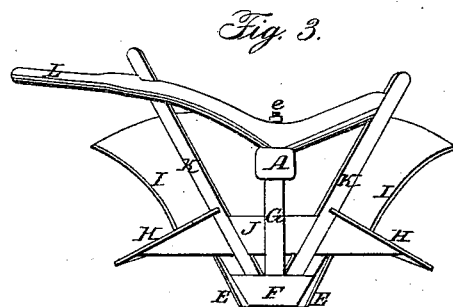
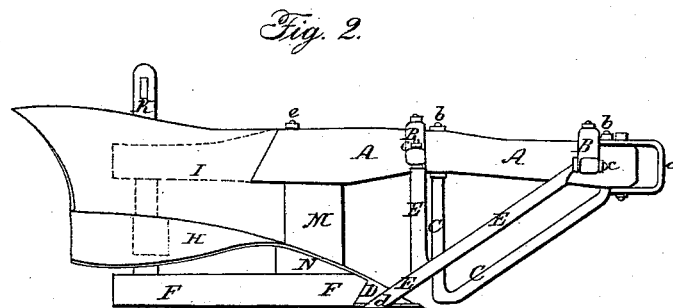
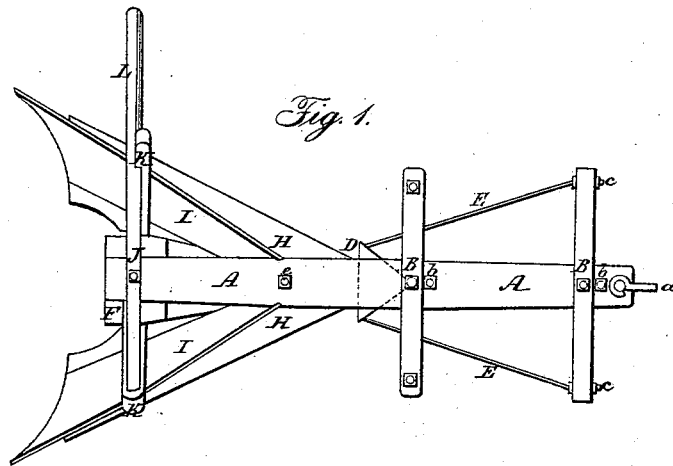


H. CLEVELAND.

Ditching Plow.

No. 2,897.

Patented Dec.31, 1842.



# UNITED STATES PATENT OFFICE.

HORACE CLEVELAND, OF FORT WAYNE, INDIANA.

## IMPROVEMENT IN MACHINES FOR DITCHING AND EMBANKING EARTH.

Specification forming part of Letters Patent No. 2,897, dated December 31, 1842.

### *To all whom it may concern:*

Be it known that I, HORACE CLEVELAND, of Fort Wayne, in the State of Indiana, have invented an Improved Machine or Plow for Ditching and Embanking, which machine I denominate the "Perfect Ditcher;" and I do hereby declare that the following is a full and exact description thereof.

My ditching-machine is in the general form of a double mold-board plow, the respective parts of which are attached to a beam furnished with a clevis, by which it is to be drawn forward. In front of the share and mold-board it is furnished with three cutters, which are made fast at their upper ends to the beam and to cross-trees attached to the beam for the purpose of holding them. One of these cutters is in a line with the middle of the beam and descends down to the level of the double share and the sole of the plow, and is at its level end nearly in contact with the point of said share. Its office is to divide the sward and ground vertically along the middle of the intended ditch preparatory to the earth being thrown out on each side by the double mold-board and lifters, to be presently described, which is to be so done as to form an embankment on each side of the ditch. The other two cutters are designed to cut the two sides of the ditch, and are so placed as to give to those sides the proper inclination or slope from top to bottom. Their lower edges terminate on each side of the double share near to the rear ends or angles of its cutting edges. The earth, after being divided by these cutters, is elevated by what I denominate the "lifters," which rise in the manner of inclined planes and extend along the lower edges of each of the mold-boards, their rear ends being at such height as to be above the surface of the ground upon which the excavated earth is to be thrown. The rear and lower edges of the mold-boards rise upward, so as to coincide with the upper sides of the lifters, and by the concurrent action of the two the earth is thrown out of the ditch and two embankments are formed, one on each side of it.

In the accompanying drawings, Figure 1 is a top view or plan of my machine. Fig. 2 is a side view thereof, and Fig. 3 a view of its rear end.

In each of these figures where like parts occur they are designated by the same letters of reference.

A A is the beam, furnished with a clevis at *a*, and which I ordinarily make about ten feet long.

B B are two cross-trees, bolted to the beam for the purpose of sustaining the side cutters.

C is the middle cutter, bolted to the beam at *b b*. This cutter reaches nearly to the point of the double share D.

E is one of the side cutters, bolted at *c c* to the cross-trees B B. The side cutters extend back to *d*, and are nearly in contact with the rear cutting-edges of the double share, where they are about a foot apart. These cutters I have made of bar iron, two and a half inches wide and half an inch thick, and sharp at their lower or cutting edges.

F F is the sill, the bottom of which constitutes the sole of the plow. This sill I have made of timber five feet long, six inches thick, one foot wide at its lower and twenty inches at its upper side, which gives to its edges or lateral planes the proper rake for the sides of the ditch and corresponds with the inclination given to the side cutters, E. The beam and sill are framed together by two upright posts, which may be about fifteen inches long between the shoulders. One of these is seen at G, and through them may pass bolts *e e* for holding the whole firmly together.

The double share D is triangular, and may be about fifteen inches long and about fourteen inches wide on its rear side, and from it rise the two lifters H H, up which the earth is to pass. These are made of iron, and may vary from six to nine inches in width, but are narrowed off to three or four inches at their rear ends. At their lower ends, where they unite with the share, they are in the same horizontal plane, or nearly so; but they curve downward as they approach toward the rear end of the instrument, preserving throughout a position at right angles with the mold-board, or nearly so.

I I are the mold-boards, which are in the ordinary form, curving over toward their rear ends. Their relationship to the lifters in this part is shown most distinctly in the view Fig. 3.

J is a transom or cross-piece framed into the

upright G and into the oblique side posts, K K, serving as supports to the mold-boards and lifters.

L is a handle for managing the plow when moving from place to place or when entering the sward.

M is what I denominate the "stem-piece." It is brought nearly to an edge at its fore end, forming the colter of the double plow, and at its back edge it is thickened out to receive the two mold-boards. It is framed above and below into the beam and into the sill.

N is a block placed between the sill and the lifters, and is of such form and thickness as to adapt it to this purpose.

Having thus fully described the manner in which I construct my perfect ditcher, and shown the operation thereof, what I claim therein as new, and desire to secure by Letters Patent, is—

The manner in which I have combined the lifters and mold-boards with the double share and middle and side cutters, so as to constitute a machine for ditching and embanking, arranged and operating substantially in the manner herein set forth.

HORACE CLEVELAND.

Witnesses:

BENJAMIN SAUNDERS,  
LEWIS BEECHER.