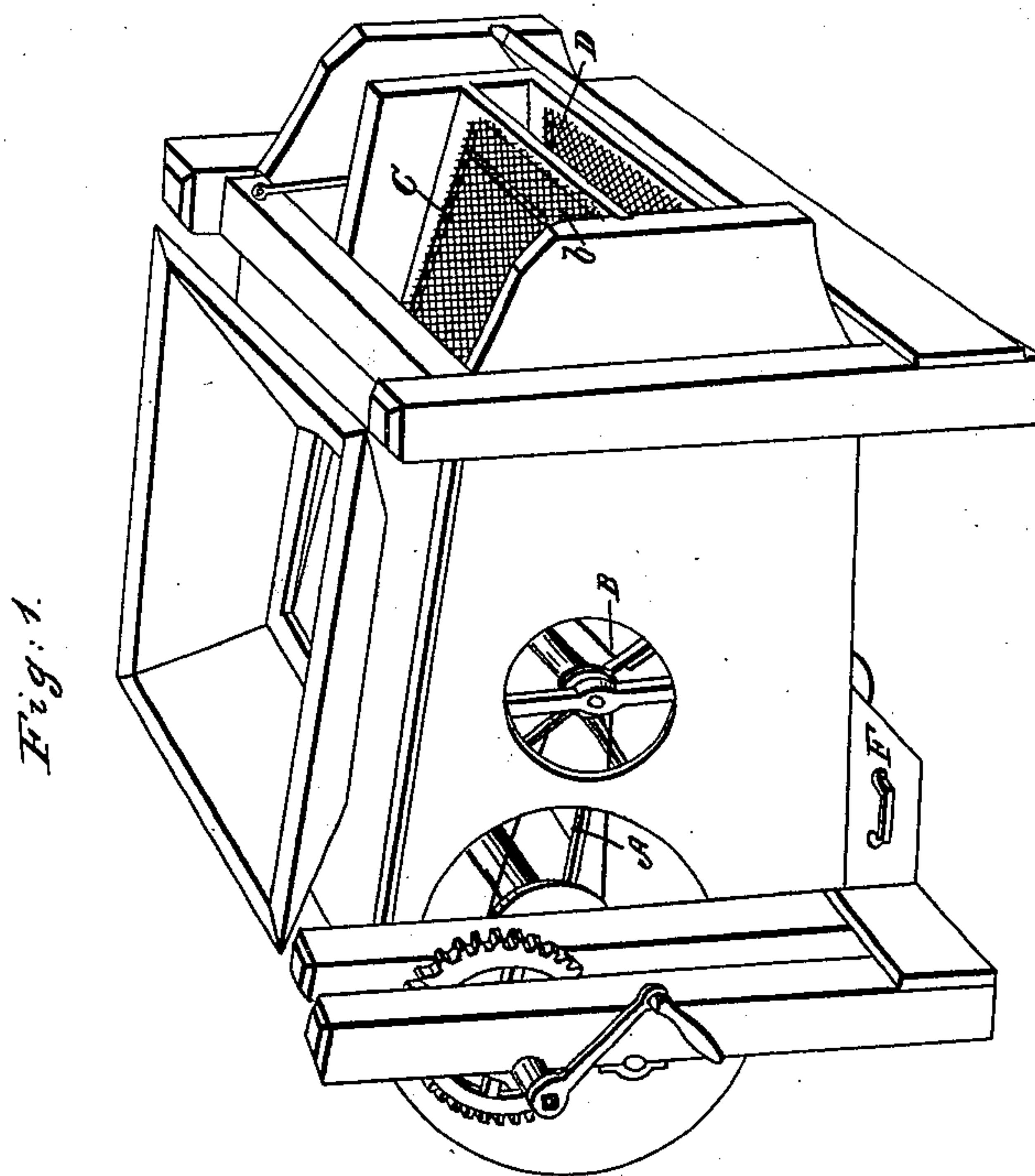
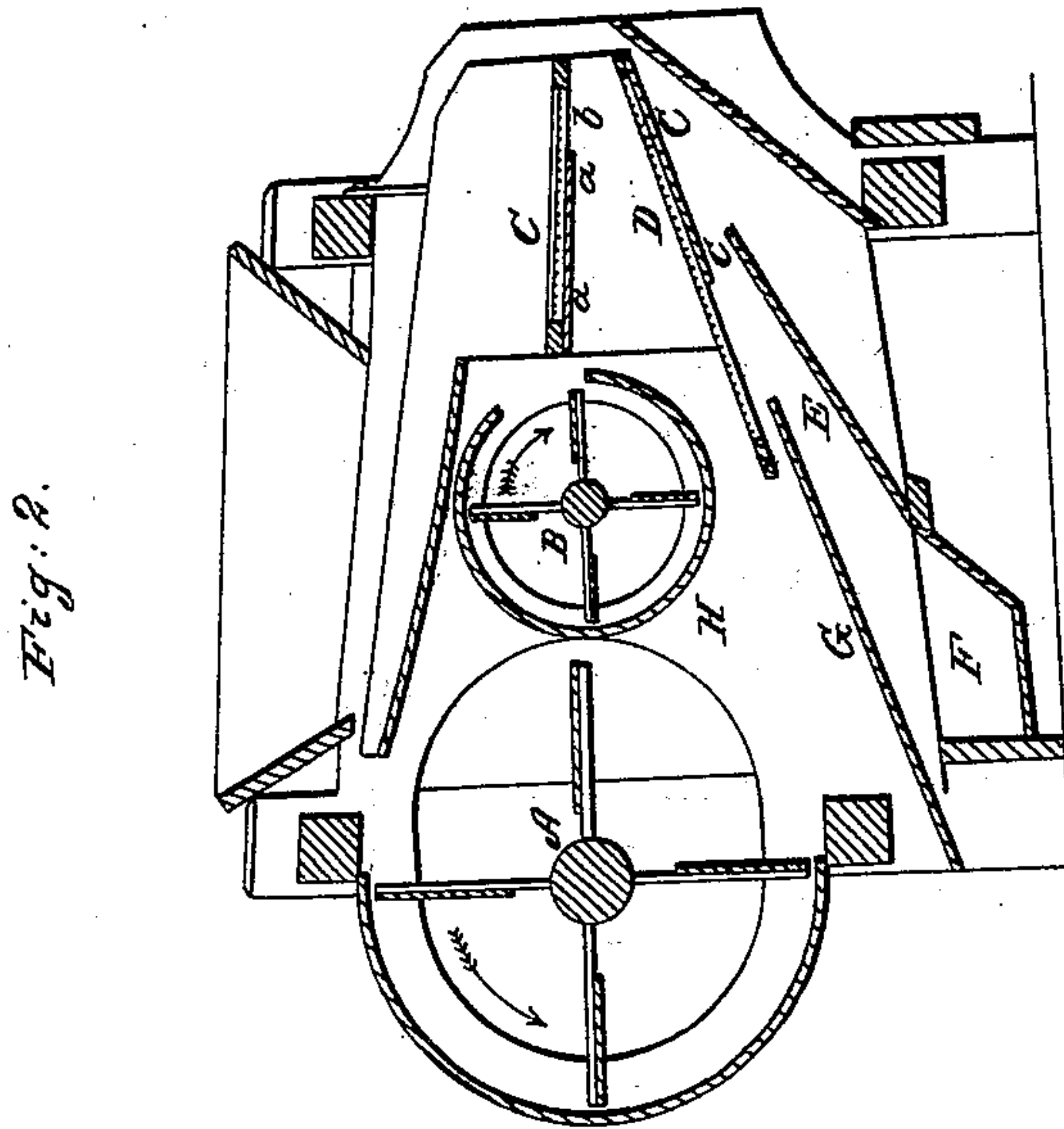


Z. RICE.
Grain Winnower.

No. 2,067.

Patented April 24, 1841.



UNITED STATES PATENT OFFICE.

ZALMUN RICE, OF LYONS, NEW YORK.

MACHINE FOR CLEANING AND WINNOWING GRAIN.

Specification of Letters Patent No. 2,067, dated April 24, 1841.

To all whom it may concern:

Be it known that I, ZALMUN RICE, of Lyons, in the county of Wayne and State of New York, have invented certain Improvements in Wheat-Fans, which Improved Machine I denominate the "Double Fan-Wheel Grain-Cleaner;" and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, Figure 1, is a perspective view of my machine and Fig. 2, a vertical section thereof from front to back.

In the ordinary wheat-cleaner, the blowing is effected by means of a single wind-wheel, which blows the wind upward, toward the undersides of the screens, or riddles, this wheel I use in my improved machine, and construct and operate it in the usual way; but I likewise use a second fan-wheel of a size smaller than that first named; said smaller wheel being generally of about half the diameter of the larger; this smaller wheel I cause to revolve in a direction the reverse of that of the large wheel, thereby causing it to blow downward. The smaller wheel I usually drive by means of a band passing around whirls on the axes of both wheels. The manner of driving the large wheel, and of shaking the screens, &c., is the same as heretofore.

A, is a large, or ordinary, fan-wheel, and B, the smaller, or additional, wheel.

C, is a sieve upon which the smaller fan-wheel is mainly to operate by blowing upon its upper surface, while it also receives a portion of wind on its lower surface from the larger wheel; and the two currents meeting effectually blow the chaff, &c., forward. The sieve C, is used in addition to such sieves, or screens, as are ordinarily employed, for although I have represented but one other sieve, D, below it, two, or more may be added if preferred. The screen C, is covered with wire that will admit the grain to fall freely through it, upon a second sieve, or screen; as the upper sieve C, receives the wind directly on its upper surface, from the small wheel, the smut balls, white caps, and other matter which are larger than the grain, are thereby effectually blown off from it. Excepting toward its front edge, the lower side of the screen is defended from the action of the wind from the large wheel, by a piece of thin wood, a sheet of metal, or other

suitable substance, fastened on to the lower side of its frame, and extending from the back to within a few inches of the front of it. This piece is seen in section at *a, a*, Fig. 2, and the open space between it and the front rail of the screen, at *b*; the piece *a, a*, I call a conductor, as it carries or conducts the whole of the grain to the opening *b*, through which it passes, and falls upon the screen below it; the opening *b* is represented in Fig. 1, as of a darker shade than the part covered by the conductor. A similar conductor may be placed under the front part of the frame of the screen D, as shown at *c, c*, which will carry the small seeds, and other substances that pass through said screen, so as to fall upon the inclined board E, and be thereby carried into the box, or drawer, F. The cleaned grain will be carried out by the inclined board G, in the ordinary way. A guide board H, extending from the casing of the smaller wheel, serves to direct the wind from the larger the more effectually on to the lower part of C, and to the other portion of the instrument where its action is most needed.

Having thus fully described the nature of my invention, and shown the operation of the respective parts of my improved wheat-fan, or grain-cleaner, what I claim therein as new, and desire to secure by Letters Patent, is—

The manner of employing a second fan wheel, operating in a direction the reverse of that usually employed, so as that the current of wind from it shall be directed downward in the manner, and for the purpose, set forth. I also claim the using of the device which I have denominated a conductor, on the lower side of the upper screen, and attached to the frame thereof, and also, if preferred, on the lower sides of the frames of the sieves, or screens, used for shifting, or screening, the grain in such a machine as herein described and made known; said conductors being so placed as to adapt them to the carrying of the grain, or other matter, either backward, or forward, according to the direction required by the inclination given to such screens, or sieves.

ZALMUN RICE.

Witnesses:

THOS. P. JONES,
GEORGE R. WEST.