

# W. Wright.

## Harmony Mach.

N<sup>o</sup> 48,332.

Patented Jan. 20, 1865.

Fig. 1.

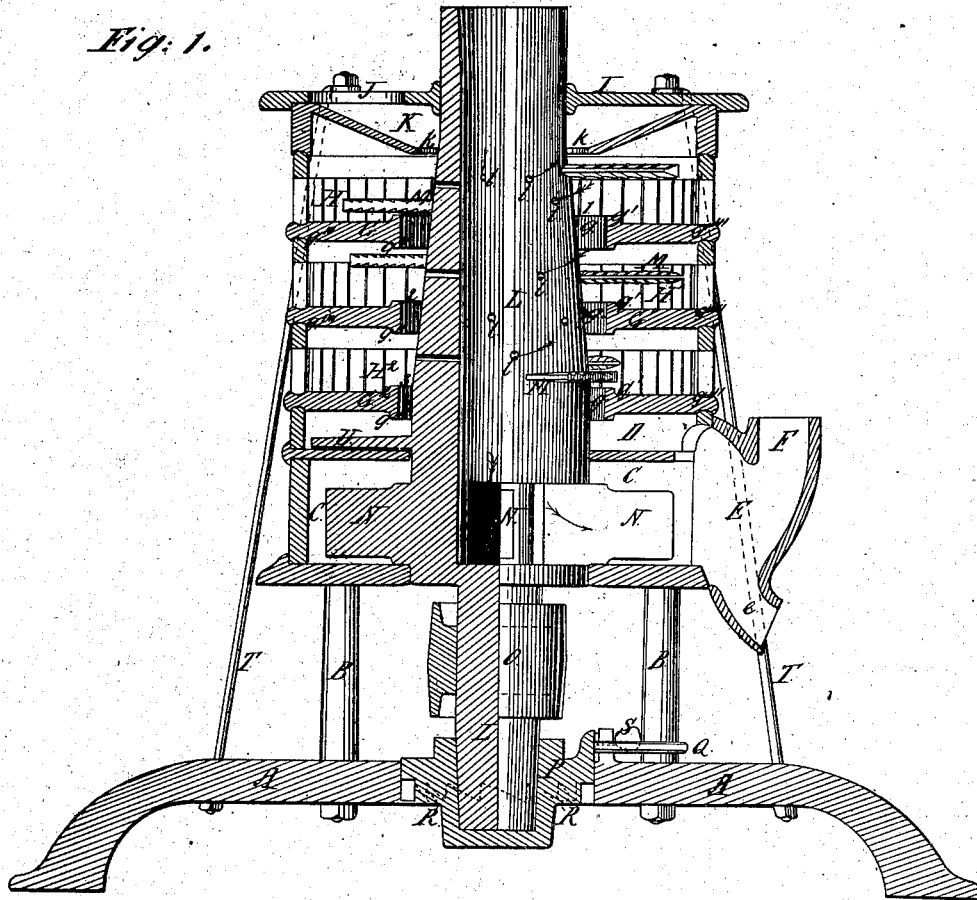


Fig. 2.

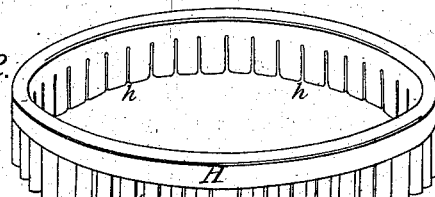
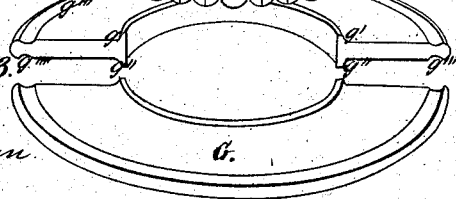


Fig. 3.



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# UNITED STATES PATENT OFFICE.

WARREN WRIGHT, OF SPRINGFIELD, OHIO

## IMPROVEMENT IN HOMINY-MILLS.

Specification forming part of Letters Patent No. 48,332, dated June 20, 1865.

*To all whom it may concern:*

Be it known that I, WARREN WRIGHT, of Springfield, Clarke county, Ohio, have invented a new and useful Improvement in Hominy-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an arrangement of parts in a hominy-mill which insures an equal and uniform conversion of all of the corn into hominy of good merchantable quality.

Figure 1 is an axial section through a mill embodying my improvements. Fig. 2 shows one of the cylindrical screens detached. Fig. 3 represents one of the two parted and symmetrical floors.

A is a base or foot, from which rise posts B, supporting a fan-case, C, which itself supports a discharging-chamber, D. Both the fan-case C and the discharge-chamber D empty into a spout, E, having a descending ventage, e, for the hominy, and an ascending ventage, F, for that portion of the dust which has been drawn down the interior of the shaft by the suction, and down the central apertures of the diaphragms.

G<sup>1</sup> G<sup>2</sup> represent a series of annular floors or diaphragms, each of which is formed of two halves, as shown in Fig. 3, cast from a common semicircular pattern. The said diaphragms are precisely alike and symmetrical on both sides, and each floor the exact duplicate or copy of every other. Each floor has a central circular aperture, g, having marginal rims or lips g' and g'' above and below. Circular grooves g''' immediately within the outer margins of the floors on their upper sides, and precisely similar grooves, g''', on their lower sides, receive and hold the edges of a series of peculiarly-formed cylindrical or ring-shaped screens, H H' H'', &c., which, with the diaphragms, as above, constitute the main portion of my case. Each of said screens is cast in a single piece from a common or single pattern, and is traversed by a series of slits or narrow perforations, h, which flare from within outward, and which, commencing near the top of the screen, pass outward through the bottom edge thereof. The screen thus formed is easily cast in one entire ring or cylinder, which, in the described combination with the diaphragms, &c., composes a very staunch

and compact case, which is free from the open joints and insecurity incident to cases with longitudinal joints.

I is a cap having an aperture, J, to receive grain from any suitable shoe or hopper, and to conduct it onto a funnel, K, whose central aperture, k, leads into the uppermost hulling-compartment.

L is my hollow perforated shaft, having the represented ribbed blades or triturators M and numerous minute apertures l. The interior of the shaft communicates at bottom with the center of the fan-case C. The shaft L flares externally downward, so as to cause the apertures 1 2 3, between the diaphragms and the shaft, to decrease in area toward the lower part of the mill.

N are the fan-blades.

O is a pulley by which the shaft is rotated about one thousand revolutions per minute.

U is a wing to discharge the hominy into the spout.

The shaft L rests in a step, P, which is adjustable vertically by means of a handle, Q, and inclined planes R, so as to enable the simultaneous expansion or contraction of the entire series of annular passages between the shaft and the internal margins of the diaphragms.

S is a set-screw for holding the step at any desired adjustment. In place of the above the step P may be adjusted by a set-screw or lever bearing directly upward against it.

T are four of a series of eight rods which confine all the above parts securely together.

For convenience of illustration, a mill with but three compartments is here shown, being but half the number employed in actual use.

The operation is as follows: The mill being set in motion, corn is fed in through the hopper, and descending into the upper compartment its kernels are driven violently against the vertically-slotted screen by the action of the ribbed blades M, until the compartment becomes charged with grain, after which the incoming portions act to crowd the lower strata of grain toward the annular passage 1 between the diaphragm and the shaft. In the act of approaching the margin of the passage 1 the grains are arrested by the lip g, and being caught by one of the blades are projected again toward the circumference. This action operates to retain the corn in the mill until each and

every compartment becomes fully charged with grain, after which the entire volume moves steadily downward by a helical motion to the place of discharge. From and after the complete charging of the compartments the combined action of the blades and suction is not to strike the individual kernels so much as it is to rub and triturate them forcibly against each other, and against the screens and diaphragms, resulting in a very thorough hulling action without much breaking or destruction of the kernels. The diaphragms are most effective with their original rough-cast surface, and as the wear is most severe on the upper surfaces and greatest on the upper diaphragms, the symmetrical and two-parted form of the diaphragms becomes available for transposition and reversal of the diaphragms, so as to make the comparatively unworn surfaces take the place of those which have been scoured smooth. The diminution downward of the series of annular passages 1 2 3, &c., as they approach the place of discharge, is made just sufficient to counteract the disposition of the contents to escape more freely as they become more comminuted and approach nearer to the suction. The vertical apertures in the screen act, in conjunction with the centrifugal force created by the revolving shaft and blades, to carry off sand and other heavy refuse, while the lighter particles of dust and powder are drawn by the suction down the interior of the shaft and down the annular passages 1 2 3, &c., and are blown out at the spout F.

Although the screens are here shown with

their slits opening downward, that being the preferred position, yet it is evident they may be arranged either upward or downward, as may be desired.

I claim herein as new and of my invention—

1. In combination with diaphragms G, the series of screens H, formed so as to be cast in entire cylinders, having the longitudinal slits h from their lower to near their upper margins, substantially as set forth.

2. The series of symmetrical equal annular and two-parted diaphragms G G' G'', capable of transposition and reversal, substantially as and for the purpose set forth.

3. The provision of the lip g', or lips g' and g'', at the interior margin of the annular diaphragms G G' G'', for the purpose explained.

4. The inclosing-case, composed of a series of entire cylindrical screens, H H' H'', and marginally-grooved annular diaphragms G G' G'', as represented.

5. In the described combination with the series of diaphragms G G' G'', having equal central apertures, the flaring suction-beater L M, substantially as set forth.

6. The arrangement of diaphragms G G' G'', having equal central apertures, in combination with the flaring and vertically-adjustable suction-beater L M, substantially as set forth.

In testimony of which invention I hereunto set my hand.

WARREN WRIGHT.

Witnesses:

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