

(No Model.)

2 Sheets—Sheet 1.

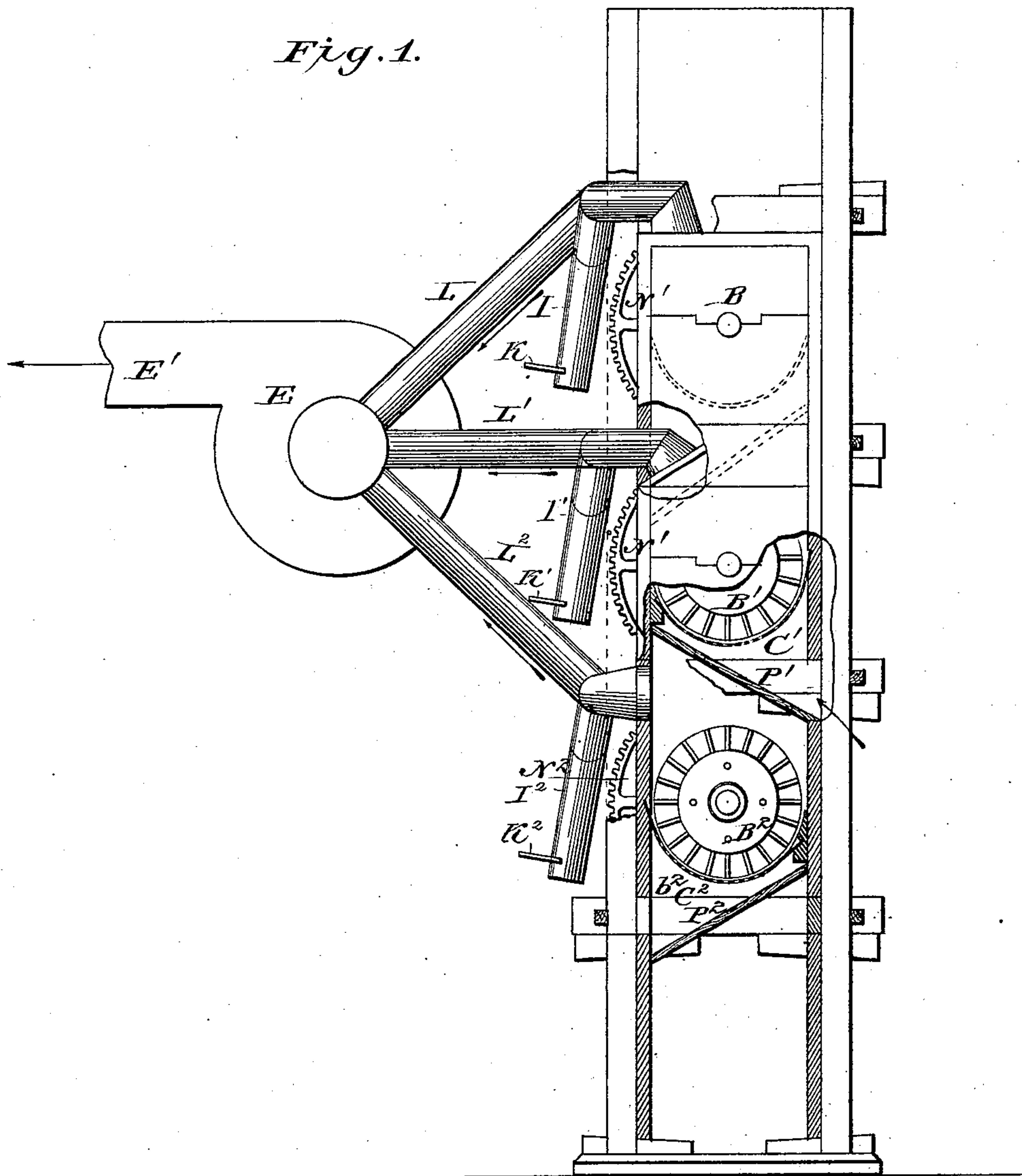
J. R. REYNOLDS.

MACHINE FOR CLEANING GRAIN.

No. 284,672.

Patented Sept. 11, 1883.

Fig. 1.



Attest:
A. M. Long.
E. P. Walker

John R. Reynolds
Inventor.
by
R. Mason
Atty.

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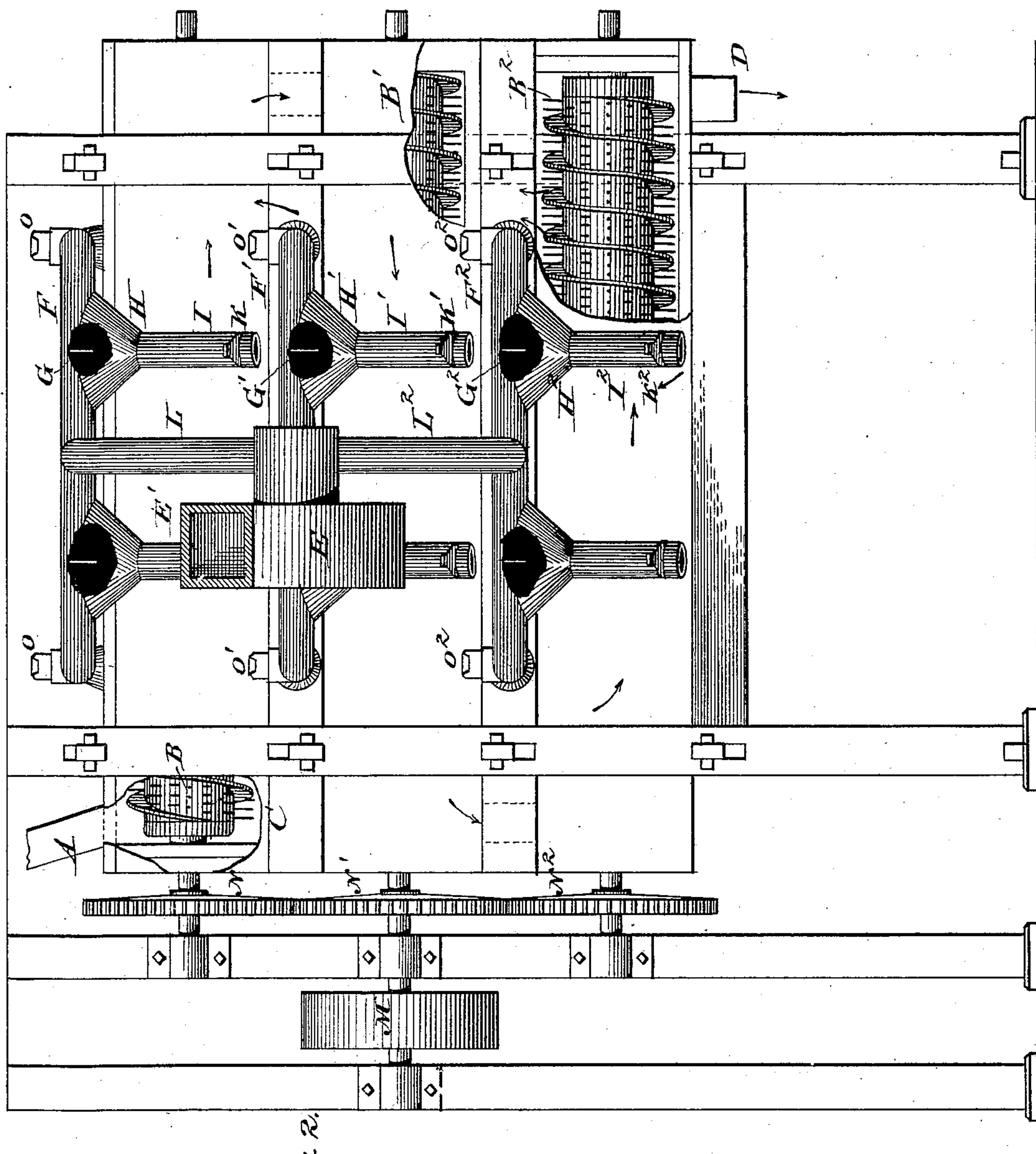


Fig. 2.

Attest:
A. M. Long.
E. J. Walker

J. R. Reynolds
Inventor.
by
R. Mason
Atty.

UNITED STATES PATENT OFFICE.

JOHN R. REYNOLDS, OF JACKSON, MICHIGAN.

MACHINE FOR CLEANING GRAIN.

SPECIFICATION forming part of Letters Patent No. 284,672, dated September 11, 1883.

Application filed June 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. REYNOLDS, of Jackson, in the county of Jackson, State of Michigan, have invented a new and useful Improvement in Machines for Cleaning Grain, of which the following is the specification.

The object of this invention is the scouring of the external surface of the grain, especially with a view to the removal of the fuzz end of the wheat, which is accomplished by passing the wheat through a series of connected troughs and conveyers having spikes arranged between the flights of the conveyers, by which the wheat is abraded to such an extent as to detach adhering particles and scour off the brittle portions which adhere to the ends of the berries, commonly known as the "fuzz," while the wheat is traversing the conveyer-troughs, which are perforated, so as to permit a current of air to rise through the troughs and through the wheat carried in the troughs to a suction-fan. I also provide means for separating from the current of air, after it has passed above the wheat, heavy particles, which are dropped out of the current and collected.

In the annexed drawings, making a part of this specification, Figure 1 is an end elevation, partly in section. Fig. 2 is a side elevation of the machine, part of the case being represented as broken away.

The same letters in both figures are used in the indication of the same parts.

The wheat is fed into the head of the upper conveyer through a pipe, A. B is the upper conveyer, of which there are three in all, B, B', and B². These conveyers run in close boxes, which admit of a draft being applied thereto by the suction-fan. These conveyers are formed in the usual way, with central shafts and spiral flanges, the rotation of which carries the grain in the troughs C C' C², and have intermediately placed between the flanges a large number of spikes, set into the shafts and projecting out to about the same distance as the flanges.

The conveyer-troughs C C' C² are concave, and are set up close to the edges of the spiral flanges, and they are also perforated with small holes, fine enough to permit the air to

rise through them, but not large enough to permit the wheat to fall through. The grain fed in through the head of the upper conveyer travels along in the conveyer-trough C until it reaches the discharge end thereof, and then is poured through an opening onto the head of the conveyer B', such opening being placed at the end of the conveyer toward which the wheat is moved, and in such position as to discharge the grain upon the head of the next lower section of the conveyer. The route traveled by the wheat is indicated by the arrows in Fig. 2. Traversing the second conveyer, B', it falls in like manner onto the head of the lower conveyer, B², and is carried along its trough until it reaches the spout D, where it is discharged. While this action is going on a current of air, put in motion by the suction-fan E, is drawn through the conveyer-troughs and through the wheat carried thereon into the pipes F F' F², opening out of the tops of the boxes which inclose the conveyers. In these pipes are placed vertical cant-boards G G' G², against which grains of wheat or other heavy particles raised by the force of the current will strike, and, their movement being changed, will fall into the hoppers H H' H², and thence into the pipes I I' I², which pipes are fitted with valves or slides K K' K², which may be opened from time to time to permit the heavy particles thus drawn out to be deposited. These pipes F F' F² are connected by the branch pipes L L' L² with the fan, so that the dust carried off by the current will pass through the fan-case and be discharged through the mouth thereof, at E', into the dust-room of the mill, or out of doors.

Motion is communicated to the conveyers by the driving-pulley M through the spur-wheels N N' N². N', being the driving spur-attached to the shaft of the conveyer B', will cause the conveyers B and B² to revolve in a direction opposite to that of the conveyer B'. The force of the blast through the separate chambers is regulated by means of slides O O' O², connected with the pipes F F' F².

The conveyers, as described, are inclosed in casings having cant-boards P P' P², by which any particles falling through the holes in the conveyer-troughs would be discharged outside

of the case through openings in the case, through which air enters into the space below the perforated bottoms of the conveyer-troughs.

- 5 I have represented the conveyer as divided into three sections. This will be understood to be merely for the purpose of shortening it. The whole conveyer may be continuous, or it may be divided into more or less sections, ac-
15 cording to the length that is desired to give to the machinery.

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

- 15 1. In combination with the fan and connecting-pipes, conveyers having spikes between their flanges, and perforated conveyer-troughs, by means of which, while the wheat is being abraded by the spikes, the air rising through

the conveyer-troughs and the wheat carried thereon will carry away light detached parti- 20
cles, while the clean grain traverses the conveyer-troughs.

2. In combination with the fan, conveyers, and perforated troughs, the pipes F, &c., cant-
boards G, &c., and hoppers H, &c., to collect 25
and retain heavy particles, which may be carried up from the conveyer-chambers by the force of the air-currents, substantially as set forth.

In testimony whereof I affix my signature in 30
presence of two witnesses.

JOHN R. REYNOLDS.

Witnesses:

E. K. DAUCHEY,
JOHN F. RATZOLD.