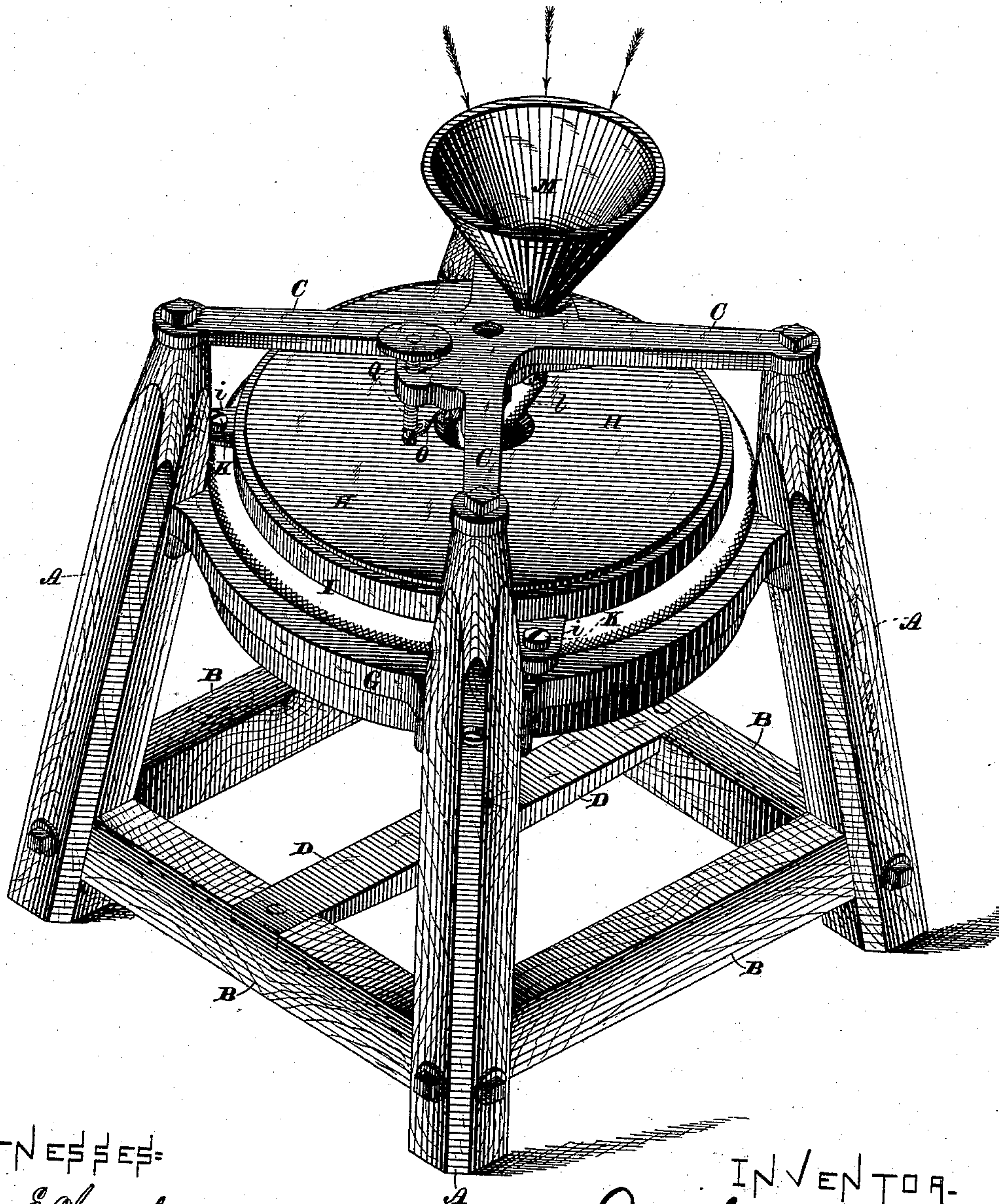


J. H. REDFIELD.  
Mill-Feeding Apparatus.

No. 221,899.

Patented Nov. 18, 1879.

Fig. 1.



WITNESSES=

Jas. E. Hutchinson.  
 Henry C. Hazard

INVENTOR.

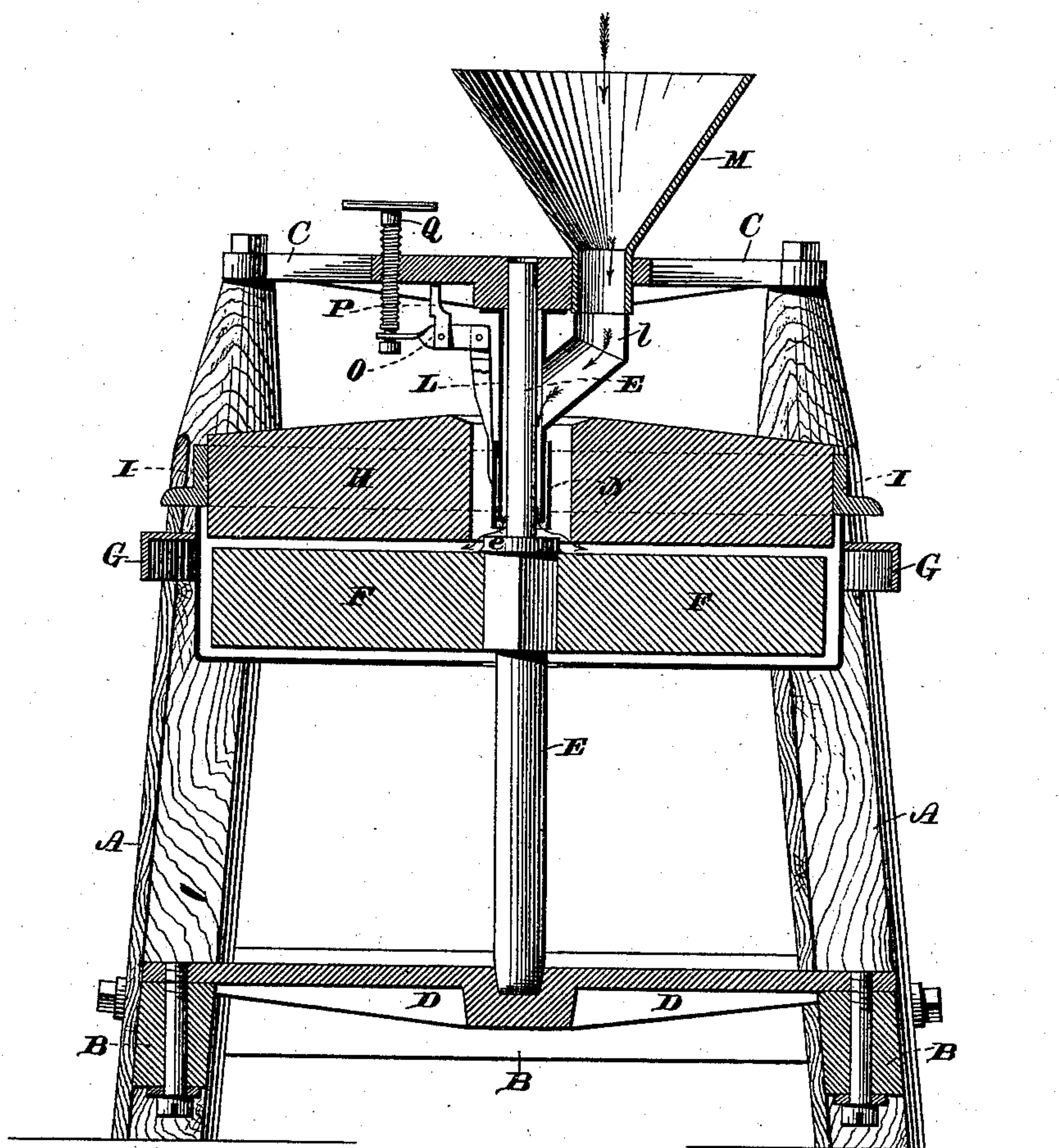
Jas. H. Redfield, by  
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Fig. 2.



WITNESSES

Jas. C. Hutchinson.

Henry C. Hazard

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# UNITED STATES PATENT OFFICE.

JAMES H. REDFIELD, OF SALEM, INDIANA.

## IMPROVEMENT IN MILL-FEEDING APPARATUS.

Specification forming part of Letters Patent No. **221,899**, dated November 18, 1879; application filed March 12, 1879.

*To all whom it may concern:*

Be it known that I, JAMES H. REDFIELD, of Salem, in the county of Washington, and in the State of Indiana, have invented certain new and useful Improvements in Mill-Feed; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a grinding-mill having attached thereto my improved feeding mechanism, and Fig. 2 is a vertical central section of the same, the full and dotted lines showing the different positions of the parts employed for regulating the flow of the grain.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable a "silent feed" to be applied to a grinding-mill in which a "stiff spindle" is employed; and to this end it consists, as an improvement in feeding devices for under-run stiff-spindle grinding-mills, and in combination therewith, in a tube which incloses the spindle above the runner and a lateral branch tube that extends to and connects with a hopper located above, whereby grain from said hopper may be caused to pass into the space between the grinding-stones, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A and A represent four posts, connected together at or near their lower ends by means of suitable cross-bars B and B, and at their upper ends by a metal spider, C, the whole forming the usual supporting-frame for the operating mechanism of a mill.

Secured upon and extending between two of the cross-bars B is a metal bar, D, within which and within the center of the spider C is journaled a spindle, E, that has secured near its longitudinal center a millstone, F, for which said spindle forms a pivotal support.

Secured to or within the posts A, at or just below the upper edge of the posts A, is a metal plate, G, which encircles said runner and furnishes a support for an upper stone, H, that has the usual size and form with relation to the like features of said runner.

Closely embracing the periphery of the upper stone, H, is a metal band, I, which is provided at three equidistant points with radial arms *i*, each of which receives a screw, K, that passes downward into the plate G, and furnishes a means whereby the lower or grinding surface of said stone may be made parallel with the upper surface of the lower stone or runner, F.

The spindle E, at or slightly above the upper face of the runner F, is provided with a horizontally-projecting shoulder, *e*, and above the same is surrounded by a metal tube, L, which tube extends from the spider C downward nearly to said shoulder, and near its upper end has a branch, *l*, that extends outward and upward, and at the upper side of said spider receives the neck of a funnel-shaped hopper, M.

Surrounding the tube L, below the branch *l*, is a second tube, N, which loosely incloses the former and is raised or lowered by means of a lever, O, that is suspended horizontally within a pivotal central support, P, which extends downward from the spider C, and has its inner end connected with said tube, so that by raising or lowering its outer end said tube will be correspondingly depressed or raised.

A screw, Q, passing downward through a correspondingly-threaded opening in the spider C, has its lower end swiveled within the outer end of the lever O, and furnishes a means whereby said lever may be moved to and secured in position, as before described.

The operation of the mechanism is as follows, viz: When the mill is in use grain is admitted to the hopper M, and the tube N then raised above the shoulder *e* sufficiently to permit said grain to escape from the tube L into the space between the stones, the amount of grain thus escaping being governed by the distance to which said tube or gate N is raised.

In consequence of the discharge of grain from the entire circumference of the shoulder *e*, the supply is even and uniform to the grinding-surfaces, by which means the capacity of the mill is materially greater than would be possible were grain fed at one point only.

The angle in the branch tube *l* changes the direction of the downward current of grain and breaks the force of the same, so as to pre-

vent it from crowding into and choking the stones, which result would follow the use of a hopper that surrounded the spindle and furnished a direct passage to the tube L.

The term "stiff-spindle under-run grinding-mill," used in this specification, is applied to a mill in which the lower stone or runner is rigidly attached to a spindle that projects through the upper stationary stone and has its bearings above the latter and below said runner, at or near its ends.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

As an improvement in feeding devices for

under-run stiff-spindle grinding-mills, and in combination therewith, a tube which incloses the spindle above the runner and a lateral branch tube that extends to and connects with a hopper located above, whereby grain from said hopper may be caused to pass into the space between the grinding-stones, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 19th day of October, 1878.

JAMES H. REDFIELD. [L. S.]

Witnesses:

DAVID M. ALSPAUGH,  
AZARIAH LANNING.