2 Sheets—Sheet 1.

N. HAMER.

FEED-REGULATING DEVICE FOR MILLSTONES.

No. 190,320. Patented May 1, 1877.

Fig. 1

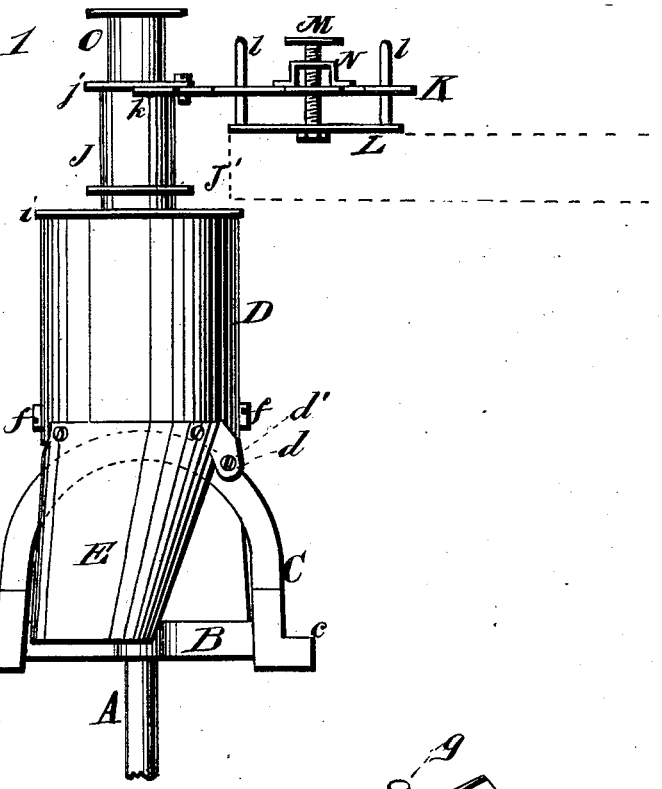

Fig. 2.

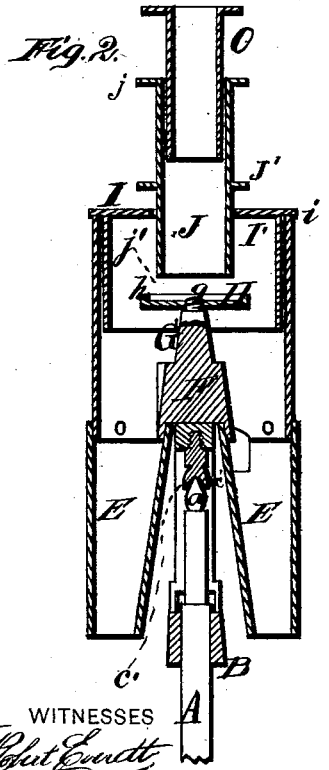

Fig. 3

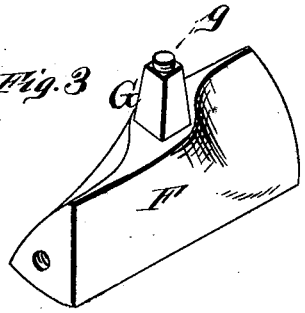

Fig. 4.

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2 Sheets—Sheet 2.

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Fig. 5.

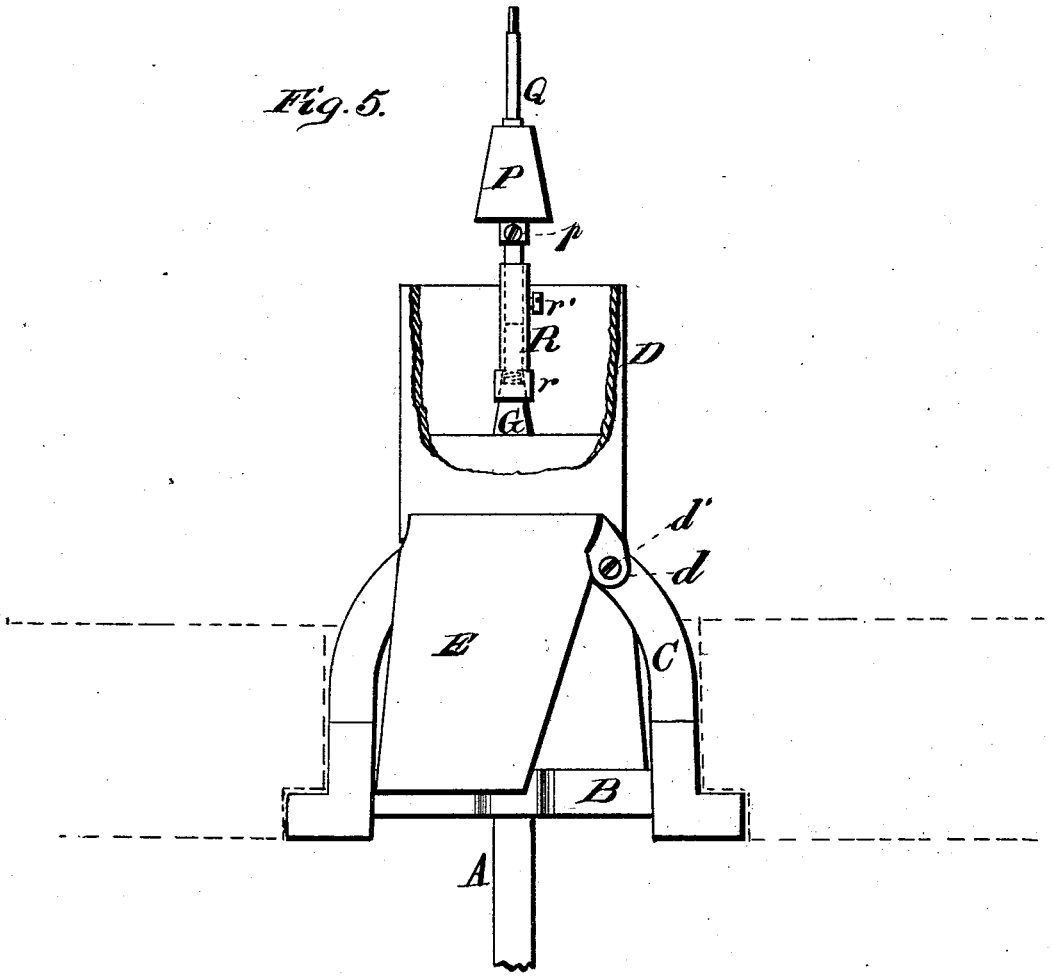

Fig. 6.

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IMPROVEMENT IN FEED-REGULATING DEVICES FOR MILLSTONES.

Specification forming part of Letters Patent No. **190,320**, dated May 1, 1877; application filed January 13, 1877.

To all whom it may concern:

Be it known that I, NATHANIEL HAMER, of Hooversville, in the county of Somerset and State of Pennsylvania, have invented a new and valuable Improvement in Millstone-Feeders; 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 representation of a front elevation of my millstone-feeder, and Fig. 2 is a central vertical sectional view thereof. Figs. 3 and 4 are detail views; and Fig. 5 is a front elevation, part sectional, with damsel attached. Fig. 6 is a plan view of the damsel.

My invention relates to improvements in millstone-feeders; and it consists in certain improvements therein, as will be hereinafter more fully set forth.

In the annexed drawings, A designates a millstone-spindle; B, a driver secured thereon; C, a balance-rynd, turning with said spindle and driver, and carrying the upper stone or runner by means of horns *c c*. The ends of said driver set into recesses *o o* in the lower part of the balance-rynd, which recesses are open at the bottom, as shown in Fig. 4. Said spindle is provided at its upper end with a conical knob or cock-head, *a*, which sets into a cup-like socket, *c'*, on the under side of the middle part of said balance-rynd. Thus the said balance-rynd is easily removable for the purpose of cleansing, though secured against casual detachment.

D designates a truncated funnel or conveyer for the grain as it falls from the hopper to the millstones. The middle part of the bottom of said funnel is arched, so as to rest firmly upon the top of balance-rynd C, and the said funnel is provided at its bottom on each side with rigidly-attached lugs *d d*, through each of which works a clamping-screw, *d' d'*, which bears against said balance-rynd.

Said lugs are arranged diagonally opposite to one another, and said screws effectually, though detachably, secure said conveyer or funnel D to said balance-rynd C.

On each side of said balance-rynd C a chute, E, extends downward from the bottom of funnel or conveyer D to the level of driver B. Said chutes E E are inclined in opposite directions, so as to deliver the grain directly between the stones at two opposite points of the eye. Heretofore grain has been fed to millstones in some cases by two chutes, discharging into the center of the eye, or into points intermediate between the center and the circumference. In all such cases, however, there is some inconvenience caused by upward drafts of air, which scatter the grain and fine particles about the eye of the runner, and also by the accumulation of coarser particles, whereby the said runner-eye is clogged, preventing the supply of grain. My improvement avoids this difficulty, the grain being fed directly to the stones at their inner line of contact. As all the devices hereinbefore described are in continual rotation on spindle A during grinding, the two points of distribution are continually changing, thereby securing an even supply of the grain to all parts of the grinding-surfaces.

F designates a scroll-shaped block or double deflector, (shown in detail in Fig. 3,) which directs the grain falling from above into the said chutes E E. Said double deflector is detachably secured in place by set-screws *f f*.

To the top of said block or deflector F is secured an upwardly-tapering truncated pyramidal holder or pedestal, G, which may be cast in one piece therewith, and on the upper end of said holder or pedestal G is formed a small screw threaded stud, *g*, which is adapted to receive a screw-tapped disk or elevated plate, H, that is provided on its upper side with a circumferential flange or rim, *h*.

I designates a cap or top piece, shaped like an inverted tub, and provided with a rigid flange, *i*, which sets upon the upper edge of funnel D. The cylindrical part I' of said cap sets within the upper part of said funnel, and the top of said cap is centrally perforated to receive a tube, J, which is vertically adjusta-

ble therein. The vertical adjustment of said tube increases or diminishes the distance between the lower end of the same and the said flange *h* on the said disk or elevated plate H, and thereby regulates the feed of grain.

Said adjustment is effected by means of the following devices: The upper end of tube J is provided with a horizontal annular flange, *j*, to which is secured the semicircular front end *k* of a vertically-movable plate, K. L designates a fixed plate, which may be secured to any convenient part of the framing under said movable plate K, and is provided with two guide-pins, *l l*, which pass up through holes in said movable plate, so that the latter may be adjusted vertically thereon. M designates an adjusting-screw, which is secured at its lower end to said fixed plate L, and works through a screw-threaded hole in said movable plate K, and also through a similar hole in a raised bracing-plate, N, on the upper side thereof. When the said screw is turned in one direction plate K and tube J are raised, increasing the feeding-opening *j'* between the lower end of said tube and raised flange *h;* when turned the other way, the opposite result is produced. Tube J is provided near its middle with an additional flange or collar, J', which prevents it from being adjusted downward so far as to close said opening *j'* entirely.

O designates an inner tube, which is connected by its upper end to the hopper, and serves to maintain unbroken the connection between said hopper and the conducting devices hereinbefore described when tube J is vertically adjusted. It thus prevents the grain from being spilled. Cap-piece I may be removed without affecting the operation of the other parts, as tube J is supported by the feed-regulating devices K L M; but said cap-piece is useful in preventing the dispersion of small particles of chaff and grain.

In Fig. 5 a damsel, P, is shown as substituted for the feeding-disk H. The shaft of said damsel consists of a tapering solid upper part, Q, and a lower tubular part or sleeve, R, adjustable longitudinally thereon. The lower end of said tubular part R is provided with an expanded socket, *r*, which receives and rests upon pyramidal holder G, hereinbefore described. The said sleeve is also provided with a clamping-screw, *r'*, which fixes it to the tapering solid part Q at any point of its longitudinal adjustment. The damsel shaft or shank is thus made longitudinally extensible or contractible; and as the said damsel P is shaped like a flattened conoid, such extension and contraction give, respectively, a longer or a shorter throw to the shoe, against which said damsel strikes in its rotation. Said damsel has a tapering axial perforation, which enables it to be sleeved upon said tapering solid part Q of the damsel-shank, where it is secured by a set-screw, *p*. Socket *r* and pyramidal holder or pedestal G are clamped together by any suitable means. A detail top view of said damsel P and solid part Q is given in Fig. 6.

In case the said damsel is used, the tubes J and O and cap-piece I may be dispensed with. All the other parts described rotate with the spindle A and the runner-stone. When disk or elevated plate H is used the tubes J and O are fixed and the other parts rotate, as aforesaid.

The raised flange or rim *h* on said elevated plate or disk prevents the grain from being thrown violently off in a tangent, and enables the feed to be regulated with great accuracy.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the conveyer D, provided with the arched bottom block F, inclined diverging chutes E E, and perforated lugs *d*, with the arched balance-rynd C, substantially as described, and for the purpose set forth.

2. A conoidal damsel, provided with an extensible shank, substantially as and for the purpose set forth.

3. The combination of the damsel P with tapering solid shank Q and sleeve R, having socket *r* and clamping-screw *r'*, substantially as set forth.

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

NATHANIEL HAMER.

Witnesses:

GEORGE R. GRIFFITH,

JAMES RUFUS HILL.