

**C. LOWIEN.**  
**Grain-Cleaners.**

No. 148,314.

Patented March 10, 1874.

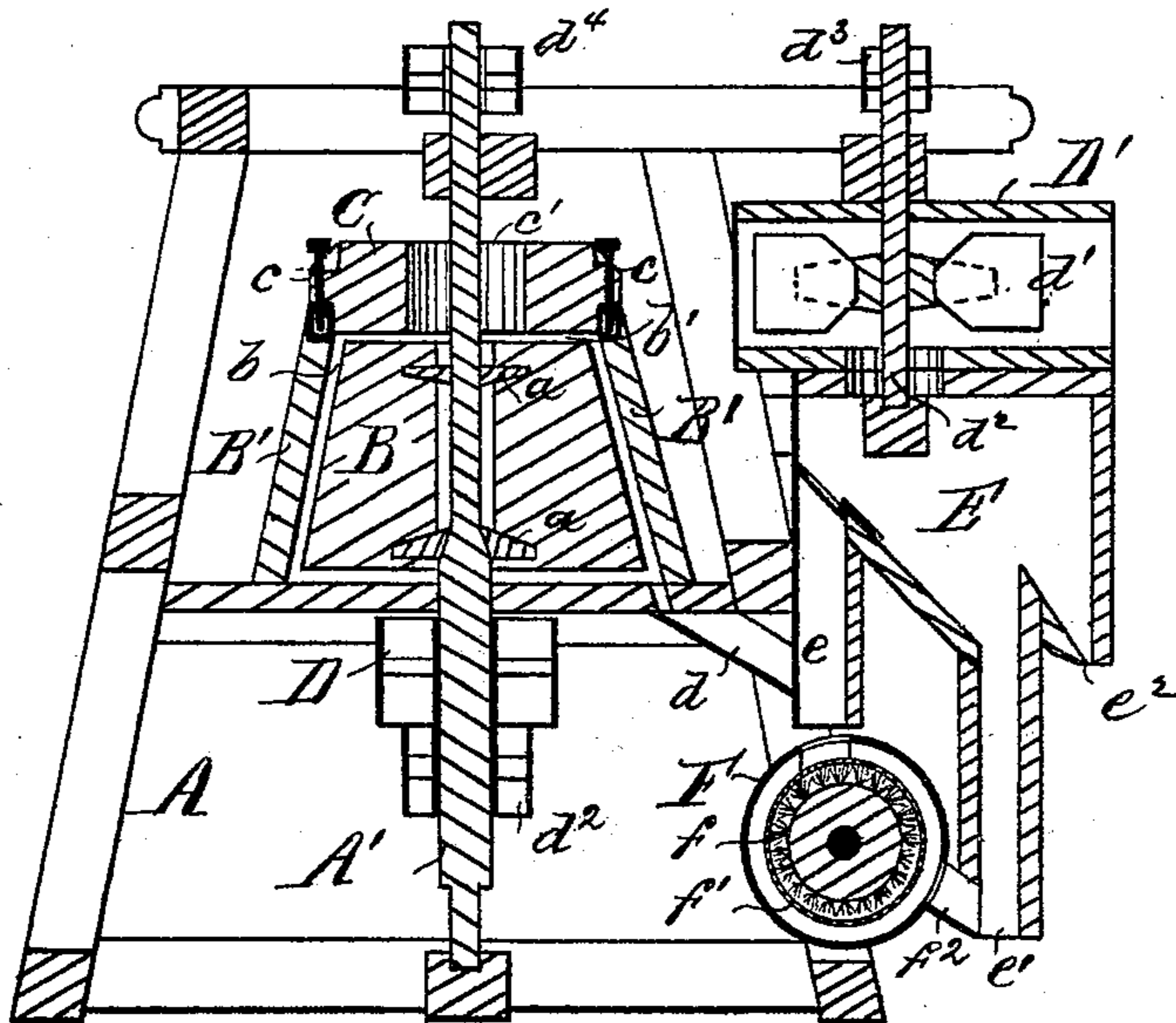


Fig. 1.

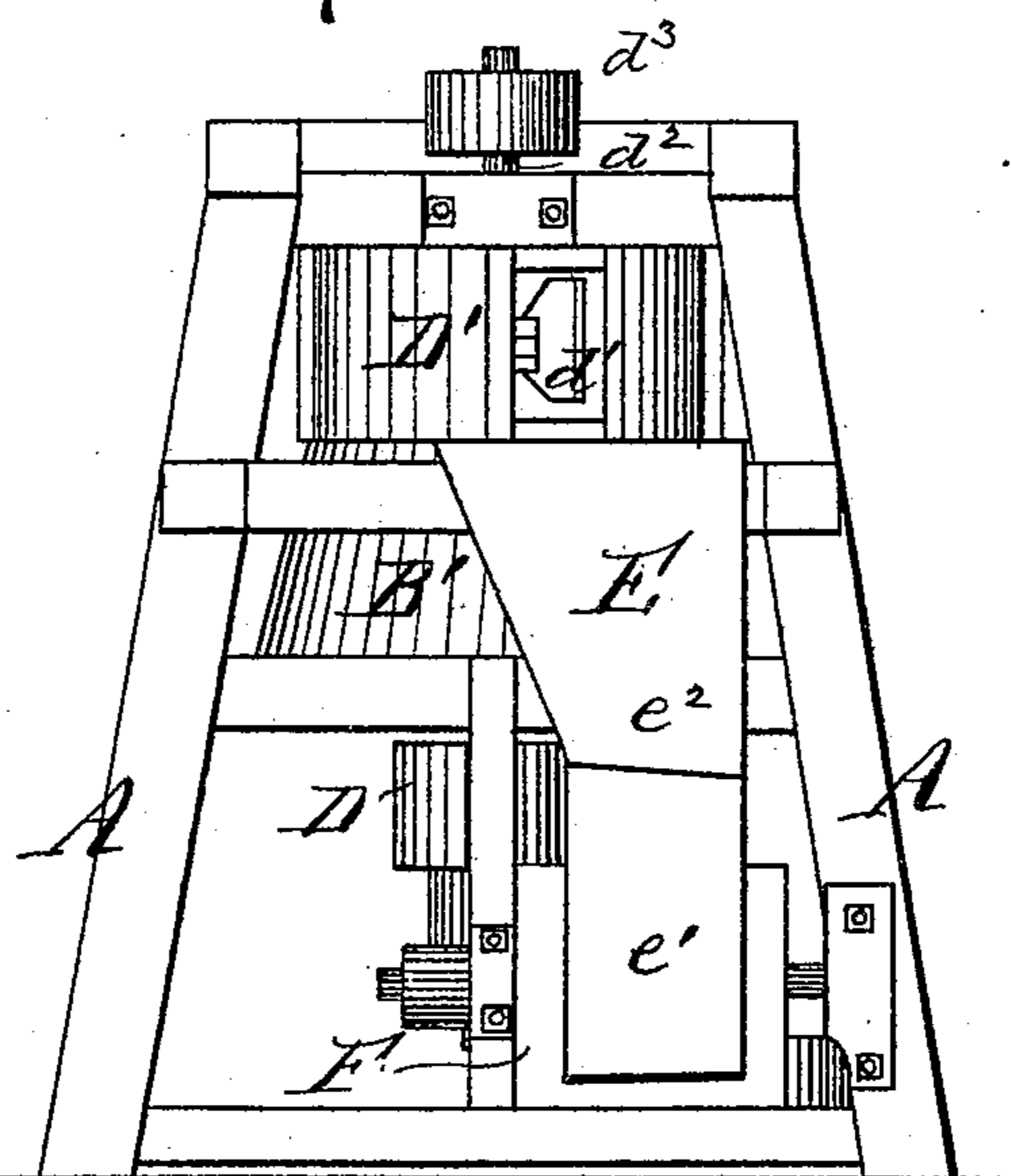


Fig. 2.

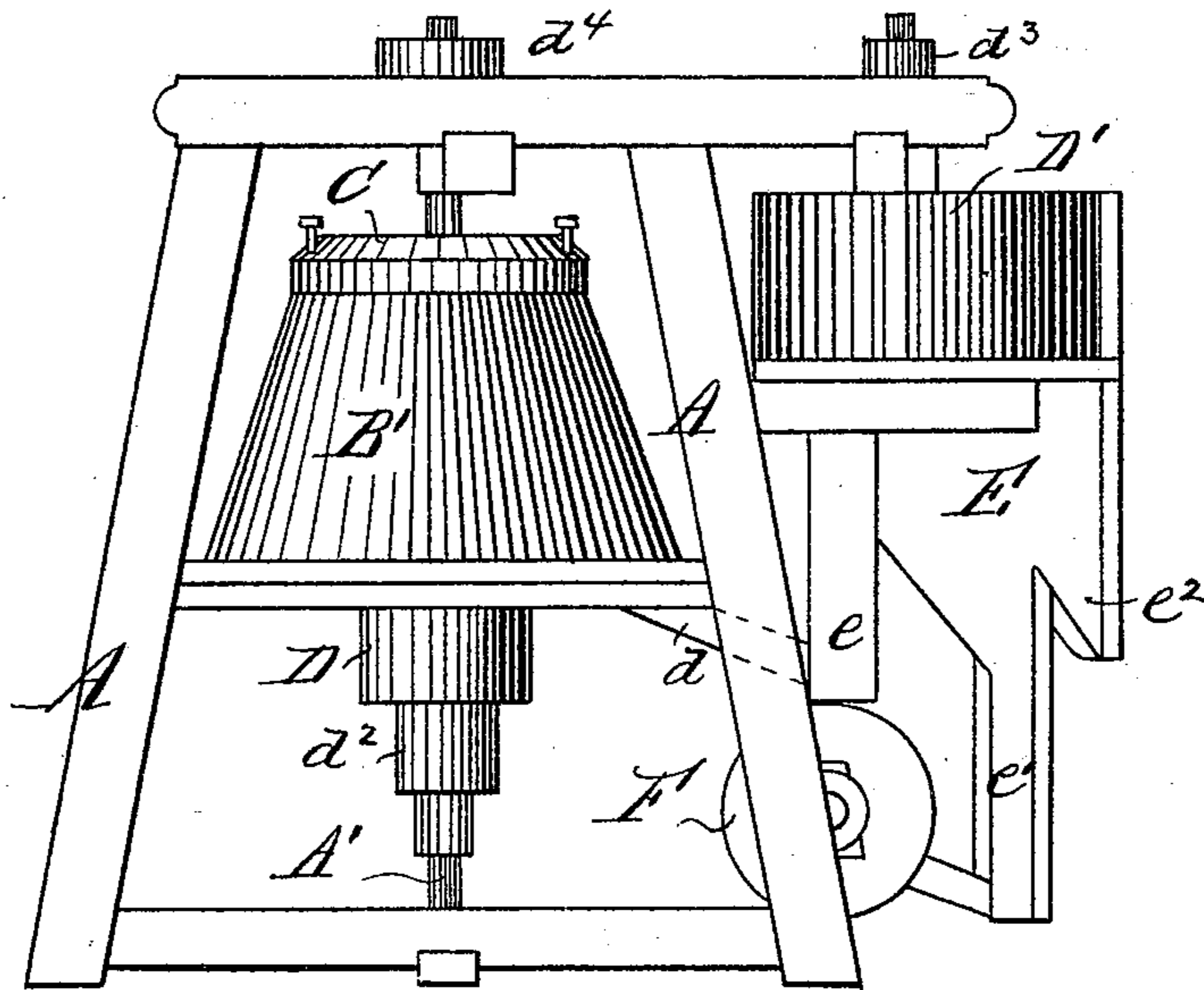
**Witnesses:**  
Chas Meisner.  
J. W. Hertzel.

**Inventor:**  
Charles Lowien  
per. Hertzel & Co  
Attys.

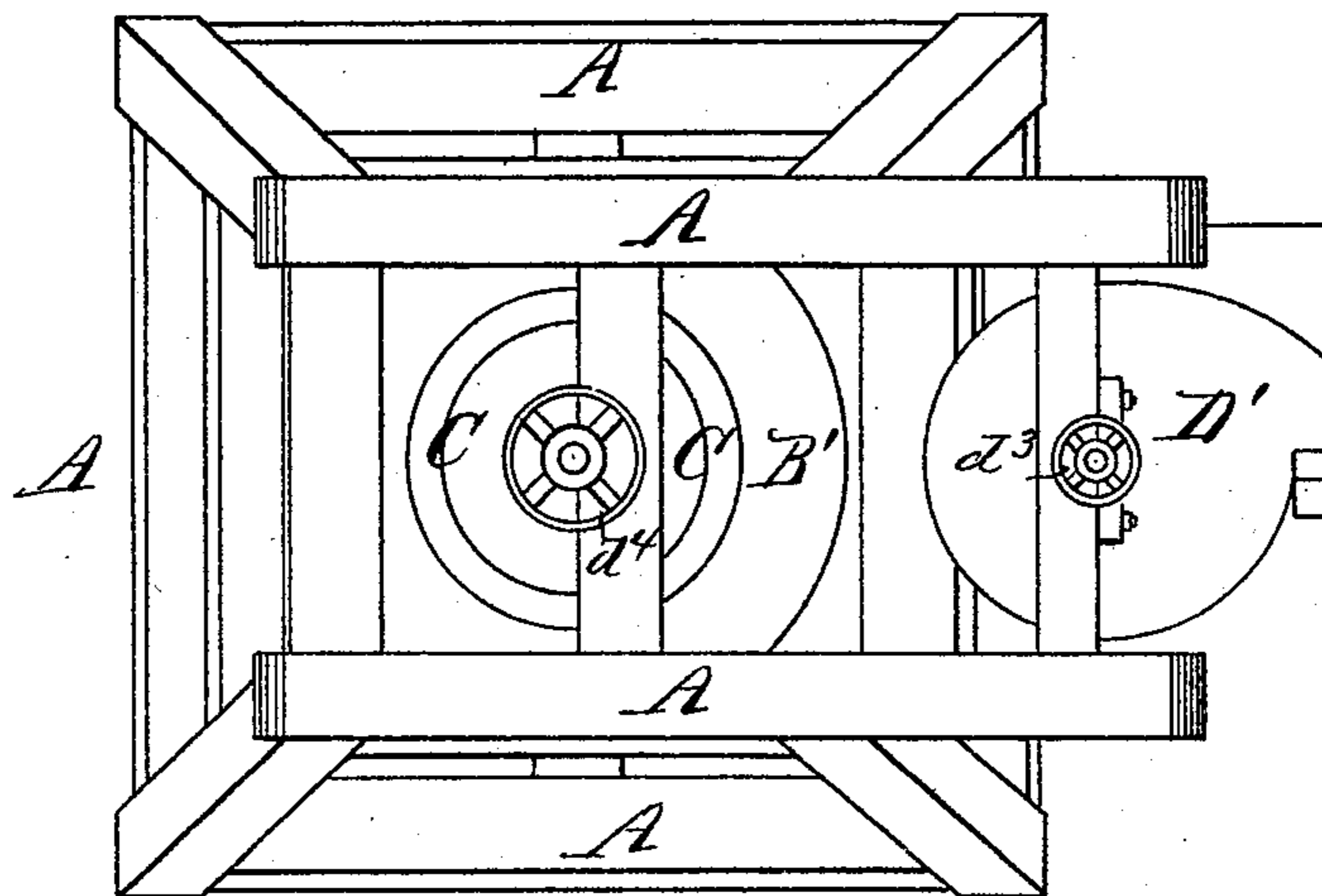
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*Fig. 3.*



*Fig. 4.*

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# UNITED STATES PATENT OFFICE.

CHARLES LOWIEN, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN GRAIN-CLEANERS.

Specification forming part of Letters Patent No. 148,314, dated March 10, 1874; application filed October 1, 1873.

*To all whom it may concern:*

Be it known that I, CHARLES LOWIEN, of St. Louis, Missouri, have invented an Improved Smut-Mill, of which the following is a specification:

This invention consists in the specific construction and arrangement of the devices for cleansing the grain after it has been subjected to the action of the stone, as will be fully described hereinafter.

Of the drawing, Figure 1 is a sectional elevation; Fig. 2, an end or side elevation. Fig. 3, Sheet 2, is a front elevation; and Fig. 4, Sheet 2, a top plan.

A is a suitable frame, upon which the operative parts are mounted; A', a vertical shaft. B represents my revolving stone, or smutter, which is cone-shaped. The vertical shaft A' has the side lugs *a*, top and bottom, fitted to engage the stone B, through which said shaft is passed, as indicated in Fig. 1. The top and bottom of the stone B is secured by metallic bands. I surround the stone B with an outer wood housing or casing, B', in such a manner as to leave a narrow intervening space, *b*, between. The wooden casing B' is supported stationary within the frame A.

As some kinds of grain, however, have their edges or points burned, blighted, and are otherwise affected, therefore I provide a top stone, C, at top of the wood casing B'. (See Figs. 1 and 3.)

The top stone C is so arranged as to leave between it and the top of the stone B the intervening passage or space *b'*. In order to control the said space *b'*, and especially adapt and otherwise enable the operator to set and adjust the top stone C with relation to the quality of grain, I have provided said top stone with adjusting-screws *c*, which pass through to engage the sockets in the top of the wood casing B'. (See Fig. 1.) By operating the screws *c*, the top stone C can be raised or lowered to and from contact with the top of the revolving stone B, thus widening or narrowing the space *b'*, according to the necessities of the grain, or the grinding action the same is required to be subjected to. The grain is fed to smutter through feed-opening

*c'*. (See Figs. 1 and 4.) D is the main pulley; this connects by belting to power source, in order to revolve the shaft A'.

The operation of the parts thus far is as follows: The grain is passed into the top of the smutter through the opening *c'*, and first acted upon between the top stone C and inner stone B. Here the action is graduated by the operator as the nature of the grain demands. The grain within the top space *b'* passes next into the space *b*. Here the grain is subjected to the necessary action resulting from the revolving stone and the friction of wood casing, which cleanses and separates from the grain its smutty substances. After being thus cleansed the grain, together with impurities, is passed out at a slanting chute, *d*. After the grain has been thus far treated, it is further subjected to a cleansing process by means of the blast-fan and brush arrangements, as follows: D' is a fan-casing. This is supported at top, between the end pieces or frames of the machine. The casing D' is provided with a revolving fan, *d'*, forming part of a revolving shaft, *d''*, which turns vertically in said casing. At top the fan-shaft *d''* has a pulley, *d'''*, which connects by belting to the pulley *d''''* top of main shaft A'. Underneath the fan-casing D' is a box-chamber, E, having the lower chutes, respectively, *ee'* *ee''*. (See Figs. 1, 2, 3.) The chute *e* is in line when the grain passes out, and communicates with the chute *d*. Further, underneath the chutes *d* and *e* I arrange a circular drum or casing, F, having a top opening in line with said chute *e*. Within the casing F, on a revolving shaft, I provide a suitable brush, *f*. Surrounding the brush I provide a further casing, *f'*. This is wire-corded or perforated. (See Fig. 1.) On the shaft A', *d''* is the pulley, which, by belting, operates the shaft of the brush *f*. The grain in its descent is thus put to the action of the brush *f*, which still further improves and cleanses the grain. The pure and cleansed grain escapes out of the brush-casing F, through a slanting chute, *f''*, this communicating with the chute *ee'*. (See Figs. 1, 2, 3.) The heavier dust particles can readily be taken out of the brush-casing F, and whatever dirt impurities are forced by the blast to

rise in the chamber E readily escapes out of the chutes  $e^1 e^2$ , the very light dirt matter being forced out of fan-casing D' through its opening. (Shown in Fig. 2.) Thus, before the final exit of the cleansed grain, whatever impurities has thus far passed with it are met by the suction-blast from the fan, and caused to be discharged at independent places from the grain-discharge.

What I claim is—

The combination of the fan and chamber D'

$d^1$  and chamber E with the chutes  $e e^1 e^2$  below the fan and above the brush-cylinder, for the purpose of drawing away the impurities from the grain, as described.

In testimony of said invention I have hereunto set my hand in presence of witnesses.

CHARLES LOWIEN.

Witnesses:

WILLIAM W. HERTHEL,  
C. F. MEISNER.