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UNITED STATES PATENT OFFICE.

FREDERICK A. GARDNER, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF AND ROBERT DUNBAR & SON, OF SAME PLACE.

IMPROVEMENT IN MILLS FOR GRINDING TORTILLA, GREEN CORN, &c.

Specification forming part of Letters Patent No. **220,525**, dated October 14, 1879; application filed August 20, 1879.

To all whom it may concern:

Be it known that I, FREDERICK A. GARDNER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Mills for Grinding Tortilla, Green Corn, or other similar material, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a vertical section through a portion of the mill, showing the grinding-cone, the means for adjusting it, and the feeding mechanism; also, the base attached to a table, bench, or other horizontal support. Fig. 2 represents a back view with the removable portion of the hopper taken off; Fig. 3, a side elevation of the lower portion of the mill, showing the base attached to a vertical support or wall; and Fig. 4 represents a plan or top view of upper part of the mill.

The object of this invention is to produce a mill that is simple and durable, and that may be conveniently attached either to a vertical or horizontal support, and be easily put together or taken apart, so that all the parts can be readily reached and washed, as will be more clearly understood by reference to the drawings, in which—

A A¹ represent the mill-hopper. The part A is kept in place by the thumb-nut A² and hooks and pins A³. Each part of the hopper is provided with projecting pieces B, to embrace the shaft B¹ of the feeding device B², so as to hold it and allow it to turn when both parts are in place, as shown in Figs. 1 and 4. The removal of the part A releases the feeding mechanism B¹ B² and grinding-cone shaft C. The cone C¹ and shaft B¹ are geared together at C² C³, so that the gearing is inside of the mill, as shown. The grinding-cone C¹ is arranged to turn easily on the shaft C, and

is connected with the handle D, so as to turn with it, and be easily detached when necessary. It is kept in place by a spring, D¹, and thumb-nut and screw D², the arrangement being such that the cone will yield as the material is forced through it by the spirally-arranged wings or blades B² of the feeding device and the operation of grinding.

E represents a thumb-nut and screw for connecting the mill to the base E¹. That portion of the base to which the mill is attached is formed at an angle, E², and the lower part or foot, I, of the mill is made to correspond, so that it may be connected to a horizontal support, as in Fig. 1, or to a vertical support, as in Fig. 3, so that the mill can be used in either position, as shown.

The material to be ground being soft, the gearing C² C³ is not obstructed by it, but assists in the grinding. F is a mouth or lip over which the material passes as it leaves the mill, and H represents a spring-scraper. G is the case or concave for the grinding-cone.

I claim as my invention—

1. The concave G and grinding-cone C¹, having a suitable handle for operating it, and provided with the gearing C² at the smaller end, as shown, in combination with the shaft B¹, arranged within the hopper and provided with the gearing C³ and two or more spirally-arranged wings, B², for the purposes described.

2. The hopper consisting of the removable parts A and A¹, each provided with the holding-pieces B, adapted to form bearings for the shaft B¹, in combination with the shaft C and thumb-nut and screw A², for holding the several parts together, substantially as specified.

FREDERICK A. GARDNER.

Witnesses:

JAMES SANGSTER,
ROBERT DUNBAR.