

(No Model.)

2 Sheets—Sheet 1.

J. P. BOND.

GRAIN SEPARATOR AND CLEANER.

No. 337,234.

Patented Mar. 2, 1886.

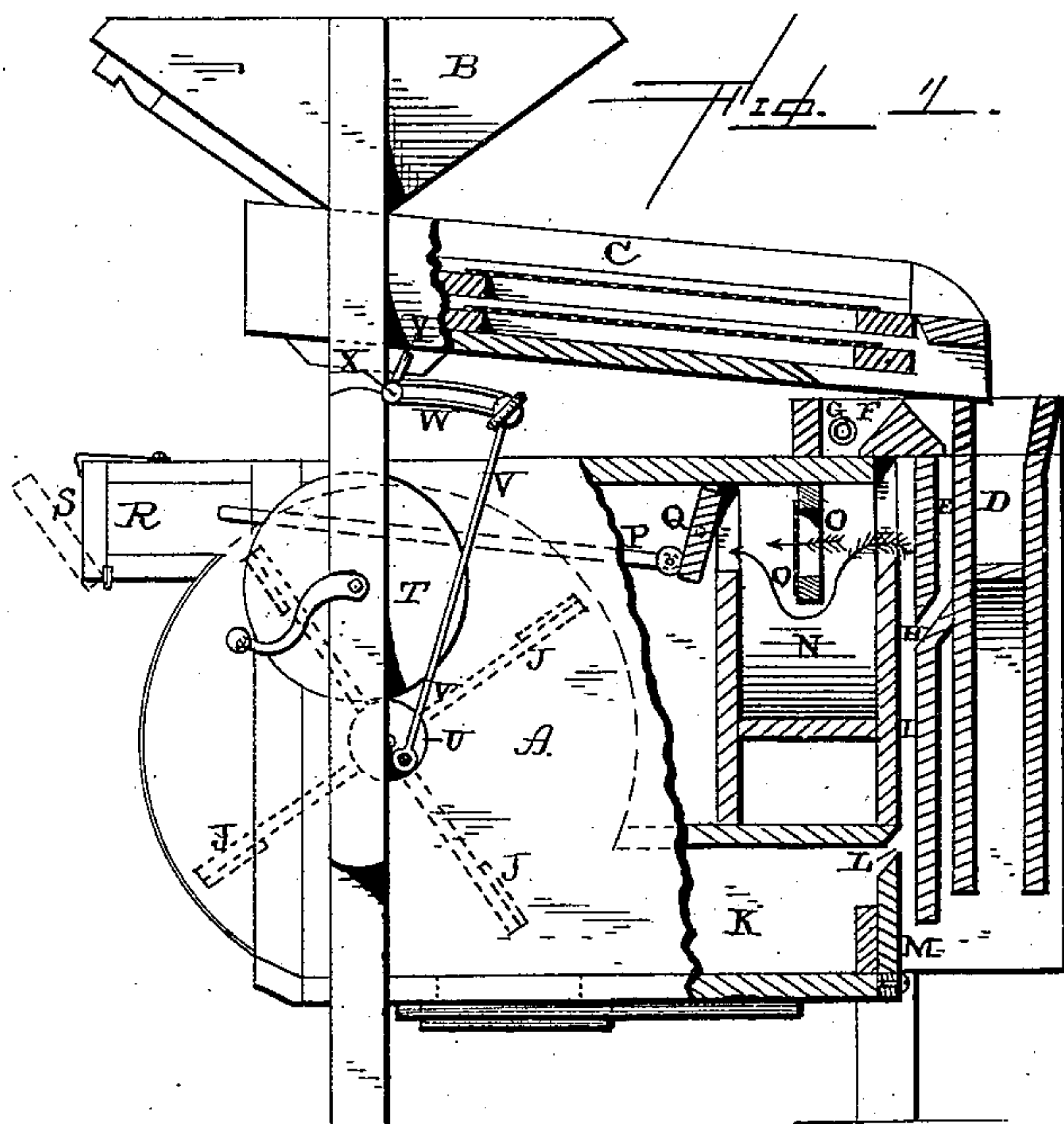
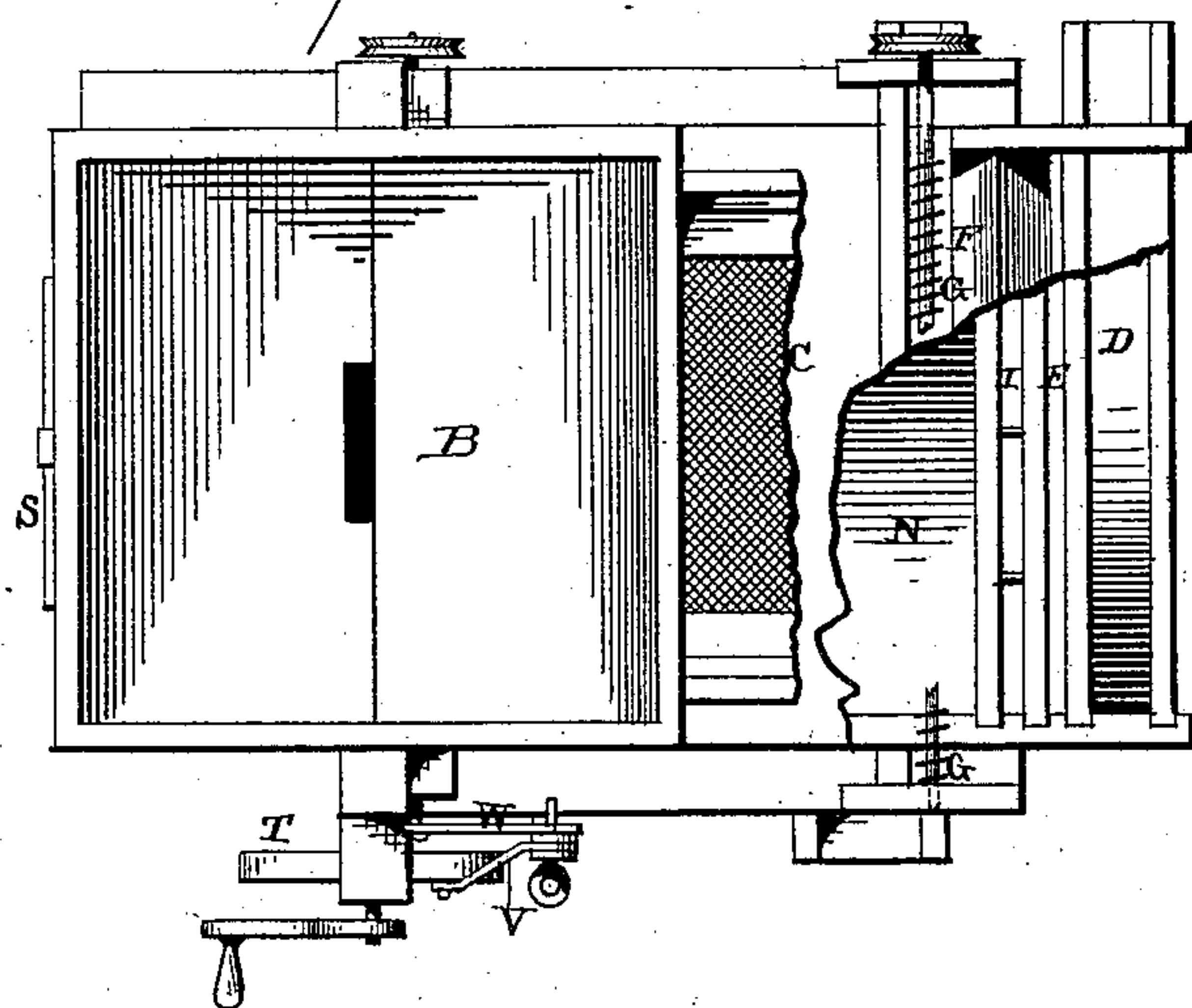


Fig. 2.



Witnesses.

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A. S. Pattison

Inventor

J. P. Bond,
per J. A. Lehmann,
att'y.

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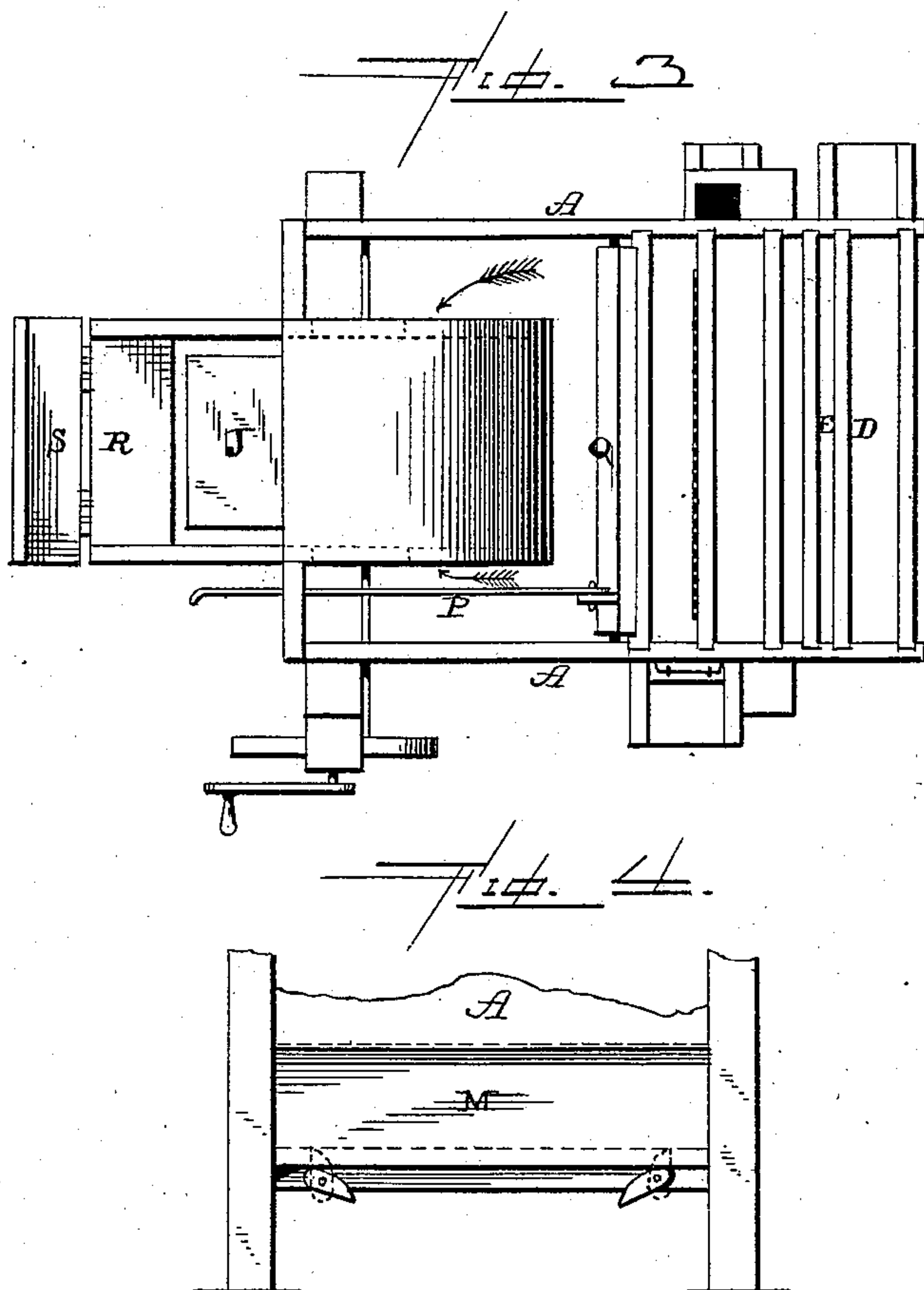
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UNITED STATES PATENT OFFICE.

JOHN P. BOND, OF WARSAW, INDIANA.

GRAIN SEPARATOR AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 337,234, dated March 2, 1886.

Application filed October 28, 1885. Serial No. 181,159. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. BOND, of Warsaw, in the county of Kosciusko and State of Indiana, have invented certain new and useful
5 Improvements in Grain Separators and Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable other skilled in
10 it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in grain separators and cleaners; and it consists
15 in the construction and combination of parts, which will be set forth in the claims, whereby a fanning-mill is produced in which the air may either be forced or exhausted for the purpose of cleaning grain and seeds.

20 Figure 1 is a side elevation, partly in section, of a machine embodying my invention. Figs. 2 and 3 are plan views with the cover of the mill removed so as to show the internal construction. Fig. 4 is a detail view of the
25 sliding valve.

A represents the frame of a machine, which may be either of the shape here shown or any other that may be preferred. Supported
30 above the top of the frame any suitable distance is the hopper B, from which the grain flows upon the top of the shaking shoe C. This shoe is provided, preferably, with two
35 screens, the upper one of which is the coarser, and over the top of which straws, sticks, and such other substances that have become mixed with the grain pass and are dropped into the
40 spout D. The bottom of this spout is made inclined, so as to carry the chaff and dirt directly out of the machine. The second screen
45 is of the required fineness, according to the grain which is to be screened, and from this screen the grain falls into the spout E. All of the cockle and other fine substances mixed with the grain pass through this second screen
50 and fall upon the bottom of the shoe, from which it passes into the trough F, which is provided with a conveyer, G, for forcing it out of the machine. The grain which is dropped into the spout E falls vertically until it reaches
the inclined board H, which deflects it into the spout I, where it is subjected to a blast of air from the fan J. The air from the fan passes

through the passage K and the opening L, which is controlled by a sliding valve, M. This opening L is made at a suitable angle, so
55 that the air which is forced through it shall pass up the spout I, and thus drive all of the dust and light particles of grain up into the air-chamber N.

Projecting down into the top of the air-
60 chamber N is a screen, O, which serves to deflect the grain and particles carried by the wind down into the bottom of the air-chamber, which is made inclined, so as to readily
conduct all that falls upon it outside. Above
55 the rear wall of this air-chamber N is a pivoted board, Q, which is moved at its lower edge by means of the rod P, whose outer end extends through the frame, where it can be
readily taken hold of by hand. By moving
70 this board Q at its lower edge, so as to draw it backward, the top of the air-chamber N is opened, and thus the blast can be forced through the chamber with greater force than
when the lower edge of the board is in a line
75 with the rear wall of the chamber. This board Q serves to moderate the force of the blast in forcing the lighter particles through the air-chamber direct to the fan. Openings, as shown
80 in dotted lines in Fig. 3, are made in the sides of the air-chamber, which is of less width than the frame, so that all of the air which passes through the air-chamber is drawn directly to the fan.

Extending from the top of the fan-chamber
85 is an exhaust-passage, R, which is controlled by the door S. In case it should be desired to use a suction-draft instead of the driven one upon the grain which is passing through
the spout I, the opening L is closed by the
90 slide M, and then the whole draft to the fan passes up through the spout I, through the air-chamber to the fan, and out of the exhaust-passage R. The door S is kept closed while a
driven or combined blast is employed; but
95 when the suction-blast is used the opening L is closed and the door S opened. When the door S is closed and the fan J revolved, air is drawn up through the passage I, through the chamber N to the fan, and then this air is
100 forced through the passage K and opening L, so as to produce an upward blast upon the falling grain in the passage I. In this manner a combined suction-and-force draft is pro-

duced. The moderator-board Q is used to regulate the draft through the air-chamber, whether a driven or a suction blast is employed. The driving power is applied to the wheel T, which in turn operates a smaller wheel, U, by frictional contact, provided with a wrist-pin, and to which wrist-pin the pitman V is connected. The upper end of the pitman is adjustably fastened to the slotted crank W, which is secured to one end of the rocking shaft X, which is provided with arms Y, for moving the screen. By means of the slotted crank W a longer or shorter stroke can be given to the pitman, and thus the amount of movement given to the shoe C can be regulated at will. The shoe C is supported at one end by the arms Y and at its other end by the frame A.

Having thus described my invention, I claim—

1. The combination of the frame A, shoe, and screens, the fan-chamber placed inside of

the frame and provided with air-openings, the fan, the exhaust-passage R, door S, passage K, provided with opening L, slide M, passage I, and chamber N, whereby the grain is separated and cleaned either by suction or by suction and blast, substantially as described. 25

2. The combination of the frame A, the shoe, and screens, the fan-chamber placed inside of the frame and provided with air-openings, the fan-passage R, door S, passage K, provided with opening L, slide M, and passage I, with the chamber N, deflector or screen placed in the top of the chamber, the moderating-board Q, and a means for moving it, substantially as described. 30 35

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

JOHN P. BOND.

Witnesses:

ABE BRUBAKER,
WILLIAM T. DANNAR,
JOHN H. BRUBAKER.