CARR & HUGHES.

Bran Duster.

No. 8,014. Patented April 1, 1851.

Fig. 1.

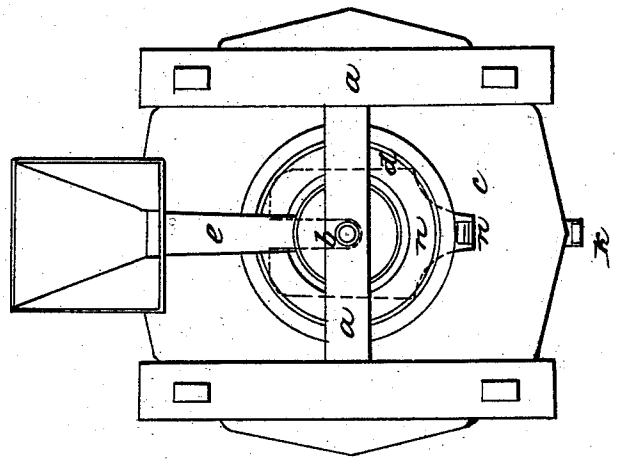
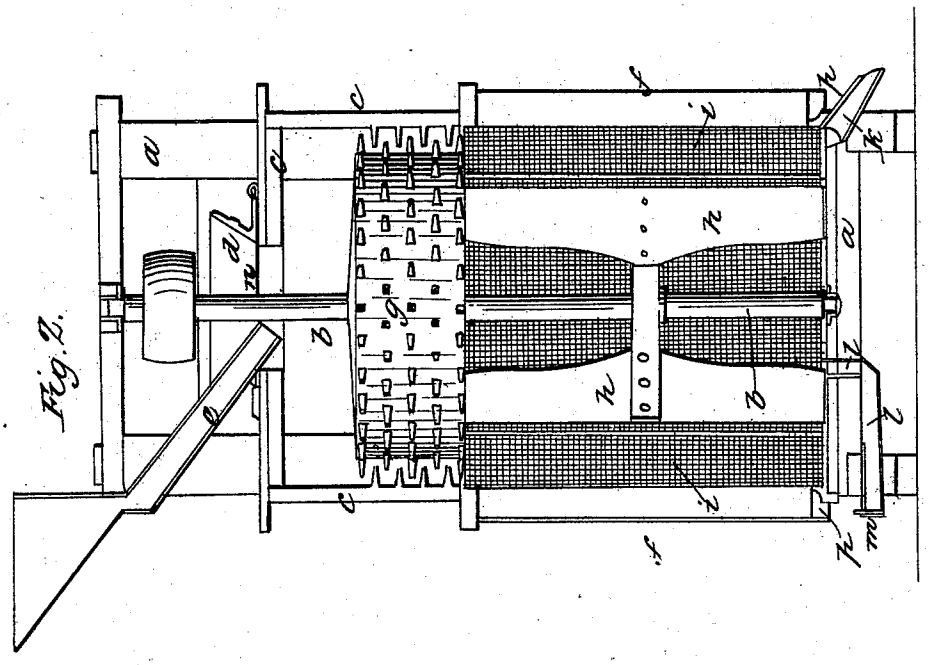


Fig. 2.



UNITED STATES PATENT OFFICE.

J. M. CARR AND JAMES HUGHES, OF CAMBRIDGE, INDIANA.

BRAN-DUSTER.

Specification of Letters Patent No. 8,014, dated April 1, 1851.

To all whom it may concern:

Be it known that we, J. M. CARR and JAMES HUGHES, of Cambridge City, in the county of Wayne and State of Indiana, have invented certain Improvements in Machinery for Separating Flour from Bran, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1 is a top plan and Fig. 2 a vertical section.

A machine for the above purpose was patented last year by "Frost and Monroe" which has been found defective and inoperative in practice for the following causes: viz: The runner being solid throughout the length, and the space between it and the standing bolt being nearly all occupied with the beaters and scourers, the air which entered at the top along with the bran, is carried around with the cylinder, without having opportunity to escape with the proper velocity through the bolting cloth; and consequently a very high velocity is required to produce the desired effect. This extreme velocity (800 revolutions per minute) which is required with this machine is found very detrimental to the durability of the apparatus as experience has proved; and the object of our present improvements is to produce an equal effect in separating the flour from the bran, as in the above mentioned machine, but not requiring a velocity of the runner of more than half the number of revolutions per minute; and the weight of the running cylinder being one third less, the wear and tear is proportionally reduced.

Part of our improvements consists in admitting a current of air to the center of the revolving fan which current can be regulated in quantity by a valve or register, and by admitting more or less air thereby, to the interior of the apparatus, the force of the blast through the bolting cloth is controlled. We also provide a sliding plate to regulate the amount of air admitted at the hopper along with the bran, by which in conjunction with the current of air admitted below, the working of the machine can be adjusted to suit the different states of the atmosphere and other contingencies by which the operation is affected.

In the drawings, (*a*) is the frame in which are the bearings of the vertical shaft (*b*).

(*c*) is the casing of the upper part, having a hopper (*d*) surrounding the shaft.

(*e*) is the pipe which conveys the bran to the hopper (*d*). The outer casing (*f*) of the lower part is of sheet iron, and is in pieces like shutter, and attached to the corner posts of the frame. (*g*) is the runner head revolving with the shaft (*b*). Its cylindrical surface is covered with spikes arranged in rings, which run between other rings of stationary spikes projecting inward, driven into the interior surface of the casing (*c*).

Below the runner (*g*) is a revolving fan (*h*) the wings of which run within a short distance of a cylindrical bolting cloth (*i*) which forms the inner casing of the lower part of the apparatus.

The bottom of the chamber is furnished with a passage for the escape of the bran after being acted on; and also a tube (*l*) through which air is admitted to the center of the fan (*h*). The tube (*l*) has a sliding valve or register (*m*) to regulate the quantity of air admitted.

The opening of the hopper (*d*) through which the bran is admitted to the machine is furnished with a sliding valve (*n*) which closes all the opening if desired, excepting where the bran enters through the spout (*o*), but when the slide (*n*) is drawn back more or less air is permitted to enter at the top of the machine.

The bran, from which the flour not separated by the previous bolting operations enters the apparatus by the hopper (*d*) and falling on the runner (*g*) is distributed by the centrifugal force to the periphery, and while descending between the revolving head (*g*) and the casing (*c*) is beaten by the moving and stationary spikes. It then falls, or is carried down by the draft, into the lower part of the machine, which is surrounded by the bolting cloth, and being there operated on by the blast from the fan, which is supplied with air partly by that which enters at the hopper with the bran, and partly by that which enters by the tube (*l*) below. The blast drives the flour separated from the bran by the previous beating, through the bolting cloth (*i*) into the chamber between the bolt and the sheet iron casing (*f*), from which it falls through passages (*p*) into a chamber provided for its reception.

The bran escapes from the interior of the machine through the passage (*k*).

Having thus fully described our improvements, we wish it understood that we do not claim, the beater and fan revolving within an upright stationary beater and bolt as these have before been used; but

What we do claim and desire to secure by Letters Patent, is—

The combination of the openings (*d* and *l*) both provided with valves or registers, with the runner and fan revolving within an upright cylindrical casing, the upper part of which acts as a beater and the lower part as a bolting apparatus substantially as described, for the purpose of separating the flour which adheres to the bran after undergoing the ordinary bolting; the said process being regulated and adjusted to suit the circumstances of weather &c. by admitting more or less air, either above or below by means of the registers, as set forth.

JNO. M. CARR.
JAS. HUGHES.

Witnesses:
LEVIN SWIGGETT,
GEORGE DEVELIN.