

G. B. TURNER.

Smut Mill.

No. 12,839.

Patented May 8, 1855.

Fig: 1.

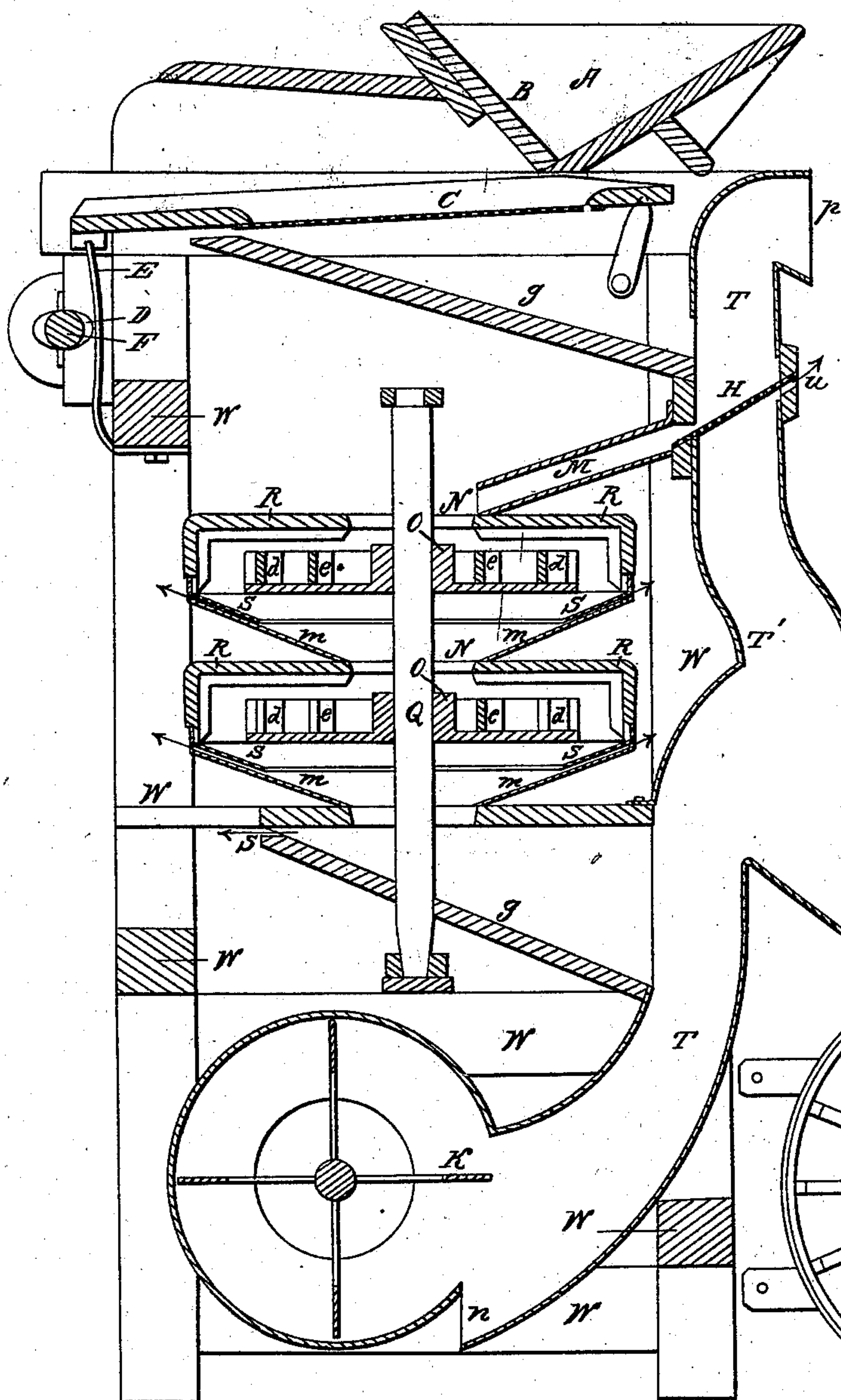


Fig: 3.

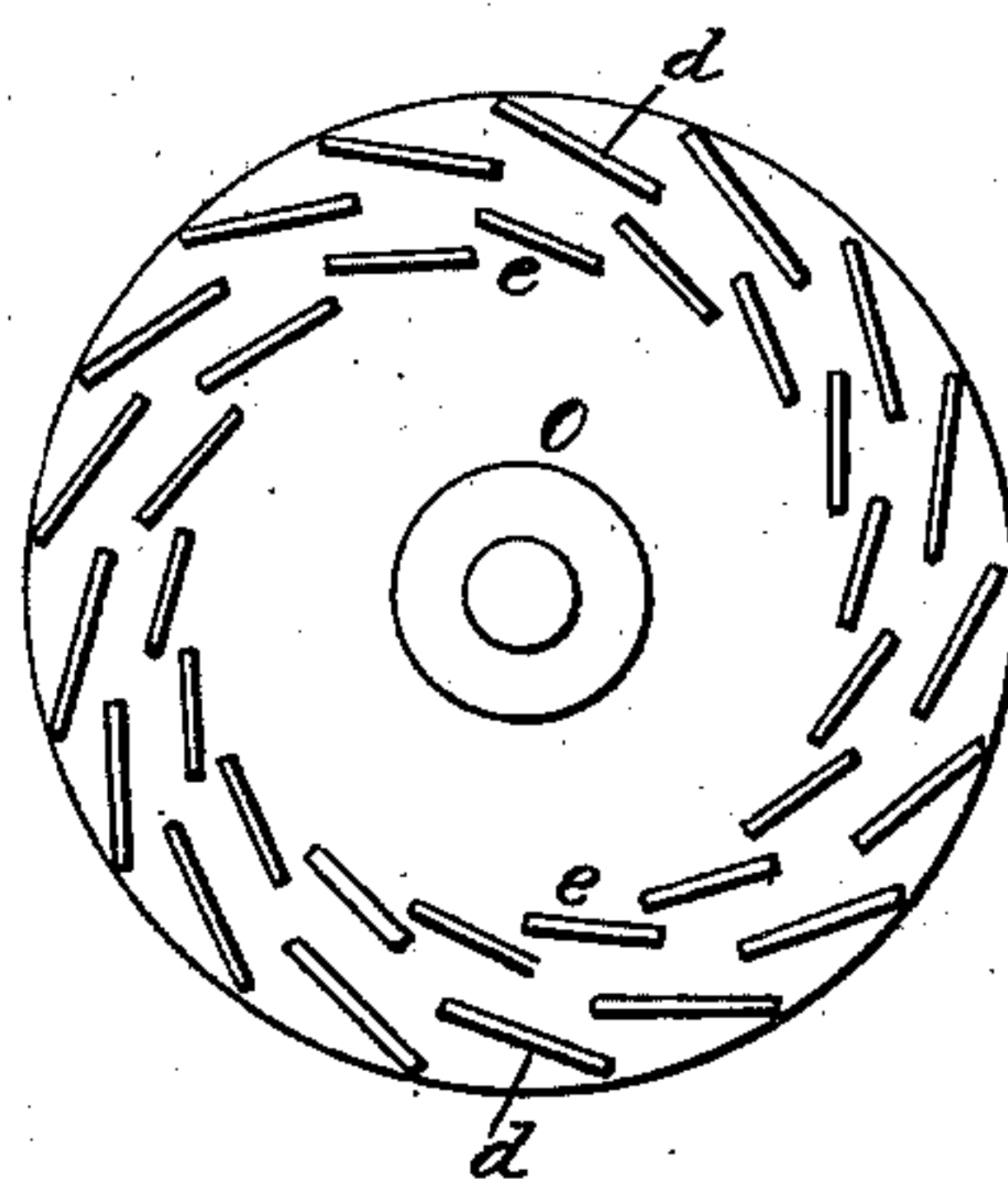
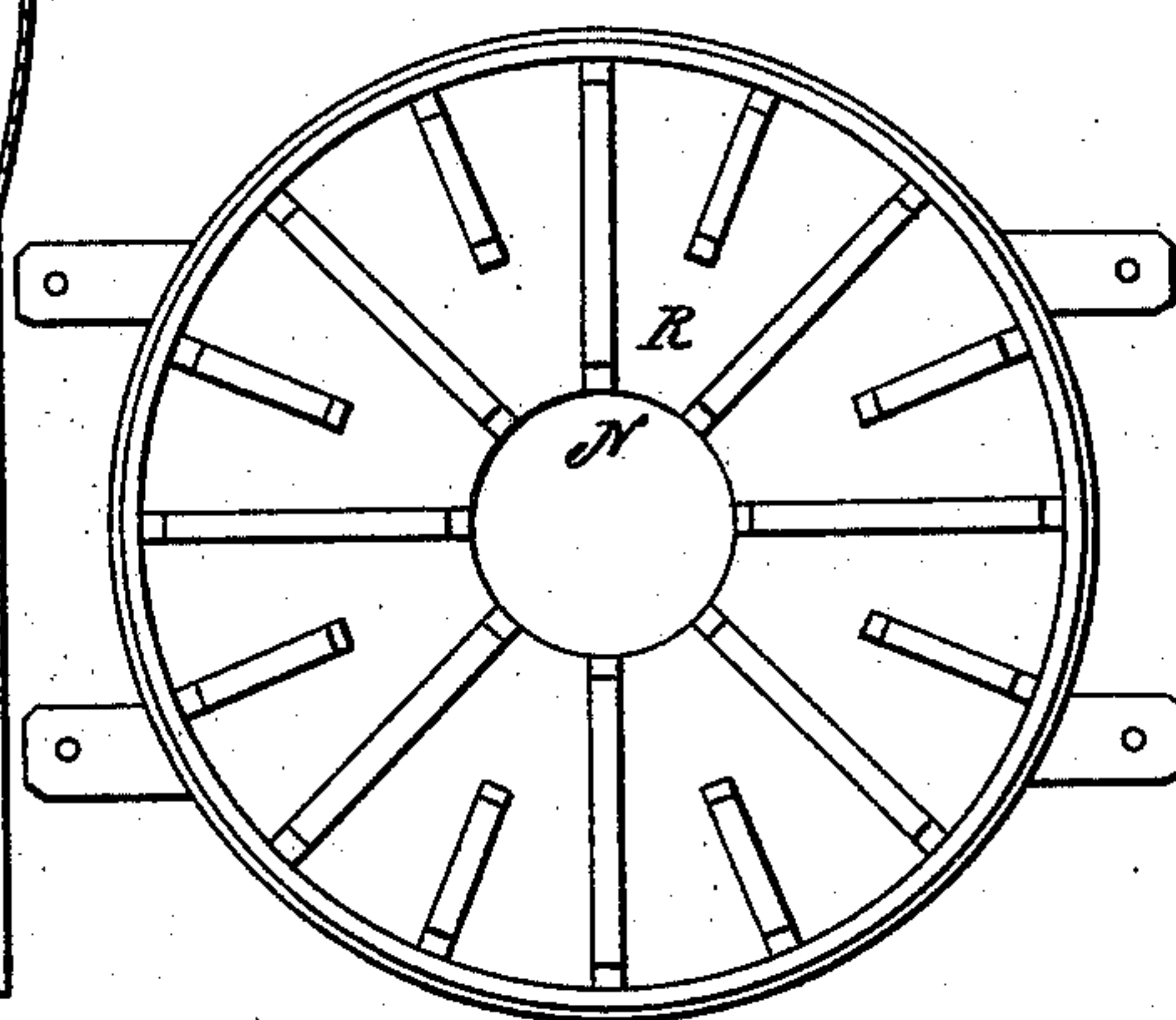


Fig: 2.





# UNITED STATES PATENT OFFICE.

GRANT B. TURNER, OF CUYAHOGA FALLS, OHIO.

## SMUT-MACHINE.

Specification of Letters Patent No. 12,839, dated May 8, 1855.

*To all whom it may concern:*

Be it known that I, GRANT B. TURNER, of Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Smut-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1, represents a central vertical section through the entire apparatus, and Figs. 2 and 3, detached portions which will be referred to.

Similar letters in the figures denote like parts.

The nature of my invention consists first in interposing between the runners, and outer concentrators of the machine, a perforated flange, which I term a partial concentrator, for separating and removing the smut without allowing it to commingle with the grain after it is once loosened from it. And also, in the method of escaping the white caps and other lighter material from the screen in the wind trunk to prevent their choking the screen.

To enable others skilled in the art to make and use my invention, I will proceed to describe the operation of the machine in connection with the drawing, which will also illustrate the construction.

The grain to be divested of the smut is thrown into the hopper A, which has a slide B, in it to regulate the quantity admitted. Motion is communicated to the machine, and the grain falls first on the screen C, which receives a shaking motion from the cam D, and spring E, said cam revolving with the shaft F. The grain being separated from many of its impurities on the screen C, drops through the screen onto the inclined board *g*, the heavier impurities passing off at the end of the screen. The grain passes from *g*, onto the screen H in the wind trunk T, where it is subjected to a blast from the fan blower K, near the bottom of the machine the light impurities separated at this point passing off and out of the machine at *p*, while the heavy grain passes through M into the scouring apparatus, and the lighter grain passes through the screen, and falling upon the projecting portion T', of the trunk, is thrown over and drops out at L. The heavy grain passing through M, drops through the opening N, onto the scouring disk or

runner O (a top view of which is seen in Fig. 3) and by the centrifugal force of said runner the grain is thrown against the inclined ribs *e*, *d*, which momentarily checks its progress, and breaks the smut balls, but which finally throws it off at its periphery against the cap R, which is also provided on its under side with radial ribs (as seen in Fig. 2) to catch and throw back any grains which may rebound or be cast against it by the rapid motion of the runner. From the scourer the grain falls upon the partial concentrator S, the smut passing through its perforations, whence it is carried out by the blast passing through between the inner concentrator S, and the outer one *m*, and thus a separation of the smut from the grain is made as soon as the smut is loosened from the grain and I would remark that although the main portion of the blast is through the wind trunk, yet enough for the purpose finds its way through the more circuitous passages of the machine. The grain from the last mentioned point passes through another scouring and separating apparatus in every respect the same as that just above described, where its entire separation from the smut is effected; it then passes down over the inclined board *r*, where it meets considerable of a blast, which carries, what impurities it takes up, out at *s*. When the grain arrives at the end of the board *r*, it meets the whole blast from the fan blower, and the heavy particles only pass through the blast, and out at *n*, while the light wheat, white caps, &c., are carried up the trunk T; by the blast, the light wheat strikes against the underside of the projection T', in the trunk, and its motion being checked and thrown over or out of the blast it finally passes out at L. The white caps, of which some will always follow the grain, are blown up by the blast against the bottom of the screen H, where they would remain and choke the screen but for the opening *u* immediately underneath it, through which they are carried out of the trunk T.

Q is the shaft on which the runners are hung and which is driven by a belt or band passing around a pulley thereon.

W is the frame on which the machine is supported.

Having thus fully described the nature of my invention what I claim therein as new and desire to secure by Letters Patent is—

1. In combination with the scouring disk



or runner and outside concentrator, the inner perforated and partial concentrator, slightly elevated from the outer one, for the purpose and in the manner set forth.

5 2. I also claim in combination with the screen H in the blast trunk T, the opening " directly under said screen to allow the white caps which may have passed through

the scouring plates to pass out, instead of being held up against the bottom of said screen by the blast, as set forth.

GRANT B. TURNER.

Witnesses:

A. B. STOUGHTON,  
THOS. H. UEPPERMAN.