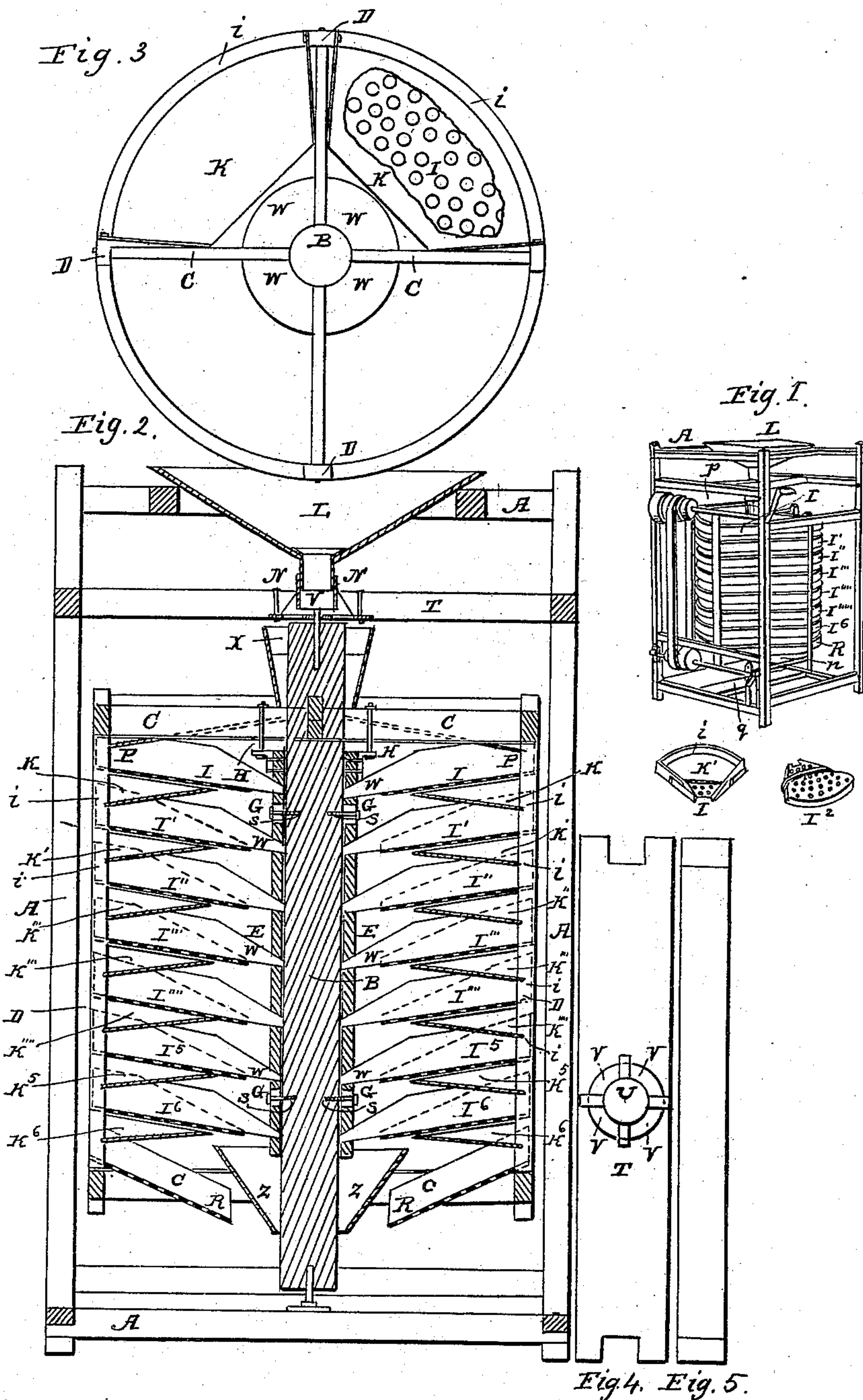


L. LOW,  
Grain Separator.

No. 43,318.

Patented June 28, 1864.



Witnesses:  
Chas. Bond.  
J. H. Wiley.

Inventor:  
Leonard Low



# UNITED STATES PATENT OFFICE.

LEONARD LOW, OF SAN FRANCISCO, CALIFORNIA.

## GRAIN-SEPARATOR.

Specification forming part of Letters Patent No. 43,318, dated June 28, 1864.

*To all whom it may concern:*

Be it known that I, LEONARD LOW, of the city and county of San Francisco, California, have invented a new and useful Machine for a Grain and Seed Separator; 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 accompanying drawings, making a part of this specification.

Figure 1 is a perspective view of the machine, in which two of the screens are removed and lie at its foot, marked 1 and 2. Fig. 2 is a sectional view vertically through its center. Fig. 3 is a cross section, and Figs. 4 and 5 represent portions of the frame.

A A is a rectangular frame-work of wood.

B is a shaft placed vertically in the center of the frame A A, working on pintles, as shown in the drawings. This shaft may be either square, octagonal, or other suitable form.

C C are arms mortised at one end into the shaft B and at the other into the uprights D D.

E E are strips of wood fastened to the shaft B by screws S S, working in slits G G.

H H are adjusting-screws working through the upper set of arms, C C, for the purpose of raising or lowering the strips E E.

I to I<sup>6</sup> are screens, as shown at 1 and 2, in Fig. 1—say in form of a quadrant or other part of a circle. The inner or converging ends of the sides of these screens are mortised, or, rather, stepped into the strips E E, and at the outer ends are screwed to the uprights D D. The screens have a downward inclination toward the shaft B. By raising or lowering the strips E, by means of the adjusting-screws H, the inclination of the screens I is adjusted.

K' to K<sup>6</sup> are return-plates or chutes, inclining downward from the center. These plates terminate a short distance from the outer edge of the screens, thereby leaving a space, *i*, to allow the grain to fall upon the screens beneath them. In Fig. 3 one of these returns or chutes is represented as broken away to allow the screen below to be seen.

R is the last screen used, and is made with holes of such a form that the grain to be cleaned

will pass over its surface into its proper hopper, while the refuse will pass through it to its own proper place.

L is a hopper for feeding the grain to the machine. N is a sliding nozzle to said hopper, for the purpose of regulating the proper quantity of grain to be fed.

P is a distributing-plate, inclining downward from the hopper to the outer edge of the screens.

T is a bridge-tree, to which is affixed the cross-head U, for the upper pintle of the shaft B to work in.

V V are spaces between the arms of the cross-head for the grain to pass through.

X is a funnel around the upper end of the shaft B, through which the grain passes from the hopper to the distributing-plate or chute P.

Operation: To operate this machine, a horizontal oscillatory motion is given to it by means as shown in Fig. 1, or in any other convenient manner. The shaft *p*, upon being turned, imparts rotary motion to the shaft *o*, which turns crank *q* and imparts an oscillating motion to the machine by means of pitman *n*. The grain is fed through the hopper L. The quantity of grain fed is regulated by increasing or decreasing the space in the opening in the bridge-tree by raising or drawing out the sliding or telescopic nozzle N. The grain, passing through the funnel X, falls upon the distributing-plate or chute P, will be distributed equally over the same by the oscillatory motion of the machine, and will fall evenly upon the outer edge of the screen I. The wheat or grain to be cleaned will pass through said screen upon the return-plate or chute K. Trash and larger seed will pass over the screen through the opening W, down the center of the machine, into a hopper, Z. The wheat passes from the chute K to the outer edge of screen I', further freeing it from foreign matter and passes from screen to chute till it reaches the chute K<sup>6</sup>, whence it passes upon the screen R, which screen has holes and slits much smaller than those of screens I to I<sup>6</sup>, the cleaned grain passing over this last screen into its proper hopper, whereas all broken grain and chaff pass through. The oscillatory motion of the machine tends to spread the grain evenly over all the chutes and screens, keeping

in agitation over the former to the outer edge of the latter, thence driving the barley, &c., to the center.

The machines may be made with two, four, or more of the upright sets of screens, and the sets may be composed of more or less screens, as may be deemed desirable.

The inclination of the screens and chutes may be regulated by raising or depressing the strips E E.

I claim—

1. The arrangement of the inclined screens I in quadrant sets around a center shaft, B, substantially as herein described and shown.

2. The combination of the screens I and chutes K, when the same are arranged around

a center shaft and operated by oscillatory motion, substantially in the manner and for the purposes described.

3. The adjustable strips E, in combination with the screen-supporters, for the purpose of adjusting the inclination of the screens, substantially as described.

4. The hopper L, in combination with the telescopic nozzle N and cross-head U, for the purpose of adjusting the feed of the grain, substantially as herein described.

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Witnesses:

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