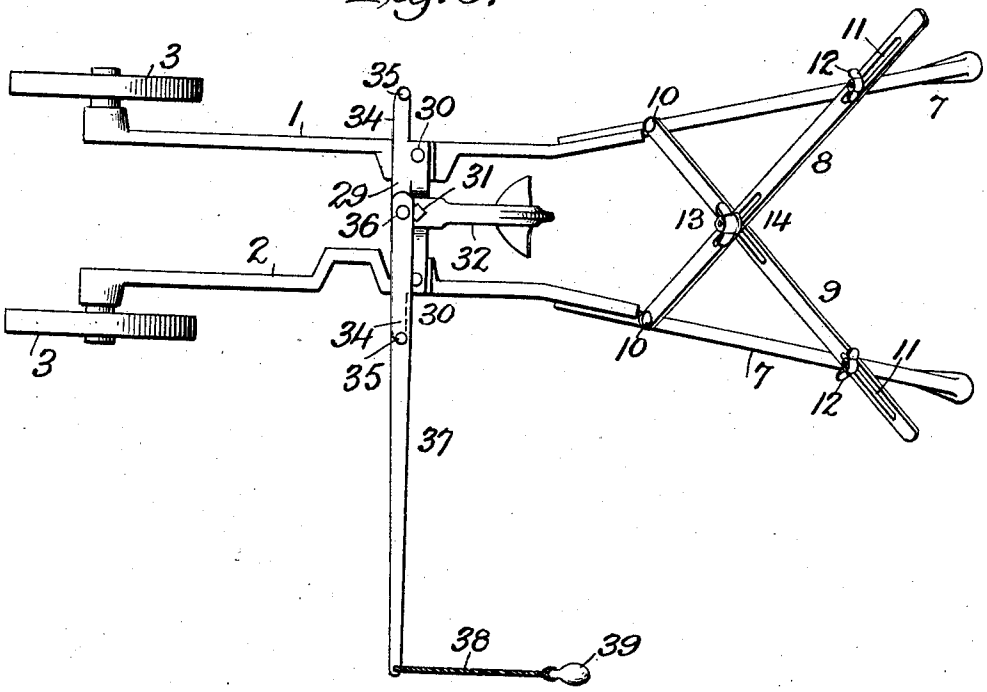


Fig. 6.

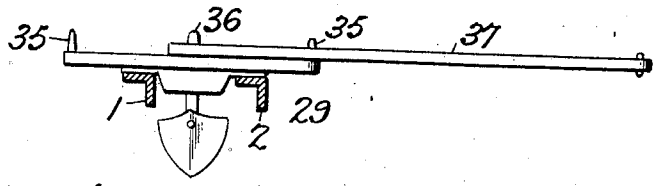
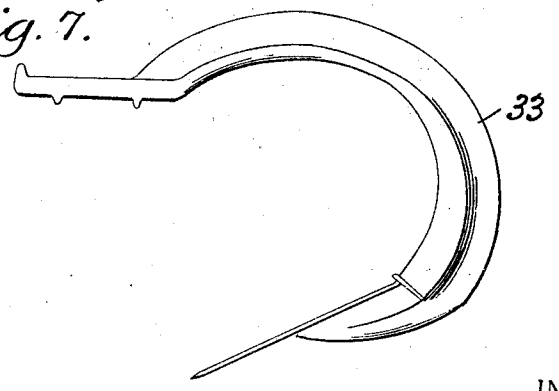


Fig. 7.



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COMBINED CULTIVATOR AND PLOW.

No. 833,130. Specification of Letters Patent. Patented Oct. 9, 1906.

Application filed July 22, 1905. Serial No. 270,825.

To all whom it may concern:

Be it known that I, ALONZO S. ETTINGER, a citizen of the United States, residing at White Plains, in the county of Westchester and State of New York, have invented new and useful Improvements in a Combined Cultivator and Plow, of which the following is a specification.

This invention relates to combined cultivators and plows.

The objects of the invention are to improve and simplify the construction of such devices; furthermore, to increase their efficiency in operation and to decrease the expense attending their manufacture.

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 as a practical embodiment thereof.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a cultivating device constructed in accordance with the invention. Fig. 2 is a plan view of the device. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a view similar to Fig. 3, showing the adjustable brackets on the inner side of the bow-spring. Fig. 5 is a plan view of a slightly-modified construction. Fig. 6 is a transverse section through the central portion of the construction shown in Fig. 5. Fig. 7 is a side elevation of a plow attachment.

The improved device of this invention is constructed with a frame having parallel side bars 1 and 2. Each of the side bars 1 and 2 is provided at its forward end with a supporting-wheel 3, the axle 4 of which extends through a vertical slot 5, formed in the end of the side bar. By means of this arrangement the side bars are adjustable vertically to increase or decrease the distance above the ground. The rear ends of the side bars 1 and 2 are provided with upwardly-extending converging handles 6 and 7. The handles 6 and 7 are connected by crossed adjusting members 8 and 9. Each of the adjusting members 8 and 9 is pivotally connected at its forward end with one of the handles, as indicated at 10, and is adjustably connected with the opposite handle by means of a suitable pin-and-slot connection, as indicated at 11 12, 11 indicating a slot formed in the adjusting member, and 12 indicating a wing-nut mounted upon a pin on the handle. At their point of intersection the crossed members 8 and 9 are pivotally connected by means of a pin 13, having a nut 14. By loosening the wing-nuts 12 the handles 6 and 7 may be adjusted toward or from each other in order to give a corresponding adjustment to the side bars 1 and 2.

It will be understood that the crossed adjusting members 8 and 9 serve to hold the side bars 1 and 2 constantly in parallel relation. Furthermore, it will be understood that the wing-nuts 12, on account of their location in proximity to the grip portions of the handle, can be loosened while the cultivator is in operation, so as to permit the operator to adjust the side bars to accommodate rows of plants of different thicknesses.

The side bars 1 and 2 preferably are connected by an upwardly-extending bow-spring 15, which is adjustably connected with the side bars in any suitable manner—such, for example, as by means of angle-brackets 16, which are bolted to the spring 15, as indicated at 17. The lower portion of the brackets 16 are slotted, as indicated at 18, to receive bolts 19 on the side bars 1 and 2. By loosening the nuts of the bolt 19 the brackets may be adjusted to move the side bars a greater or lesser distance away from each other. In the event that it is necessary to move the side bars very close to each other the angle-brackets 16 may be reversed and placed on the inner sides of the bow-spring terminals, as shown in Fig. 4. Although the angle-brackets 16 are illustrated as being adjustable, it will be understood that a large degree of adjustment can be secured through the resiliency of the spring 15 without loosening the nuts of the bolts 19—that is to say, when the adjusting members are loosened to change the position or distance from each other of the handle 6 and 7 the spring 15 will permit a corresponding movement of the side bars 1 and 2 without loosening the angle-brackets 16.

Cultivating devices of various different kinds can be detachably secured to the side bars 1 and 2 in any suitable manner. In the embodiment of invention illustrated each of the side bars 1 and 2 is provided with a downwardly-extending plate 20, which is secured to the side bar in any suitable manner, as by means of a bolt 21. Detachably secured to

each of the plates 20 by means of a bolt 22 is an angle member 23, having a knife 24 and a guard-disk 25, which is located adjacent to the knife 24 in order to prevent any earth which is cut by said knife from being thrown toward the center of the device. The purpose of the knives 24 is merely to break the surface or crust of the ground.

In addition to the knives 24 and disks 25 each of the plates 20 has detachably secured thereto, by means of bolts 26 or other suitable device, an inwardly-extending wing, such as 27. The purpose of the wings 27 is to throw earth toward the center of the cultivator in such operations as hilling, cultivating onions, and the like, covering seeds, exterminating weeds, &c. It will thus be seen that the wings 27 constitute an extremely-valuable attachment to a cultivating device.

As shown in Fig. 5, the bow-spring 15 and the plates 20, with their various attachments, can be removed when desired, and the side bars 1 and 2 can be connected by a cross-piece 29, which is secured to the side bars in any suitable manner, such as by bolts 30. Secured to the cross-piece 29 in any suitable manner, as by means of a bolt 31, is a plow attachment 32, having a flat hoe-plowshare 33. These parts may be of any convenient construction.

The cross-piece 29 preferably is provided with side extensions 34, each provided with an upwardly-extending pin 35. At its center the cross-piece 29 is provided with an upwardly-extending pin 36, removably engaged with the central pin 36, and one or the other of the side pins 35 is a laterally-extending arm 37, having secured to the outer end thereof a flexible element or connecting member 38, provided at its lower end with a weight 39, which serves as a marker to lay out the course of the next furrow. It will be understood that the lateral arm 37 may be swung to either side of the device by disengaging it from one pin 35 and moving it into engagement with the other pin 35.

The improved cultivator of this invention is strong, simple, durable, and inexpensive in construction, as well as thoroughly efficient in operation.

If it is desired to use the plow attachment shown in Figs. 5 and 6 without taking the trouble to remove the spring 15, the side bars 1 and 2 are provided with upwardly-extending pins 40, which extend through perforations in the cross-piece 41, having the upwardly-extending pin 42 and the plow attachment 32.

It will be understood that the transverse arm 37 is engaged with the pins 40 and 42 in the same manner as illustrated in Figs. 5 and 6.

Changes in the precise embodiment of invention illustrated and described may be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

The improved device of this invention is adapted particularly for use as a hand implement, although any suitable draft-attaching means may be used if it is desired to employ the device for other purposes.

Having thus described the invention, what is claimed as new is—

1. In a cultivating device, a pair of side bars having supporting-wheels, cultivator attachments detachably secured to the side bars, a bow-spring connecting the side bars, handles connected with the side bars, and crossed adjusting members connecting the handles, said adjusting members being adapted to hold the side bars in parallel relation with each other.

2. In a cultivating device, a pair of side bars having supporting-wheels, cultivator attachments detachably secured to the side bars, a bow-spring connecting the side bars, said bow-spring being adjustably connected with the side bars at its terminals, handles connected to the side bars, and crossed adjusting members connecting the handles.

In testimony whereof I affix my signature in presence of two witnesses.

ALONZO S. ETTINGER.

Witnesses:
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H. G. HOSE.