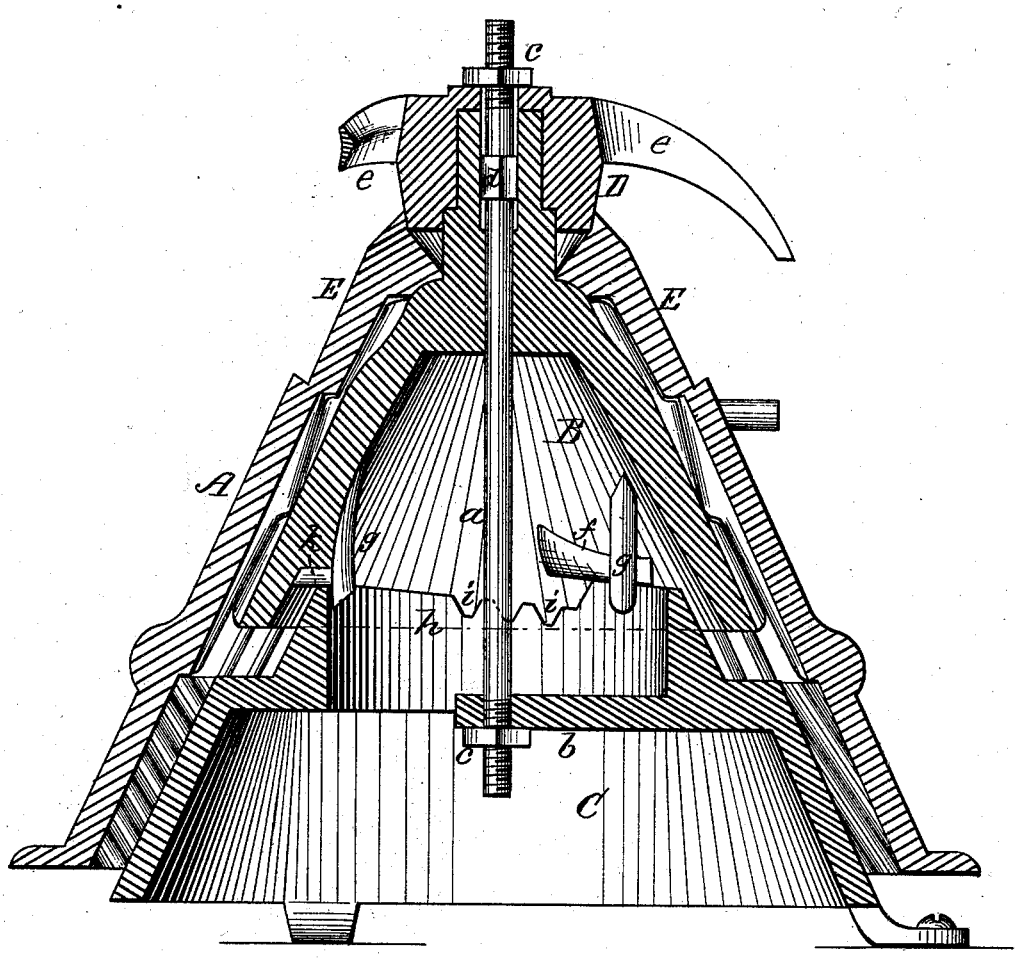
2 Sheets—Sheet 1.

L. LITCHFIELD.

Feed-Grinding Mill.

No. 219,166. **Patented Sept. 2, 1879.**

Fig. 1



WITNESSES
Nat. E. Oliphant.
Geo. R. Porter.

INVENTOR
Lyman Litchfield
per Chas. H. Fowler.
Attorney.

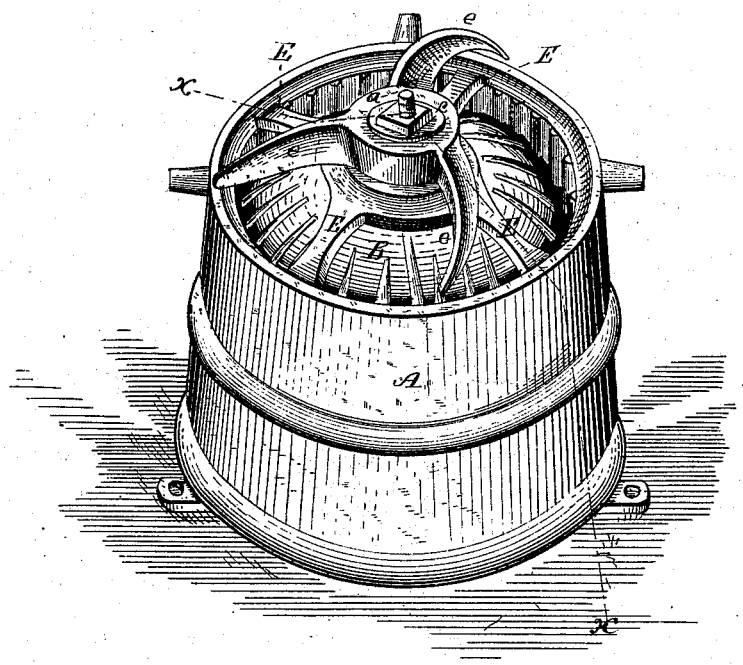
2 Sheets—Sheet 2.

L. LITCHFIELD.

Feed-Grinding Mill.

No. 219,166. Patented Sept. 2, 1879.

Fig. 2.



Witnesses;
T. Walter Fowler.
Nat. E. Oliphant.

Inventor;
Lyman Litchfield
per Chas. H. Fowler,
Attorney.

UNITED STATES PATENT OFFICE.

LYMAN LITCHFIELD, OF WATERLOO, IOWA, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE W. MILLER, OF SAME PLACE.

IMPROVEMENT IN FEED-GRINDING MILLS.

Specification forming part of Letters Patent No. **219,166**, dated September 2, 1879; application filed June 11, 1879.

To all whom it may concern:

Be it known that I, LYMAN LITCHFIELD, of Waterloo, in the county of Black Hawk and State of Iowa, have invented a new and valuable Improvement in Feed-Grinding Mills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a vertical section of a mill embodying my invention, taken on line *x x* of Fig. 2. Fig. 2 is a perspective view of the same on a reduced scale.

The present invention has relation to an improved mill for cracking and grinding corn into feed for farmers' use, the grinding-cone of the mill being formed in two sections, and so constructed that they can be adjusted with relation to the outer casing or shell to grind coarse or fine, as will be hereinafter more fully described, and subsequently pointed out in the claim.

In the accompanying drawings, A represents the outer shell, formed of one piece of metal, with a spider, E, at its top, and having upon its interior circumference the usual grinding-surface.

The stationary grinding-cone is formed of two sections, B C, and have upon their exterior the customary grinding-surface, so that the corn will be ground to the required degree of fineness as it passes between it and the interior surface of the shell A. The two sections B C of the grinding-cone are held together by a central rod, *a*, passing through the apex of the cone or upper section, B, and through a spider, *b*, upon the inner circumference of the lower section, C.

The rod *a* is formed near its upper end with a square shoulder, *d*, to prevent the same from turning, the rod being tightened by nuts *c* upon the screw-threaded ends of said rod. The nut upon the upper end of the rod *a* is screwed down upon a socket, D, having triangular or curved stationary arms *e*, that serve as stirrers, acting with the outer shell, A, and serving to keep up a uniform supply of corn to the grinding-surfaces.

The upper section, B, of the cone is formed with a series of inclined shoulders, *f*, and guide-fingers *g*, and the lower section, C, is formed with an annular rim, *h*, somewhat smaller in circumference than the inner circumference of the largest part of the upper section, B, so that the section will fit over the rim *h*.

The rim *h* is formed with steps *i*, into which fit projections *k*, in form to correspond with the steps *i*.

The advantage of constructing the cone to admit of its being adjusted to regulate the degree of fineness in grinding, instead of the outer shell, admits of the shell being made in one piece, and also avoids the necessity of a multiplication of bolts and nuts or other fastening devices, thereby greatly lessening the cost in the manufacture of this class of mills.

In setting up the mill the upper section, B, of the grinding-cone is brought as close to the lower section, C, as possible, and when wear takes place said upper section is raised the required distance to compensate for wear.

In regulating the position of the upper section of the grinding-cone, it is turned until the projections *k* register and rest in the required steps *i*, while the shoulders, which are inclined to correspond with the inclinations of the rim *h*, rest upon the rim, the fingers *g* passing over upon the inside of the rim, to hold steady the upper section and retain the projections *k* in the steps. After this adjustment has been made, the screw-rod *a* is tightened by the screw-nuts upon the ends thereof.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A feed-grinding mill consisting of the grinding-cone formed in sections B C, the upper section, B, having inclined shoulders *f*, fingers *g*, and projections *k*, and the section C having the rim *h* and steps *i*, in combination with the outer shell, A, and the central rod, *a*, with nuts *c*, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LYMAN LITCHFIELD.

Witnesses:
GEO. W. MILLER,
JOSEPH TAYLOR.