

M. HOFFMAN.

Grain Huller.

No. 113,770.

Patented Apr. 18, 1871.

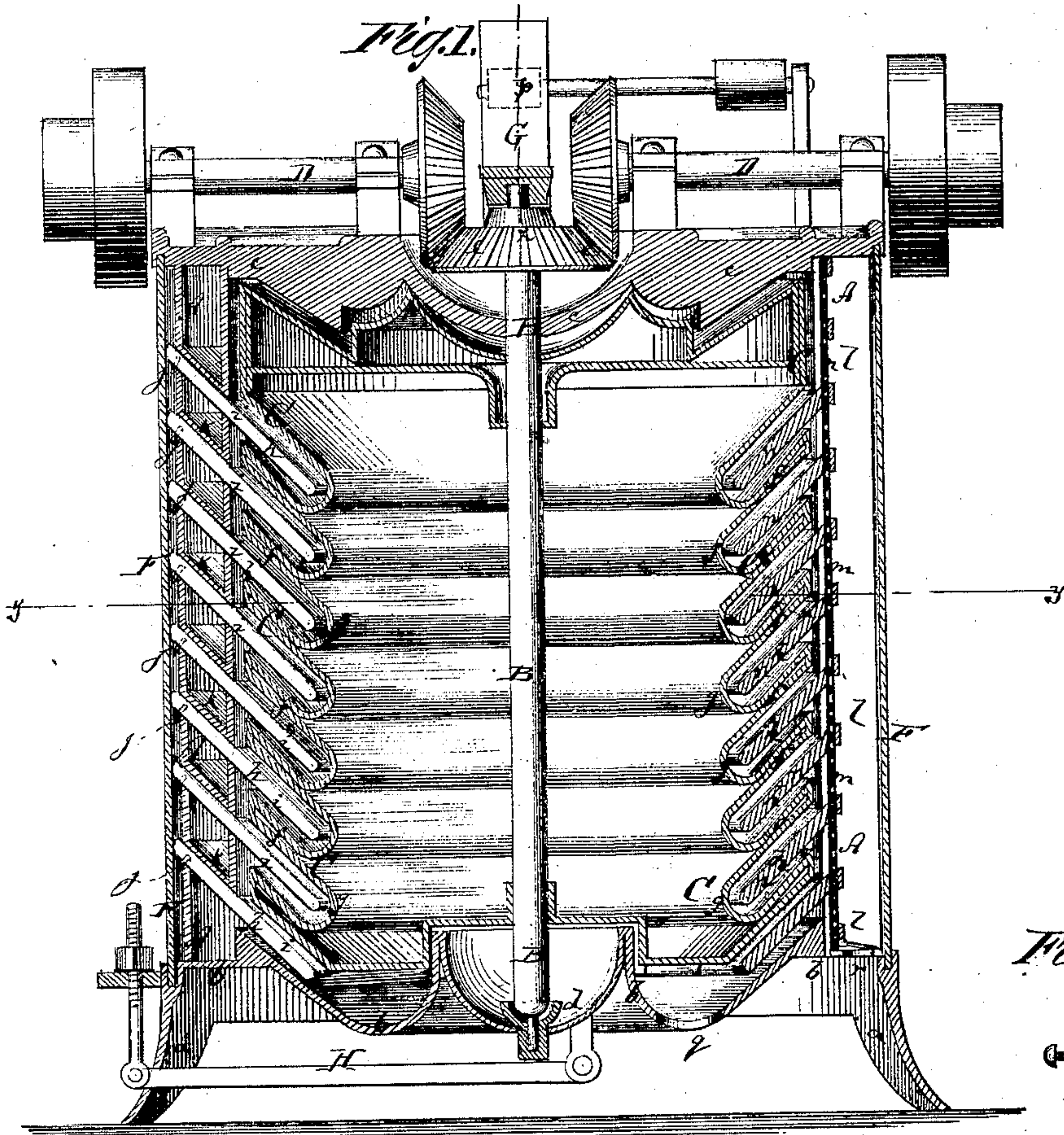


Fig. 2.

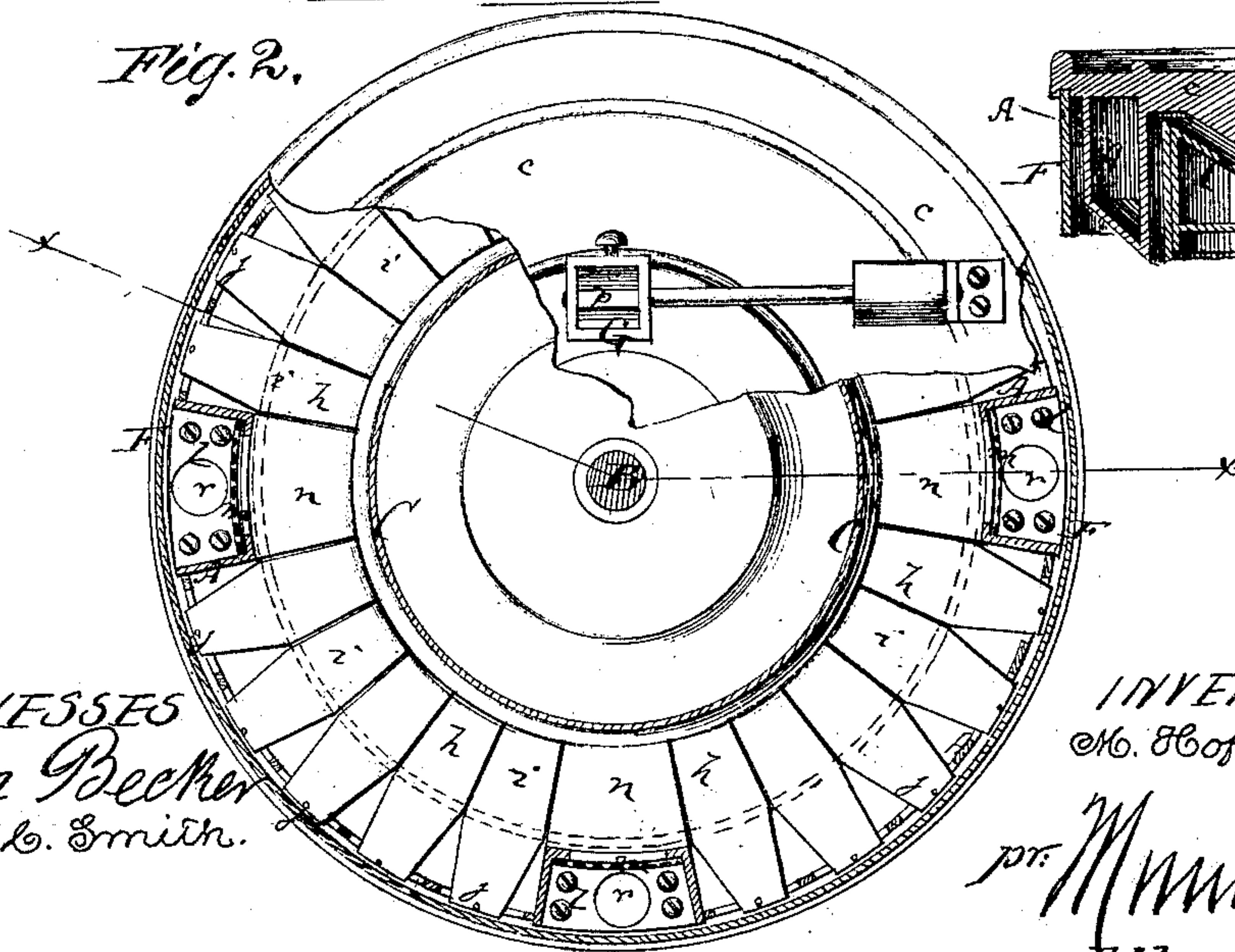
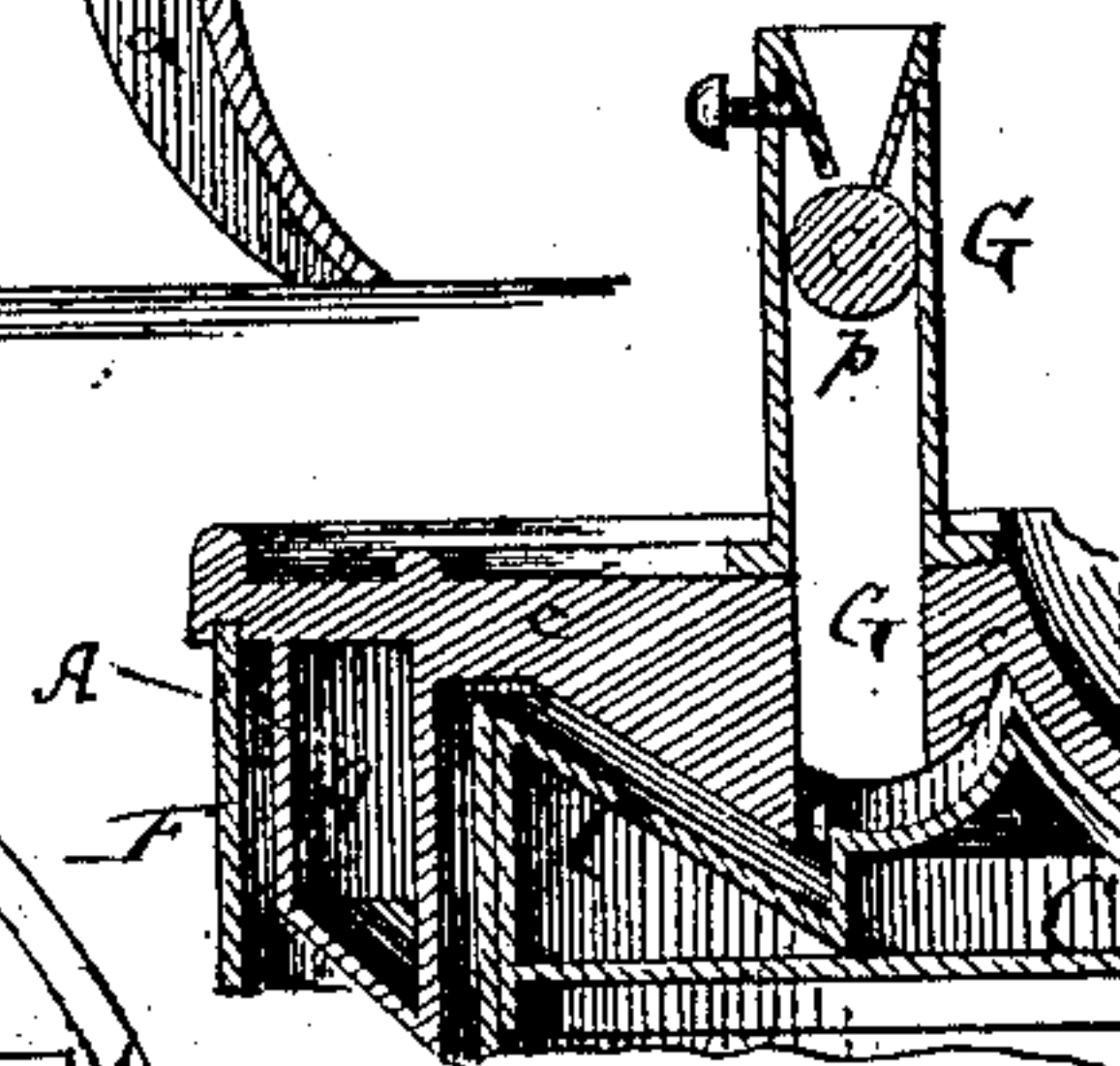


Fig. 3.



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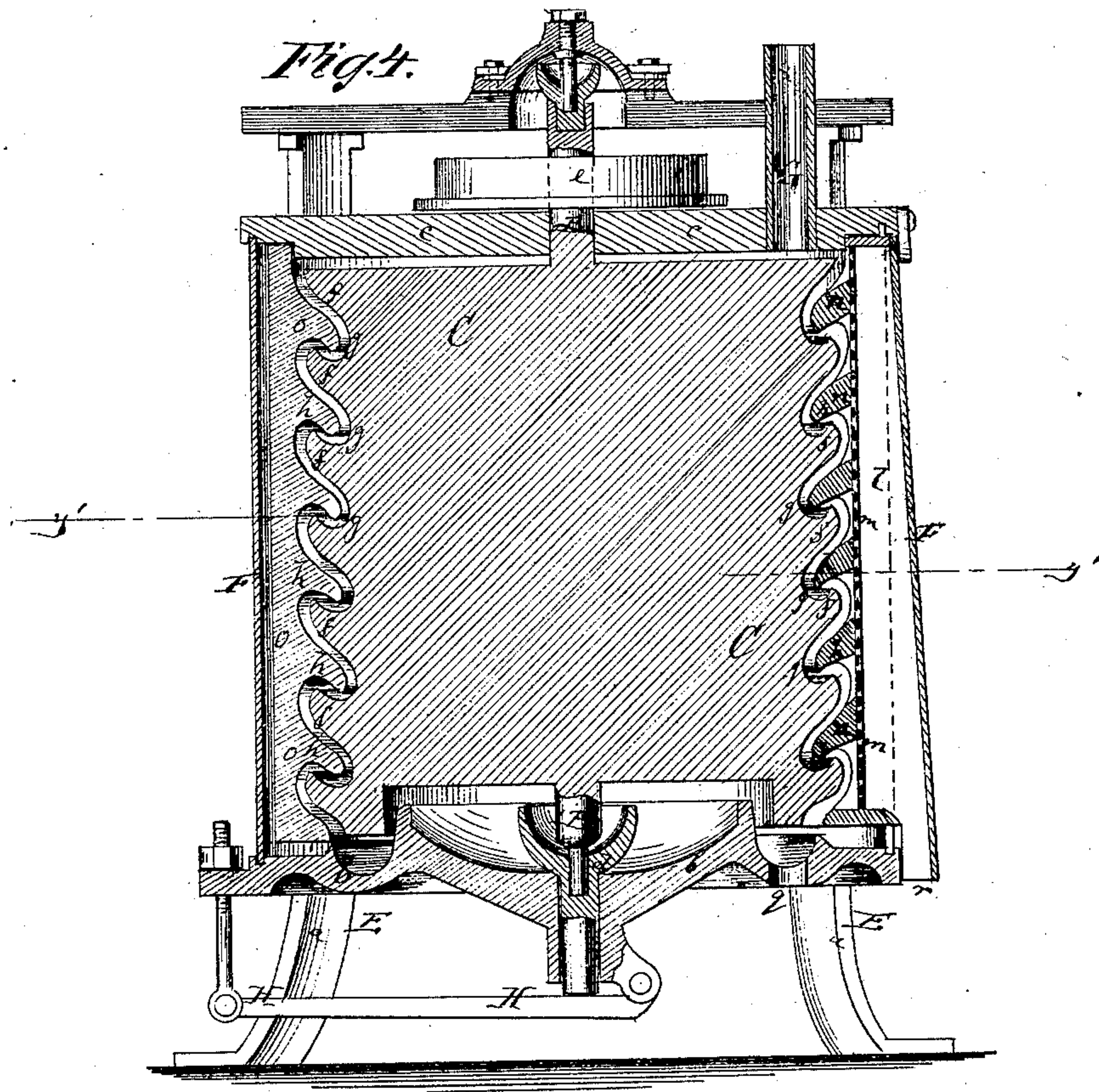
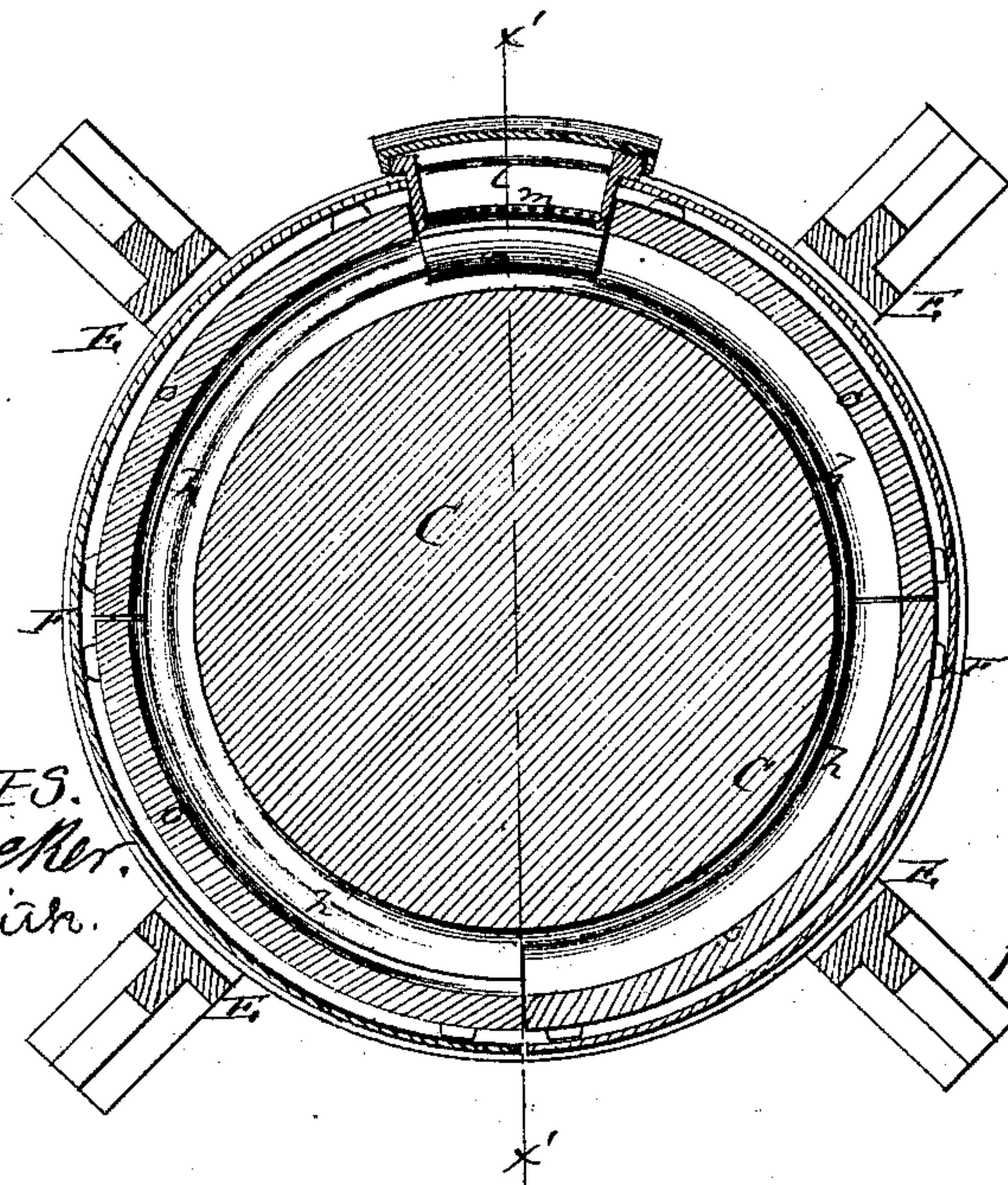


Fig. 5.



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Letters Patent No. 113,770, dated April 18, 1871.

IMPROVEMENT IN GRAIN-HULLING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, MICHAEL HOFFMANN, of Munich, in Germany, have invented a new and improved Grain-Hulling Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical section of my improved grain-hulling machine taken on the plane of the line *xx*, fig. 2.

Figure 2 is a plan or top view partly in section of the same, the plane of section being indicated by the line *yy*, fig. 1.

Figure 3 is a detail transverse section of the same taken on the plane of the line *zz*, fig. 1.

Figure 4 is a vertical central section of a modification of the machine taken on the plane of the line *xx'*, fig. 5.

Figure 5 is a horizontal section of said modification taken on the plane of the line *y'y'*, fig. 4.

Similar letters of reference indicate corresponding parts.

My invention consists in a "new way" of combining the hullers and sieves for taking off the outer cuticle of grain and leaving the body thereof in its entirety.

It also consists in a new way of applying stone ribs within a metal case to act in conjunction with the rotary grinder.

It consists, also, in a new way of applying sections of stone to form the shell by combining therewith certain means for retaining them in place.

A in the drawing represents the cylindrical shell of my improved hulling-machine.

It constitutes the frame or supports of the machine, is set vertically upon legs or standards *aa*, has a bottom, *b*, and top plate *c*, and a step, *d*, in the bottom for the support of a central vertical shaft, B.

Upon the shaft B is mounted the hulling-cylinder C, which is surrounded by the shell A, and between the end plates *bc* of the same.

The shaft B carries above the shell a bevel-gear wheel, *e*, or other device for receiving rotary motion from a suitable driving-shaft, D.

When the shaft B is revolved the cylinder C is turned with it within the stationary shell A.

The cylinder C is preferably made of metal, bent or cast in such manner that its circumference forms alternate circular ribs *f* and grooves *g*, one above the other, along its entire length, as shown in fig. 1.

The cylinder may also be formed of stone, as in figs. 4 and 5, in which case the alternate ribs and grooves are cut into its circumference, as indicated.

If made of stone, I prefer to make each rib *f* waved in form, of a *cyma-reversa*, as in fig. 4, the grooves being

like open troughs at the bottoms of the ribs. The ribs may, however, also be made with straight sides, as in fig. 1, with rounded inner connections to form the grooves. In every case, however, the ribs extend outward and upwardly from the body of the cylinder, so that the grooves are troughs to retain the grain.

The shell A has inwardly-projecting inclined ribs *h*.

These ribs enter the grooves of the cylinder C as shown, while the ribs of the cylinder enter the grooves or spaces between the ribs *h*.

In case the shell A is made of metal, the ribs *h* are formed of separate stones, *ii*, which are fitted through inclined slots in the shell, and suspended by means of projecting pins *j*, as is clearly shown in fig. 1.

For the reception of these stones the metal shell should be made of double thickness, as at K in fig. 1, or of considerable width, to furnish a broad support to each stone.

In the metal shell is provided a series of open sections, *ll*, which are lined with sieves, *m*, which sieves are about in line with the inner circumference of the shell.

Along these sections the ribs *h* are continued by means of metallic projections *n*, which are affixed to the frames or supports of the sieves.

If the shell is not made of metal it can, as in figs. 4 and 5, be composed of stones, *oo*, which are interposed between the heads *bc*, having their inner faces grooved and ribbed, as shown. The sieve sections are in this case also made of iron, substantially in the same manner as for the metallic shell.

When the shell is made of stone a frame, E, is required for holding the heads *bc* and supporting all parts in proper position.

F is a sheet-metal case or lining placed around the shell, between the heads *bc*, to protect the machine and prevent the dust from flying about.

The grain to be hulled is passed through a suitable spout or hopper, G, which may contain a feed-wheel, *p*, as in fig. 3, fed to the mill between the upper end of the cylinder and the upper head *c*. It is between these surfaces rubbed to have the peals loosened, and is by centrifugal force carried outwardly between the rubbed and grooved sides.

The cylinder can be adjusted vertically by fitting the step *d* upon a lever, H, so that the space above it may be made more or less narrow, as well as to bring the ribs *f* and *h* more or less close together.

The bran and removed peals are ejected through the sieves in the side of the shell, while the grain works down to the bottom of the shell, where it is discharged through a suitable aperture, *q*.

The matter ejected through the sieves escapes into suitable receptacles through apertures *r*.

By the adjustability of the cylinder the machine

can be properly set for larger or smaller, softer or harder grain, and to such having thicker or thinner skins.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The rotating cylinder C, having downwardly-obliqued grooves *g* arranged one above another, combined, as described, with the stationary cylinder A having internal and correspondingly-oblique ribs *h*, and the sieves *m*, arranged as and for the purpose specified.

2. The stones *i*, arranged separately above one

another, and suspended on projecting pins *j* of the shell to form stationary ribs of a hulling-machine, as set forth.

3. The heads *b c*, frames E E, and metal case F, combined with the series of stones *o* ribbed on their inner faces, and arranged as and for the purpose specified.

The above specification of my invention signed by me this 8th day of July, 1870.

MICHAEL HOFFMANN. [L. S.]

Witnesses:

[L. S.] MAX KOELBL,

[L. S.] LORENZ MOSER.