2 Sheets—Sheet 1.

H. F. WESCOTT & R. O. RANDALL.

ADJUSTING DEVICES FOR GRINDING MILLS.

No. 190,394. Patented May 1, 1877.

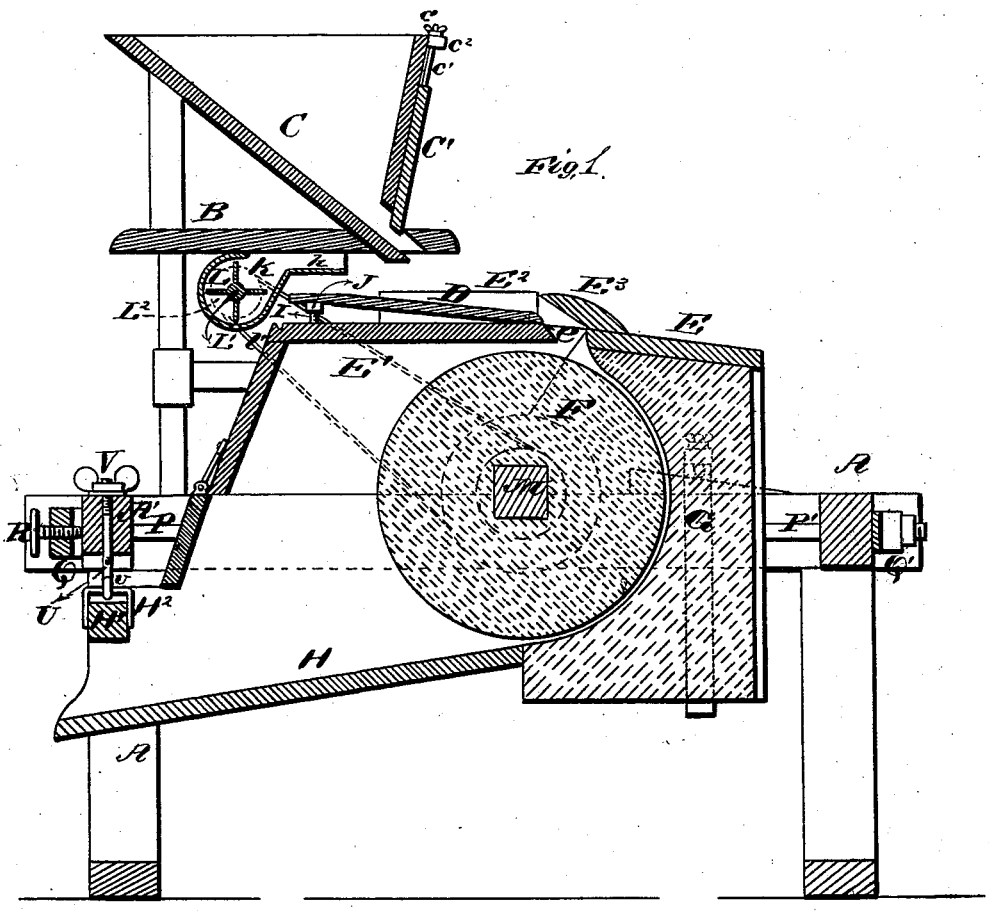

Fig. 1.

WITNESSES
E. H. Bates
George E. Upham

INVENTORS.
Henry F. Wescott.
Rodolphus O. Randall.
Gilmore, Smith & Co.
ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2

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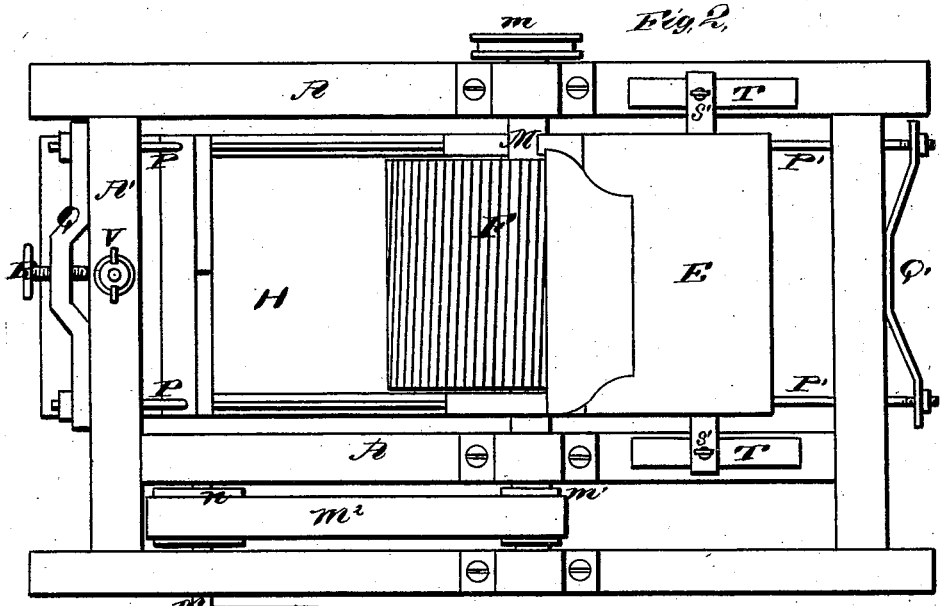

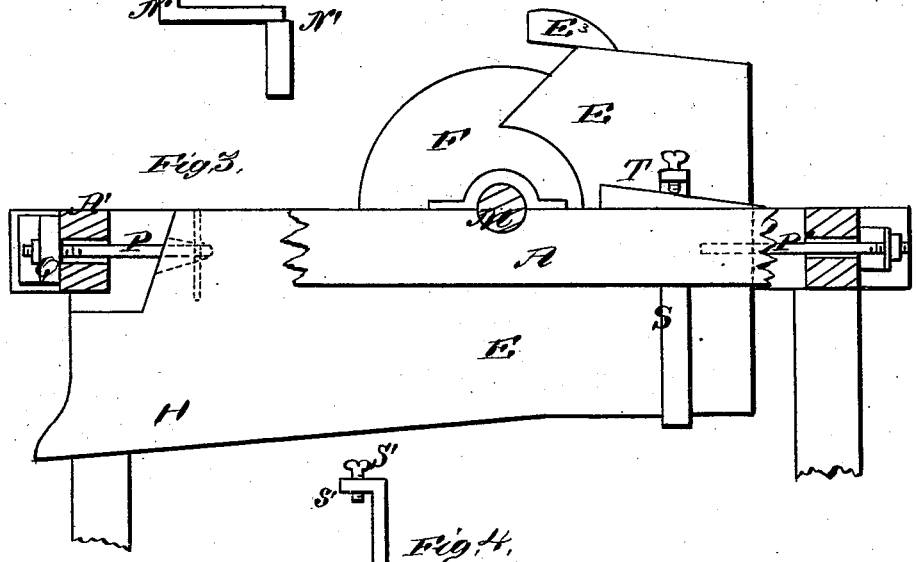

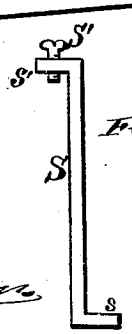

WITNESSES

E. M. Bates

George E. Upham

INVENTORS.

Henry F. Wescott.

Rockwell R. O. Randall.

by Munn & Co.

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY F. WESCOTT AND RODOLPHUS O. RANDALL, OF GADSDEN, ALA., ASSIGNORS OF ONE-THIRD THEIR RIGHT TO THE GADSDEN GRANGE MILL COMPANY, OF SAME PLACE.

IMPROVEMENT IN ADJUSTING DEVICES FOR GRINDING-MILLS.

Specification forming part of Letters Patent No. **190,394**, dated May 1, 1877; application filed February 3, 1877.

To all whom it may concern:

Be it known that we, HENRY F. WESCOTT and RODOLPHUS O. RANDALL, of Gadsden, in the county of Etowah and State of Alabama, have invented a new and valuable Improvement in Grinding-Mills; and we 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 central vertical section of our grinding-mills, and Fig. 2 is a plan view of the same. Fig. 3 is a side elevation, part sectional.

This invention relates to that class of grinding-mills having a cylindrical runner-stone and a segmental adjustable bed-stone; and it consists in certain devices for adjusting said bed-stone and holding the same to the runner, as hereinafter particularly set forth.

In the accompanying drawing, A designates the main frame of our apparatus, which supports, at or near its front end, a detachable table, B. Upon said table or stand B is placed a detachable hopper, C, the discharge end of which passes down through a slot or opening in the said table, so as to deliver the grain upon an inclined plane or shoe, D, which conducts it to an opening, *e*, in the top of case E, whence it falls between cylindrical runner F and segmental bed-stone G contained therein. These stones grind the grain, and the meal or flour thus produced passes out through an inclined chute, H, which is rigidly attached to the bottom of the rear end of said case. The upper front quarter E^1 of said case is made detachable, in order to allow the convenient inspection of the working of said stones. On the top of said case are formed two longitudinal guide-blocks, E^2, which prevent the grain from escaping at the sides of shoe D, and also a transverse stop-block, E^3, which prevents the grain from escaping at the lower end thereof, above opening *e*. The rear and lower end of said shoe or inclined plane D is journaled between the front ends of blocks E^2, and the front upper end of said shoe or inclined plane is perforated to receive the upper end of a small screw-threaded rod, I, which is set into the top of a case, E^1. On said rod I works an adjusting-nut, J, which supports the rear end of said shoe, and by which the inclination of said shoe may be varied. The above-described parts E^2 E^2, I, and J are all secured to the detachable quarter E^1 of said case E. To the under side of table B is secured a fan-casing, K, provided with a rear outlet, *k*, through which the blast is directed against the stream of grain descending from hopper C, for the purpose of blowing off all the chaff and lighter impurities accompanying the same. Said blast is derived from a fan, L, rotating within said case K on a shaft, L^1, which turns in bearings *l l* depending from the under side of table B. Said shaft is provided with two fixed collars or disks, to prevent endwise motion through said bearings, and also at one end with a grooved pulley, L^2. (Shown by dotted lines in Fig. 1.) Said pulley is connected by an endless band, *l'*, with a larger pulley, *m*, on the shaft M of runner F. Said horizontal runner-shaft M is journaled in or on top of frame A, and is provided, near its other end, with a drum, m^1, whence an endless belt, m^2, Fig. 2, extends to a similar drum, *n*, on a driving-shaft, N, operated by a crank, N', or by any equivalent mechanism. Thus, by the rotation of said driving-shaft, both the runner-stone and the fan are operated. The flow of grain from hopper C is regulated by means of a gate or slide, C', which is vertically raised and lowered between guides by means of a screw-threaded rod, c^1, and adjusting-nut *c*. Said rod passes up through a perforated lug, c^2, attached to the upper part of the rear of said hopper, and said nut works upon said rod above said lug. To the front end of case E, already described, are attached two rods, P P, which extend through the front of frame A, and are detachably but firmly secured to a yoke, Q. At the rear end of said case E are two similar rods, P' P', which also extend through said frame in the opposite direction, their outer ends being detachably connected to a bow-spring, Q'. The middle of said spring

bears against the outside of the rear of frame A, and the said spring operates to draw case E backward, carrying with it the segmental bed-stone G, so as to enlarge the space between said bed-stone and runner F, and adapt the same to coarser grinding. This tendency of said spring is resisted by an adjusting-screw, R, which works through the middle of yoke Q, and bears against the front of frame A. By the combined action of adjusting-screw R and spring Q′ the width of the space between the grinding-surfaces is regulated at will.

This longitudinal adjustment will not, however, alone retain said surfaces concentric, which is essential to a proper grinding action. This additional adjustment is approximately effected by the following means: S designates two metal suspending-bars arranged on opposite sides of case E, near the rear thereof. Each one of said bars is provided, as shown in detail in Fig. 4, with an inwardly-extending lower flange or plate, *s*, and an outwardly-extending upper flange or plate, *s′*. Case E rests upon said lower flanges *s s*, and said upper flanges *s′ s′* are vertically screw-tapped to receive small adjusting-screws S′ S′, the lower ends of which work into inclined blocks T T, secured upon the top of supporting-frame A at the sides thereof. Chute H is provided with a cross-bar, H^1, to which is attached an inverted stirrup or clip, H^2, which catches upon a hook, *u*, on the lower end of a screw-threaded adjusting-rod, U, that passes up through cross-bar A′ at the rear of frame A, and is operated by means of an adjusting-nut, V. Case E is entirely suspended by means of the above devices S, S′, and U, and bed-stone G may be vertically adjusted thereby. Inclined blocks T T operate, when said case E and bed-stone G are lowered, to give slight forward and upward tip to the lower end of said bed-stone. This insures the thorough grinding of the grain, even when the upper parts of stones F and G are considerably separated by the longitudinal adjustment previously described.

The perforations in frame A, through which rods P′ P′ pass, are enlarged so as to form short vertical slots, for the purpose of allowing the above-described vertical and inclined adjustment of the said bed-stone G.

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

The suspending-hangers S, arranged on opposite sides of the case E, and provided with the inwardly-extending lower flanges *s* and outwardly-extending perforated upper flanges *s′*, and adjusting-screws S′ S′, in combination with the inclined blocks T T, attached to the frame, stirrup H^2, rod U, and thumb-nut V, substantially as described, and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

H. F. WESCOTT.
R. O. RANDALL.

Witnesses:
APOLLOS HARRIS,
T. H. CAULLER.

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