

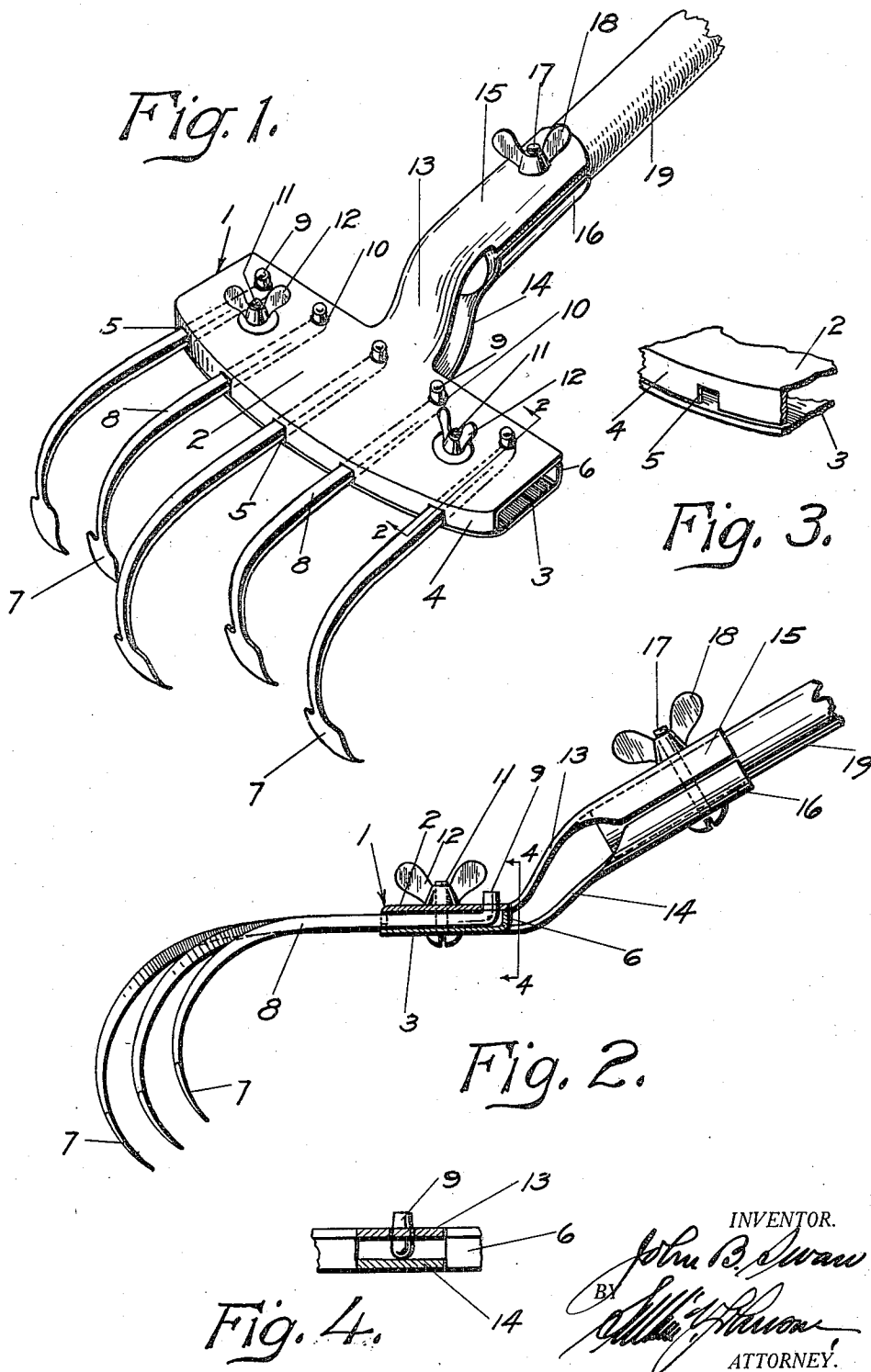
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J. B. SWAN

HAND CULTIVATOR

Filed April 25, 1921



UNITED STATES PATENT OFFICE.

JOHN B. SWAN, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO LOUIS CSEMICZKY,
OF DENVER, COLORADO.

HAND CULTIVATOR.

Application filed April 25, 1921. Serial No. 464,173.

To all whom it may concern:

Be it known that I, JOHN B. SWAN, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Hand Cultivators, of which the following is a specification.

The present invention relates to improvements in hand cultivators, and more particularly to that type for cultivating small and delicate plants, whether in pots or rows.

The primary object of the invention is to provide a cultivator of this character so constructed that the teeth thereof may be easily and quickly removed or replaced, whereby teeth of various designs may be readily interchanged.

A further object of the invention is to provide novel means for firmly securing the teeth shanks between the head plates, but at the same time providing means whereby the teeth and associated shanks may be quickly removed or replaced.

A still further object of the invention is to provide a simple and novel means for securing the handle in place.

With these and other objects in view, this invention resides in the novel features of construction, formation, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which:—

Figure 1 is a perspective view of the device.

Figure 2 is a sectional view on line 2—2 of Fig. 1.

Figure 3 is a fragmentary detail perspective view of the head plates.

Figure 4 is a sectional view on line 4—4 of Fig. 2.

The device comprises a head 1, consisting of upper and lower plates 2 and 3, respectively, the former having its forward edge terminating in a vertical flange 4, said flange being formed with a plurality of downwardly opening rectangular notches 5, the purpose of which will appear later.

The lower plate 3 has its rear edge terminating in an upwardly extending flange 6, and upon which the rear end of the upper plate 2 rests, as clearly shown in Fig. 2 of the drawing.

The teeth 7 have their associated shanks 8, which are shaped to correspond to the shape of the notches 5, terminating in up-

turned lugs 9 which are adapted to detachably engage the perforations 10 formed in the upper plate 2. Since the shanks 8 are disposed between the plates and engage in the notches 5 it is obvious that they cannot move laterally, nor can they move endwise, due to the fact that the lugs 9 engage the perforations 10.

In order to hold the plates 2 and 3 in clamped engagement with the shanks 8 bolts 11 are passed therethrough, and are equipped with winged clamping nuts 12. Thus it will be apparent that the plates may be easily and quickly separated to permit the teeth to be interchanged, when desired. It is some times necessary to change the form of the teeth during different stages of cultivation, and the present construction is designed with this object in view.

It will be noted that the notches 5 are of slightly less depth than the diameter of the shanks 8, which being the case, the forward end of the plate 3 does not contact with the lower edge of the flange 4, but will, however, contact with the lower surfaces of the shanks. It will be obvious that when the plate 3 is drawn towards the plate 2 the flange 6 will serve as a fulcrum therefor, and thus cause the forward end of the plate 3 to bear against the shanks 8 and hold the same snugly and firmly in the notches 5.

The rear edges of the plates 2 and 3 have formed integral therewith upwardly inclined arms 13 and 14, respectively, which terminate in elongated complementary jaws 15 and 16, which are semi-circular in cross section so as to conform to the curvature of the handle 17 which has its lower end engaged between said jaws. A bolt 18 is passed through the jaws and handle, and has a winged nut 19 engaged thereon, thus permitting the handle to be firmly clamped between the jaws, and at the same time permitting the handle to be removed, as desired.

From the foregoing it will be seen that a hand cultivator has been produced constructed in such a manner that the plates forming the head may be easily and quickly separated to permit the teeth to be interchanged, as desired.

While I have in this application specifically described one embodiment which my invention may assume in practice, it will be understood that this form of the same is

used for illustrative purposes only and that the invention may be modified in other various forms without departing from the spirit of the invention.

5 What is claimed is:

1. A hand cultivator comprising a head, consisting of upper and lower plates, teeth having their shanks arranged between said plates, a flange carried by the rear edge of the lower plate, the upper plate being fulcrumed on said flange, means for drawing the plates towards each other to cause the lower plate to bindingly engage the shanks, and arms formed integral with the rear
10 edges of the plates and having jaws carried thereby for detachably engaging a handle.

2. A cultivator of the class described comprising a head, consisting of upper and lower plates, flanges carried by the respective

front and rear edges thereof, teeth having shanks which are engaged between said plates, the flange of the upper plate having notches formed therein, said shanks being engaged in the notches, said shanks being greater in diameter than the depth of the notches, the upper plate being fulcrumed on the flange of the lower plate and having its forward end engaged with the shanks adjacent said notches, and means for holding the plates in operative positions.

30 In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN B. SWAN.

Witnesses:

LEWIS F. BUTTERFIELD,
SULLIVAN V. JOHNSON.