

PLANT & RAITH.

Grain Cleaner.

No. 30,090.

Patented Sept. 18, 1860.

Fig. 2.

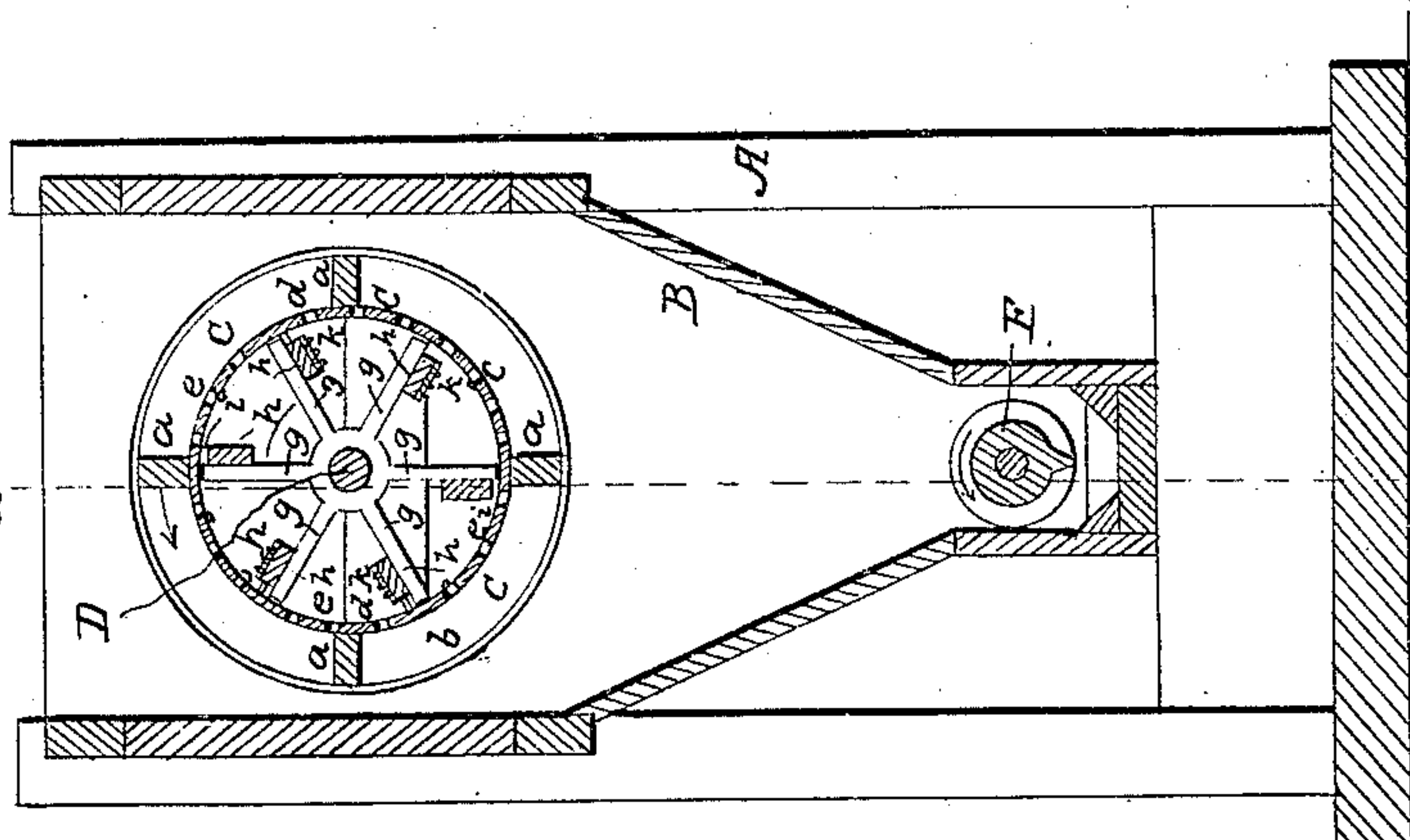


Fig. 4.

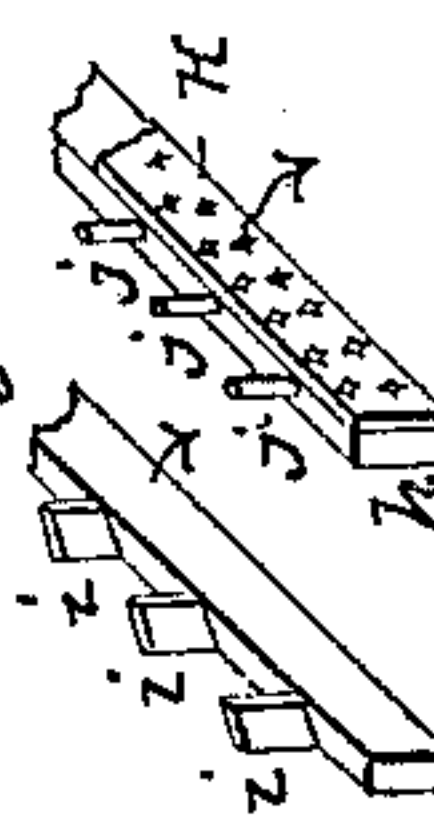


Fig. 1.

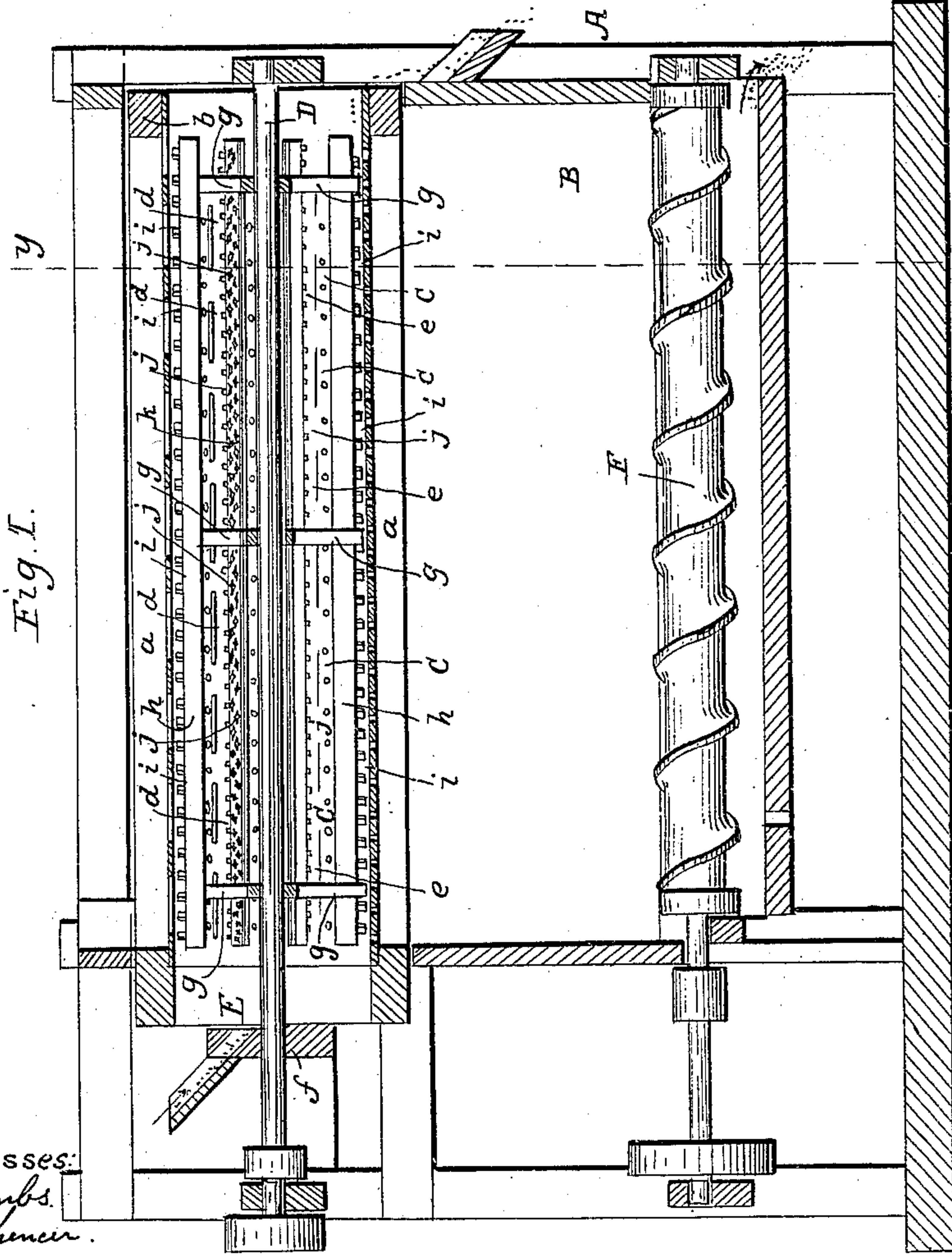
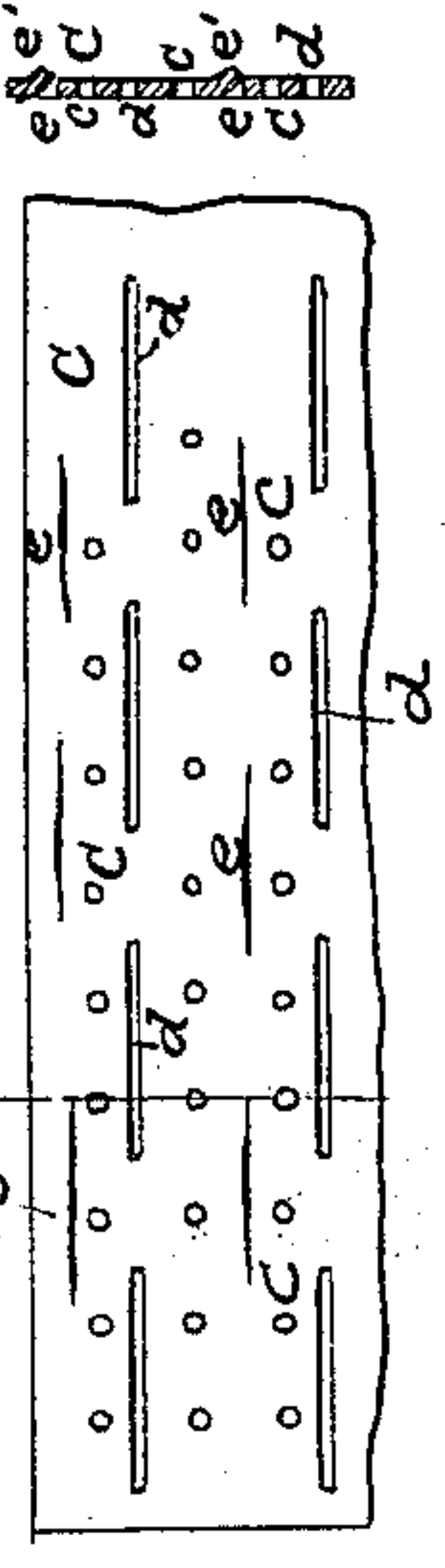


Fig. 3.



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# UNITED STATES PATENT OFFICE.

GEO. P. PLANT AND J. RATH, OF ST. LOUIS, MISSOURI.

MACHINE FOR SCOURING, CLEANING, AND POLISHING GRAIN.

Specification of Letters Patent No. 30,090, dated September 18, 1860.

*To all whom it may concern:*

Be it known that we, GEORGE P. PLANT and JULIUS RATH, of the city of St. Louis and State of Missouri, have invented a new and Improved Machine for Scouring, Screening, and Polishing Grain Preparatory to Grinding the Same; and we 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 side sectional view of our invention taken in the line  $x, x$ , Fig. 2. Fig. 2 a transverse vertical section of the same taken in the line  $y, y$ , Fig. 1. Fig. 3 detached sectional views of the screen. Fig. 4 detached views of the scourers.

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

This invention consists in the employment or use of a rotating sheet metal screen constructed in a novel way and containing within it revolving beaters, and brushes and feeders rotating in a reverse direction to the screen; the parts being so arranged as to effectually scour and clean the grain preparatory to grinding the same.

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

A, represents a suitable frame in which a case or box B, is fitted and in the upper part of this case or box there is placed a horizontal or nearly horizontal rotating screen C, which is formed of perforated sheet metal secured to a suitable cylindrical frame work, which may be formed of longitudinal wooden bars  $a$ , secured to rings  $b$ . The sheet metal is perforated in a novel way, it having three different kinds of perforations to wit; circular holes  $c$ , oblong rectangular holes or openings  $d$ , and slits  $e$ , the perforations alternating in longitudinal lines as shown in Fig. 3. The holes  $c$ ,  $d$ , are cut through the metal with a clean cut no bur being left at the inner side but the slits  $e$ , in being formed force inward the metal at one side of them and form a lip or bur  $e'$ , as shown in Fig. 3. The slits  $e$ , form quite narrow openings.

Within the screen C, there is placed centrally a longitudinal shaft D, the bearings  $f$ , of which are at the ends of the frame A. The shaft D, has radial arms  $g$ , attached to it and to the ends of said arms bars  $h$ , are secured the bars being parallel with the

shaft D. The bars  $h$ , extend the whole length of the screen C, and to the outer edges of two or more of said bars  $h$ , blades or plates  $i$ , are attached at suitable distances apart in oblique positions as shown clearly in Fig. 4. The outer edges of the plates  $i$ , nearly touch the inner surface of the screen C, and the bars  $h$ , that have their oblique plates attached one at opposite sides of the shaft D.

In the outer edges of the other bars  $h$ , there are driven pins  $j$ , of wood or metal at suitable distances apart. These pins may be of cylindrical form and they also nearly touch the inner surface of the screen. The front sides of the bars  $h$ , which have the pins  $j$ , attached have punched sheet metal strips  $k$ , secured to them said strips forming corrugated or rough surfaces as shown in Figs. 2, and 3.

The screen C, and shaft D, rotate in reverse directions, as indicated by the arrows in Fig. 2. The grain to be operated upon is introduced into one end of the screen C, at E, and is subjected to a scouring process by the action of the pins  $j$ , as the bars  $h$ , rotate, in connection with the roughened or corrugated inner surface of the screen C, and the punched strips  $k$ , on the bars  $h$ . The oblique plates  $i$ , serve to feed the grain along to the discharge end of the screen C, and the dust and offal pass through the perforations  $c$ ,  $d$ ,  $e$ , of the screen and drop to the bottom of the case B. The screen C, rotates with ordinary rapidity about twenty five revolutions per minute and the shaft D, makes about one hundred and seventy five revolutions in the same time.

The circular holes  $c$ , admit dust and fine foreign substances through them and so do the slits  $e$ , while the oblong rectangular perforations  $d$ , admit through them large foreign substances, straw etc., which may be in the grain. The edges  $e'$ , of the slits  $e$ , projecting angularly into the screen form very efficient scourers and the strips  $k$ , punched or roughened as shown act as beaters, while the pins  $j$ , serve as brushes and have a tendency to keep open or clear the perforations of the screen.

In the lower part of the box or case B, there is placed a horizontal rotating screw F, for the purpose of feeding the fragments of broken grain, chaff etc., which may pass through the screen C, out from the end of the case B. The screw F, may be rotated

from shaft D, and the screen C, rotated from the shaft of the screw.

We do not claim separately and irrespective of construction any of the parts  
5 herein shown and described, but

We do claim as new and desire to secure by Letters Patent—

The combination of the screen C, and beaters *k*, brushes *j*, and feeders *i*, when the  
10 beaters brushes and feeders are placed with-

in the screen C, and the latter made to rotate in a reverse direction to the former and the screen formed with the three different kinds of perforations *c*, *d*, *e*, substantially as and for the purpose set forth.

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Witnesses:

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