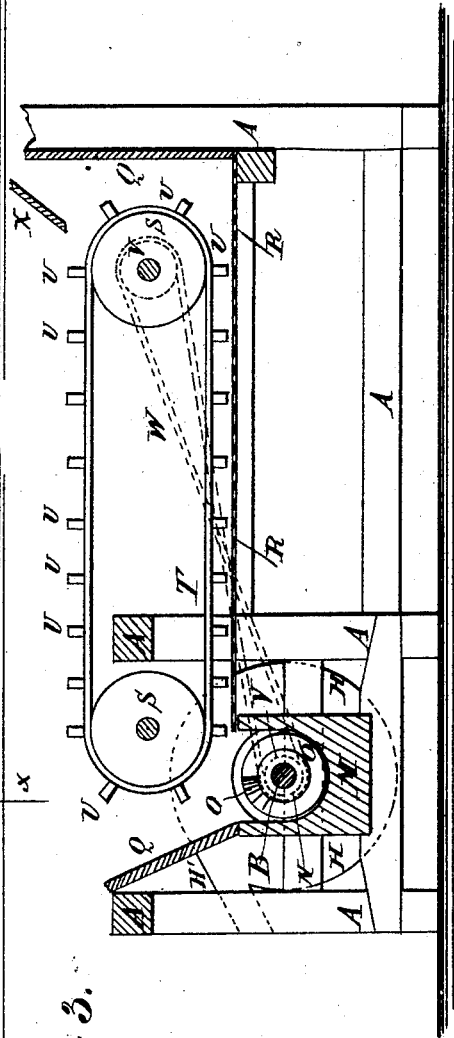
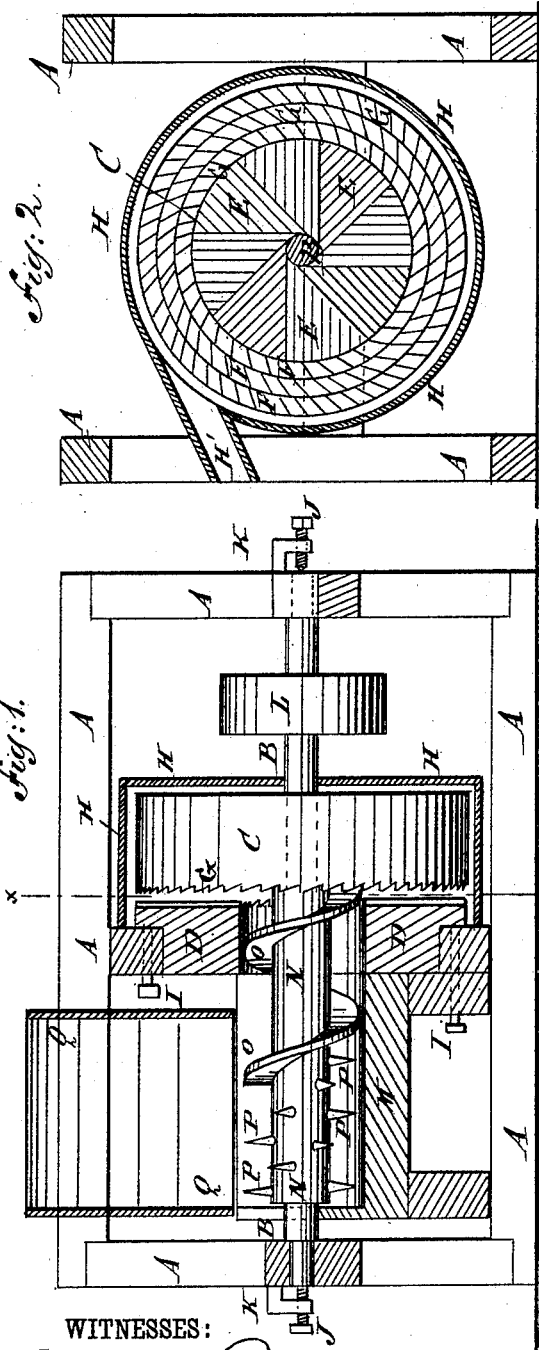


(No Model.)

S. McLEAN.  
COTTON SEED MILL.

No. 362,028.

Patented Apr. 26, 1887.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

SILAMON McLEAN, OF MINERAL SPRINGS, SOUTH CAROLINA.

## COTTON-SEED MILL.

SPECIFICATION forming part of Letters Patent No. 362,028, dated April 26, 1887.

Application filed May 21, 1886. Serial No. 202,870 (No model.)

*To all whom it may concern:*

Be it known that I, SILAMON McLEAN, of Mineral Springs, in the county of Marion and State of South Carolina, have invented a new and useful Improvement in Cotton-Seed Mills, of which the following is a full, clear, and exact description.

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 partly sectional side elevation of my improved cotton-seed mill. Fig. 2 is a cross section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a section of a feed mechanism.

The special object of this invention is to provide convenient, durable, and reliable mills for grinding cotton-seed, but which can also be used for grinding corn in the ear and shelled corn.

The invention consists in the construction and combination of various parts of the mill, as will be hereinafter fully described and claimed.

A represents the frame of the mill. B is a shaft journaled in bearings attached to the frame A and carrying the movable stone or runner C. The shaft B passes through the eye of the stationary stone D, which is set in the frame A.

The faces of the stones C D, from the eyes to within a short distance of the peripheries, are dressed with straight furrows E, arranged in series, as shown, the furrows of each series being cut at substantially an acute angle to the furrows of the preceding series. Between the furrows E and the periphery the faces of the stones C and D are dressed with rows of short inclined furrows G, arranged in concentric circles—three in the present case—F in the drawings showing the dividing-lines of the several rows. Each furrow of the inner circle of furrows, G, ends between two furrows of the next outer circle, and so on with respect to the other rows, none of the furrows, except those of the extreme outer circle, extending to the periphery of the stone, so that the material being ground will meet with a continually-interrupted passage to the discharge-spout. It will thus be seen that by this arrangement of

the furrows the cotton seed or other material cannot be conveyed to the discharge-spout without having been repeatedly acted upon and crushed, which action is not insured where the furrows lead direct to the periphery of the stone from any considerable distance from the same. The utility of the arrangement described will therefore be apparent. In Fig. 1 an edge view of the stone C is shown, and which illustrates the form and preferred draft or pitch of the furrows G, and, as the furrows E are similarly formed, this view, with the aid of Fig. 2, will serve to fully illustrate the form and arrangement of the furrows.

The stones C D are inclosed by a casing, H, attached to the frame A, and from the upper part of which projects an inclined spout, H', through which the meal is discharged. The stationary stone D is adjusted by screws I, passing through bars of the frame A and resting against the back of the said stone or against the shoulder of a rabbet formed around it. The runner C is adjusted by screws J, passing through screw-holes in brackets K, attached to the frame A, the ends of the said screws resting against the ends of the shaft B. The shaft B and runner C are driven from any convenient power by a belt passing around a pulley, L, attached to the said shaft B.

A trough, M, is fitted against the outer side of the stationary stone D, the inner surface of the bottom of said trough being flush with the bottom of the eye of the said stone D. Into this trough M the shaft B extends. Upon the shaft B is placed a sleeve, N, the inner part of which is provided with a spiral flange, O, extending through the eye of the stone D. The outer part of the sleeve N is provided with spirally-arranged spikes P. The seed to be ground is placed in a hopper, Q, attached to the frame A, with its lower edge resting upon the edge of the trough M. With this construction the spikes P tear apart the cotton-seeds, or break in pieces the ears of corn, and the flange O carries the material thus prepared through the eye of the stone D into the space between the stones, where it is cut in pieces by the said stones and discharged through the spout H'.

If desired, the hopper Q can be extended, as shown in Fig. 3, and provided with a sieve-

bottom, R, through which the sand can escape, and thus prevent the stones from being dulled by the said sand. In this case two rollers, S, are placed in the lower part of the hopper Q, and around them is placed an endless belt, T, provided with cross-cleats U. The rollers S and endless belt T U are driven from the shaft B by pulleys V and a crossed belt, W, as indicated in dotted lines in Fig. 3, so that the seed carried down at the rear end of the hopper Q will be carried forward along the sieve-bottom R, and fall into the trough M, and be fed thence to the stones C D. In this case the supply is fed to the belt by means of a slide, X, placed in the hopper Q at one end.

When cotton-seeds are received direct from the gin, the carrier S T U and the sieve R are not needed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A millstone provided with a dress formed with a series of straight furrows, E, extending over its face from the eye outward to within a

short distance of the periphery and the remainder of the face being formed with series of short inclined furrows arranged in concentric circles, the furrows of the inner circles not extending to the periphery of the stone, substantially as shown and described, whereby the material being treated will meet with continued interruptions in its passage to the discharge-spout, as set forth.

2. In a cotton-seed mill, the combination, with the frame A, the shaft B, the stones C D, and the hopper Q, of the trough M, the spiral flange O, and the spirally-arranged spikes P, substantially as herein shown and described.

3. The combination, in a grinding-mill, and with the millstones thereof, of the shaft B and the sleeve N, having spiral flange O and spirally-arranged spikes or teeth in advance of the said flange, substantially as and for the purpose set forth.

SILAMON McLEAN.

Witnesses:

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