No. 606,835. Patented July 5, 1898.

# W. A. DOUGLAS.

## WHEEL CULTIVATOR APPLIANCE.

(No Model.) (Application filed Mar. 30, 1897.)

FIG. 1.

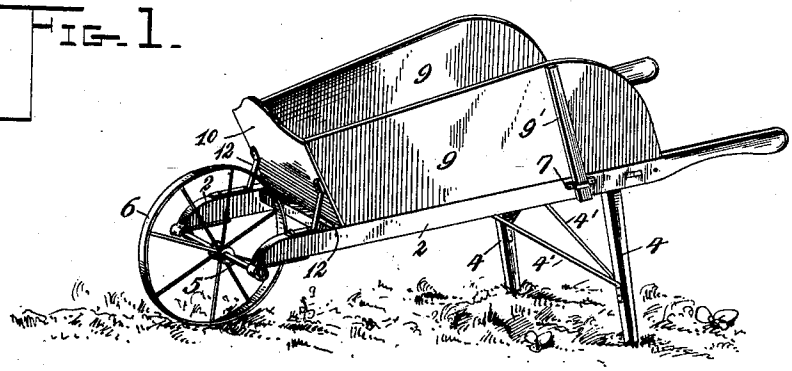



FIG. 2.

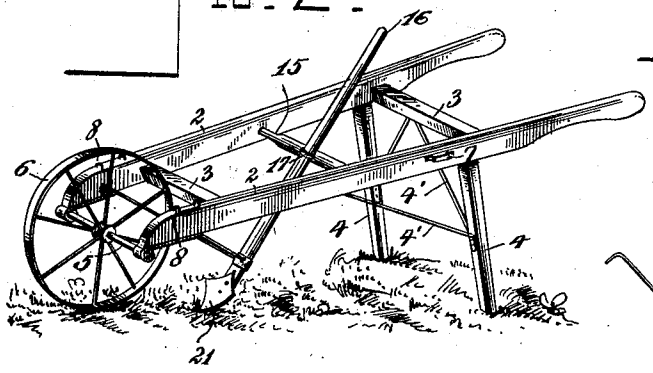



FIG. 4

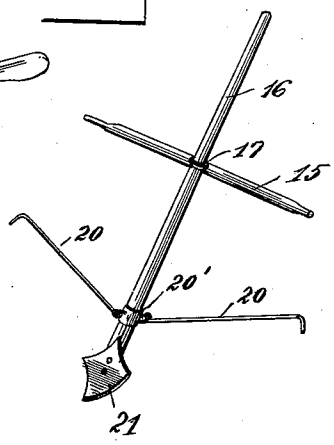



FIG. 3.

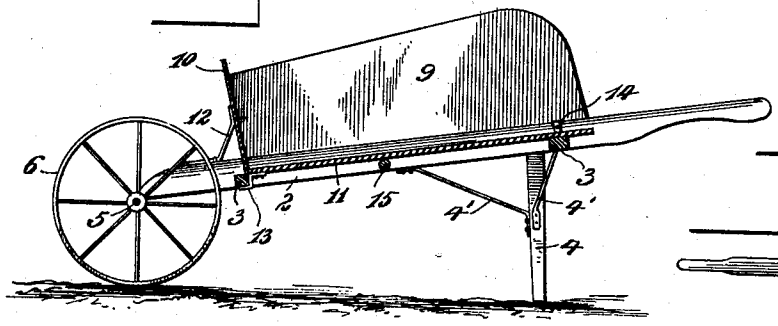
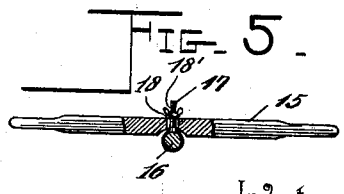



FIG. 5.




Witnesses.
John F. Dewerwiel
H. J. Berdhoff

Inventor
William A. Douglas.

By his Attorneys,
C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

WILLIAM A. DOUGLAS, OF BRONSON, MICHIGAN.

## WHEEL-CULTIVATOR APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 606,835, dated July 5, 1898.

Application filed March 30, 1897. Serial No. 630,014. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. DOUGLAS, a citizen of the United States, residing at Bronson, in the county of Branch and State of Michigan, have invented a new and useful Appliance for Combining a Garden-Wheelbarrow and Garden-Cultivator, of which the following is a specification.

My invention relates to improvements in a convertible wheelbarrow and cultivator, in which I have combined and arranged the several elements in a manner to enable the implement to be used either as a wheelbarrow or as a cultivator with a few changes in the construction of the implement.

A further object of the invention is to provide for the secure holding of the walls and bottom of the structure when adjusted for service as a wheelbarrow.

A further object of the invention is to enable the structure when used as a cultivator to be adjusted to regulate the height of the handles or the depth of penetration of the cultivator tooth or teeth.

To the accomplishment of these ends my invention consists in the novel combination of devices and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of the structure adjusted for service as a wheelbarrow. Fig. 2 is a perspective view showing the machine adjusted as a cultivator. Fig. 3 is a longitudinal sectional view through the structure adjusted as a wheelbarrow, as shown by Fig. 1. Fig. 4 is a detail perspective view of the cultivator-standard, its rock-shaft, and the clamp for attaching the standard or stock to said rock-shaft. Fig. 5 is a detail view, partly in section, to show the clamp for attaching the cultivator standard or stock to the rock-shaft or cross-bar.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

I construct my improved machine with a frame which is arranged for service in connection with the elements that constitute, in connection with said frame, the wheelbarrow or the cultivator. This frame comprises the side rails 2 2, the cross-bars 3 3, the legs 4 4, and the axle 5, which sustains the carrying-wheel 6. The side rails 2 are arranged in slightly-divergent positions with relation to each other, and the rear ends thereof are formed into the handles, by which the operator is enabled to easily and firmly grasp the implement to direct and control the same. The side rails, the cross-bars, and the legs are all joined together in a substantial manner to present a rigid structure possessing great strength and comparatively light in weight. The cross-bars are arranged slightly below the level of the top faces of the side rails to properly accommodate the end board and the bottom of the wheelbarrow. The legs 4 are fastened to the frame at the juncture of the side rails and the rear cross-bar, and said legs are braced by the stays 4′, suitably attached to the legs and to the rear cross-bar. The adjacent front ends of the side rails are provided with suitable boxes or journal-bearings, in which are fitted the ends of the axle 5. The axle and the carrying-wheel 6 may be of any suitable construction.

To enable the frame to be used in connection with the boards forming the body of a wheelbarrow, I provide the side rails with the loops 7 near the rear cross-bar and with the eyes or loops 8 8, which are attached to the side rails near their front ends and on opposite sides of the ground-wheel 6.

The body of the barrow consists of the side boards 9 9, the end board 10, and the bottom board 11. The side boards 9 are provided with cleats 9′, which are extended below the lower edges of said boards, to fit into the loops or keepers 7 on the side rails. The side boards are adapted to rest upon the side rails 2, and the front ends of said side boards abut against the end board 10, which is placed in an upright position across the front end of the frame to rest upon the front cross-bar thereof. The end board 10 is provided with the braces 12, which are rigidly fastened to said board and which have their ends bent and extended to fit in the loops or eyes 8 on the side rails 2, whereby the end board is held and braced in position. The bottom board

11 of the barrow-body rests upon the cross-bars 3 3 of the carrying-frame, between the side rails 2 thereof, and at its front end the bottom board is provided with the lugs 13, which are arranged to fit beneath the front cross-bar 3 of the frame, the rear end of the bottom board being held in place by a turn-button 14 or other suitable catch.

From the foregoing description it will be seen that the body of the barrow has its several parts connected detachably to the carrying-frame in a manner to permit of the ready application of the parts to the frame or their removal therefrom when it is desired to use the carrying-frame in connection with cultivator appliances.

The cultivator attachment consists of a cross-bar or shaft 15, a standard or stock 16, a clamp 17 for coupling the stock to the cross-bar, braces to stay the lower end of the stock, and one or more cultivator-teeth to be connected to the lower extremity of the stock or standard. The cross-bar or shaft 15 is adapted to be connected to the side rails 2 of the carrying-frame in any suitable way to permit of its ready adjustment. This cross rail or bar 15 may be loosely and pivotally connected to the side rails 2, between the front and rear cross-bars thereof, so as to allow the cross-bar to remain attached to the carrying-frame when the machine is adapted for service as a wheelbarrow. A central hole or orifice 18 is provided in this pivotal rocking cross-rail 15, and through this hole is passed the threaded shank 18′ of the clamp 17, a nut being screwed on the threaded shank to hold the clamp and the standard or stock 16 in place. This clamp 17 has an eye or loop through which the stock or standard 16 is passed, and the clamp serves to hold the stock in place on the cross-rail. The stock when adjusted for service is braced by means of the stay-rods 20, which are fastened at their lower ends to an eye or collar 20′ on the stock or standard 16 and which have their upper ends bent to enable said stay-rods to be applied against the inner faces of the side rails 2. These upper bent ends of the stay-rods are fastened detachably to the side rails of the carrying-frame by means of bolts or other suitable appliances. The construction of the cross-rail 15 and the clamp 17 enables the stock or standard to be adjusted to regulate the height of the handles and the depth of penetration of the tooth or teeth carried by the stock. In the drawings I have shown the stock 16 provided with a single tooth or point 21; but it is obvious that a gang of cultivator-teeth may be applied to the stock. By loosening the nut that holds the clamp and turning the stock or standard axially in the clamp a plow is produced to throw the dirt either to or from the rows, as desired.

To adapt the machine for use as a cultivator, it is only necessary to remove the boards forming the body of the barrow, adjust the standard in the clamp, tighten the clamp, and attach the stay-rods. When it is desired to use the machine as a wheelbarrow, the standard and its stays are detached and the several boards to form the barrow-body are applied or adjusted in the manner described.

It will be readily seen that the structure can be converted easily and quickly from a wheelbarrow to a wheeled cultivator, or vice versa, and that the carrying-frame serves in connection with either set of devices.

Various changes in the form and proportion of parts and in the details of construction may be made without departing from the spirit or sacrificing the advantages of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A convertible cultivator and wheelbarrow comprising the frame having the tie-bars, 3, and the wheeled axle, the transverse rod, 15, loosely journaled in the frame in substantially the horizontal plane of the tie-bars and provided with a central clamp, the sectional barrow-body with its front and sides fastened removably to the frame and with its bottom resting on the side and transverse rails of the frame and provided with a keeper which fits beneath one of said rails, and a cultivator-standard adapted for use on the frame interchangeably with the barrow-body and fitted in the clamp and provided with the braces detachably fastened to the frame, substantially as described.

2. A convertible cultivator and wheelbarrow comprising a frame having its side rails joined by the transverse rails and provided with a wheeled axle, a rocking bar, 15, journaled in the side rails in the plane of the transverse rails and having an obliquely-arranged clamp, a barrow-body having its front and side walls seated on rails of the frame to which they are detachably secured, and its bottom resting on the rails and rocking bar and provided with a keeper which engages with the frame, and a cultivator-standard clamped in the rocking bar and adapted for attachment to the frame interchangeably with the barrow-body, substantially as described.

WILLIAM A. DOUGLAS.

Witnesses:
W. H. DAVIS,
J. E. WATSON.