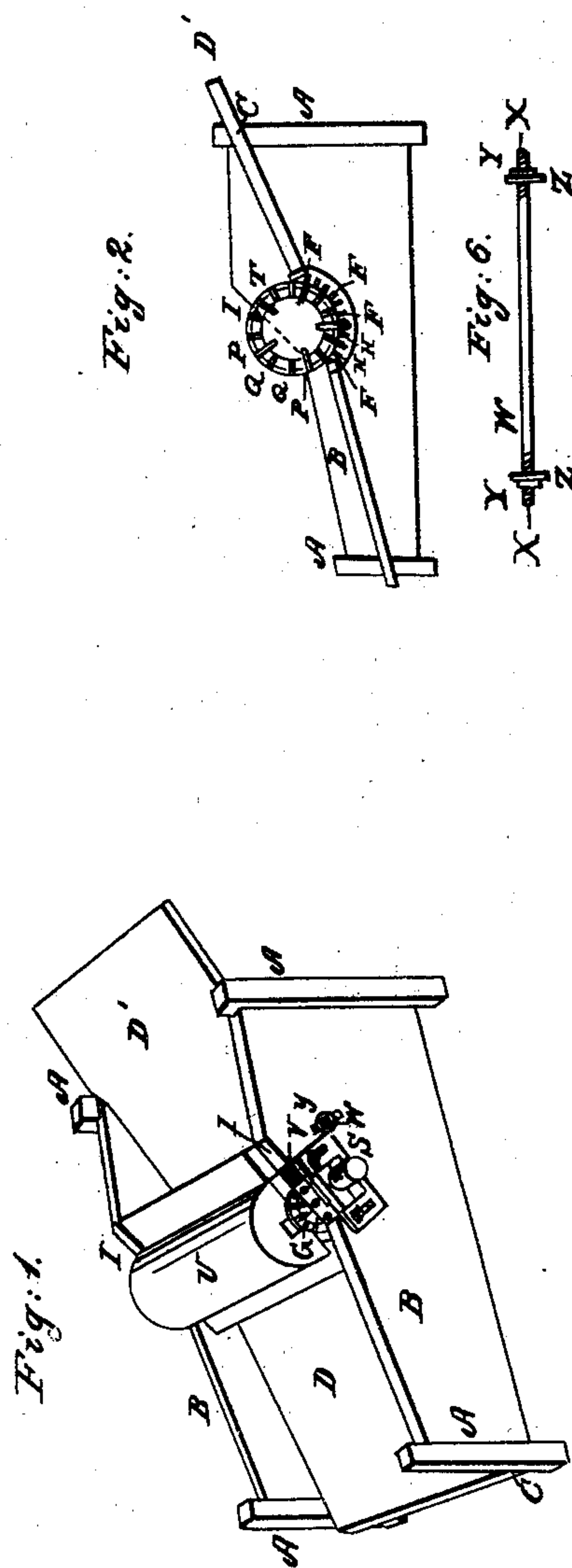


# H. N. WATERHOUSE. Thrashing Machine.

No. 650.

Patented March 21, 1838.





# UNITED STATES PATENT OFFICE.

HORATIO N. WATERHOUSE, OF BUTLER COUNTY, KENTUCKY.

## MACHINE FOR THRESHING GRAIN, HULLING CLOVER-SEED, SHELLING CORN, AND FOR OTHER PURPOSES.

Specification of Letters Patent No. 650, dated March 21, 1838.

*To all whom it may concern:*

Be it known that I, HORATIO N. WATERHOUSE, of Butler county, State of Kentucky, have invented a new and useful Improvement in Machines for Threshing Out Grain, Hulling Clover-Seed, Shelling Corn, and for other Purposes, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

A Figure 1 represents the frame. This is composed of four posts A, A, A, A—two side boards, B, B cross pieces C, C. Fig. 2 two inclined boards D', D—the one marked D' being the feeding board and the other D the discharging board.

For a two horse power the frame may be about two and a half feet wide, three and a half feet long and about two feet high. Its size and proportions, however, may be varied to suit circumstances.

Between the side boards B, B, of the frame is formed a concave E Fig. 2, whose ends are let into grooves made in said side boards B B. It commences at the lower edge of the feeding board and extends about one fourth the circle of the cylinder revolving therein. In said concave are made parallel triangular grooves across the concave, in which are placed square iron bars F in such a manner that one of the corners of each will be presented to the cylinder G. One each end of each bar is a gudgeon or neck extending through the side boards, on which are cut threads for nuts by which the side boards are confined together. Between every pair of bars may be inserted two or three rows of spikes H about three fourths of an inch apart and projecting from the surface about a half or three fourths of an inch.

A slope I is made in the sides of the frame commencing about one third of the way from the feeding end running parallel with the upper and lower edges of the concave—into the surface of which are cut square notches to admit slides J Figs. 1 and 3 containing the boxes K Figs. 1 and 4 for the journals of the cylinder. The slides J consist of metallic castings in each of which a vacancy L is made to receive the boxes for the journals which boxes are made in two parts K, K, Fig. 4 and held in their place by a plate M Fig. 5 screwed upon the top of the slide. Each slide has two ears

in which are made oblong mortises N, N, to allow them to slide up and down over screw bolts O secured permanently to the frame for fixing the cylinder at any height desired. When the cylinder is raised or lowered to the point desired blocks are placed under the slides containing the boxes and the nuts are screwed fast.

The cylinder G is solid—about one foot in diameter and as long as the width of the frame inside, armed on its surface with alternate parallel plates P and rows of teeth Q having an axle R passing through its center with journals turned on it which turn in the before described boxes—one end of said shaft extends beyond the side of the frame to receive a driving pulley S, of such diameter as will give the cylinder about twelve hundred revolutions per minute. The parallel plates are about the length of the cylinder, two inches wide, and three eighths of an inch thick, let edgewise into the cylinder about one inch, at the distance of about 7 or 9 inches apart secured by iron bands T Fig. 2. Between every two plates are inserted two or more parallel rows of iron teeth Q about three eighths of an inch in diameter and of sufficient length. The teeth or spikes in each row are to stand opposite the spaces of the other and they are to extend no farther from the surface of the cylinder than the bars. The outer edges of the plates may be smooth or notched.

The size of the cylinder ought to be determined by the speed which the propelling power is calculated to give. A cylinder of about one foot in diameter requires twelve or thirteen hundred revolutions per minute. A larger one less and a smaller one more in proportion. A cap or cover V Fig. 1 is placed over the cylinder.

In threshing wheat, rye, or such like grain the cylinder is set low in the concave—the bundles are untied and placed upon the inclined board D' with the heads toward the cylinder;—the machine being put in operation, the teeth draw in the grain between the concave and cylinder—the edges of the parallel plates and outward corners of the bars separate the grain from the straw—which pass off at the rear of the machine over the inclined discharging board D.

In shelling corn the cylinder must be raised and blocks put under the slides J and the screws made fast—the ears enter



the machine parallel with the plates which strip off the grain from the cob—the teeth in the cylinder and concave preventing the ears lodging behind the plates and bars—  
5 and thus escaping the action of the plates—but the teeth keep the ears constantly performing a rotary motion while in the machine until they are completely shelled.

10 The operation in getting cut clover seed is the same as that for grain.

The size, proportion and materials of the machine may be varied to suit the views of the constructors.

15 The first or uppermost bar of the concave and nearest the feeding board must have a nut and screw on each end so as to secure it by tightening the nut at any position desired—a slot being made in each side of the frame where the necks of this bar pass  
20 through for the purpose of raising or lowering the bar as occasion may require. For shelling corn this bar must be let down about as low as the surface of the concave by which means the corn passes into the  
25 machine with more ease and without break-

ing either the grain or cob. For cleaning clover seed this bar should be raised until it is about as near the surface of the cylinder as the other concave bars by which the clover will not feed faster than the machine  
30 will clean it. For threshing wheat or other small grain the bar must be placed about one fourth of an inch from the cylinder, but it may be more or less than a fourth as you may wish to regulate the space and manner  
35 of its feeding. See Fig. 6 in which W is the bar—X the screws—Y the nuts—Z the washers or rings placed over the bar, and V slot.

40 The invention claimed and desired to be secured by Letters Patent consists in—

The before described movable bar of the concave for regulating the feed of the machine, for shelling corn, hulling cloverseed, or threshing grain.

HORATIO N. WATERHOUSE.

Witnesses:

WM. P. ELLIOT,  
THOS. ELLIOTT.