(No Model.)

B. NICHOLS & G. E. WATSON.

REDUCTION MILL.

No. 263,948. Patented Sept. 5, 1882.

Fig. 1.

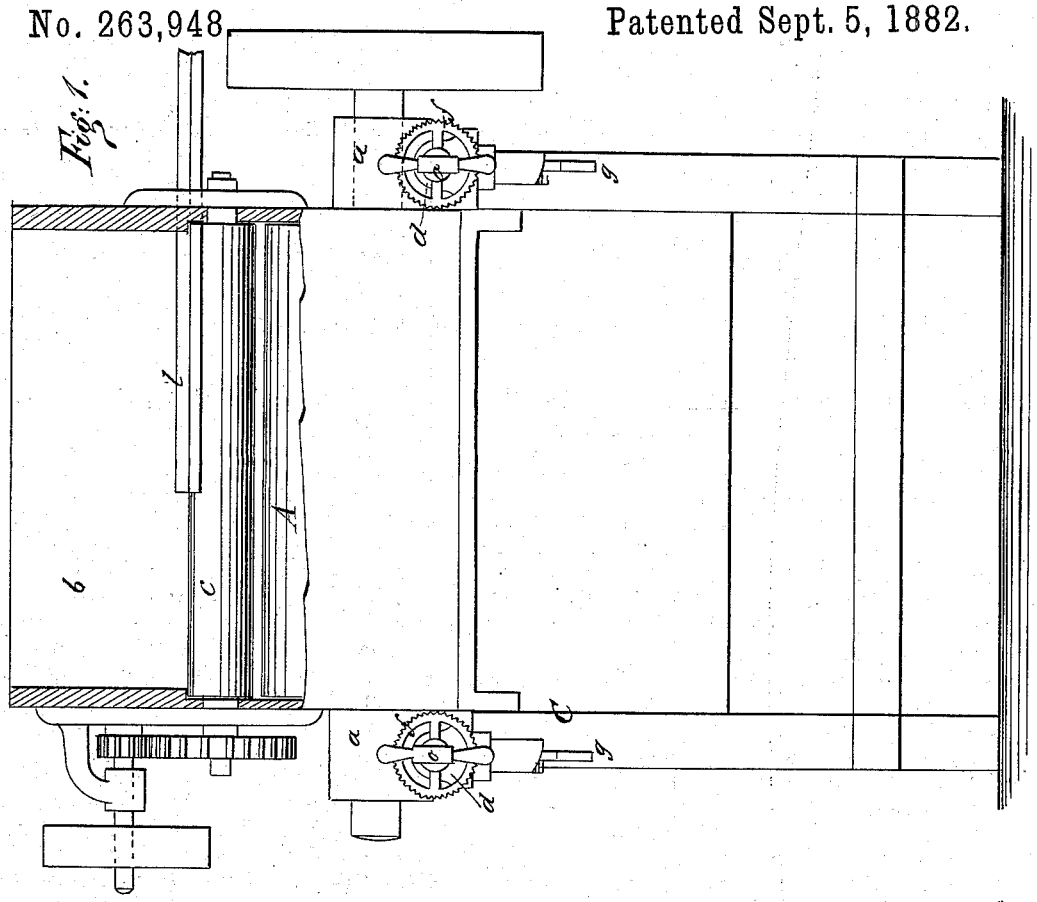
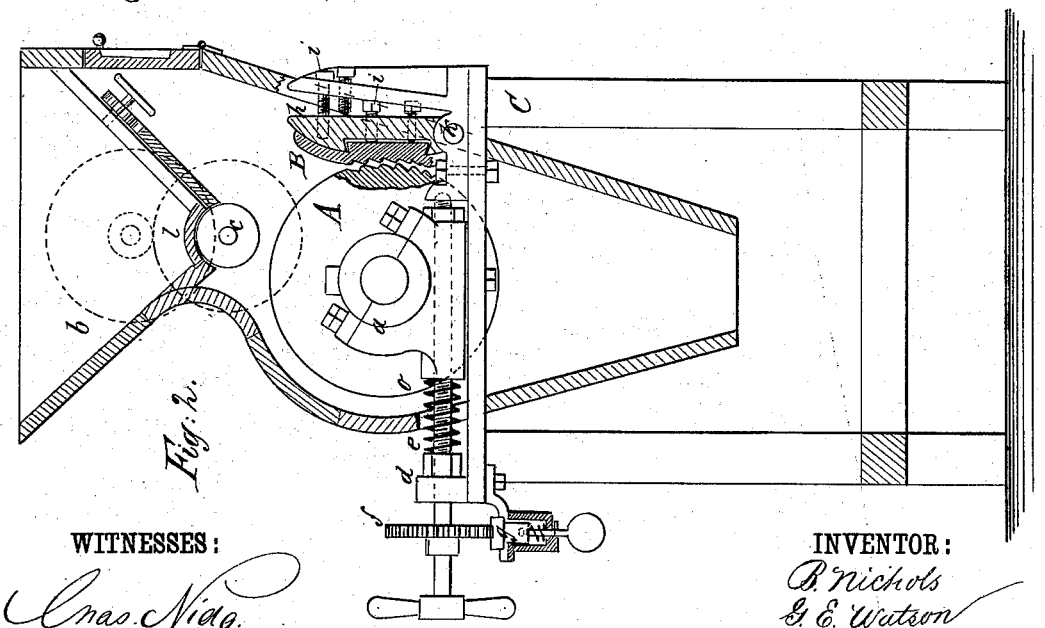


Fig. 2.



WITNESSES:

Chas. Nida.

C. Sedgwick

INVENTOR:

B. Nichols

G. E. Watson

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN NICHOLS AND GEORGE E. WATSON, OF KENNEDY, NEW YORK.

REDUCTION-MILL.

SPECIFICATION forming part of Letters Patent No. 263,948, dated September 5, 1882.

Application filed April 5, 1882. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN NICHOLS and GEORGE E. WATSON, of Kennedy, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Reduction-Mills, of which the following is a full, clear, and exact description.

Our improved mill is designed for grinding all kinds of grain and for breaking and degerminating wheat.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation, partly sectional, of our improved mill; and Fig. 2 is a vertical transverse section of the mill.

A is a roller journaled in boxes *a a*, and B is the surface-plate. The roller and plate are arranged on a suitable frame, C, which is provided with a feed-box, *b*, and feed-roller *c*, the latter being sustained at the lower end of the feed-box. The boxes *a*, carrying the roller, are loose upon screws *o o*, that are sustained in screw-threaded bearings at *d d*. On the screws, between the boxes and the bearings, are spiral springs *e e*, which force the boxes and rollers toward the surface-plate B, so that the roller is held nearly in contact with the surface-plate. The distance can be varied by drawing the boxes out with the screws; and to prevent accidental movement of the screws they are provided with ratchet-wheels *f*, engaged by spring-pawls *g*. The surface-plate B is of any suitable width, according to the extent of surface required. It is made as a plate held in a dovetail mortise of a carrying-block, *h*, so that the plate can be removed for repairs or substitution of another. The block *h* is hung by pivots *k* at its lower end, and is set up and held in place by screws *i*, so that it can be adjusted at the desired angle or tangent to the roller. The roller and plate are made of any suitable material, preferably chilled iron, and are provided with any number of lands and furrows of any required form, according to the character of work to be done.

In operation the grain passes from the feed-box and roller *c* to a point between roller A and the surface-plate B. At the bottom of hopper *b* and above the feed-roller is fitted a slide, *l*, adapted to be adjusted back and forth in the hopper by any suitable means for bringing a greater or less length of the grinding-surface into use. The mill is adapted for grinding and pulverizing grain and other material, for degerminating wheat, and also for grinding damp grain or wet corn in the manufacture of starch, &c.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The grinding-mill, substantially as shown and described, consisting of the grinding-roller A, the grinding-plate B, mechanism for adjusting said parts, hopper *b*, feed-roll *c*, and slide *l*, for the purposes specified.

BENJAMIN NICHOLS.
GEORGE EMMER WATSON.

Witnesses:
CHARLES E. STRATTON,
CHARLES A. HAUNT.