2 Sheets—Sheet 1.

R. FROST.

Apparatus for Reducing Semolina, Middlings, or Sharps to Flour.

No. 201,000. Patented March 5, 1878.

Fig. 2.

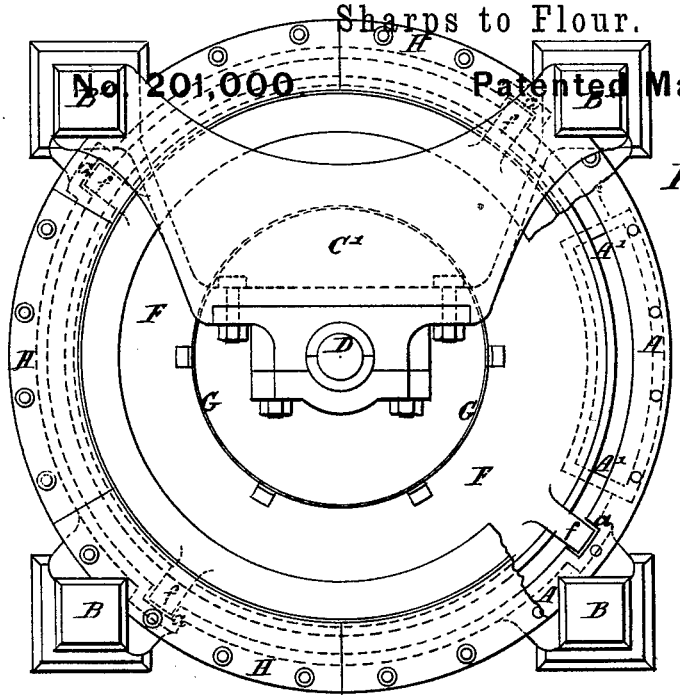


Fig. 1.

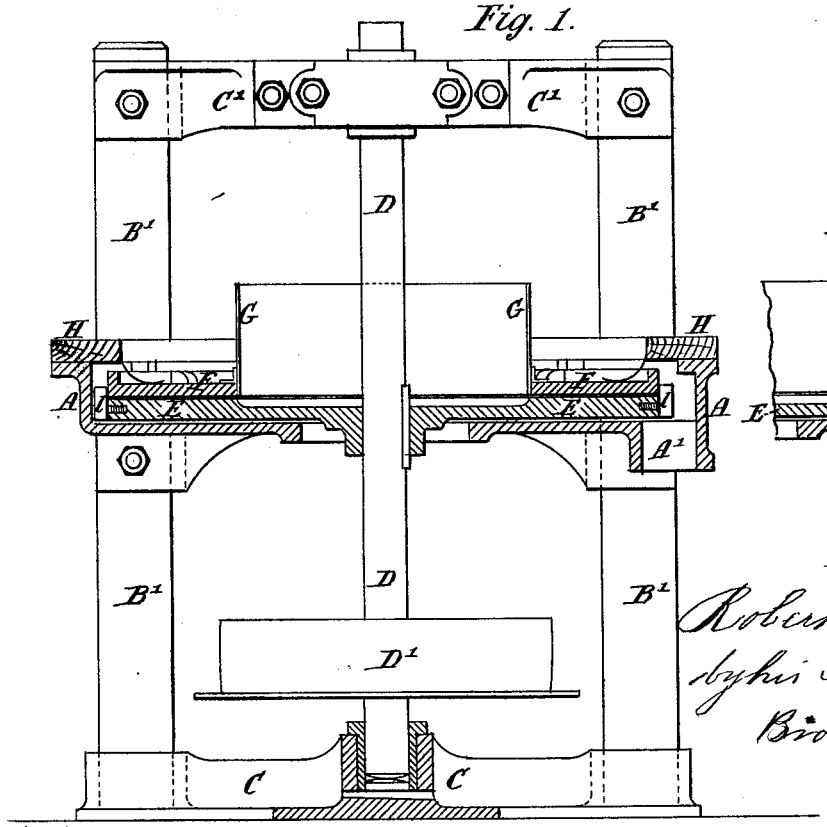
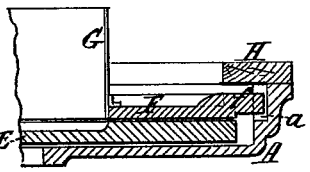


Fig. 5.



Inventor
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Witnesses
Chas. J. Raymond
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2 Sheets—Sheet 2.

R. FROST.

Apparatus for Reducing Semolina, Middlings, or Sharps to Flour.

No. 201,000. **Patented March 5, 1878.**

Fig. 4.

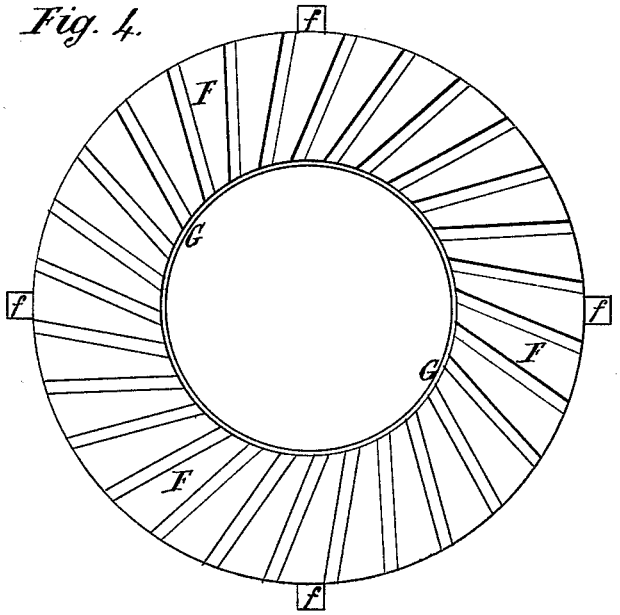
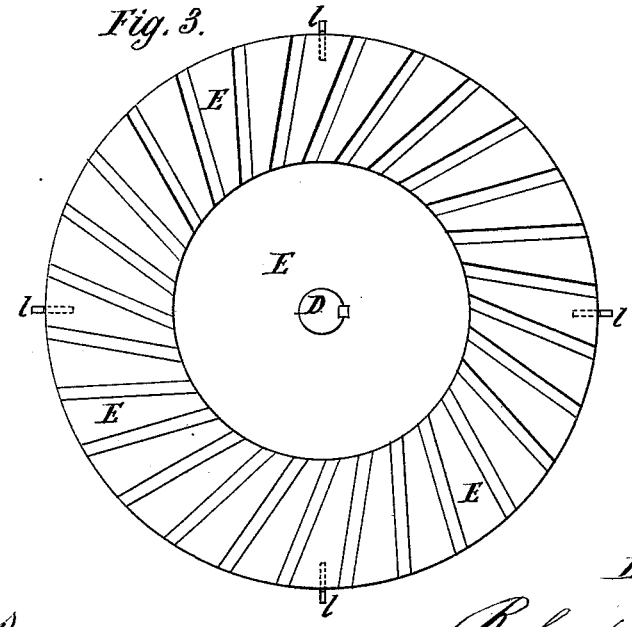


Fig. 3.



Witnesses
Fred. Haynes
L. Allen

Inventor
Robert Frost
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

ROBERT FROST, OF CHESTER, ENGLAND.

IMPROVEMENT IN APPARATUS FOR REDUCING SEMOLINO, MIDDLINGS, OR SHARPS TO FLOUR.

Specification forming part of Letters Patent No. **201,000**, dated March 5, 1878; application filed September 20, 1877; patented in England May 24, 1877.

To all whom it may concern:

Be it known that I, ROBERT FROST, of Chester, in the county of Chester, England, have invented certain Improvements in Apparatus for Reducing Semolino, Middlings, or Sharps to Flour, of which the following is a specification:

The object of this invention is to reduce semolino, middlings, or sharps to flour without grinding up the bran that is combined therewith.

To this end, instead of submitting the semolino to the action of millstones, I provide the arrangement of apparatus shown in sectional elevation at Figure 1 of the accompanying drawing, and in plan view at Fig. 2, part of the annular cover being removed the better to show the interior construction of the apparatus.

In these figures, A is the mill-case, supported on standards B B′, which stand up from a cruciform casting, C. The standards B′ carry at their upper ends a casting, C′, which is fitted with a bearing for the spindle D. This spindle runs in a footstep in the casting C, and is driven by a belt passing over a pulley, D′, keyed to the spindle below the mill-case. E is a metal-disk runner, keyed to the spindle D. This runner is made by preference of cast-iron, the annular working-face of which is smooth, but grooved tangentially, as shown in the plan view, Fig. 3. Upon this runner I place a stationary disk of metal, F, faced similarly to the runner, as shown in the plan view, Fig. 4. This disk is provided with an eye, like a top millstone, and it has on its periphery studs *f*, which enter vertical grooves cast in the case A.

This arrangement of the top disk allows of its adjusting itself to the work, its weight serving to provide the requisite pressure for crushing the semolino, and the studs preventing its moving round with the runner.

Fitted to the center of the stationary disk F is a hoop, G, for receiving the semolino as it is delivered to the mill, and conducting it to the operating-surfaces. H is the cover of the case A, and to it is fitted a curtain of canvas or other flexible material, which will prevent the stive or any particles of fine flour being driven upward out of the case by the centrifugal action. A′ is the discharge-opening in the bottom of the case, and *a* are the vertical grooves in the case into which the studs *f* of the plate F project. This is best seen in the detached sectional view, Fig. 5, which shows that the plate F is free to rise under the upward pressure of an accumulation of semolino between it and the runner, and to fall as that accumulation is disposed of.

The semolino to be operated upon is delivered to the hoop G from a purifier, which serves to deprive it of the detached particles of bran and other impurities mixed with the semolino. When, therefore, the purified semolino is presented to the crushing-surfaces the attached portions only of the bran are carried in with it.

By the action of the smooth metal crushing-surfaces this bran is readily detached without disintegration, and it may then be separated from the flour by dressing, in any approved manner.

The runner E is provided at its periphery with scrapers *l*, which sweep the flour as it is formed to the opening A′, and deliver it out of the case into any suitable receptacle.

It will be understood that in my improved mill the semolino or reduced grain will be subject only to so much action as is due to the resisting power of the plate F to the semolino as it is carried round by the runner. In other words, the severe and positive action of the ordinary flour-mills is modified by leaving the plate F, which represents the top stone, free to adjust itself to the requirements of the work, and by this means all risk of the bran being ground up into fine dust, which will become inseparable from the flour, will be removed, and thus a flour of good color may be obtained from wheat of a comparatively inferior quality.

Having now explained the nature of my in-

vention, and the means of carrying the same into effect, I wish it to be understood that I claim—

The combination, with the runner E, faced as described, of the similarly-faced crushing plate or surface F, having a central feed-hole for the passage of semolino to the runner, such plate being supported by the runner and prevented from rotating by means of studs projecting from its periphery and entering vertical guides in the mill-case, substantially as specified.

Dated the 15th day of August, 1877.

ROBERT FROST.

Witnesses:

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Notary Public, Chester.

WM. HUMPHREYS,
Writing Clerk, Chester.