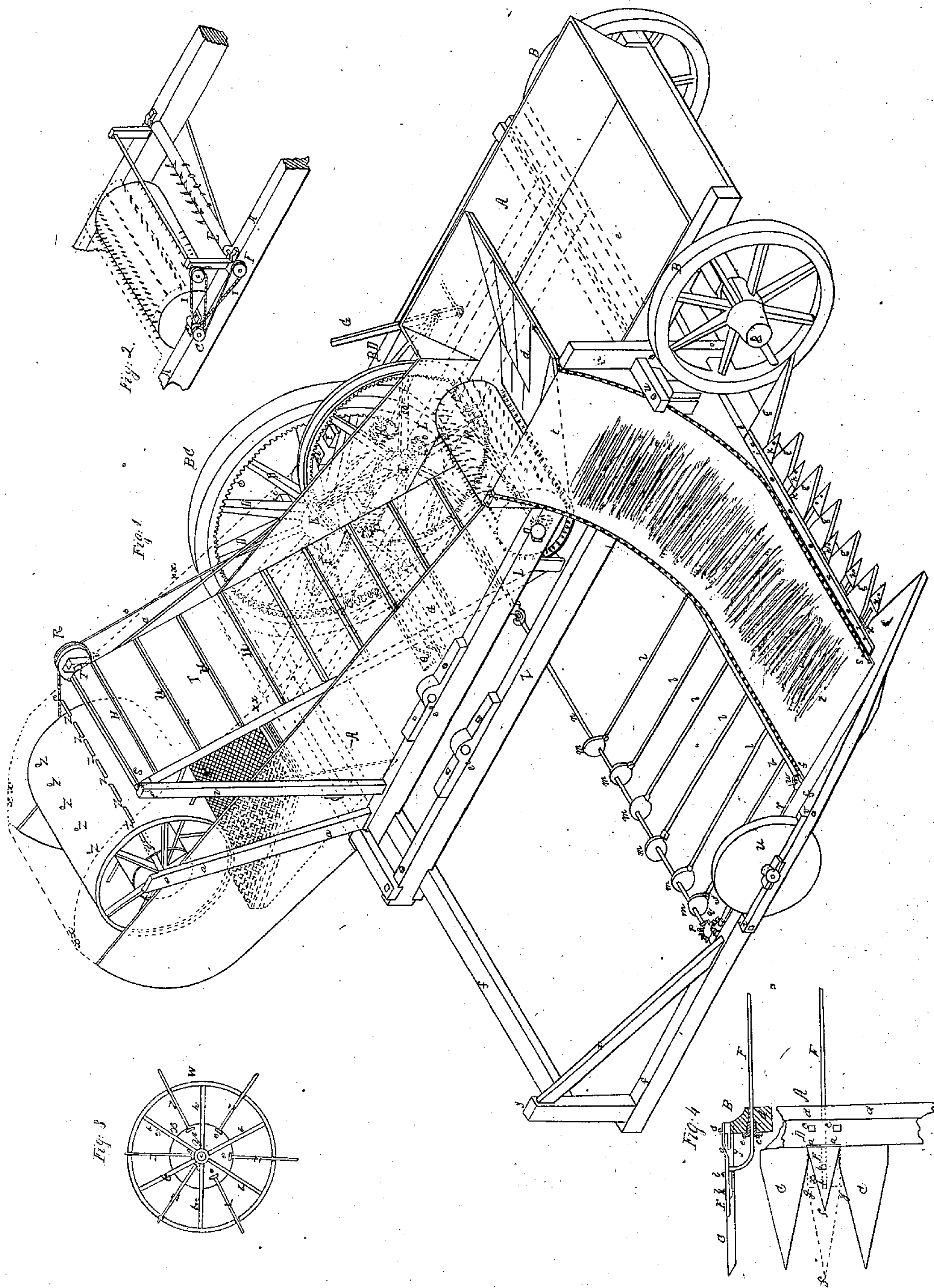


C. Foster.
Harvester & Thresher.

Nº 4916

Patented Jan. 1, 1847.



UNITED STATES PATENT OFFICE.

CLINTON FOSTER, OF LA PORTE COUNTY, INDIANA.

IMPROVEMENT IN HARVESTING-MACHINES.

Specification forming part of Letters Patent No. 4,916, dated January 1, 1847.

To all whom it may concern:

Be it known that I, CLINTON FOSTER, of the county of La Porte, and State of Indiana, have invented a new and useful Machine for Cutting and Harvesting Grain, which I call "Foster's Harvester;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 exhibits the thrashing-drum and other parts belonging to it which could not be otherwise exhibited. Fig. 3 illustrates the movable prongs or teeth in the cylindrical raker W in Fig. 1. Fig. 4 shows the cutters on a larger scale, &c.

In Fig. 1, A A are two principal side boards, inclosing the machine. B b B B are the three principal wheels on which the machine rests, one of which, B b, having within its felly a concave toothed wheel, C C, and which is the first mover of the whole machinery; D D D, spokes of the wheel B b; E, the dotted line showing the hub and axle of the wheel B b. F F are sliding joists, in which the axle of the wheel B b rests. These sliding joists are moved forward and backward by means of lever G, which throws the concave wheel C C out or into gear. H, dotted, is a pinion working into the concave toothed wheel C C. This pinion is on the axle I of another concave-toothed wheel, K, supported by frame L. M is another pinion on the shaft of the drum N, meshing into the concave toothed wheel K, (shown in dotted lines;) O, box of the shaft of thrashing-drum, secured to frame L; P, a pinion on the shaft of the fan Q, carried by the concave-toothed wheel K; R, a pulley (double) on roller S, to give motion to revolving cloth T. U U U, &c., are cleats across the revolving cloth T, to keep it in a proper position as well as to act as elevators; V V, upright posts to support the shaft of the roller S. The revolving cloth T receives the straw and grain from the thrashing-drum, elevating them to the raker W, the grain chiefly falling between the roller S and the raker W into the sieve X. Y is a cylinder within the cylindrical raker W, to gage the projections of the prongs Z Z Z, &c., which, in the revolutions of raker W, are projected and withdrawn by their own gravity as often as they reach a vertical position. These prongs

or teeth are intended to separate and remove the straw from the grain. a a, posts to support the shaft of the raker W; c c c, bands passing over the double pulley R, to put the apron on revolving cloth T and the raker W in motion. d is a slide-board, on which the grain is deposited by the revolving apron t, and slides down upon the thrashing-drum N; e, a platform. x x, &c., dotted lines, shows the box which covers and incloses the upper part of the thrashing apparatus; f f f, the frame of the reaping or cutting machine, strongly attached to the frame-pieces L of the thrashing-machine. g g g, &c., are wooden points, projecting in advance of the cutters, to divide and gather the grain; h h h, &c., the cutters; i i, an iron or steel bar above and across the cutters, sharp on its front edge, to assist in cutting the grain; k k, a bar under the cutters, similar to i i; l l, &c., iron rods, to which the cutters h h h are attached by screws, the other end of which rods are secured with collars upon the eccentric wheels m m m, &c., which move the cutters forward and backward; n, the shaft upon which the eccentric wheels m m, &c., are secured, at one end of which is the pinion O, meshing into the concave wheel C. p is a small beveled wheel at the other extremity of shaft n, meshing into a similar wheel, q, turning the shaft r and with it the roller s s; u, a wheel to support the cutting apparatus traversing in frame v; w w, rests for the shaft r, secured to the frame f f; x, a brace; y, a post; Z, a rail outside of L and parallel with it. Between the rails L and Z a wheel corresponding in size to the wheel B b is to be used, when then the cutting apparatus is detached and the machine used only as a thrashing-machine. The axle of this wheel works in the holes c c c c. i i is a joist connecting the frame f of the cutting-machine to the frame L of the thrashing-machine; j, a box (not shown in the drawings) under the wagon to receive the grain.

Fig. 2 shows the thrashing-drum with such parts as are attached when the machine is used only for thrashing. A A represents the frame; B, the thrashing-drum; C, a pulley on the axle of the drum; D, a slide-board; E, a roller with crooked teeth to draw the unthrashed grain uniformly toward the drum; F, a pulley on the shaft of roller E. G is a pulley upon another shaft, in which the knives

k k k are secured, and which cut the bands of the sheaves before they reach the drum B. *H H*, &c., dotted lines, is the covering inclosing the drum, &c.; *I I*, the bands on the pulleys.

Fig. 3 shows the internal structure of the raker *W*; *X*, the inner cylinder; *y*, the shaft; *Z Z Z*, the prongs or teeth. *b b b*, &c., are the arms on frame of the raker; *C*, &c., the heads of the prongs, which prevent them from passing through the cylinder *X*.

Fig. 4 shows the cutters on a large scale; *A*, a view from above; *C*, the wooden points in advance of the cutters; *D*, the upper iron plate; *E*, the cutters, triangular and sharp at base *a a*; *F*, the rod connecting the cutters with the collar on the eccentric wheels *m m*, &c., in Fig. 1; *b b*, the fastenings of the cutters to the rod *F*; *c c*, the fastenings of the upper bar, *D*, to the lower bar, *G*, (not shown in the drawings) by screws; *d d*, the frame-piece, in which the rods *F* move in boxes. *B* is a side view; *e e*, the boxes, with square holes for the rods. *f*, in dotted lines, shows the length of the stroke given by the eccentric wheels. *g g*, dotted lines, shows the space through which the grain passes to be cut by the backward motion of the cutters *E*.

The operation of the harvester is as follows: Horses are attached as to a common wagon. The large wheel *B b* receives motion as the horses advance, and thus the concave toothed wheel *C* moves the pinion on the axle of wheel *K*. The concave of this wheel *K* meshes into pinion *M* on the shaft of the drum and also into the pinion *P* on the shaft of the fan, giving motion to both. The wheel *C* also gives motion to pinion *o* on shaft *n*, giving motion to the eccentric wheels *m m m*, &c., by which the knives *h* are also put in motion. *p* is a beveled pinion on shaft *n*, working in a similar pinion, *q*, on shaft *r*, which carries roller *s*,

and with it the apron *t*. Thus as the machine advances the grain is cut and falls upon the apron *t*, and is elevated to the slide-board *d*, sliding thence under the drum, which casts it violently up upon the revolving cloth *T*, which is moved by band *c c*, which is carried by a pulley on the axle of *K*. This revolving cloth *T* carries the straw and grain over upon cylindrical raker *W*, which is moved by band *c*, separating the straw and grain, the former being carried over the raker, and the grain falling between it and the revolving cloth *T*, upon the sieve *x*. The sieve is shaken by pins in the felly of wheel *K*, tilting a lever. (Not shown in the drawings.)

This machine may be used merely for thrashing, either traveling or stationary, when the cutting apparatus is detached and a wheel of the size of *B b* is applied at *c c c c* on *L* and *Z*, also the two rollers shown in Fig. 2, one of which having sharp knives to cut the bands, the other with curved teeth to draw the grain within reach of the drum. These rollers receive their motion from a double pulley, *c*, on the shaft of the drum by bands *I* and *I*, the band *I* being crossed, the remaining part of the operation as before described.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the cutting and thrashing apparatus herein described in one harvesting-machine, connecting the knives separately with the respective rods *l* and the eccentrics *m*, and their arrangement and combination with the guides *g*, being a spur and balance wheel combined, and the cutting-plate *i*.

CLINTON FOSTER.

Witnesses:

JOSHUA DOWNING,
WILLIAM B. GUSTINE.