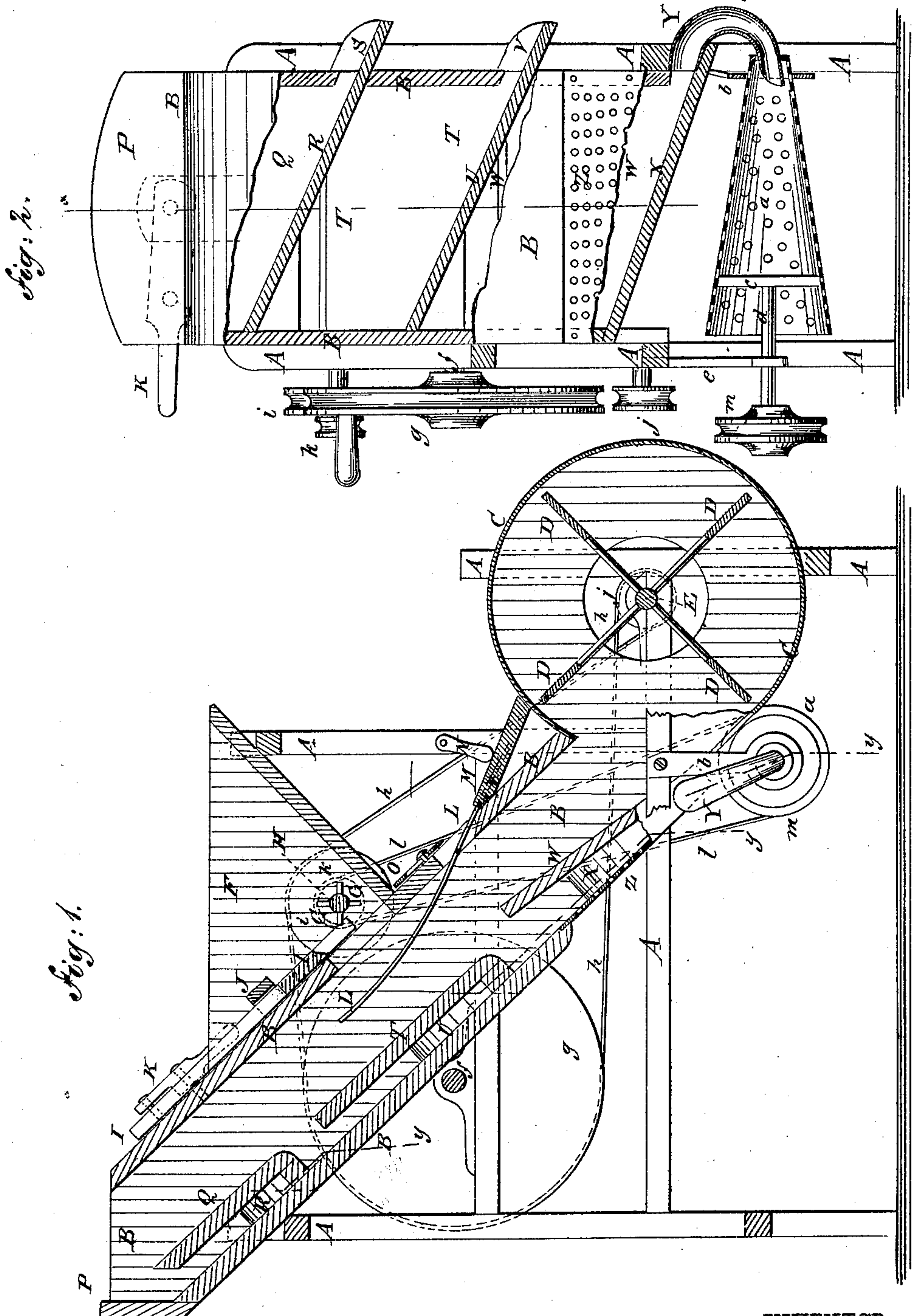


(No Model.)

W. S. BRIGHT & S. THOMAS.  
Grain Separators.

No. 231,992.

Patented Sept. 7, 1880.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM S. BRIGHT AND SAMUEL THOMAS, OF LETART, W. VA.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 231,992, dated September 7, 1880.

Application filed March 25, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM SANDERSON BRIGHT and SAMUEL THOMAS, of Letart, in the county of Mason and State of West Virginia, have invented a new and useful Improvement in Grain-Separators, of which the following is a specification.

Figure 1 is a sectional side elevation of the improvement, taken through the line *x x*, Fig. 10 2. Fig. 2 is a sectional end elevation taken through the broken line *y y y y*, Fig. 1.

The object of this invention is to furnish grain-separators so constructed that the light grain, the cheat, and chaff will be separated 15 from the grain by an air-blast, and the cockle and other small seeds will be separated by screens, and which shall be simple in construction and rapid and effective in operation.

Similar letters of reference indicate corresponding parts.

A represents the frame of the machine, to which is attached a spout, B, inclined upward and rearward at an angle of forty-five degrees, (45°,) more or less. With the lower end of 25 the spout B is connected the case C of a fan-blower, the fans D of which are attached to a shaft, E, revolving in bearings attached to the frame A. To the frame A and to the upper forward part of the spout B is attached the 30 hopper F, from which the grain passes into the spout B through a cross-slot in the middle part of the forward side of the said spout B.

The grain is fed out of the hopper F by radial pins G, attached to a shaft, H, which revolves in bearings in the sides of the said 35 hopper F. The amount of grain fed out is regulated by a slide or gate, I, which slides upon the inclined upper side of the spout B, and has its lower part slotted for the passage of 40 the pins G, so that the slide and pins will not interfere with each other. The upper part of the slide I is made narrower than the lower part, passes through a keeper, J, attached to the upper side of the spout B, and its upper 45 end is pivoted to the inner end of a lever, K. The lever K is pivoted to the upper side of the spout B, and its outer end projects into such a position that it may be conveniently reached and operated by the operator.

50 As the grain escapes from the hopper F it is received upon the upwardly-inclined and

slightly-curved fingers L, where it is exposed to the blast of air from the fan-blower C D E, through which the grain falls, while the chaff is blown through the spout B and out at the 55 upper end of the said spout B. Any sticks, stones, and other heavy impurities that cannot be blown off by the air-blast slide down the fingers and escape through the slot in the upper side of the spout B below the hopper F, 60 and through which the fingers L enter. The outer ends of the fingers L are attached to a board, M, which rests upon the upper side of the spout B and the case C of the fan-blower, where it is secured in place by buttons N, piv- 65 oted to posts of the frame A, so that the fingers or rake L M can be readily detached when not required for use. When the fingers L M are detached the aperture through which they enter the spout B is closed by a slide, O. The 70 slide O rests upon the upper side of the spout B, and is slotted to receive the screw by which it is secured to the said spout.

As the grain falls from the fingers L the cheat is blown up the spout B, strikes against 75 the stop-board P, attached to the lower part of the upper end of the said spout B, and falls into the space between the lower side of the spout B and the board Q, placed parallel with and at a little distance from the said lower 80 side.

The lower end of the space between the board Q and the lower side of the spout B is closed by an inclined bar, R, by which the cheat is made to pass out through the spout S, 85 secured in an aperture in the side of the spout B. The light and cut kernels of grain, heavier than cheat, fall upon the board Q, slide down it, and at its lower edge fall into the space between the lower side of the spout B and the 90 board T, placed parallel with and at a little distance from the said lower side of the spout B.

The lower end of the space between the lower side of the spout B and the board T is closed by an inclined bar, U, which causes the light 95 and cut kernels to pass out through the spout V, secured in an aperture in the side of the spout B. The full plump kernels of grain fall upon the inclined board T, slide down it, and fall from its lower end into the space between the 100 lower side of the spout B and the board W, which is placed at a greater inclination than



the lower side of the said spout B, as shown in Fig. 1, to direct the air-blast more directly against the fingers L and the grain falling through them.

5 The lower end of the space between the bottom of the spout B and the board W is closed by an inclined bar, X, which causes the grain to pass into and through the U-pipe Y.

10 The bottom of the spout B, beneath the board W, is perforated with numerous small holes, or is replaced by a perforated or wire-gauze plate, Z, through which the cockle-seed and other small seeds that have not been removed by the air-blast escape, while the grain  
15 passes down to the pipe Y, and thence to the screen a. The screen a is made of perforated sheet metal or wire-gauze in the form of a truncated cone, and receives the end of the pipe Y and the grain in its smaller end. The  
20 smaller end of the screen a revolves in a bearing, b, attached to the frame A, and to the said screen, at a little distance from its larger end, is attached a cross-bar, c, to the center of which is rigidly attached, or upon it is formed,  
25 a shaft, d. The shaft d is placed in line with the axis of the tapering screen a, and revolves in bearings in a bar, e, attached to the frame A.

30 With this construction any cockle-seeds or other small seeds that may still remain in the grain escape through the apertures or meshes of the screen a, and the grain is discharged from the open larger end of the said screen a.

35 In bearings attached to the upper rear part of the frame A revolves the driving-shaft f, to one end of which is attached a crank wheel or pulley, g. Motion is given to the crank

wheel or pulley g by hand or by any convenient power, and around the said crank wheel or pulley g passes an endless band, h, which also passes over a pulley, i, attached to the  
40 end of the stirrer-shaft H and around a pulley, j, attached to the end of the fan-shaft E.

The fans D E and the stirrer G H are driven at different speed by making the pulleys j i of  
45 different size.

With the stirrer-pulley i is rigidly connected a small pulley, k, around which passes a band, l. The band l also passes around a pulley, m,  
50 attached to the end of the screen-shaft d to rotate the said screen.

55 If desired, the finger-screen L M may be pivoted inside the spout B, and connected by a pitman with a pulley or wheel placed upon the fan-shaft E, so that the said finger-screen may be agitated by the revolution of the said fan-shaft.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

60 The combination, in a grain-separator, with the upwardly-inclined spout B, provided with settling-spouts, of the fan-blower C D E at its lower end, the hopper F, connecting with spout B at a point between its ends and the upwardly-inclined curved fingers L, arranged be-  
65 neath the hopper, as described.

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Witnesses:

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