

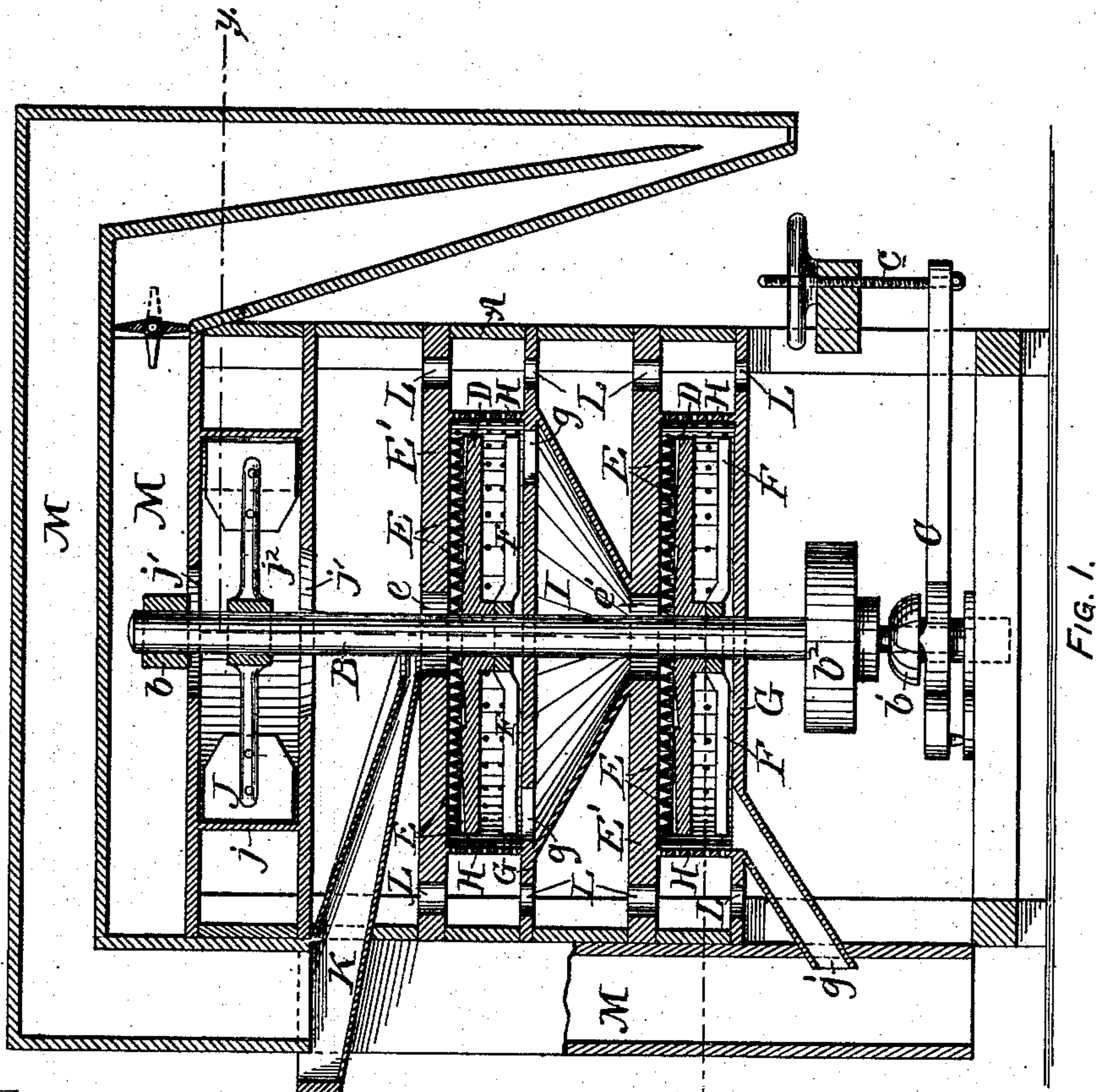
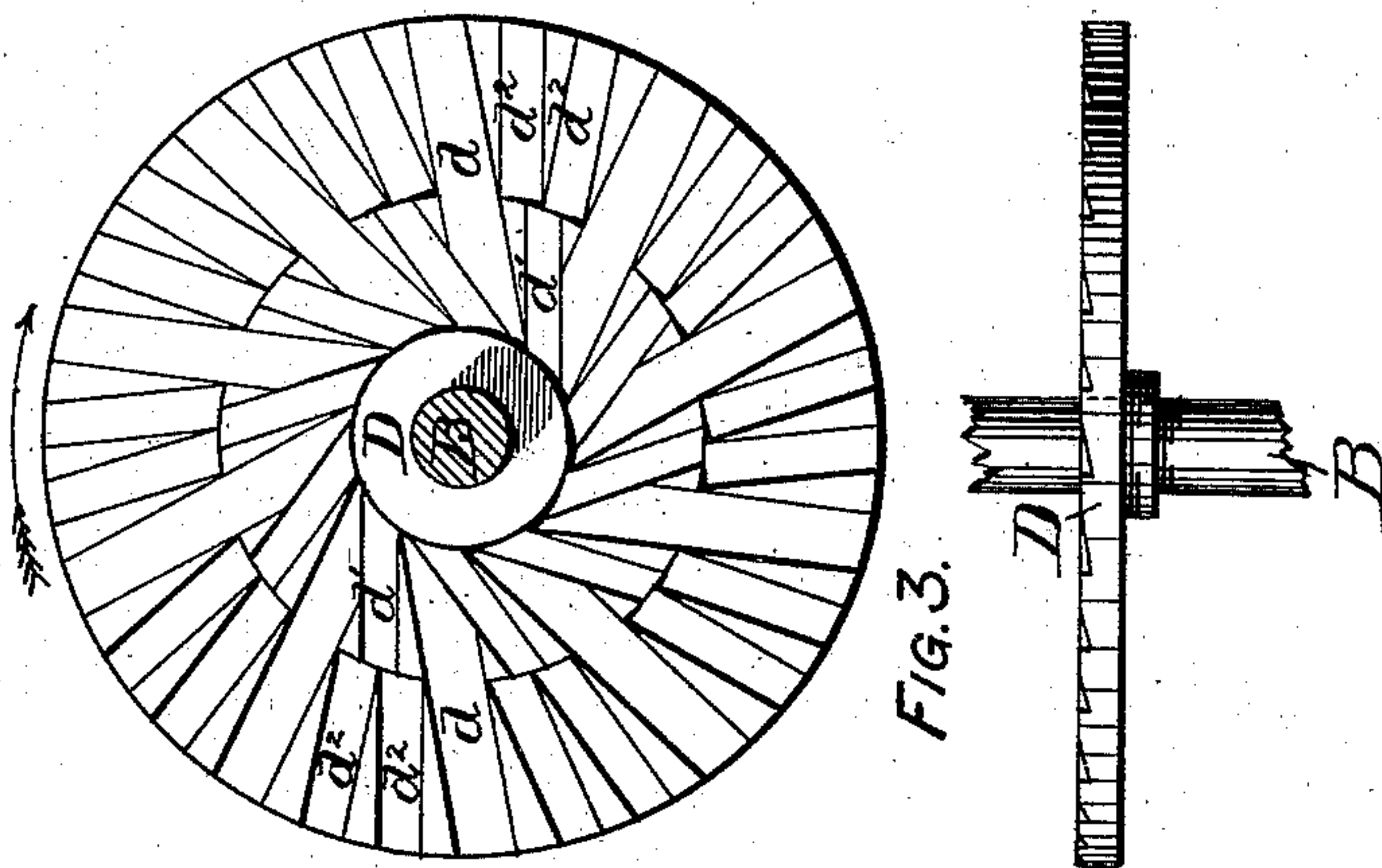
(No Model.)

2 Sheets—Sheet 1.

D. MANN.
GRAIN SCOURER.

No. 252,048

Patented Jan. 10, 1882.



Witnesses,
E. F. Benham,
J. Brown

Inventor,
D. Mann,
~by~
William H. Low, Attorney.

(No Model.)

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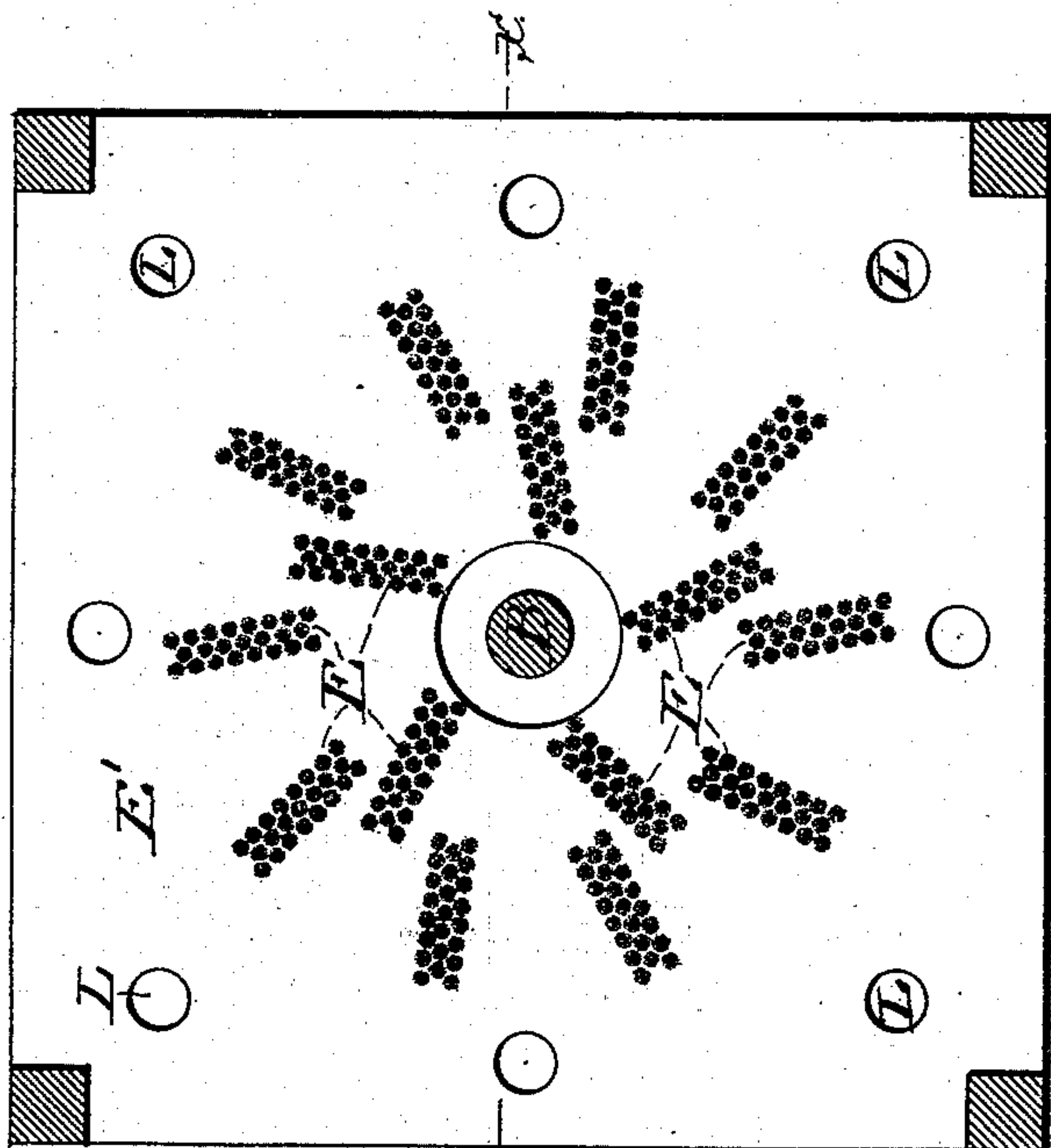


FIG. 4.

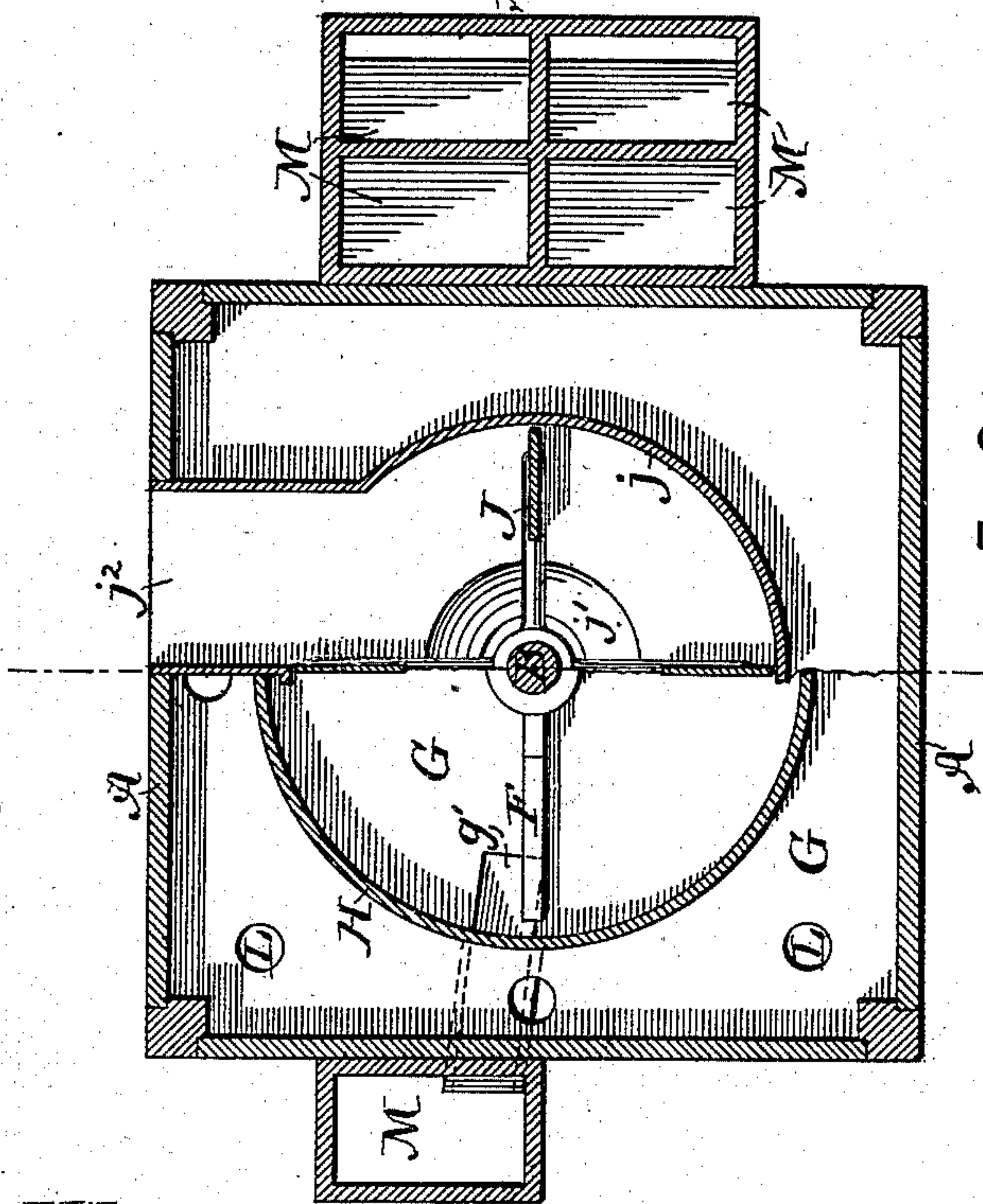
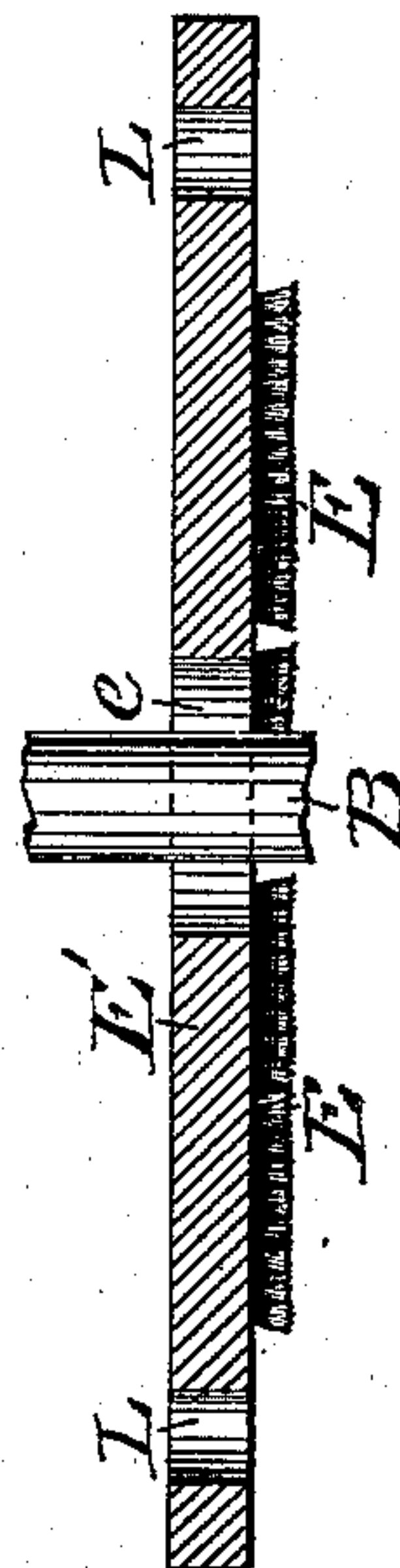


FIG. 2.

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UNITED STATES PATENT OFFICE.

DANIEL MANN, OF WEST WINFIELD, NEW YORK.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 252,048, dated January 10, 1882.

Application filed August 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, DANIEL MANN, of West Winfield, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Grain-Scourers, of which the following is a specification.

My invention relates to improvements in machines for scouring and cleaning grain preparatory to the process of grinding; but it relates especially to that class of such machines wherein are combined stationary brushes with revolving disks having their faces dressed like millstones and an exhausting-fan.

The object of my invention is to scour and cleanse grain in a more thorough manner than is now accomplished by the machines commonly used for that purpose, and this object I attain by means of the mechanism illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical section of my improved machine; Fig. 2, a horizontal section of the same at the line *yy* on Fig. 1; Fig. 3, plan and edge views of one of my revolving disks, and Fig. 4 an inverted plan view and vertical section of one of the stationary platforms bearing the scouring-brushes.

As represented in the drawings, A is the frame-work and casing of the machine; B, a vertical shaft, to which all the revolving parts of the machine are secured. Said shaft is arranged to revolve in suitable bearings, of which the one marked *b*, at its upper end, is held in a stationary position, and the one at the lower end is made in the form of an adjustable step, *b'*, and hung in the lever C, the latter being provided with an adjusting-screw, *c*, by means of which the shaft B may be adjusted vertically to any required height.

D are disks of metal, porcelain, or other suitable material, secured to and revolving with the shaft B. Each of said disks has on its upper surface the dressing (shown in the plan view of Fig. 3) consisting of the principal furrows or grooves, *d*, the inner short furrows, *d'*, and the outer short furrows, *d''*. All of said furrows are arranged tangentially to a circle of about one-fifth of the diameter of the disk. The principal furrows extend from near the center of the disk to its perimeter. The inner short furrows (which equal the number of the

principal ones) are placed intermediate to the principal furrows, and are about one-half the length of the latter, and the outer short furrows (of which there are double the number of either the other furrows) extend from the ends of the inner furrows to the perimeter of the disk. By this arrangement of the furrows the grain (under the action of the stationary brushes hereinafter described) is compelled to turn over and over again before it escapes at the periphery of the disk.

E are scouring-brushes, secured to the stationary platforms E' and arranged in two circular rows, as shown in Fig. 4, of tangential lines, that cross the furrows in the disks D in an angular direction, and in such manner that the said brushes will, in addition to their service in cleaning the grain, aid in moving the grain through the furrows toward and over the peripheries of the disks.

F are radial arms or sweeps, secured to the shaft B immediately underneath each of the disks D, for the purpose of sweeping the grain that falls from the disks and is deposited on the stationary platforms G into the discharge-openings *g* and discharge-spout *g'*. Said sweeps also render valuable service in producing air-currents for carrying off the lighter particles of dirt that have been separated from the grain by the action of the brushes.

H are cylindrical casings, surrounding the disks D and held in fixed positions by and between the stationary platforms E' and G. Said casings are perforated for the purpose of permitting the air-currents to pass through them and carry away the dirt from the grain as it falls from the disks.

I is a funnel-shaped connection between the chambers containing the upper disk and the lower one. Said connection receives the grain that has received its first scouring on the upper disk as it falls from the openings *g*, and conveys it through the feed-opening *e'* to the central portion of the lower disk.

J is an exhausting-fan, secured to the shaft and revolving in the casing *j*, the latter being provided with induction air-openings *j'*, through which air is drawn from the different compartments of the machine, and with the discharge-spout *j''*, through which the air is ejected.

K is a feeding-spout, leading from the exte-

rior of the machine, through which the grain is fed into the opening *e* over the center of the upper disk.

L are inlet air-openings in the platforms *E'* and *G*, for admitting the external air into the several compartments of the machine.

M are air-flues, arranged over the exterior of the machine, for producing a circulation of air there through under the action of the fan *J*. Said flues are an old and well-known arrangement in grain-cleaning machines. They form no part of my invention, and therefore require no detailed description.

The operation of my improved machine is as follows: The shaft *B* is rotated (by means of a driving-belt on the pulley *b*²) in the direction indicated by the curved arrow on Fig. 3. The grain fed into the machine through the spout *K* passes through the opening *e* and falls upon the central portion of the upper disk *D*, where it is caught in the deepest portion of the furrows *d* and *d'* and carried under the brushes *E*. By the action of the latter the grain is forced up the inclined faces of the furrows, where it will be subjected to a more vigorous action of the brushes, which will cause the kernels of grain to frequently turn over and shift their positions, so as to permit the brushes to act upon them in a most thorough manner. The angularity of the lines of brushes in respect to the lines of the furrows causes the grain to move outwardly toward the periphery of the disk, over which it is discharged upon the upper stationary platform *G*, and from the latter it is dislodged by the action of the upper sweeps *F*, and it then passes through the openings *g*, funnel *I*, and opening *e'* onto the lower disk *D*, and on the latter the grain is again subjected to the operation above described in respect to the upper disk and brushes, whereby the grain is cleansed from dirt and other

foreign matter in a most thorough and perfect manner. As fast as discharged from the lower disk *D* the grain is carried by the lower sweeps *F* into the discharge-spout *g'*, and from thence it is discharged into any proper receptacle. In passing through the machine the falling grain is subjected to the action of the incoming currents of air produced by the action of the fan *J* and sweeps *F*, and by the force of such currents the dirt, &c., removed from the grain is carried upward through the machine and discharged through the spout *j*² of the fan.

I am aware that grain-scouring machines containing a single revolving disk combined with scouring-brushes and an air-fan have heretofore been constructed and used. Therefore I do not broadly claim those factors; but

I claim as my invention—

1. In a grain-scouring machine, the combination, with two revolving disks, *D*, provided with the furrows *d*, *d'*, and *d*², as herein described, and secured one above the other, and the shaft *B*, of the stationary brushes *E*, arranged in tangential lines whose obliquity is reversed to the tangential lines of the furrows in the disks *D*, and the radial sweeps *F*, all constructed and arranged to operate as herein specified.

2. The combination, with the revolving disks *D*, provided with tangentially-arranged furrows, as herein set forth, of the stationary brushes *E*, arranged in tangential lines having an opposite angularity to the lines of the disk-furrows, the said disks and brushes being arranged in relation to each other and to operate as herein specified.

DANIEL MANN.

Witnesses:

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