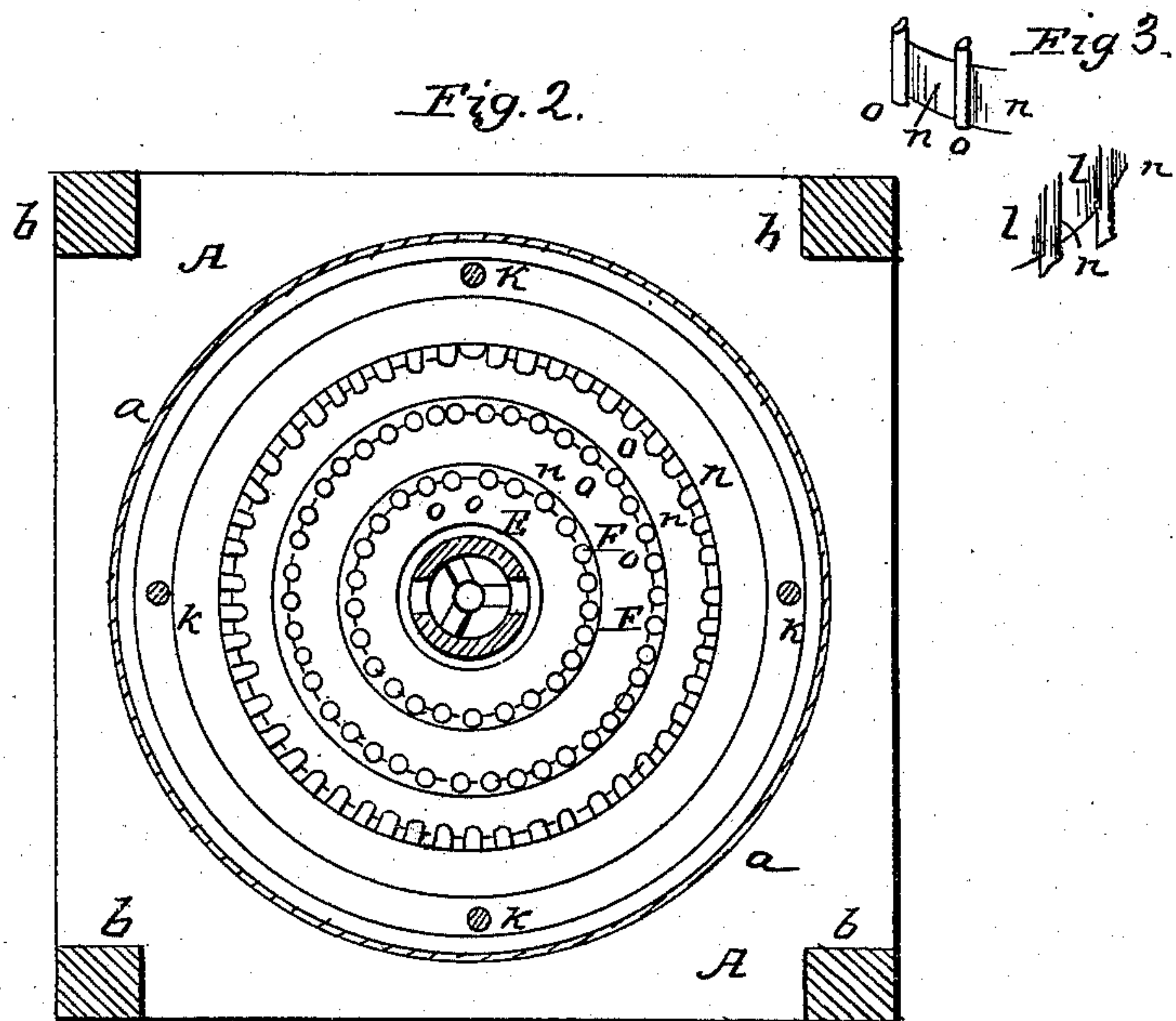
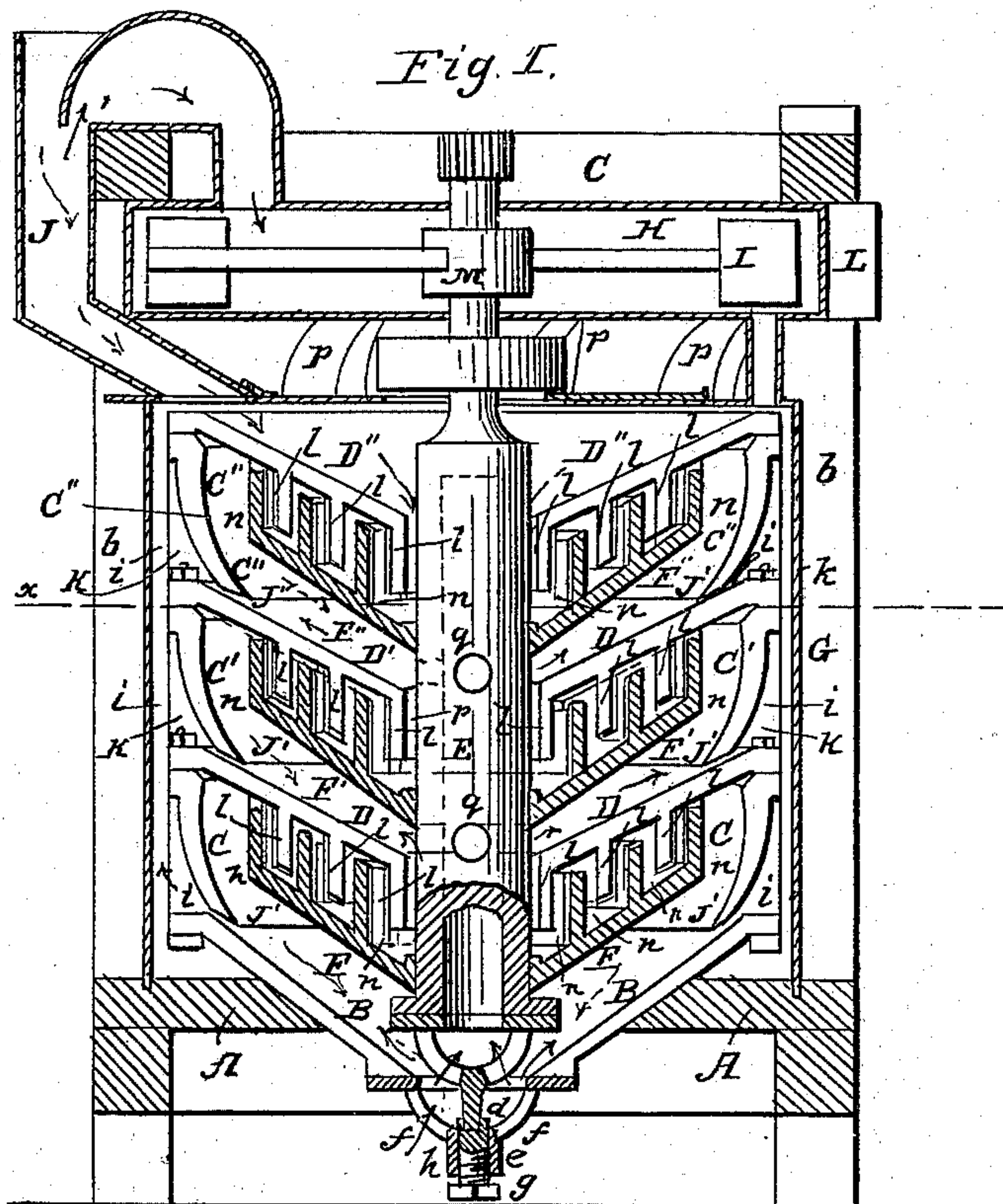


J. N. LESTER.  
Smut Machine.

No. 21,202.

Patented Aug. 17, 1858.





# UNITED STATES PATENT OFFICE.

J. N. LESTER, OF OSWEGO, NEW YORK.

## CENTRIFUGAL SMUT-MACHINE AND GRAIN-SCOURER.

Specification of Letters Patent No. 21,202, dated August 17, 1858.

*To all whom it may concern:*

Be it known that I, J. N. LESTER, of Oswego, in the county of Oswego and State of New York, have invented a new and Improved Smut-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which,—

Figure 1, is a vertical central section of my invention. Fig. 2, is a horizontal section of ditto, taken in the line *x, x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in the employment or use of a series of rotating and stationary conical scourers placed within a proper case, the rotating scourers being placed on a hollow shaft and the whole constructed and arranged relatively with each other and with a fan as hereinafter described whereby the grain will be thoroughly cleansed from smut, dust and like impurities in a very expeditious manner.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a framing of rectangular form and sufficiently heavy to support well the working parts of the machine. This framing may be formed of a rectangular bedpiece *a*, and four uprights *b*, one at each corner, the uprights being connected at their upper ends by cross ties *c*. The framing may be constructed of wood.

B, represents an inverted conical metal dish which forms the lower end of the machine, and is fitted in the bedpiece *a*. This dish has an opening *d*, at its lower end and a step *e*, is suspended to the lower end of dish B, by curved bars *f*, said step being a screw *g*, fitted in a socket *h*, as shown clearly in Fig. 1. To the upper edge of the dish B, a metal rim C, is attached. This rim has curved sides and it is supported by upright lugs or ears *i*, which are cast with it. The rim C, is so curved as to leave a small space *j*, between its lower end and the upper end of B, as shown clearly in Fig. 1. To the upper end of the rim C, an inverted conical dish or plate D, is attached. This dish or plate may be nearly if not quite parallel with the dish B, and the dish B, rim C, and dish or plate D, may all be connected by the same bolts *k*. To the upper edge of this dish or plate D, a rim C', is attached

and a dish or plate D', is attached to C. A rim C'', is also attached to dish or plate D', and a dish or plate D'', is attached to rim C''.

On the under side of each dish or plate D, D', D'', a series of pendent and annular scouring ledges *l*, are formed. Three ledges are shown in the drawings but more may be used if desired. These ledges may be formed of concentric projections having teeth *m*, cast with them, the teeth projecting down a short distance below the ledges *l*, and projecting outward from their face sides, see more particularly Fig. 3.

E, is a hollow metal shaft which is placed vertically and centrally within the rims C, and plates D, and has its lower end stepped in the screen *g*. The shaft has a series of inverted conical plates F, F', F'', attached. These plates are each provided with three annular upright and concentric scouring ledges *n*, which are constructed precisely similar to the ledges *l*, of the plates D, D', D''. The ledges *n*, of the plates F, fit between the ledges *l*, of the plates D, as shown clearly in Fig. 1, the teeth *n*, *o*, of the respective ledges being opposite each other.

The rims C, and plates D, D', D'', and F, F', F'', any proper number being used, are encompassed by a cylindrical case G, the upper end of which communicates by passages or tubes *p*, with a fan box H. In the shaft E, holes *q*, are made, just below the plates F.

I, is a fan placed on the upper end of the shaft E, and within the box H, and J, is a spout which passes through the top of the case G, a curved spout K, from the fan box H, communicating with spout J.

L, is the eduction spout of the fan box H.

M, is a driving pulley on shaft E.

The operation is as follows: The wheat to be cleaned designated by red arrows passes down the spout J, into the case G, and falls on the upper part of the top dish or plate D'', the wheat being subjected to a suction blast in passing down said spout, the blast entering spout K, as indicated by arrows 1. This blast which is produced by fan I, takes all the loose smut and dirt from the grain before it enters the machine. The grain passes down the dish D'', and through an opening *r*, between the lower end of the dish and shaft E, and falls on the plate F'', and the grain owing to the centrifugal force generated by the rotation of the plate F'',



is forced under and over the scouring ledges  
 7, *n*, which form a sinuous scouring surface,  
 the teeth *m*, *o*, serving as corrugations. The  
 wheat passes off of plate *F''*, and falls  
 5 on the dish or plate *D'*, and in passing  
 down said plate is subjected to a suction  
 blast which passes through the holes *q*, in  
 the shaft *E''*, the smut and dirt that was  
 loosened as the grain passed through the  
 10 scouring passage being drawn through the  
 space *j*, and up between the outer sides of  
 the rims *C*, *C'*, *C''*, and the case *G*, and  
 through the passages *p*, into the box *H*, the  
 smut and dirt being ejected from the fan  
 15 box through *L*, the wheat passes successively  
 through the several sinuous scouring pas-  
 sages in the same way as it passed through  
 the one described and is subjected to a blast  
 as it passes down each plate *D*, *D'*, *D''*, the  
 20 wheat being discharged through the open-  
 ing *d*.

The shaft *E*, and plates *F*, may be raised  
 at any time by adjusting nut *g*.

This machine performs its work very ef-  
 25 ficiently and in a rapid manner. The loose  
 smut and dirt being removed previous to  
 the scouring and the grain being subjected  
 to a continuous blast during the whole of  
 its passage through the machine, the smut

and dirt cannot be ground into the eye of 30  
 the grain as is the case to a greater or less  
 extent with all other machines with which  
 I am acquainted.

I do not claim separately the parts herein  
 described for they or their equivalents have 35  
 all been used under different form of ar-  
 rangement and in connection with various  
 devices forming the majority of smut ma-  
 chines in use, I am not aware however that  
 sinuous scouring passages arranged with a 40  
 fan, hollow shaft, cylindrical case and in-  
 duction blast spout as herein shown, have  
 been used.

I claim therefore as new and desire to  
 secure by Letters Patent, 45

The rotating conical plates *F*, *F'*, *F''*, at-  
 tached to the hollow shaft *E*, in combina-  
 tion with the stationary conical plates *D*, *D'*,  
*D''*, rims *C*, cylinder case *G*, and fan *I*, the  
 plates *F*, *F'*, *F''*, and *D*, *D'*, *D''*, being 50  
 provided with scouring ledges *l*, *n*, and the  
 whole arranged relatively with the fan *I*,  
 induction spout *J*, and blast spout *K*, sub-  
 stantially as and for the purpose set forth.

J. N. LESTER.

Witnesses:

HENRY ADRIANCE,  
 CHAS. E. SKINNER.