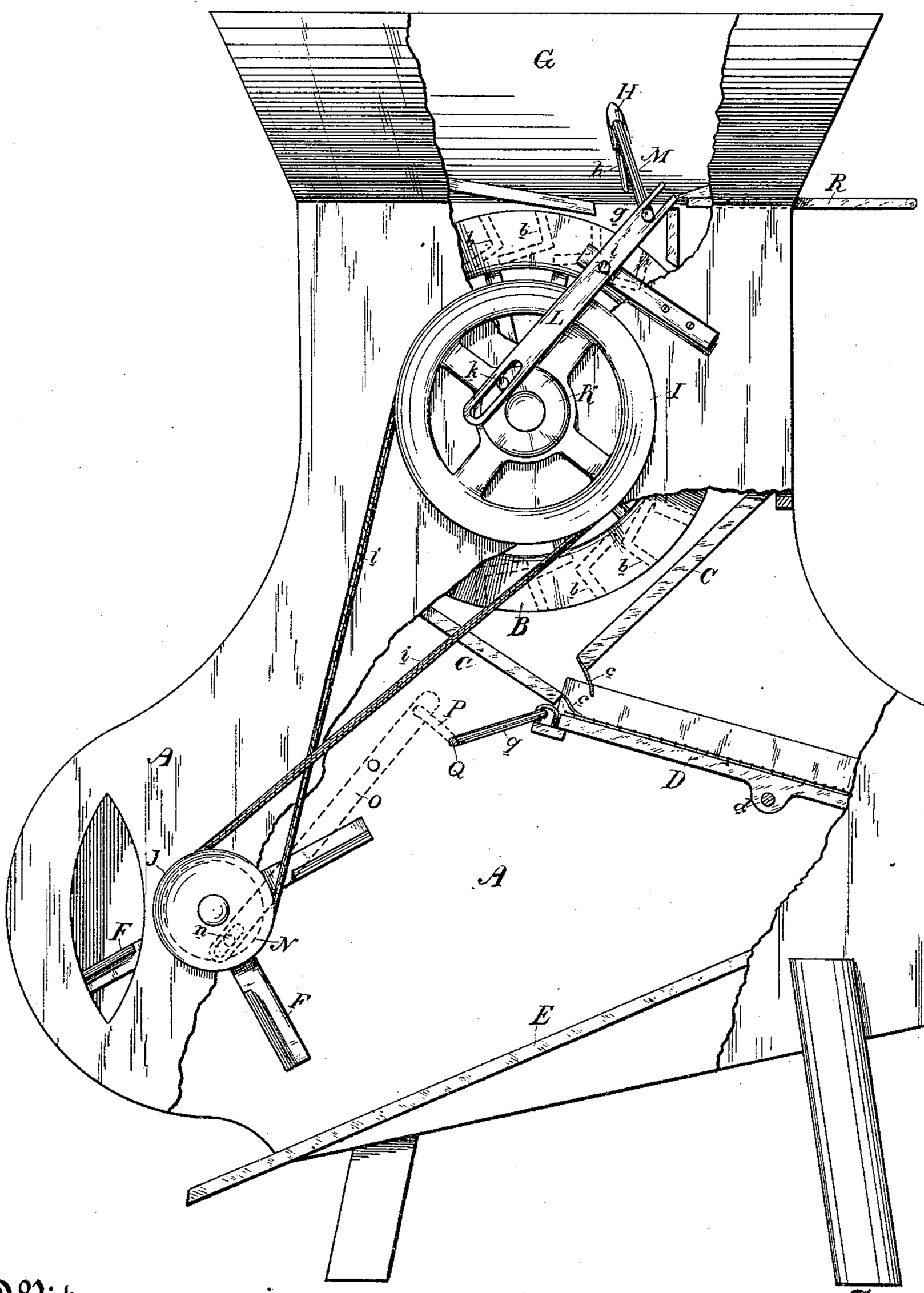
(No Model.)

H. S. ZINK.

AUTOMATIC FANNING MILL.

No. 332,470. Patented Dec. 15, 1885.



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UNITED STATES PATENT OFFICE.

HARRY S. ZINK, OF SACRAMENTO, CAL., ASSIGNOR OF TWO-THIRDS TO RICHARD REED AND HENRY S. RUHLMAN, BOTH OF SAME PLACE.

AUTOMATIC FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 332,470, dated December 15, 1885.

Application filed February 18, 1885. Serial No. 156,305. (No model.)

To all whom it may concern:

Be it known that I, HARRY S. ZINK, of Sacramento, Sacramento county, State of California, have invented an Improvement in Automatic Fanning-Mills; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of machines used for cleaning wheat and other grain, known commonly as "fanning-mills;" and the machine comprises a power-wheel adapted to be rotated by the grain itself as it passes from a superposed hopper, a directing-chute, riddle, and fan, said fan and riddle being connected with and operated by the power-wheel, and an agitator or feeder within the hopper, also connected with and operated by the power-wheel, whereby the grain is fed constantly and evenly.

The object of my invention is to provide a fanning-mill which is adapted to be operated automatically by the weight of the grain in the hopper, and to continue its operation as long as said hopper is kept supplied.

Referring to the accompanying drawing, the figure is an elevation of my machine, a portion of the casing being broken away to show interior parts, the mechanism on the opposite side being shown in dotted lines.

A is the main frame or casing of the machine, and B is the operating or power wheel mounted in its top and adapted to rotate. This wheel should be made as light as possible and be accurately mounted, whereby its rotation is rendered the easier. Upon the periphery of the wheel are formed or secured angular flanges *b*, constituting buckets, in which the grain is adapted to be received, and also discharged to effect the rotation of the wheel. In the casing A, and below the wheel, is formed the chute C, the bottom of which is provided with flexible guard-flaps *c*, and is in communication with and over the riddle D. This riddle may be of any suitable form, and may comprise any number of screens. It is mounted upon a pivot-shaft, *d*, on which it is adapted to rock. Under the riddle and inclining in an opposite direction is the grain floor or chute E. In the front of the casing is mounted a fan, F, the blast from which is directed under the riddle. Upon the top of the casing is the hopper G, having a transverse feed-opening, *g*, in its base, which is located over the power-wheel and to one side of its vertical center, whereby the grain is discharged into the buckets of the wheel beyond the plane of the center of gravity, thus effecting its rotation. Within the hopper and over the feed-aperture is journaled a rock-shaft, H, having stirrers or teeth *h*, whereby the feed-aperture is kept open and prevented from clogging. Upon the end of the shaft of the power-wheel is a large pulley, I, from which a crossed belt, *i*, extends to a pulley, J, on the end of the fan-shaft. Upon the power-wheel shaft outside of pulley I is a crank, K, having a crank-pin, *k*, upon which is slotted the lower end of a lever, L, pivoted at *l* to a bracket on the side of the main casing, and engaging at its upper end, by means of a suitable slot or groove, a crank, M, on the end of the rock-shaft H, within the hopper. On the opposite end of the shaft of the fan is a crank, N, having a pin, *n*, upon which is slotted the lower end of a lever, O, which is pivoted in a bracket on the side of the casing and engages with its upper end a crank, P. This crank is formed on the end of a transverse shaft, Q, passing through the casing, and the center of which is provided with a crank-arm, *q*, which is connected with the forward end of the pivoted riddle. Let in between the top of the casing A and the bottom of the hopper is a sliding gate, R, which is adapted to regulate the amount of feed through the aperture *g*.

The operation of the device is as follows: The grain is placed in the hopper, and passing down through the feed-aperture falls into the buckets or flanges of the power-wheel, whereby said wheel is rotated. The rotation of this wheel transmits motion, through the crank K and lever L, to the oscillating feeder-shaft H within the hopper, whereby the grain is fed evenly and continuously, with the effect of continuing the rotation of the power-wheel. Through the pulleys I J and belt *i* the fan is also driven from the said power-wheel, and from the fan-shaft, through the pivoted lever

O, the riddle is given a vibrating or swinging motion. The grain falls through chute C from the wheel and passes on the riddle, where the chaff and other light stuff are blown away by the blast from the fan-wheel, and the cleaned grain passes through upon the inclined floor and is discharged at the front of the machine into a suitable sacker or other receiving device. The riddle may be mounted in any suitable manner, whereby it may receive its usual shaking or vibrating motion.

It will be observed that as long as the hopper is kept supplied with grain the operation of the machine will be continued.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fanning-mill, the power-wheel B, in combination with the hopper G, having feed-aperture *g* in communication with the wheel, the feeder-shaft H in the hopper having teeth *h*, and the means by which said shaft is oscillated, consisting of the crank K on the wheel-shaft, having pin *k*, the crank M on the feeder-shaft, and the pivoted lever L, slotted on the pin and engaging the crank M, substantially as herein described.

2. In a fanning-mill, the power-wheel B, rotated by the grain entering the mill, as described, in combination with the fan F, the pivoted riddle D, and the means by which the fan is rotated and the riddle vibrated, consisting of the pulley I on the wheel-shaft, the pulley J on the fan-shaft, and belt *i* between them, the crank N on the other end of the fan-shaft having pin *n*, the cross-shaft Q, having interior crank, *q*, engaging the riddle, and exterior crank, P, and the pivoted lever O, slotted on the pin *n* and engaging crank P, all arranged and adapted to operate substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

HARRY S. ZINK.

Witnesses:
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