

E. EMBREY & T. J. BLACKBURN.

Improvement in Device for Cooling Mill-Burrs.

No. 128,132.

Patented June 18, 1872.

Fig. 1.

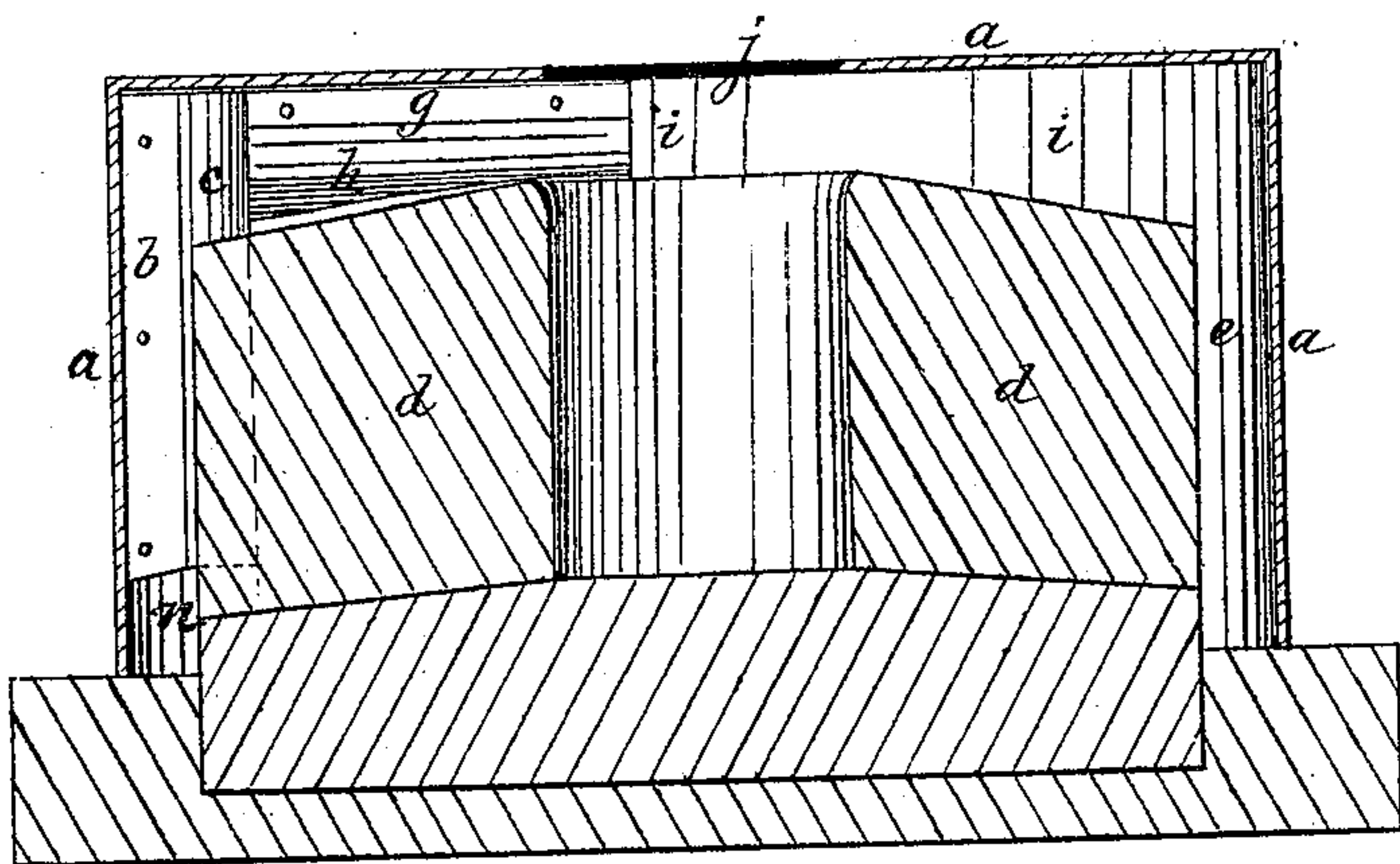


Fig. 3.

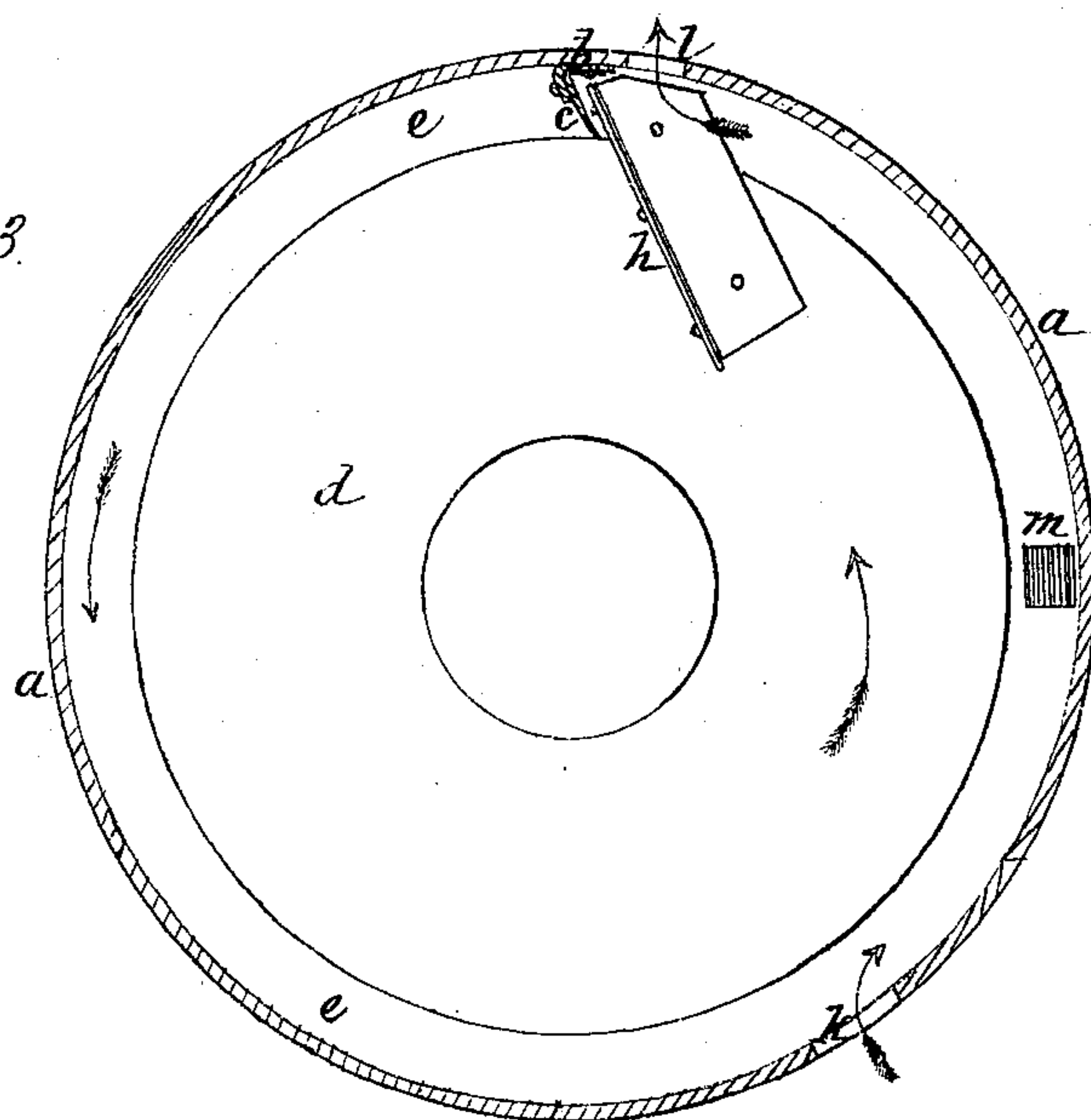
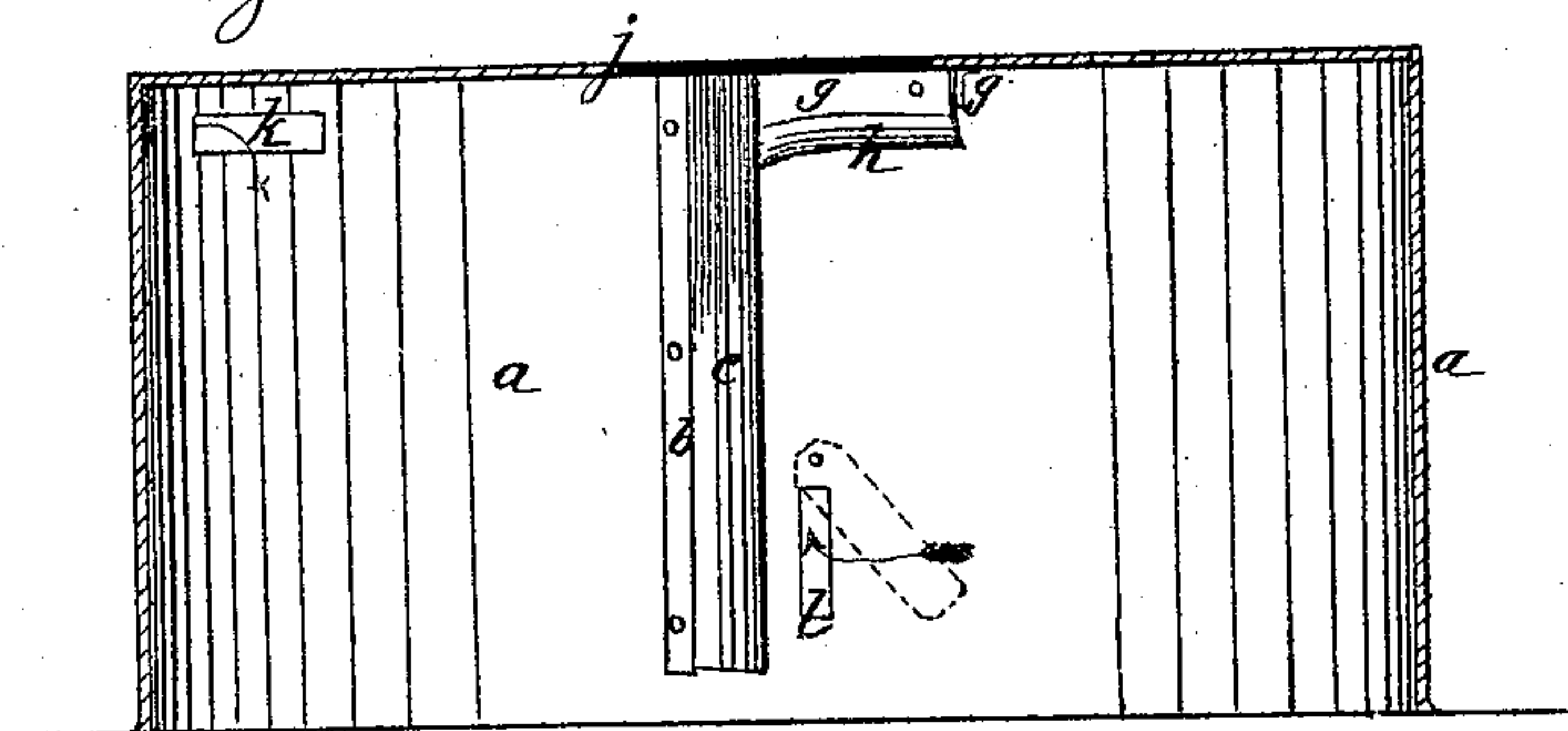


Fig. 2.



Witnesses:-  
Spring Hallae.  
Geo. Cushing.

Inventors:-  
Enoch Embrey  
and  
Thomas J. Blackburn  
by Johnson, Hancock & Co.  
their Attorneys.



# UNITED STATES PATENT OFFICE.

ENOCHEMBREY AND THOMAS J. BLACKBURN, OF WEST LIBERTY, OHIO.

## IMPROVEMENT IN DEVICES FOR COOLING MILL-BURS.

Specification forming part of Letters Patent No. 128,132, dated June 18, 1872.

*To all whom it may concern:*

Be it known that we, ENOCHEMBREY and THOMAS J. BLACKBURN, both of West Liberty, in the county of Logan and State of Ohio, have jointly invented a new and useful Device for Cooling Mill-Burs, of which the following is a specification:

Our invention relates to devices for cooling mill-burs and their inclosing-cases in the process of grinding; and our said improvement therein consists in the construction and arrangement of a fixed air-brake or stop, the vertical branch of which is secured to the fixed inclosing-case, and forms a junction with a top branch, extending diagonally over the revolving bur in connection with openings in the said case on either side of the air-brake, one of said openings serving to supply the cool air within the case by means of the suction of the revolving bur, and the other as a means of exit for the heated air which is carried against the vertical and lateral branches of the brake, and thus held or interrupted in its motion with the bur and driven out of the case at the arresting side of the brake, thereby serving not only to cool the bur, but to keep the inclosing-case from becoming heated and prevent the clogging up of the space between the case and the bur with caked flour, and thus avoid the necessity of having to remove the case to clean it out, preserve the hoop from rot, and save the loss of flour, which usually gathers and incrusts the heated case, as heretofore.

In the accompanying drawing, Figure 1 represents a vertical section of a pair of mill-burs with their inclosing-case, showing our improvement applied thereto. Fig. 2 represents a section of the inclosing-case, showing the inlet and outlet openings on opposite sides of the brake; and Fig. 3, a horizontal section of the case above the air-brake.

To the inner side of the case *a* I secure a strip of metal, *b*, in a vertical position, to which a leather or other flexible strip, *c*, is secured, so as to extend at an acute angle to the radius of the bur *f*, across the space *e*, between the case *a* and the bur *f*; and to the top of the case a similar metal strip, *g*, is se-

cured for the attachment of a flexible strip, *h*, which extends over the revolving bur in the space *i*, between it and the top of the case at an angle, forming a tangent or nearly so with the feeding-opening *j* in the case and bur. The two strips *c* and *h* thus arranged have a fixed position with respect to the side and top of the revolving bur *f*, and are located between an inlet and an outlet opening, *k* and *l*, in the case, while these openings must be arranged with respect to the discharge-spout *m*, of said case, so as to receive the air from one side of the discharge-spout *m*, and cause it to pass out of the case on the other side of said discharge-spout, thus encircling the interior of the case and the outside of the bur with a passing current of cold air, which, while greatly reducing the heat of the bur, keeps the case or hoop cool and clean by driving out the heated air.

These openings *k* and *l* in the case *a* are of great advantage in connection with the air-brake, for without them the space between the case and the bur would gather dough to the extent of twenty or thirty pounds in the period of every ten or fifteen days, and must necessarily be as often cleaned out; but by our improvement this difficulty is entirely avoided, the case or hoop kept from rotting, and this great loss of flour saved.

The bur turns with the sun; but, when otherwise, the inlet and outlet openings and the air-brake must be arranged accordingly to produce the results described.

The inlet-opening *k* should be about two inches wide and eight inches long, and provided with a sliding door to let in or out the required amount of air, and the outlet opening *l* should be about three inches wide and four inches in height, which will give the necessary inlet and outlet for the air as it is sucked in and driven out by the bur.

The vertical branch *c* of the brake should terminate within three inches of the bottom of the case, so as to leave an unobstructed passage, *n*, in the bottom of the case where the burs join, so as to prevent the accumulation of flour at the bottom against the brake.

Having described our invention, we claim—

The interior vertical fixed flexible strip *c* with its horizontal flexible branch strip *h* arranged to form an air-brake at the side and top of the bur, in combination with the inlet and outlet openings *k* and *l* in the case, arranged with respect to the air-brake and the flour-discharge spout *m*, to keep both the revolving bur and the inclosing-case cool, and

also for obtaining the advantages herein stated, as described.

ENOCH EMBREY.

THOMAS J. BLACKBURN.

Witnesses:

R. N. JORDAN,  
JENNIE JORDAN.