

UNITED STATES PATENT OFFICE.

GEORGE L. ROBY, OF GRAND HAVEN, MICHIGAN, ASSIGNOR TO THE GALE MANUFACTURING COMPANY, OF ALBION, MICHIGAN.

HAND-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 611,649, dated October 4, 1898.

Application filed February 3, 1898. Serial No. 668,917. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. ROBY, a citizen of the United States, residing in Grand Haven, in the county of Ottawa and State of Michigan, have invented certain new and useful Improvements in Hand-Cultivators, of which the following is a full and complete description, reference being had to the accompanying drawings.

My invention relates to hand-cultivators; and it consists of an improved form of construction, a new manner of adjusting the cultivating-tooth thereon, and a new form of handhold.

Figure 1 is a perspective view. Fig. 2 is a detailed view of the lower end of the frame. Fig. 3 is a detailed view of the parts employed in clamping the cultivating-tooth thereon. Fig. 4 is a detailed view of the parts employed in clamping the cultivating-tooth. Fig. 5 is a sectional view of the handhold. Fig. 6 is a sectional view of the axle and manner of binding certain members together.

Similar letters refer to similar parts throughout the different views.

In constructing an implement of this class it is of the utmost importance that while it should be light and easily handled it should be very stiff and inflexible. To attain these desired qualities, I have made the frame in that part where it has heretofore been constructed the weakest of a double-truss form, which I have joined to a casting of peculiar form. The truss members B B B B have holes provided in each end thereof and through which a bolt is passed at A' and A², thereby binding them fast to the casting A. The other hole in each piece B B B B is passed over a reduced section of the spindle B³, Fig. 6, thereby completing the truss formation.

In order to properly joint the lower part of the frame to the wooden handles F F, forming a part thereof, a seat is formed at F' to receive the same and bolts passed through the parts at A³ and A⁴.

At the lower end the standard A is divided into two members G G, leaving a slot for the passage of a clamping-bolt to hold the cultivating-tooth in place. The back edge of these members G G are notched at the corners H, and corresponding lugs or projections I' I' of

the clamping-washer I fit therein, preventing any slip of the tooth when in use. In connection therewith there is used a tooth-engaging plate J, engaging with the face of the members G G. The shovel or cultivator tooth D having two holes J² and K, the bolt L is passed through J² and the pin K² through K. The whole combination when placed upon the members G G (which can be done without disconnecting the parts) are quickly and firmly clamped by tightening the nut on the bolt L.

In a tool to be propelled by hand-power it is also of importance that the means of connecting the machine to the person should be of a form to secure the greatest ease and convenience. In my invention I secure this result by employing a metallic member M, molded to exactly fit the hand when closed as in use, and so distributes the pressure over the interior thereof and reduces the consequent friction and pain otherwise present. The part M is made of hollow or tubular form, and from each end thereof there are two extended parts O and N, formed integral therewith, which pass to opposite sides of the handle F and are clamped thereto by the bolt P, passing through the parts N, O, and F, as shown in Fig. 5.

Having described my invention, I claim and desire to protect by Letters Patent—

1. In a cultivator the combination with the main frame, of a depth-regulating wheel, and a truss construction connecting said wheel with the main frame, comprising two arms on each side of said wheel having their front ends connected to the wheel-axle and having their opposite ends connected to the main frame at separated points in different horizontal planes, substantially as described.

2. In a cultivator the combination with the main frame, provided with a seat to receive the handles, and the handles rigidly attached to said seat, of a depth-regulating wheel, and a truss construction for connecting said wheel to the frame, comprising two arms on each side of the wheel having their forward ends connected to the wheel-axle and their rear ends connected to said frame at separated points in different horizontal planes, substantially as described.

3. In a cultivator the combination with the

standard having its lower end bifurcated, of
a tooth-holding clip comprising a tooth-engaging plate adapted to engage the front face
of the bifurcated standard, the clamping-
5 washer for engaging the rear face of the
standard and the clamping-bolt, substantially
as described.

4. In a cultivator, the combination with the
standard having its lower end bifurcated, of
10 the tooth-holding clip comprising the tooth-
engaging plate for engaging the front face of
the standard, provided with a stud adapted
to enter a recess in the tooth, or shovel, the
clamping-washer for engaging the rear face
15 of the standard and the clamping-bolt, sub-
stantially as described.

5. In a cultivator, the combination with the

standard having its lower end bifurcated, and
the said bifurcated portions notched on their
rear sides, of the tooth-holding clip compris- 20
ing the tooth-engaging plate, for engaging the
front face of the standard, and provided with
a lug adapted to enter a recess in the tooth,
the clamping-washer for engaging the rear
face of the standard and provided with pro- 25
jections to engage said notches and the clamp-
ing-bolt passing through said tooth, plate and
washer and lying between the bifurcated por-
tions of the standard, substantially as de-
scribed.

GEORGE L. ROBY.

Witnesses:

JACOB BAAR,
L. F. ROBY.