

No. 728,604.

PATENTED MAY 19, 1903.

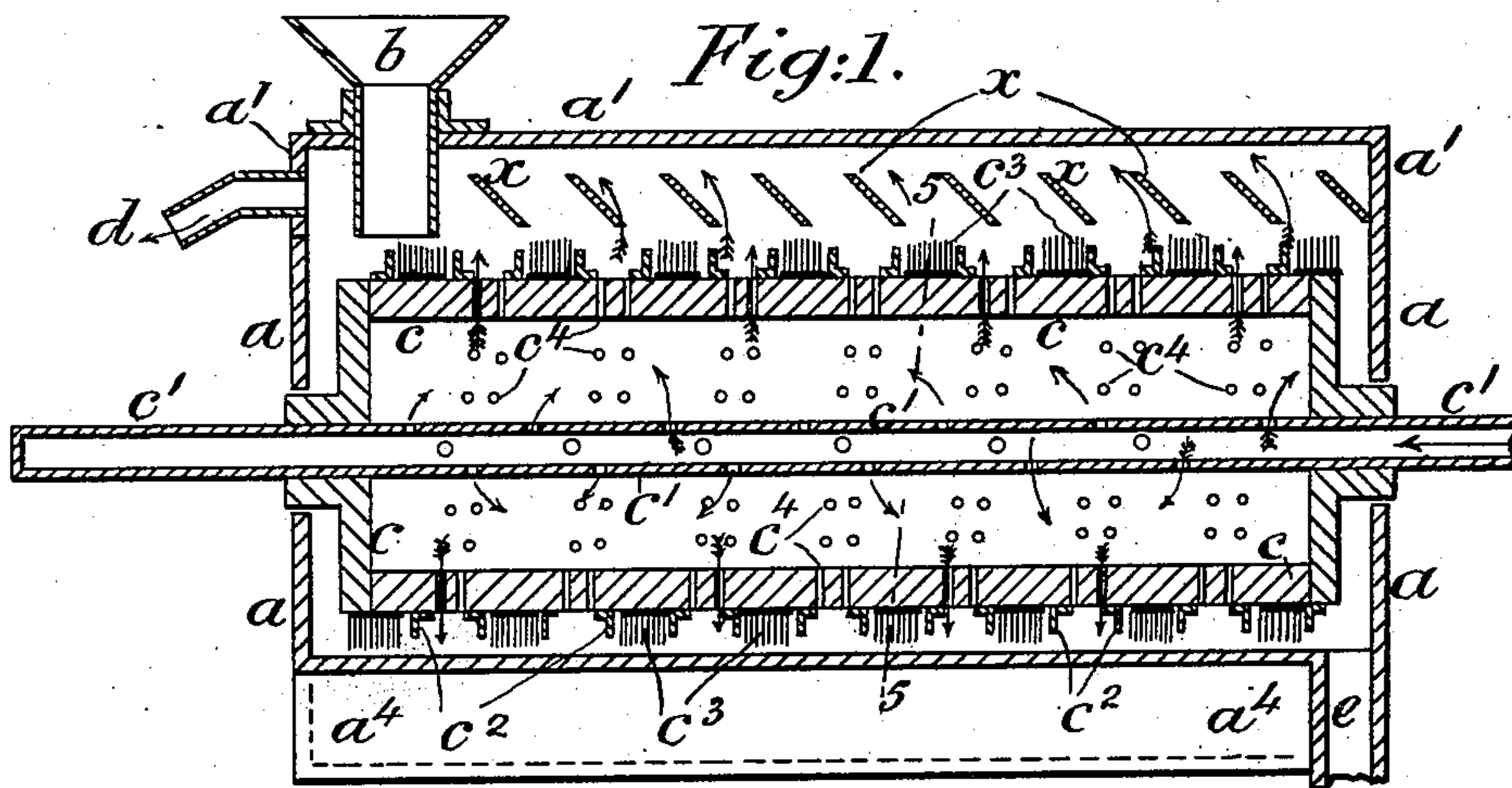
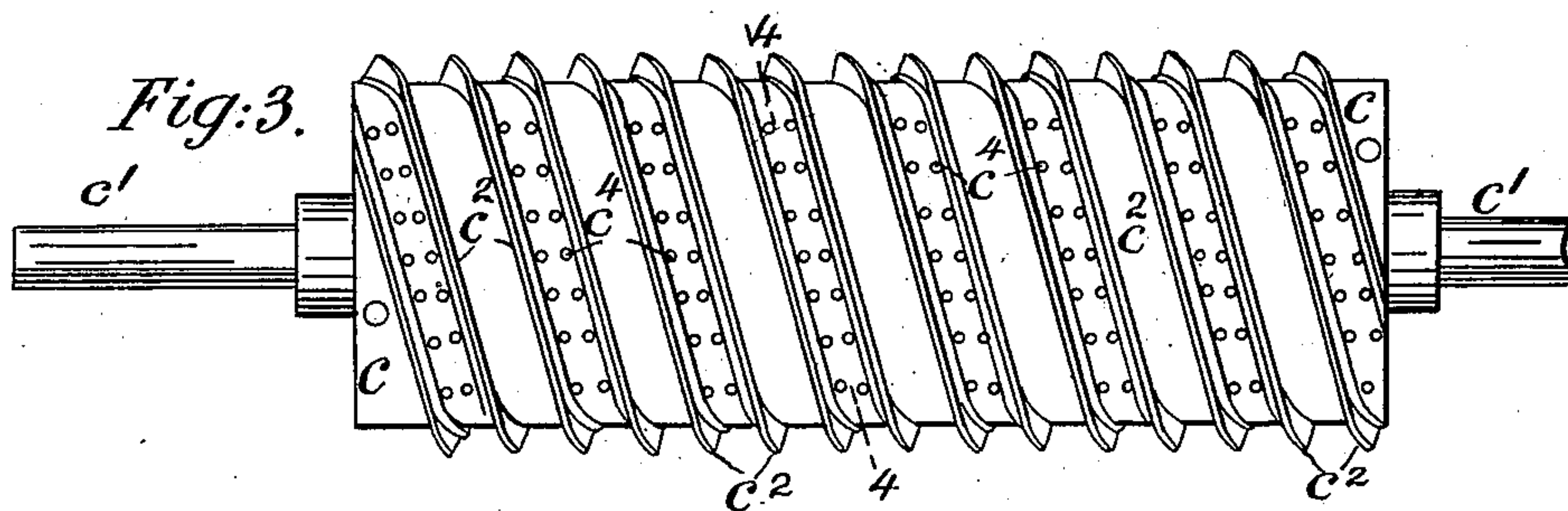
O. G. C. L. J. OVERBECK.

APPARATUS FOR CLEANING MALT, GRAIN, SEEDS, &c.

APPLICATION FILED MAY 31, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
P. F. Somack  
W. P. Hammond

Inventor,  
Otto G. C. L. J. Overbeck,  
By Knight Bros  
Attys.

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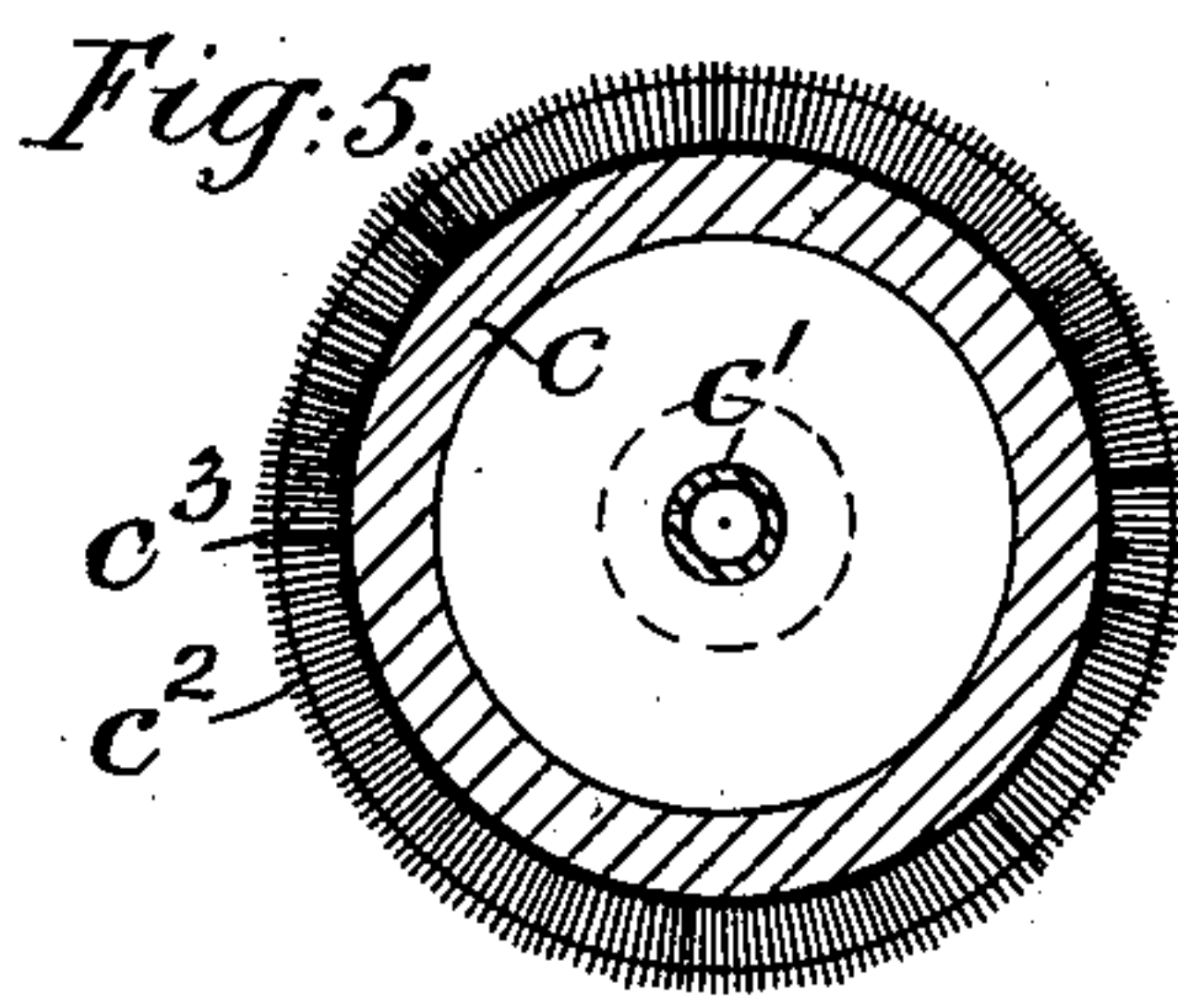
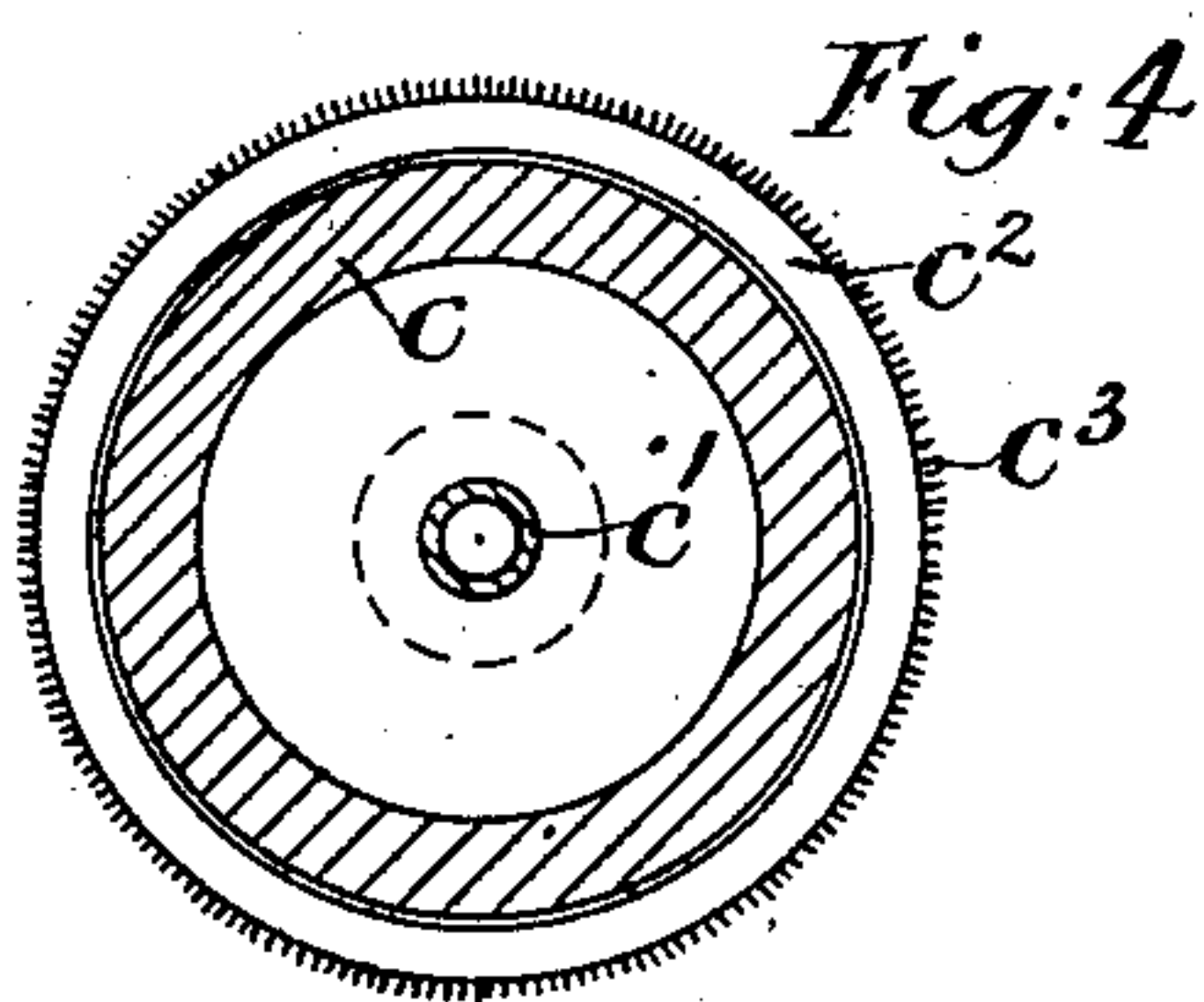
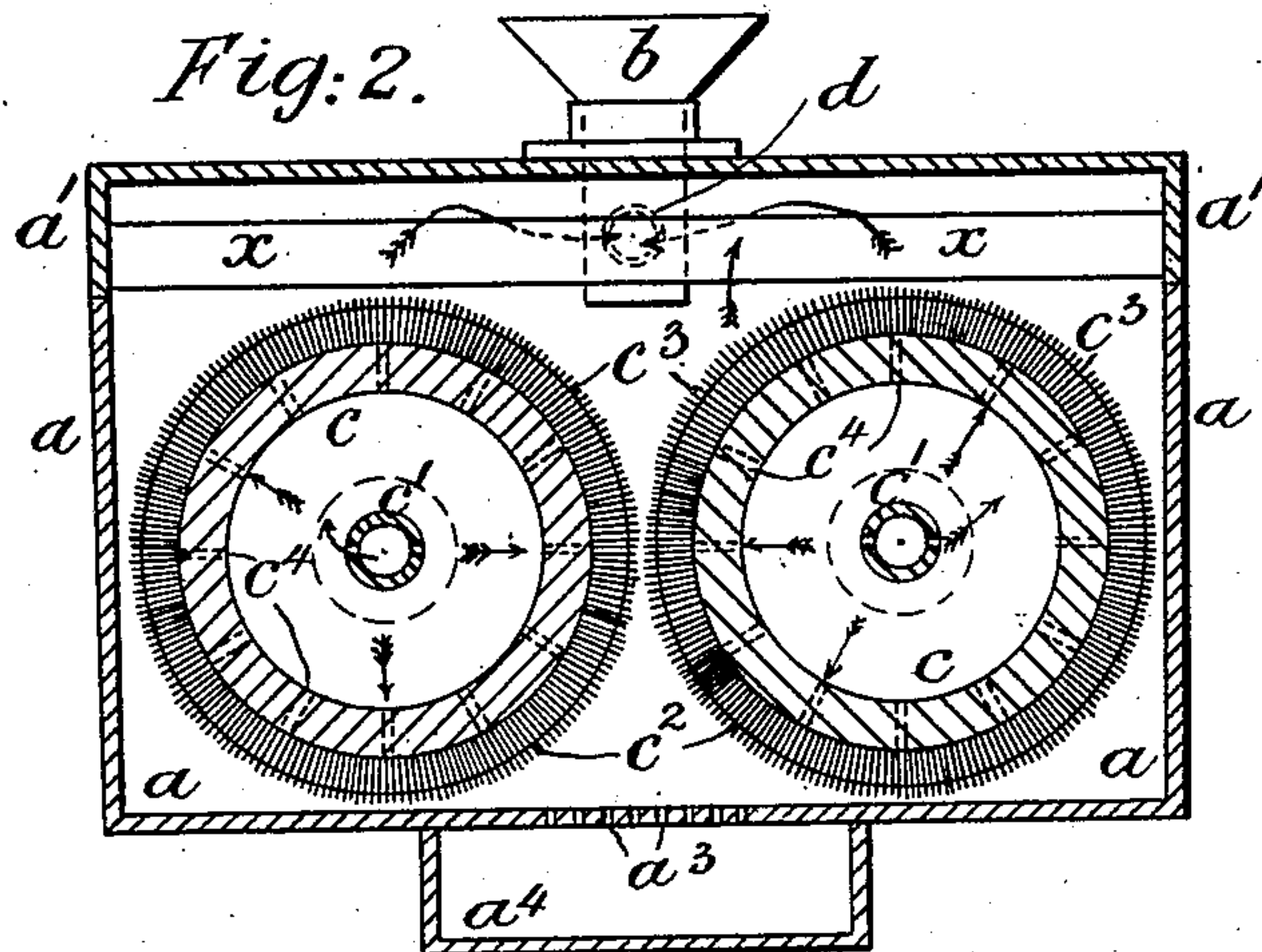
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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:  
P. F. Lusk  
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# UNITED STATES PATENT OFFICE.

OTTO G. C. L. J. OVERBECK, OF GRIMSBY, ENGLAND.

## APPARATUS FOR CLEANING MALT, GRAIN, SEEDS, &c.

SPECIFICATION forming part of Letters Patent No. 728,604, dated May 19, 1903.

Application filed May 31, 1902. Serial No. 109,721. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO GERHARD CHRISTOPH LUDWIG JOSEPH OVERBECK, F. C. S., F. G. S., a subject of the King of Great Britain, residing at Grimsby, in the county of Lincoln, England, have invented certain new and useful Apparatus for Cleaning Malt, of which the following is a full, clear, and exact description.

My invention consists of an improved apparatus for cleaning malt, grain, seeds, and other material, for which purpose I employ a pair of hollow cylindrical perforated brush-bodies, each fitted with a helical brush-surface and helical blades fixed around said body in combination with a case provided with a feeding-hopper, an outlet for the cleaned material, and an upper air-chamber having a bottom formed of internal louver-boards to direct the air, and an air-outlet. The bottom of the main body of the case is provided with a longitudinal central perforated portion, below which is a box to receive heavy dirt or foreign matter, or liquids, if used.

I will describe my invention by the aid of the accompanying drawings, in which—

Figure 1 is a longitudinal section of the improved apparatus. Fig. 2 is a transverse section. Fig. 3 is a side view of one of the brush-rollers. Fig. 4 is a cross-section on the line 4 4 of Fig. 3, and Fig. 5 is a cross-section on the line 5 5 of Fig. 1.

$a$  is the main body of the case.

$a'$  is a movable upper portion forming the dust-chamber and fitted with the feed-hopper  $b$ , which delivers the material to be cleaned to the interior of the portion  $a$  of the case. The bottom  $a^2$  of the dust-chamber  $a'$  is formed of a horizontal row of inclined louver boards or deflectors  $x$ , fixed crosswise thereof.

The main part  $a$  of the case is fitted with a pair of rotating brushes of the following construction.

$c$  is the brush-body, which is in the form of a hollow perforated cylinder closed at both ends.

$c'$  is a hollow perforated axle closed at one end and communicating at the other end with a source of compressed air or steam or other vapors or liquids, either hot or cold.

$c^2$  represents helical blades fixed around the brush-body, and  $c^3$  is a strip of brush ma-

terial wound around the brush-body and fixed between alternate pairs of the helical blades, the perforations  $c^4$  in the brush-body being arranged in the spaces formed by the helical blades  $c^2$  between the coils of the brush material  $c^3$ .

$a^3$  is a perforated portion extending longitudinally along the center of the bottom of the part  $a$  of the case, and  $a^4$  is a box below the bottom of the case  $a$  to receive heavy dirt or foreign matter, or liquids, if used, passing through the perforated part  $a^3$ .

$d$  is the air-outlet, and  $e$  is the outlet for the cleaned material.

The action of the apparatus is as follows: Malt, grain, seed, or other material is fed to the apparatus through the hopper  $b$ . Compressed air, steam, or other vapors or liquids are supplied to the hollow axle  $c'$ , and rotary motion is given to the brushes. The malt, grain, seed, or other material is acted upon by the brushes and is gradually worked from the inlet to the outlet  $e$  by the helical blades  $c^2$ . The outlet  $e$  is kept charged, and so traps or checks the escape of air or steam thereat. The air, steam, vapor, or liquid enters the hollow axle  $c'$ , passes through the perforations in the latter, and through the perforations  $c^4$  in the brush-body  $c$ . It then acts to carry the light dust disturbed by the brushes away through the louver boards or deflectors  $x$  of the dust-chamber  $a'$ , said dust, together with the air, steam, vapor, or liquid, escaping by the outlet  $d$ . The air, steam, vapor, or liquid also in issuing through the perforations  $c^4$  in the brush-body  $c$  blows the malt, grain, seed, or other material from one brush to the other, and so greatly assists in the cleaning process. The course of the current of air, steam, vapor, or liquid is indicated in the various figures by the arrows and is contrary to the direction taken by the material to be cleaned.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an apparatus for cleaning malt, grain, seeds or other material, the combination of a pair of rotating cylindrical brushes each consisting of a hollow cylindrical body with helically-arranged rows of perforations in its shell, a hollow shaft closed at one end and perforated along the part within the brush-



body for the passage of air or other fluid, strips of brush material wound helically around the brush-body between the rows of perforations and helical blades extending  
 5 around the brush-body between the brush material and rows of perforations; a case in which the cylindrical brushes are mounted side by side, an upper part forming a light-dust chamber and an inlet and outlet for the  
 10 material to be cleaned, substantially as herein set forth.

2. In apparatus for cleaning malt, grain, seeds or other material, the combination of the case consisting of a main body *a* and movable upper portion *a'* having a feed-hopper *b*  
 15 dust-outlet *d* and a horizontal row of inclined deflecting-boards *x*; an outlet *e* for cleaned material in the lower part of the case and a pair of revolving cylindrical brushes mounted  
 20 in the main part *a* of the case, each consisting of a hollow cylindrical body *c* closed at both ends having helically-arranged rows of perforations *c<sup>1</sup>*, blades *c<sup>2</sup>* extending helically  
 25 around the body between the rows of perforations, a strip *c<sup>3</sup>* of brush material wound around said brush-body between the rows of perforations and the helical blades, and a hollow shaft *c'* closed at one end and perforated in the part passing through the brush-  
 30 body, for the passage of fluid, substantially as herein set forth.

3. In an apparatus for cleaning malt, grain, seeds or other material, the combination of a pair of rotating cylindrical brushes each hav-  
 35 ing a hollow body perforated on the cylindrical part, a hollow shaft closed at one end and perforated along the part within the brush-body through which air, steam, or other vapor or liquid, is adapted to be passed, a  
 40 strip of brush material wound helically around

the brush-body between the helical blades and rows of perforations, intermediate helical blades fixed on the brush-body, a case with removable upper part forming a light-dust chamber, a longitudinal perforated portion  
 45 on the floor of the main part of the case, a chamber to receive heavy dirt, foreign matter, or liquids if used, passing through the perforations in said floor, and an inlet and an outlet for the material to be cleaned, substan-  
 50 tially as herein set forth.

4. In an apparatus for cleaning malt, grain, seeds, or other material, the combination of a pair of rotating cylindrical brushes each  
 55 having a hollow body perforated on the cylindrical part, a hollow shaft closed at one end and perforated along the part within the brush-body through which air, steam, or other vapor or liquid, is adapted to be passed, a helical brush-surface, intermediate helical  
 60 blades fixed on the brush-body, a case with removable upper part forming a light-dust chamber, fixed louver boards or deflectors forming the bottom of said dust-chamber to permit entrance thereto of the air or steam  
 65 and dust, an outlet to said dust-chamber, a longitudinal perforated portion on the floor of the main part of the case, a chamber to receive heavy dirt, foreign matter, or liquids if used, passing through the perforations in  
 70 said floor, and an inlet and an outlet for the material to be cleaned, substantially as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

OTTO G. C. L. J. OVERBECK.

Witnesses:

H. J. F. CROSBY,  
 H. E. SHARMAN.