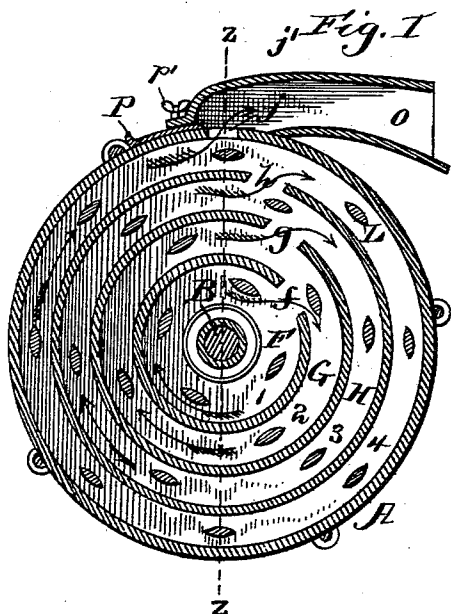
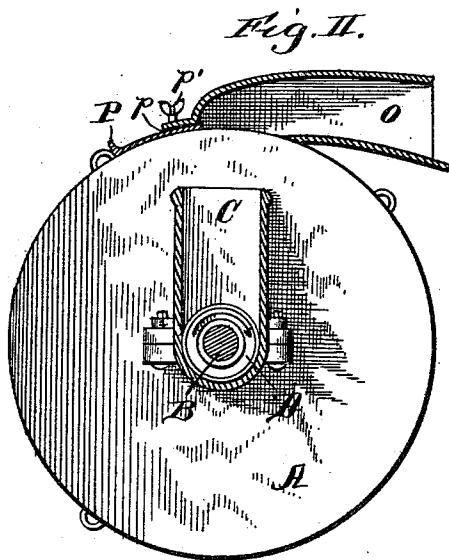
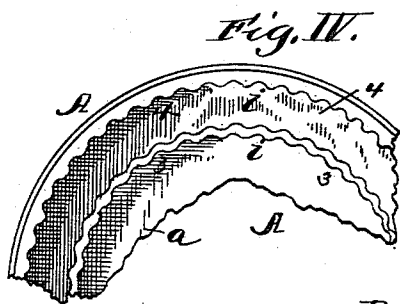
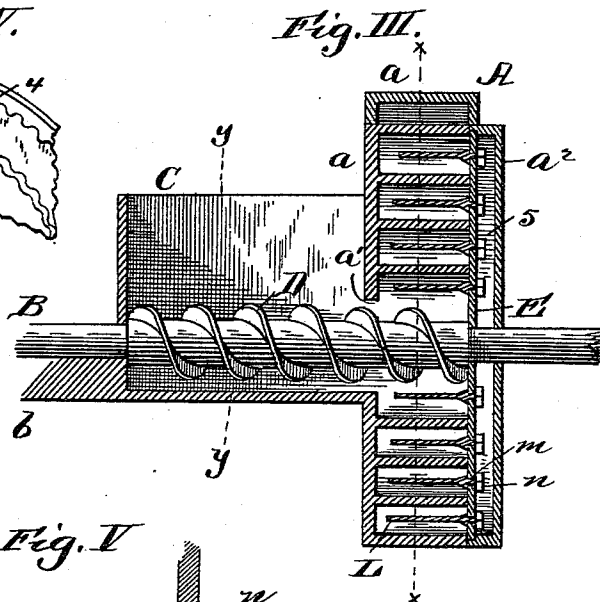
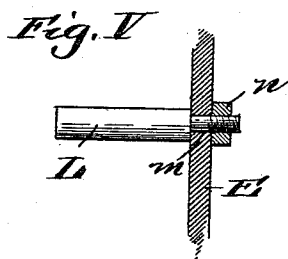


(No Model.)

H. H. RING.
GRAIN SCOURER.

No. 458,495.

Patented Aug. 25, 1891.



Witnesses:

J. B. McGirr.
W. D. Berukoff

Inventor:
Henry H. Ring
By this Attorney,
Edmund Bros.,

UNITED STATES PATENT OFFICE.

HENRY H. RING, OF LAIRDSVILLE, ASSIGNOR TO WALDRON & SPROUT, OF MUNCY, PENNSYLVANIA.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 458,495, dated August 25, 1891.

Application filed April 2, 1891. Serial No. 387,399. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. RING, a citizen of the United States, residing at Lairds-
ville, in the county of Lycoming and State of
5 Pennsylvania, have invented certain new and
useful Improvements in Grain-Scourers; and
I do hereby declare the following to be a full,
clear, and exact description of the invention,
such as will enable others skilled in the art to
10 which it appertains to make and use the same.

The present invention relates to improve-
ments in grain-scourers; and the object is to
provide simple and durable means for expedi-
tiously and thoroughly cleansing grain of
15 any adhering dirt or sand, as well as to re-
move the thin coating or skin which adheres
to the kernels, and a further object is to pro-
vide for the adjustment of parts and regulate
the action of the beaters on the kernels, ac-
20 cording to the condition of the grain.

In another application (Case C) filed by me
on the same day as this application, Serial No.
387,398, I have illustrated the adaptation of
my scourer for use in connection with a grain
25 separator and cleaner; but I do not confine
myself to this particular use of the present
improvement, as it can be advantageously
used by itself or in any relation where it is
desired to accomplish the expeditious and
30 thorough scouring of grain.

The invention consists in the combination
of a shaft, a shell or casing situated at one
side of a hopper and divided into a series of
concentric compartments arranged with their
35 outlet-openings out of line, a screw-conveyer
carried by said shaft and arranged to posi-
tively feed the grain from the hopper axially
into the shell or casing, a rotary disk carried
by the shaft within the casing or shell, and
40 beaters rigid with said disks and arranged in
the compartments of the case.

My invention further consists in the novel
construction, combination, and adaptation of
parts, as will be hereinafter fully explained.

45 To enable others to understand my inven-
tion more readily, I have illustrated the same
in the accompanying drawings, in which—

Figure I is a vertical sectional view taken
through the machine on the plane indicated
50 by the dotted line *xx* of Fig. III. Fig. II is
a view of the machine with the delivery-spout

and the feed-hopper in section and the cas-
ing in elevation, the section of the feed-hop-
per being on the line *yy* of Fig. III. Fig.
III is a vertical sectional view of the machine
55 on a plane at right angles to the section shown
by Fig. I, and indicated by the dotted lines *zz*
of Fig. I. Fig. IV is a detail view of a por-
tion of the shell or casing and the concentric
partitions therein. Fig. V is a detail view, 60
partly in section, showing the construction by
which the adjustment of the beater-blades on
the rotary disk is effected.

Like letters and numerals of reference de-
note corresponding parts in all the figures of 65
the drawings, referring to which—

A designates the annular case or shell, which
is placed in a vertical fixed position on a suit-
able frame, and B is the horizontal shaft, which
extends axially through said annular shell 70
and through a feed hopper or receptacle C,
provided at one side of the case or shell. Said
horizontal shaft may be supported in any
suitable manner, either by a single long bear-
ing *b* or by two separate bearings, as may be 75
preferred. One of the sides of the annular
case or shell A is closed by a head *a*, in which
is formed an axial feed-opening *a'*, while the
other side of the case or shell is closed by a
face plate or head *a''*, suitably bolted or other- 80
wise secured to said shell. The upper side
of the hopper or receptacle C is open for the
free introduction of the grain therein, while
the lower side of the hopper is curved. (See
Fig. II.) In the hopper is a screw conveyer 85
D, which is suitably fixed to the shaft B, and
this screw conveyer operates close to the
curved bottom of the hopper. The screw-
conveyer extends into the case or shell through
the axial feed-opening *a'* therein, and this 90
conveyer terminates close to the rotary disk
E, which is arranged within the case or shell,
and is suitably fixed or secured to the shaft
B, so as to be positively rotated thereby in
the case or shell. 95

The interior of the case or shell is divided
into a series of compartments 1, 2, 3, and 4
by a series of partitions or walls F G H, which
are concentric with each other and with the
annular shell or case A. These annular par- 100
titions or walls are rigid or integral with the
head *a* of the case or shell, and they extend

therefrom for a suitable distance toward the face-plate a^2 , so as to leave a space or chamber 5 between the partitions and said face-plate, in which chamber the rotary disk E is arranged, as shown by Fig. III. The interior surface of the annular shell and the opposing faces of the concentric partitions or walls thereof are roughened by corrugating or fluting them, as at i , (see Fig. IV,) to enable said surfaces of the shell and its partitions to act with better effect on the grain. The series of concentric partitions or walls F G H are provided with openings $f g h$, and the shell A has an outlet-opening j' , said series of openings being out of line with each other. Thus the opening f from the chamber 1 is out of line with the opening g from the chamber 2, and the opening h from the chamber 3 is out of line with the openings $g j'$ from the chambers 2 4. (See Fig. I.) By this arrangement of the outlet-openings from the several chambers and use of the beaters L and the rotary disk E, I am enabled to cause the grain to travel or pass around each chamber before it is delivered into the other surrounding chamber, and thereby more thoroughly effect the scouring and cleansing of the grain.

A multiplicity of beaters L are provided on the rotary disk E, and said beaters are arranged in a number of circular rows, which are concentric with each other, one row or series of beaters being arranged in each of the chambers. These beaters are carried by the rotations of the disk E around the concentric chambers, and they act upon the grain in conjunction with the corrugated partitions to thoroughly and quickly remove any adhering particles of dust and the thin coating or skin on the kernels of the grain. Each beater or blade is of peculiar form or shape, the same being convexo-convex in cross-section, and each beater or blade is formed with a threaded stud m , which passes through an aperture in the disk E and receives a nut n to firmly hold the beater in place on the disk. The beaters or blades may be arranged on the rotary disk, so that their convex surfaces face the corrugated walls or partitions, as indicated in Fig. I, or the beaters may be turned part way around at an angle to said walls or partitions, or they may be adjusted transversely across the compartments, in which they travel or operate, according as it is desired to subject the grain to a hard or easy scouring operation, the manner of fastening the blades admitting of their adjustment with facility and ease. A discharge-spout O is clamped or fixed to one side of the case or shell to receive the grain from the opening j in the case A, and across this opening j is adapted to be adjusted a regulating gate or valve P, which is fitted to a slot p in the discharge-spout O, and is held in place by a binding-screw p' , to regulate the escape of grain from the scouring-chambers.

The operation of my improved machine may be described briefly as follows: The shaft

B, being rotated by any suitable means and the grain deposited in quantities in the hopper, the screw conveyer D positively forces the grain from the hopper into the inner chamber 1 of the case or shell, from whence it passes successively to the chambers 2 3 4 by the openings $f g h$. As the screw conveyer continues to feed and push the grain into the chamber 1 and the beaters are carried around the series of chambers by the disk E, the grain is positively forced and pushed through the successive chambers and at the same time subjected to the beating or scouring action by the beaters and the corrugated walls or partitions in the flutings. By adjusting the regulating-slide the rate of travel or escape of the grain can be regulated and the force of the beaters on the grain can be controlled by the position of the beaters in reference to the walls of the compartments in which the beaters operate.

I am aware that changes in the form and proportions of parts and details of construction of the mechanism herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such modifications as fall within the scope of my invention.

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

1. In a grain-scourer, the stationary shell or case having the axial inlet-opening therein on one side and provided with a series of concentric walls or partitions forming the series of concentric compartments, the openings in said walls or partitions being out of line with each other, combined with a rotary disk arranged within the closed side of said shell or case close to the walls or partitions therein, and a series of beater-blades carried by the disk and fitted in the compartments of said case or shell, substantially as described.

2. In a grain-scourer, a stationary shell or case provided with the axial inlet on the one side thereof and having a series of concentric partitions or walls forming a series of connected compartments, the openings in said walls between the compartments being out of line with each other, in combination with a hopper or inlet arranged laterally to the case or shell, a shaft carrying a feed-screw that enters the central compartment of the shell, a rotary disk fixed to the shaft, and the blades or beaters carried by the disk and arranged in the compartments of said shell, substantially as and for the purpose specified.

3. In a grain-scourer, the combination of a shell or case divided into a series of connected concentric compartments, a hopper, a shaft passing axially through said shell or case, a feed-screw carried by the shaft and operating in the hopper and central compartment of the case, the disk carrying the beaters or blades which travel in said compartments of

the shell, and the regulating gate or valve operating in the outlet from the case or shell, substantially as and for the purpose set forth.

4. In a grain-scourer, the combination, with
5 a shell or case, of a rotary disk carrying the
beaters or blades, which are capable of ad-
justment thereon relatively to the walls of the
compartments in which said beaters operate,
substantially as and for the purpose set forth.

10 5. In a grain-scourer, the combination, with
a shell or case provided with a series of com-
partments, of a rotary disk and the beaters
carried by said disk and arranged in the com-
partments of the shell, said beaters being
15 convexo-convex in cross-section and adjust-
able on the disk relatively to the walls of the
compartments in which they operate, sub-
stantially as and for the purpose set forth.

20 6. In a grain-scourer, the combination, with
a shell or case having the concentric walls

forming the compartments and the rotary
disk, of the beaters or blades adjustably
clamped on the disk and operating in said
compartments of the case or shell, substan-
tially as described.

25 7. In a grain-scourer, the combination of a
case or shell having the corrugated concentric
partitions, a shaft, a rotary disk, and the con-
vexo-convex beaters clamped on the disk and
adjustable thereon relatively to the corru- 30
gated walls forming the compartments in
which the beaters operate, substantially as
and for the purpose set forth.

In testimony whereof I affix my signature in
presence of two witnesses.

HENRY H. RING.

Witnesses:

D. B. DYKINS,
JOHN WALDRON.