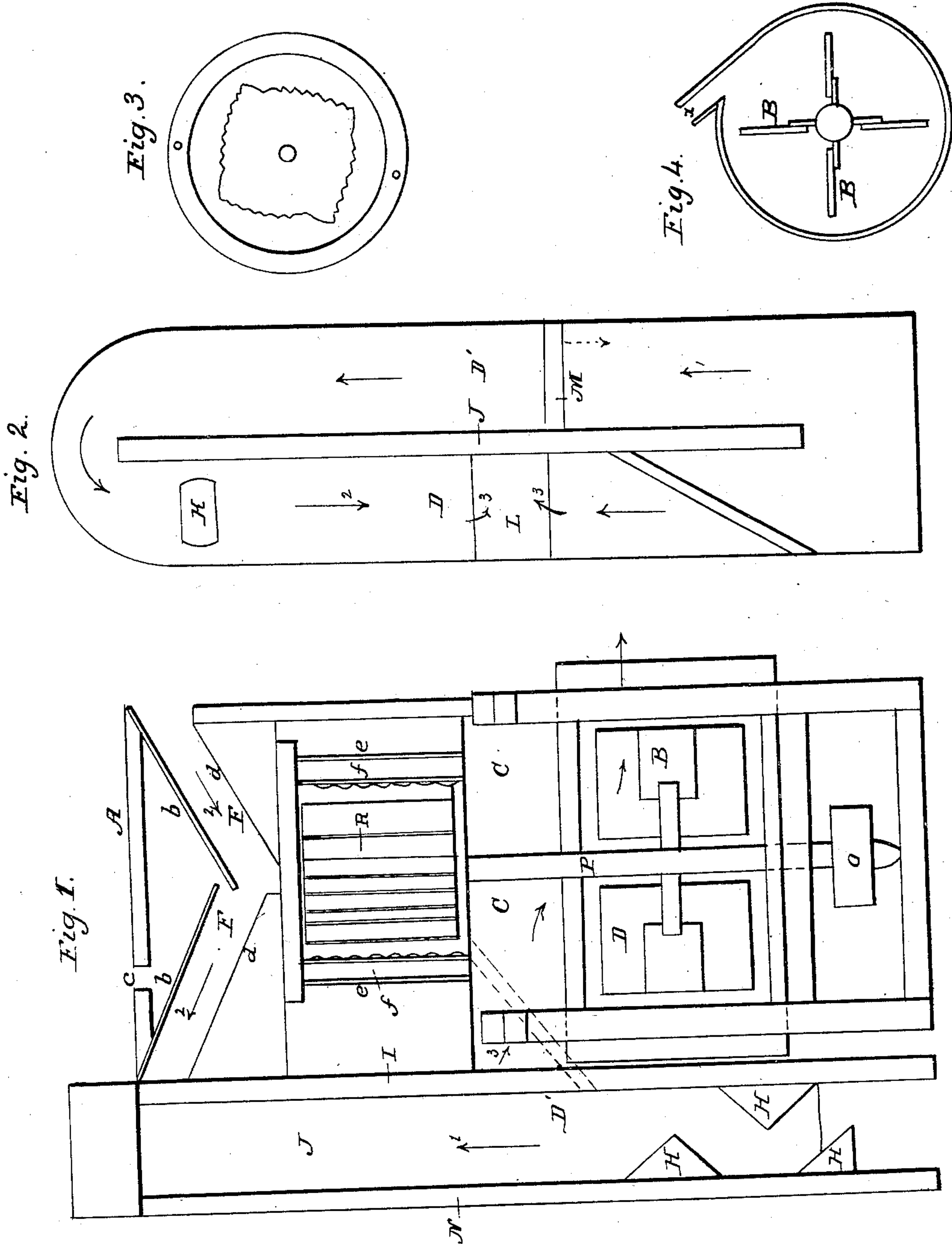


KELLY & FROST.

Smut Mill.

No. 20,161.

Patented May 4, 1858.



# UNITED STATES PATENT OFFICE.

J. C. KELLY AND A. FROST, OF EDINBURG, INDIANA.

## SMUT-MILL.

Specification of Letters Patent No. 20,161, dated May 4, 1858.

*To all whom it may concern:*

Be it known that we, JNO. C. KELLY and AMOS FROST, of Edinburg, Johnson county, and State of Indiana, have invented certain  
5 new and useful Improvements in Smut-Mills; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of  
10 reference marked thereon.

The nature of our invention consists in the arrangement of certain devices for the purpose of removing smut from grain, the peculiarities of which will be hereinafter  
15 fully described.

In order that others skilled in the arts may use and construct our machine we will proceed to describe its construction and operation.

20 In the annexed drawings making a part of this specification, Figure 1 represents a side elevation. Fig. 2 is a face view of side I, Fig. 1. Fig. 3 is a top view of the scourer. Fig. 4 is a top view of the fan case.

25 In Fig. 1 A, represents the hopper, (c) the aperture in said hopper through which the grain descends.

b b, and d d, are partitions which form the air passage F.

30 R is the beater, the construction of which will be seen in Fig. 3. This beater is incased within two drums, (e e) being the outer drum and (f f) being the inner drum. The inner drum (f f) is perforated and its sides  
35 are rough as seen in this figure.

C, is an air chamber above the fans.

40 P, is the driving shaft having the beater R, secured to its upper extremity, and being provided with drum O, near its lower extremity over which the driving belt passes. B, B, are fans also secured to shaft P in a central position.

N and I, represent two sides of the air tubes D, and D' seen in Fig. 2, J, being a  
45 partition between the two.

H, H, H, are triangular blocks, secured alternately to these sides, for the purpose of scattering the grain.

(a) is a spout forming a connection between the scourer and the air passage D'.  
50

X, represents the exit of the air and smut.

In Fig. 2, D, and D', are the air passages or tubes.

J, is the division seen in Fig. 1.

K is an aperture through which the air from the passage F passes.

L, is an air passage leading into passage C, Fig. 1.

M, is an aperture through which the  
60 wheat passes into air tube D'.

In the operation of this machine the wheat passes in at the aperture (c) of the hopper and thence down to the beater R, between said beater and the inner drum (f).  
65 This beater having a rapid motion and the drum being rough the smut is detached from the wheat and passes through the perforated sides of drum (f) between e and f, and thence is drawn through an aperture in the  
70 bottom of the scourer by means of the suction from the fans, B, B, and passes out of the machine at the point (x). The grain passes down the connection (a) to the air passage D', falls upon deflector H. Its sides  
75 being inclined the grain falls to the next deflector H, and then to the next. Thus falling against these devices the remaining particles of smut are removed and a rapid current of air passing through the grain  
80 thus scattered. The smut is carried up passage D' and down passage D to passage L, and thence through C, out through the fans to exit (x). The air enters the machine at  
85 several points, but goes out at only one which is, x. The air entering at passage F, passes through the grain before it reaches the beater; thence through aperture K, in the direction shown by arrow 2, in Fig. 2  
90 into passage L, thence into C and out at (x). The air also passes up passages D', and D, enters L, and thence out, at x. The grain falls from aperture M, down passage D' and the chaff and smut pass out by suction through the bottom of the scourer into pas-  
95 sage C, and thence through the fans, from the machine at the point x as described.

Having thus fully described our invention what we claim as new and desire to secure by Letters Patent is—  
100

1. The arrangement of the hopper as constructed with the air passage F in the manner herein set forth and for the purpose described.

5 2. We claim the peculiar arrangement of the scourer as constructed with the air passages D, and C connecting spout (a) and fan B, for the purpose of separating the

smut from the wheat as herein fully set forth.

JNO. C. KELLY.  
AMOS FROST.

Witnesses:

H. DAILY,  
W. P. RUST.