(No Model.)

L. GATHMANN.

MACHINE FOR SPLITTING GRAIN.

No. 254,812. Patented Mar. 14, 1882.

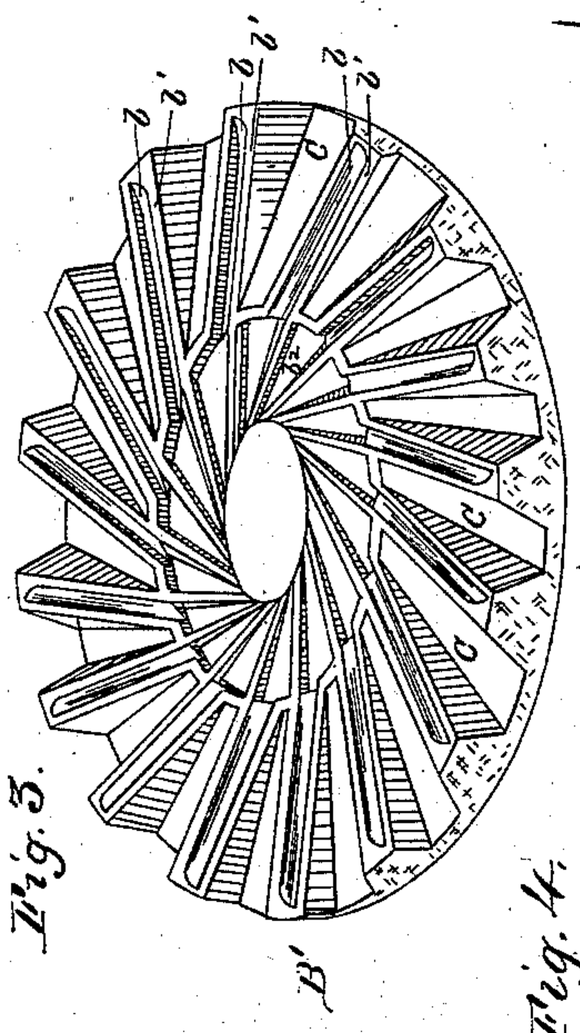

Fig. 3.

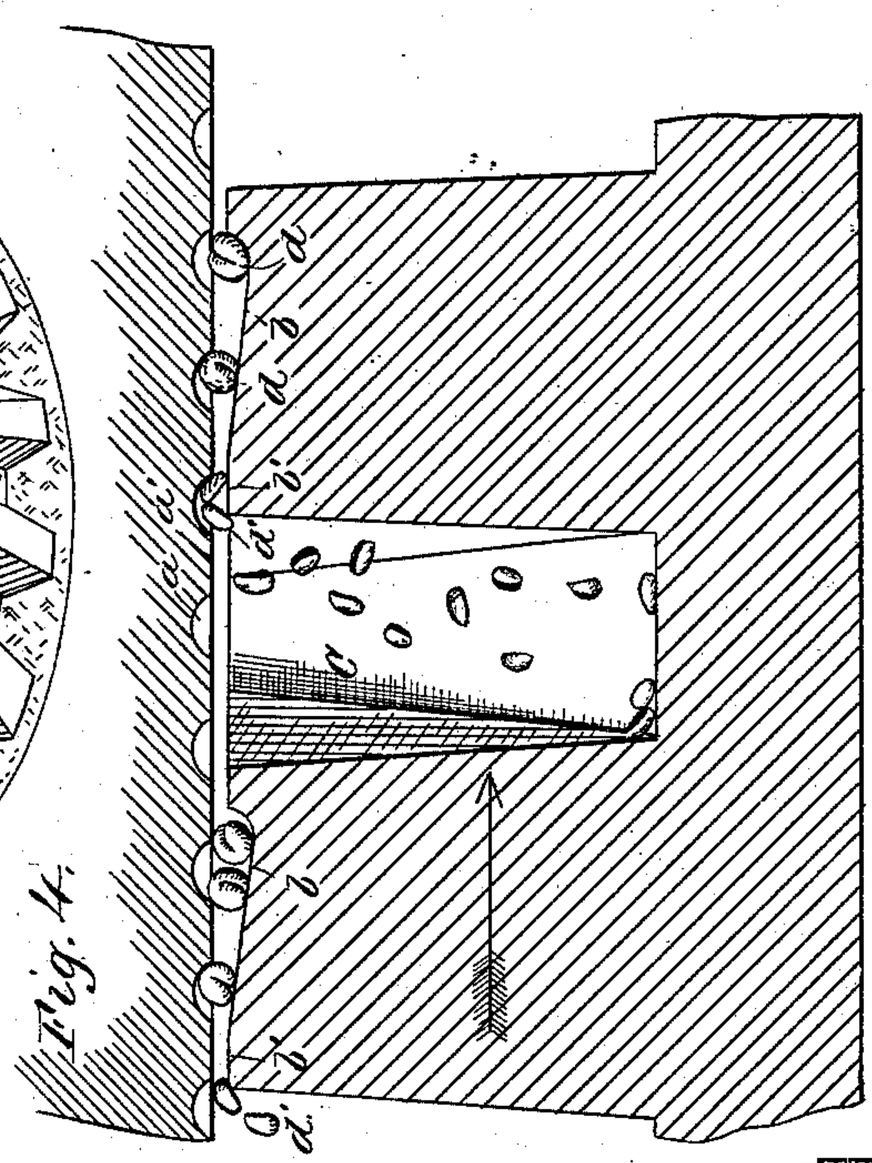

Fig. 4.

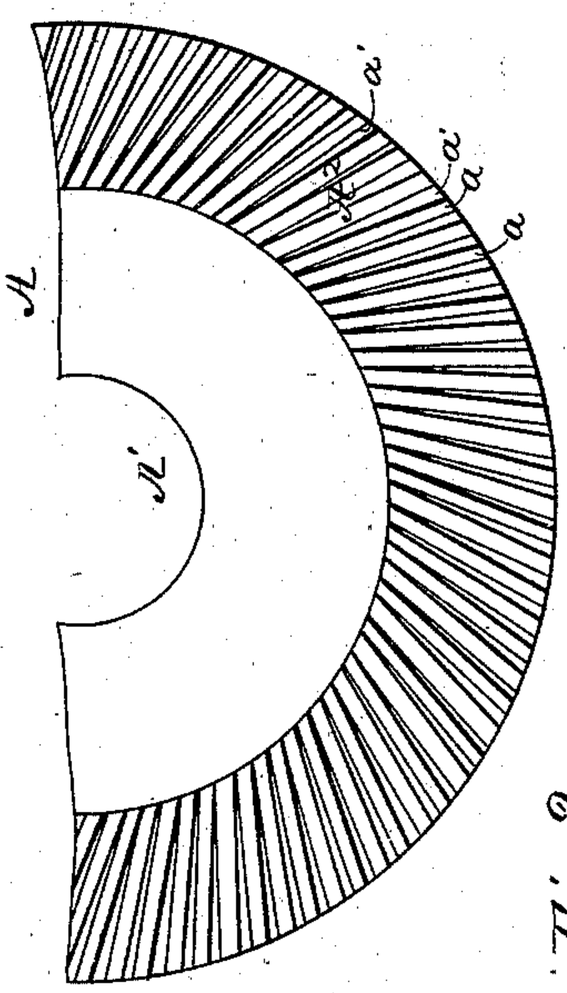

Fig. 1.

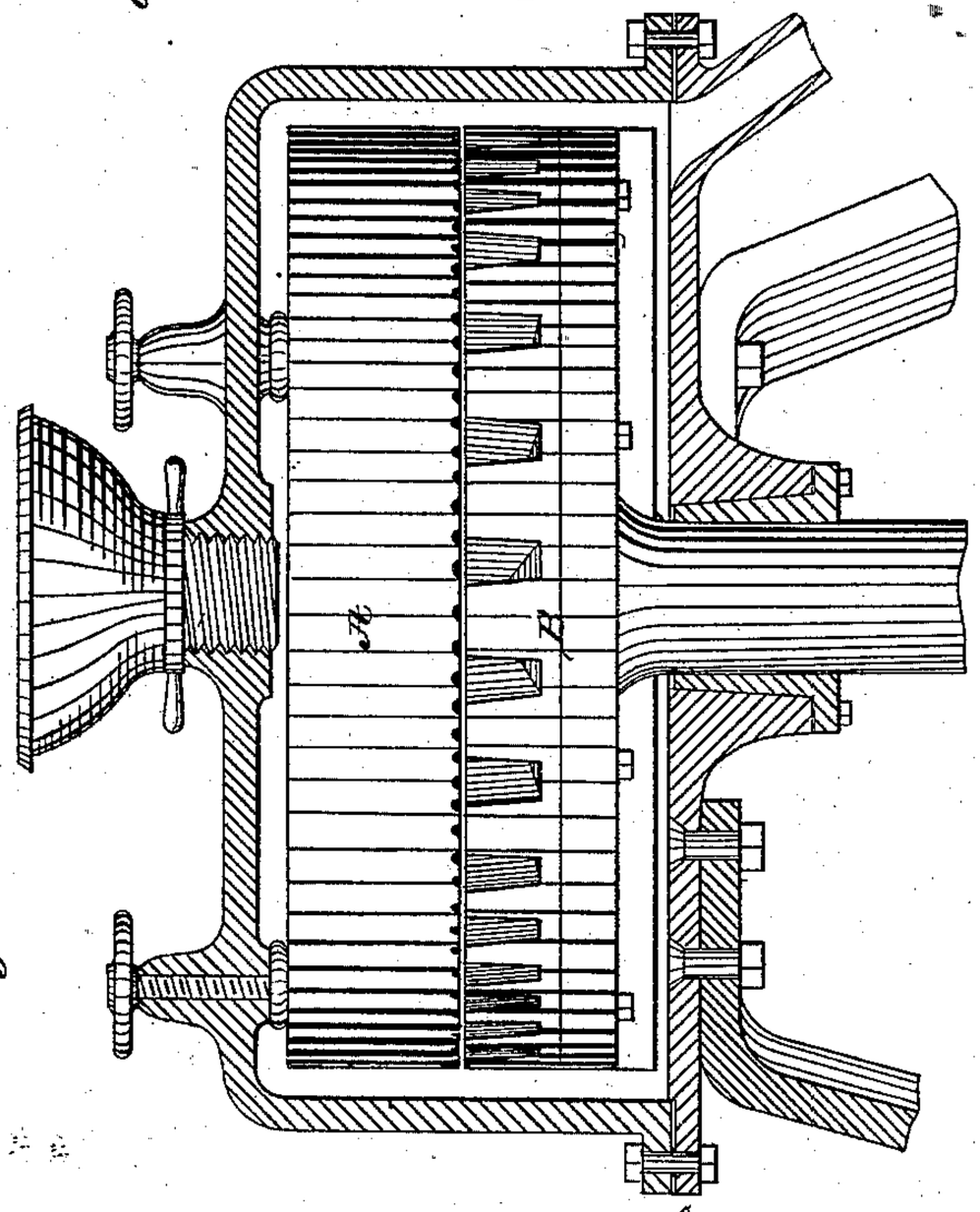

Fig. 2.

Witnesses.
Einar Rasmussen
F. W. Adams.

Inventor
Louis Gathmann
per W. E. Dawson
Attorney

UNITED STATES PATENT OFFICE.

LOUIS GATHMANN, OF CHICAGO, ILLINOIS.

MACHINE FOR SPLITTING GRAIN.

SPECIFICATION forming part of Letters Patent No. 254,812, dated March 14, 1882.

Application filed June 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GATHMANN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Splitting Grain; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to disk-machines for coarse-cracking, splitting, or degerminating grain; and it consists in the combination, with a smooth disk having furrows, the bottoms of which incline to the land-faces, of an opposing disk having radial flutes or rounded grooves, whereby the grain is more positively seized and borne over the ridges or lands of the opposite disk, substantially as hereinafter more fully set forth and claimed.

In the accompanying drawings, Figure 1 is a view of the fluted disk-face. Fig. 2 is an elevation of the two opposing disks in working relation in a vertical-axised machine, portions of the case being shown in central vertical section. Fig. 3 is a perspective view of a preferred form of furrowed disk to be used in opposition to the fluted disk. Fig. 4 is a fragmentary view of the opposing disks in vertical section transverse to their grooves and furrows, showing their action upon wheat.

A is a disk, made of iron, steel, porcelain, or any other suitably hard material, having a central feed-aperture, A′, and a marginal skirt, A^2, provided with radial or inclined flutes or rounded grooves *a*, of uniform width, and placed as near to each other as possible at their inner ends.

B is an opposing disk, of hard material, capable of being given a smooth surface, having an elevated margin or skirt, B′, corresponding in width with the skirt A^2 of the disk A, and provided with feeding-furrows *b*, the bottoms of which are inclined at an easy angle to the level of the lands *b′*. The surface of the lands and of the furrows *b* is smooth, so as to not abrade the grain integument as it passes over them, and so as to allow the latter to slip thereon freely in the operation hereinafter described. The disk B is preferably the runner, and is in that case provided with ribs b^2 in the bosom, arranged to direct the grain into the furrows *b*. Said disk B, as here shown, is of a special construction, more fully set forth in another patent of even date herewith. Briefly stated, such special construction consists, first, in the feeding-furrows *b* terminating inside the margin of the disk, so that no escape of the grain therefrom is possible, except over the adjacent land or ridge *b′*; and, second, in the deep, abrupt, walled recesses C, one following each land *b′*, and extending from a point outside the inner margin of the skirt B′, and opening broadly at the margin of the disk, whereby the grain which passes over either one of the lands is at once discharged. The lands or ridges *b′* are of equal width with each other and throughout the length of each, so that all kernels of the grain mass are equally acted upon. While I prefer to use this form of disk in opposition to the fluted disk A, any ordinary or other form having the inclined-bottomed furrows *b* may be employed.

The purpose and effect of the fluted grooves *a* in the disk A, when combined with the disk B, having inclined-bottomed furrows *b*, is to catch the grain-kernels as they rise the incline of said furrows, to turn said kernels so that they will pass the lands nearly or quite longitudinally therewith, and to positively retain them until they have passed and been split by pressure from the lands *b′*. To this end said flutes *a* are sectionally less than a half-circle, so as to hold down the kernels therein retained against the opposing land or ridge *b′*, and so as to allow the kernels to spread therein in the act of splitting. The size of the flutes will of course be determined by that of the grain to be split. For whole wheat they should be, say, three-sixteenths of an inch in breadth at the face of the disk and, say, one-sixteenth of an inch in depth. The distance at which the opposing disks will be set apart is estimated from the bottoms of the flutes *a* to the opposing lands *b′*. The faces *a′* of the disk A, which intervene between the flutes *a*, perform no work, but are made smooth in order that a kernel caught between said faces and the incline of the opposite furrows may slide thereon until

reached and caught by the next adjacent flute. When the operation is upon wheat or other similar lobated grain the effect is to split the kernels through the crease.

In Fig. 4, *d d* represent whole kernels of wheat, and *d' d'* half-kernels or fragments of wheat, passing or having passed the point of splitting pressure.

In the splitting of wheat for the purpose of detaching the germ preparatory to further reduction, it is especially desirable that the half-kernels shall be discharged as soon as produced and without further action upon them. Wherefore the special form of furrowed and recessed disk B here illustrated is particularly adapted for this work.

While I prefer the arrangement shown of the disks A and B on a vertical axis, the axis of said disks may, if desired, be horizontal.

I claim as my invention—

1. In combination with a smooth-surfaced disk provided with furrows *b*, having inclined-bottom faces, an opposing disk, A, having grooves *a*, of fluted or rounded form, substantially as described, and for the purposes set forth.

2. The combination of the disk A, having the grooves *a*, of fluted or rounded form, and the disk B, having the alternating furrows *b*, lands *b'*, and recesses C, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

LOUIS GATHMANN.

Witnesses:
M. E. DAYTON,
JESSE COX, Jr.