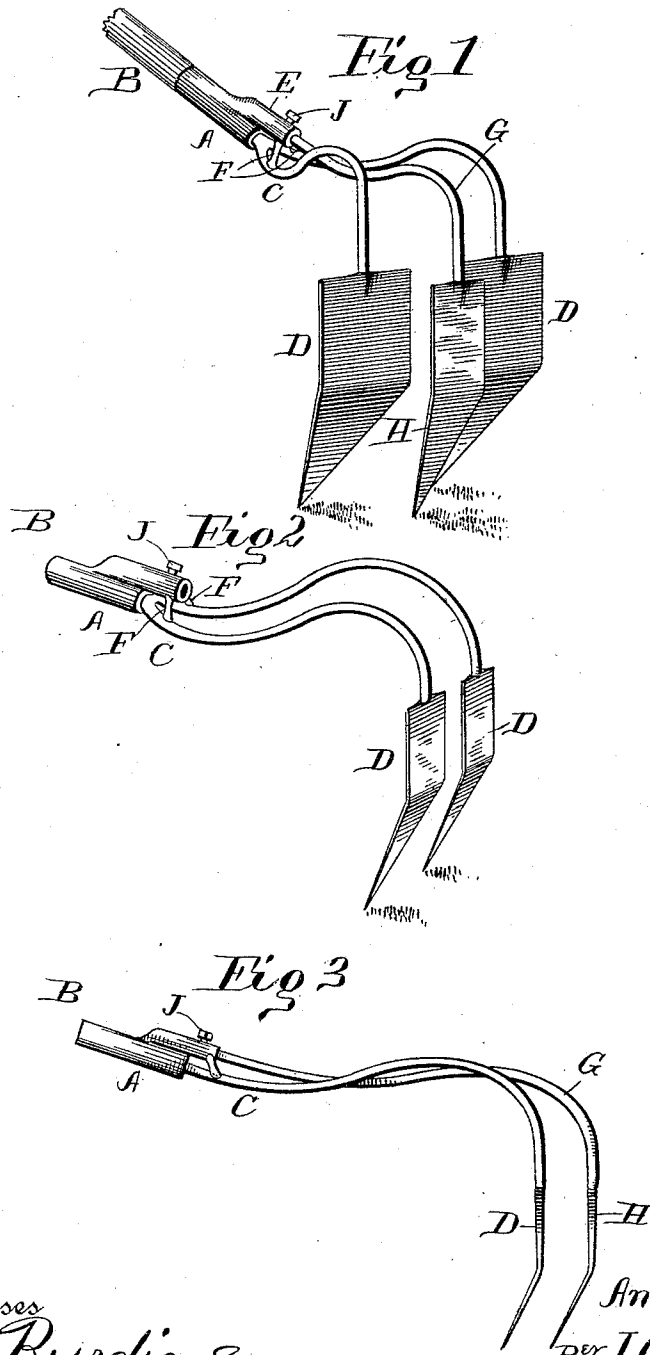


(No Model.)

A. J. OSBORNE.
HAND CULTIVATOR.

No. 460,157.

Patented Sept. 29, 1891.



Witnesses
C. O. Burdine
H. P. Wilson

Inventor
Andrew J. Osborne
per *J. G. Manahan*
his Attorney

UNITED STATES PATENT OFFICE.

ANDREW J. OSBORNE, OF ERIE, ILLINOIS.

HAND-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 460,157, dated September 29, 1891.

Application filed June 30, 1891. Serial No. 398,042. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. OSBORNE, a citizen of the United States, residing at Erie, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Hand-Cultivators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in hand-cultivators; and it consists of three steel blades of a peculiar conformation drawn at variant distances from a common center, at which the implement is provided with a handle of any desired length. The center blade is but one-half the width of the outside blades and is adjustable forward and back and optionally removable.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of the three cutting-blades in their relative position and their point of connection to a common socket. Fig. 2 is the same with the central blade and its bow removed. Fig. 3 exhibits details of a side elevation of one of the side bows and its adjunctive blade and of the center bow and its blade.

Similar letters refer to similar parts throughout the several views.

A is an ordinary socket adapted to receive any suitable handle B for drawing the implement.

C C are bows suitably attached to the lower end of the socket A and diverging therefrom and arched upward, as shown in Fig. 3. To the rear or free ends of the bows C C are suitably attached, respectively, steel blades D D. These blades have downwardly-tapering sides and a forward inclination at their lower ends, as shown in Fig. 3, from their transverse obtuse angle K. The bows C are nine inches from their point of attachment to the socket A to the upper extremity of the blades D, said bows being suitably attached at the cen-

ter of the upper edge of the blades D. The greatest width of the blades D is three inches and their greatest length is six inches.

E is a socket projected rearwardly from the top of the socket A and braced laterally by rods F F, extending in opposite directions from the socket E to the bows C C and attached to socket E and bows C and serving the double purpose of bracing the socket E and holding the bows C in their relative position. A third bow G is adapted at its forward end to be inserted in the socket E and extends rearwardly slightly beyond the rear ends of the bow C, and is there attached to the third or central blade H, having a like angle K. This central blade H is of the same length and general conformation as the blades D, except that it is only half the width of the other blades, and the interval between the blades D is such that the blade H will cultivate the same after the passage of the blades D. In the upper surface of the socket E is seated a set-screw J, which serves to tighten the bow G in the socket E, and by means of which the bow G, and thereby the blade H, may be adjustably fastened forward and back in reference to the other blades, as the nature and condition of the ground may render most desirable.

All of the bows and blades are made of the best steel.

In the use of my invention the center blade H is removed in straddling the rows of growing plants, in which condition the implement can also be used as a double hoe. In cultivating between the rows or while the invention is being used as a hand-cultivator all three of the blades are utilized. By placing the blade H slightly in the rear of the blades D D the three can be brought together and at the same time permit the passage of the loose earth off the inner edges of the blades D without interfering with the action of the blade H. The blade H is shifted backward in each instance to create an interval proportionate to the quantity of earth or weeds discharged by blades D D. By this construction the ordinary unmoved portions of earth between the outside blades can be reached and cultivated.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

- 5 1. The combination of the socket A, adapted to receive a suitable handle B, divergent bows C, attached at their forward ends to said socket A, the socket E, rigidly seated upon the socket A and provided with set-screw J, the bow G, adapted to be adjustably attached to socket
10 E and provided at its rearward end with blade H, substantially as shown, and for the purpose described.
2. The combination of the socket A, adapted to receive a suitable handle B, divergent bows
15 C, rigidly attached at their forward ends to said socket and diverged rearwardly in oppo-

site directions therefrom and provided at their rear ends with blades D, socket E, rigidly seated upon socket A and provided with set-screw J, tie-rods F, extending laterally in opposite directions from socket E and attached at their outer ends to the bows C, bow G, adapted to be adjustably inserted in socket E and provided at its rear end with blade H, substantially as shown, and for the purpose
20 described.
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In testimony whereof I affix my signature in presence of two witnesses.

ANDREW J. OSBORNE.

Witnesses:

ROBERT T. JAMES,
EDMUND J. HOWELL.