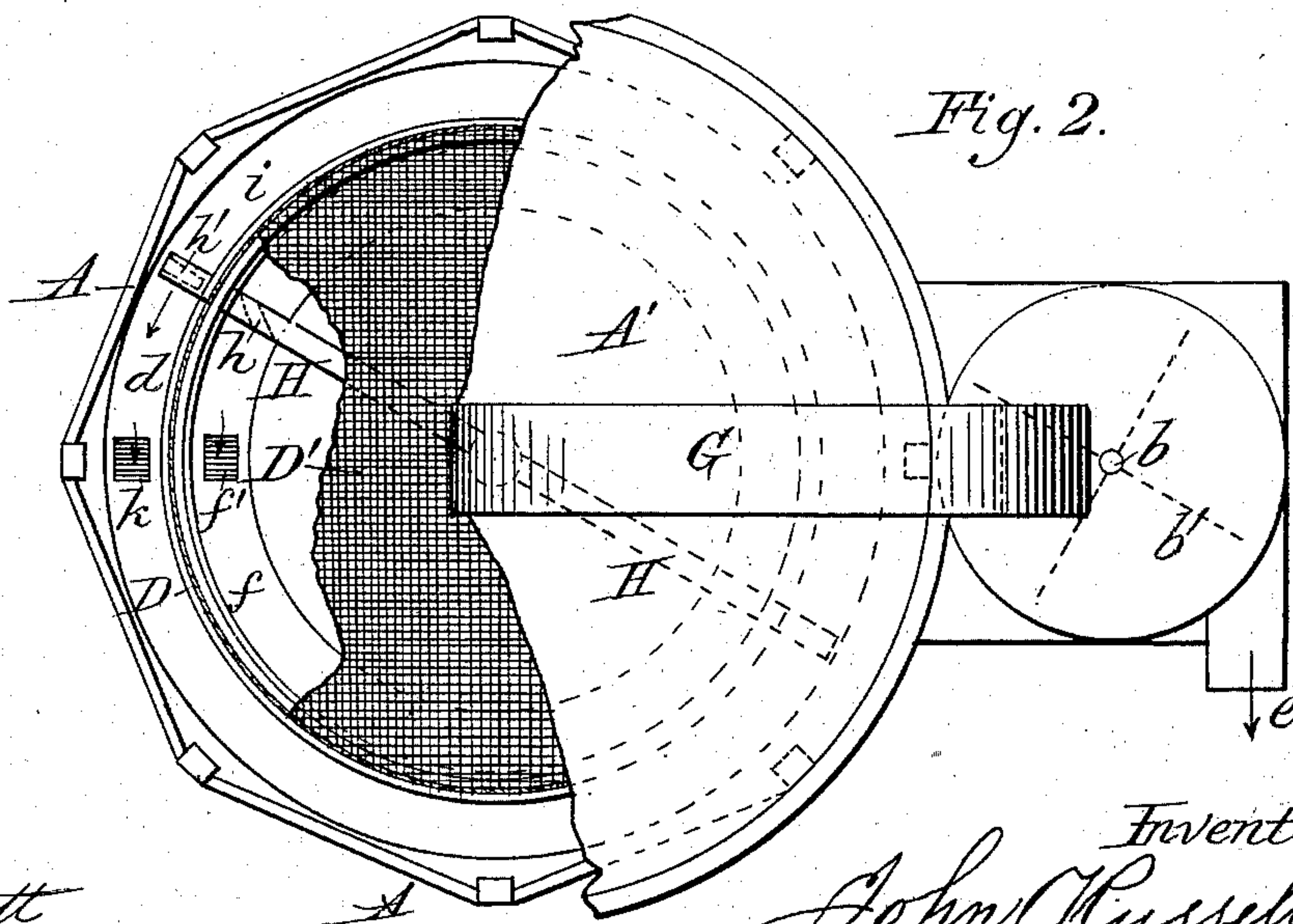


J. RUSSELL.
MIDLINGS PURIFIER.

Patented Sept. 4, 1883.



Inventor:
John Russell
per J. C. Tasterdally

UNITED STATES PATENT OFFICE.

JOHN RUSSELL, OF BERLIN, PENNSYLVANIA.

MIDDLINGS-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 284,488, dated September 4, 1883.

Application filed February 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN RUSSELL, a citizen of the United States, residing at Berlin, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Middlings-Purifiers; and I do declare the following to be full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 This invention relates to middlings-purifiers, or machines by which the middlings are separated from the fine flour and bran, the separated material being delivered at suitable points; and the invention consists in the construction and arrangement of parts, as herein-
20 after more fully described and claimed.

In the annexed drawings, Figure 1 is a vertical central section of my improved middlings-purifier. Fig. 2 is a plan view, partly in section; and Fig. 3 is a detail view.

25 The same letters indicate the same or corresponding parts.

The letter A designates an outer casing of wood, octagonal or circular in shape, and provided with a cone-shaped cover or roof, A', and with legs A². In the center of this case A is journaled a vertical shaft, B, having at its lower end two pulleys, a a, one of which serves to rotate the said shaft by means of a belt from any
30 suitable motor, and the other to revolve the fan-shaft b, as shown by dotted lines in Fig. 1. The casing A is provided at intervals with elongated ports or openings c c, a short distance above the bottom, for the admission of air to
40 the interior of the casing, which is provided with a bottom, B'. The shaft B has secured to it, near its upper end, a number of radial arms, C C, which are set at a slight upward inclination, as shown. Over these arms is stretched
45 a bolting-cloth, D', preferably composed of wire, upon which the middlings are conducted by a spout or tube, E, which is arranged to deliver them near the center of said cloth. Near the lower end of the shaft B are attached the
50 radial arms C' C'. A circular partition, D, of light material, extends from the upper arms, C C, to the lower arms, C' C', and is for the

purpose of keeping the fine flour, which passes through the wire-cloth D', separate from the middlings and bran, that are thrown off the revolving wire-cloth by centrifugal force into the space d, between the partition D and outer casing, A. 55

F is a circular guard composed of cloth, attached to radial arms C², and provided on its under side with circular flanges or folds d', extending down within a quarter of an inch of the wire-cloth D'. The object of this guard F is to prevent the light flour from being carried up with the bran, and also, by means of the circular flanges d', to prevent the middlings from passing too rapidly from the wire-cloth. The middlings, as they fall from the bolting-cloth into the space d, are separated from the light bran by gentle upward currents or drafts of air, induced by the fan b' through the suction-spout G, the draft being regulated by means of a valve or slide, m, that can be adjusted to vary the diameter of the air-passage. The light bran passes upward into the suction-spout G, and through the same to the fan b', where it is passed through the opening or mouth e, as indicated by the arrows, and may be received in a suitable receptacle. 65 70 75

A short distance above the bottom B' of the casing are a number of radial arms, H, attached to the shaft, and provided on their under sides with a series of short wooden blocks or sweeps, h h, so placed as to convey the fine flour from the center outward to the annular groove or recess f, from which it is conveyed to the opening f', and into the inclined discharge-spout g. (Indicated in dotted lines.) The purified middlings fall into the circular groove or recess i, at the bottom of the space d, and are swept out through the opening k into the spout g' by means of blocks or sweeps h' h', secured on the under side of the radial arms H at each end. It will be observed that the sweeps h h are placed on the arms H in an inclined direction for the purpose of sweeping the flour from the center to the circumference. The sweeps that travel in the recesses f and i are made deeper, so as to nearly sweep the bottoms of said recesses. The sweeps h', which travel in the recess i, need not be set inclined, their object being merely to sweep the middlings along the groove to its exit. 80 85 90 95 100

If desired, a conical hood, I, may be arranged

beneath the cover A', above the bolting-cloth, and provided with an opening for the passage of the spout E. The object of this hood is to prevent any of the separated bran from falling
5 back upon the bolting-cloth.

It will be seen that by this apparatus the middlings delivered to the rotary bolting-cloth are separated into three grades or portions—namely, middlings proper, fine flour, and bran,
10 the latter being carried upward by air-currents from the fan, and then passed through the suction-spout and fan-box to a suitable receptacle, while the middlings and fine flour, respectively, are separately collected through
15 the inclined spouts at the bottom of the machine.

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

1. In a middlings-purifier, the combination 20 of the casing A, shaft B, circular partition D, rotary bolting-cloth D', circular guard F, and fan b', substantially as described.

2. In a middlings-purifier, the combination, with the casing A, having inlets or air-ports 25 c c, conical top A', and bottom B', provided with annular concentric grooves or recesses f i, opening, respectively, into the spouts g g', of the shaft B, radial arms H, sweeps h h', radial arms C C', circular partition or shell D, the bolting-cloth D', guard F, hood I, suction-spout G, and
30 the fan b', substantially as described.

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

JOHN RUSSELL.

Witnesses:

A. R. BROWN,
PHILIP MAURO.