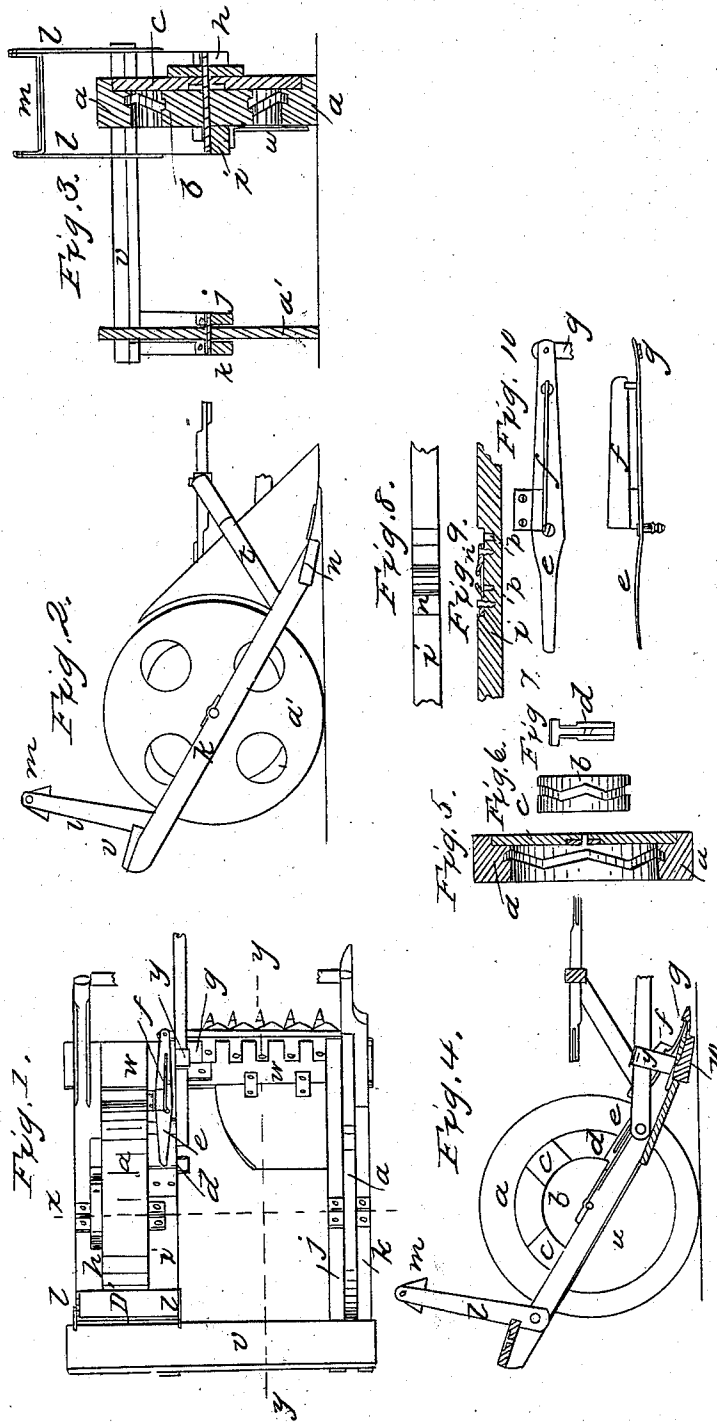


D. CLOW.

Harvester.

No. 22,936.

Patented Feb. 15, 1859.



Witnesses:
Charles A. Abbott

Inventor:
Daniel Clow

UNITED STATES PATENT OFFICE.

DANIEL CLOW, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 22,936, dated February 15, 1859.

To all whom it may concern:

Be it known that I, DANIEL CLOW, of Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in Harvesting-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is a top view of my improved harvesting-machine; Fig. 2, a side elevation of the same; Fig. 3, a section in the line *xx* of Fig. 1; Fig. 4, a section in the line *yy* of Fig. 1; and Figs. 5, 6, 7, 8, 9, and 10 represent detached portions of said machine.

Similar letters indicate like parts in each of the drawings.

The frame of my improved harvester is constructed by combining with each other in any suitable manner the parallel longitudinal beams *hi*, the parallel longitudinal beams *jk*, the transverse beam *v*, and the finger-bar *w*. The main portion of the weight of said frame is supported by the broad-faced driving-wheel *a*, which is located between the parallel beams *hi*, and the opposite side of said frame is supported by the wheel *a'*, which is located between the parallel beams *jk*. The tongue of the machine is jointed to the inner surface of the beam *i*, and to a limited extent plays freely in a vertical direction in the loop *y'*, which rises from its connection with the finger-bar *w*. The bearing-rim *a* of the driving-wheel projects inward from its supporting-arms *cc*, and a smaller wheel, *b*, which is placed on the axle of said driving-wheel, is also secured to the wheel-arms *cc*, and is of such a size as to form a narrow annular space between its periphery and the inner periphery of the rim *a*. A zigzag groove is formed in the inner periphery of the rim *a*, and a differently-proportioned zigzag groove is also formed in the periphery of the wheel *b*. Opposite the annular space between the outer periphery of the inner wheel, *b*, and the inner periphery of the rim *a* of the driving-wheel a recessed bearing-surface is formed for the reception of the bearing-plate *n*, which has a transverse groove formed in it for the reception of the sliding bar *d*, whose inner end terminates in a cross-head, as shown in Fig. 7. The arms of the cross-head of the sliding bar *d* are

of such a size that the one pointing rearward will, when the bearing-plate *n* is in the position shown in Fig. 7, fit accurately and easily into the groove in the periphery of the wheel *b* on the main bearing-axle, and the opposite arm of said sliding bar is of such a size that it fits easily into the groove in the inner periphery of the rim *a* when the bearing-plate *n* is moved forward to the utmost limit in the recess that receives it, and the screws which retain the said plate are received into the apertures *pp*. (Shown in Fig. 7.) The sliding bar *d* is made to impart the requisite reciprocating movements to the cutter-bar *g* through the medium of the vibrating lever *e*. The after end of the lever *e* may either fit into a notch in an upwardly-projecting ledge of the sliding bar *d* or may pass through an aperture in said ledge. The fulcrum-pivot of the lever *e* may be secured in any proper manner to the beam *i*, and the forward end of the said lever may be connected by any suitable form of joint to the inner end of the cutter-bar *g*.

The zigzag groove in the periphery of the wheel *b* and the groove in the inner periphery of the rim *a* of the driving-wheel are so proportioned that one of said grooves will impart a more rapid reciprocating movement to the sliding bar *d* than the other. Consequently any desired degree of speed can be given to the movements of the cutter-bar by properly adjusting the position of the bearing-plate *n* in the recess which receives it.

For the purpose of enabling the arms of the sliding bar *d* to glide smoothly from one plane to another of the zigzag grooves which impart the requisite movements thereto, I combine a spring, *f*, with the beam *i* and with the outer end of the lever *e*, substantially as shown in the drawings; or in place of said spring any other suitable form of spring may be combined with the finger-bar, and with either the lever *e* or with the cutter-bar, in any manner which shall produce the same effect in equalizing the strain upon the arms of the sliding bar *n* and causing the same to glide smoothly over the angles of the zigzag grooves in which they are inserted.

A semicircular plate, *u*, descending from the under side of the beam *i*, is in sufficiently close proximity to the inner surface of the driv-

ing-wheel *a b* to prevent any straws or trashy matter from entering the annular space in said wheel.

The driver's seat *m* is suspended by joint-pins between the plates *l l*, which are also secured by joint-pins to the outer sides of the rear ends of the frame-beams in such a manner that by shifting the position of his seat the driver can at any moment throw upward the finger-bar to carry it safely over any obstruction that would be liable to do injury thereto.

I am aware that the main supporting-wheel of a harvesting-machine has been furnished with an outer and an inner parallel series of teeth, and that the bearings of the crank-shaft of said machine have been so arranged that the pinion on said shaft could be thrown out of gear with one of said series of teeth and into gear with the other series of teeth, at pleasure, for the purpose of changing the number of the movements of the cutter-bar which is combined with the said crank-shaft; but this method of imparting the requisite movements to the cutter-bar of a harvester is expensive, is constantly liable to get out of order, and is attended with a great degree of friction. In the aforesaid arrangement the teeth of the same pinion are forced to match with an outer and inner series of operating-teeth within the driving-wheel, whereas the reciprocating bar *n* in my machine has an outwardly-projecting tooth

or arm, which is specially adapted to work into the outermost propelling-groove of the driving-wheel, and the said reciprocating bar has an inwardly-projecting tooth or arm, which is specially adapted to work in the innermost propelling-groove of the driving-wheel of said machine.

Having thus fully described my improved harvesting-machine, what I claim therein as new, and desire to secure by Letters Patent, is—

Constructing the main supporting-wheel thereof in such a manner as to form therein an outer and an inner zigzag groove; but this I only claim when the said grooves have differently-proportioned reaches and bear such a relation to the T-headed sliding bar *n* and the other parts of the machine which are connected with said bar and with the cutting apparatus that the number of the movements imparted to the cutter-bar can be varied at pleasure by shifting the bearings of the said sliding bar *n* from one position to another, substantially as herein set forth.

The above specification of my improvements in harvesting-machines signed and witnessed this 15th day of October, 1858.

DANIEL CLOW.

Witnesses:

JAMES YATES,
E. L. TICE.