

1,013,526.

3 SHEETS—SHEET 1.

Fig. 1.

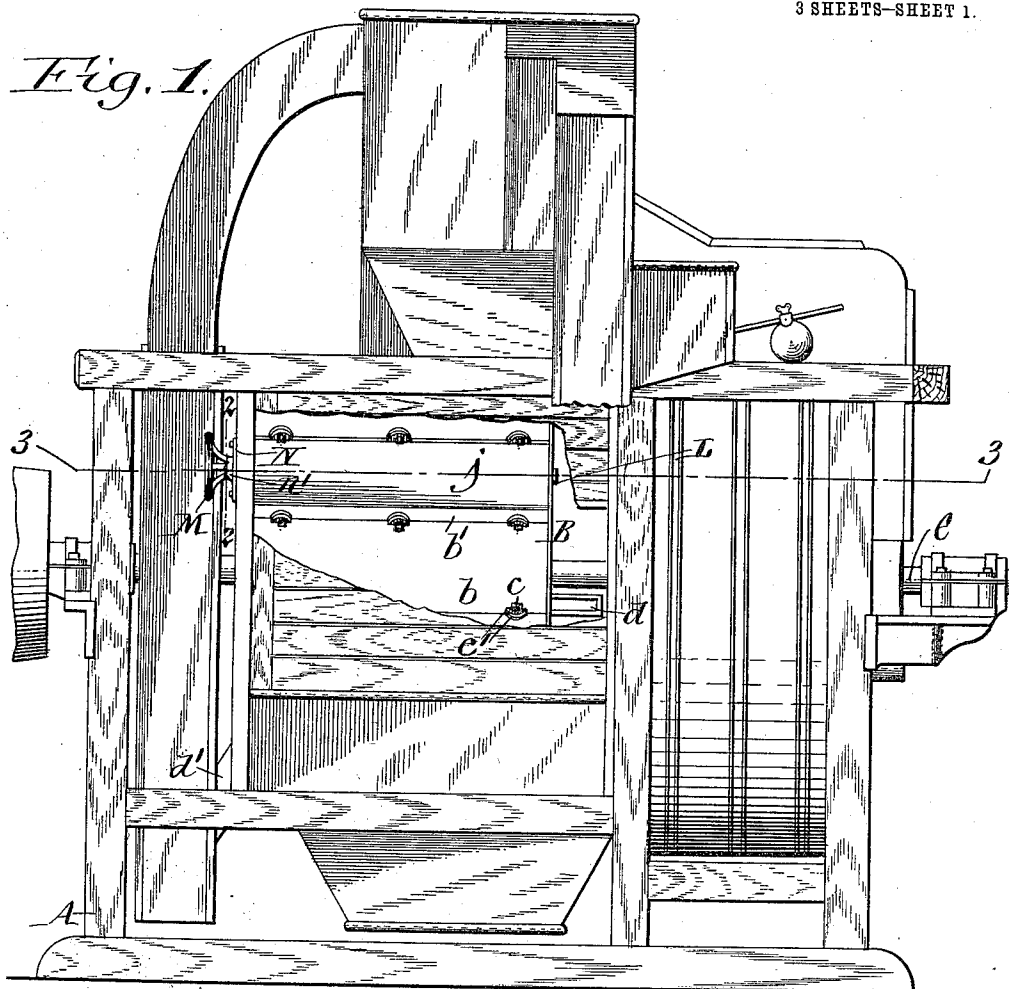
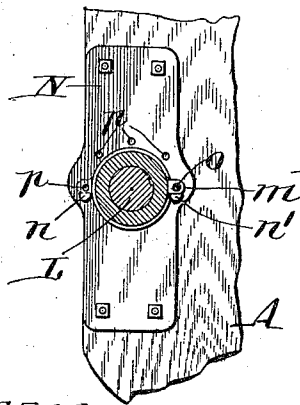


Fig. 2.



Witnesses:-
Alfred Borkenhagen.
Richard Sommer

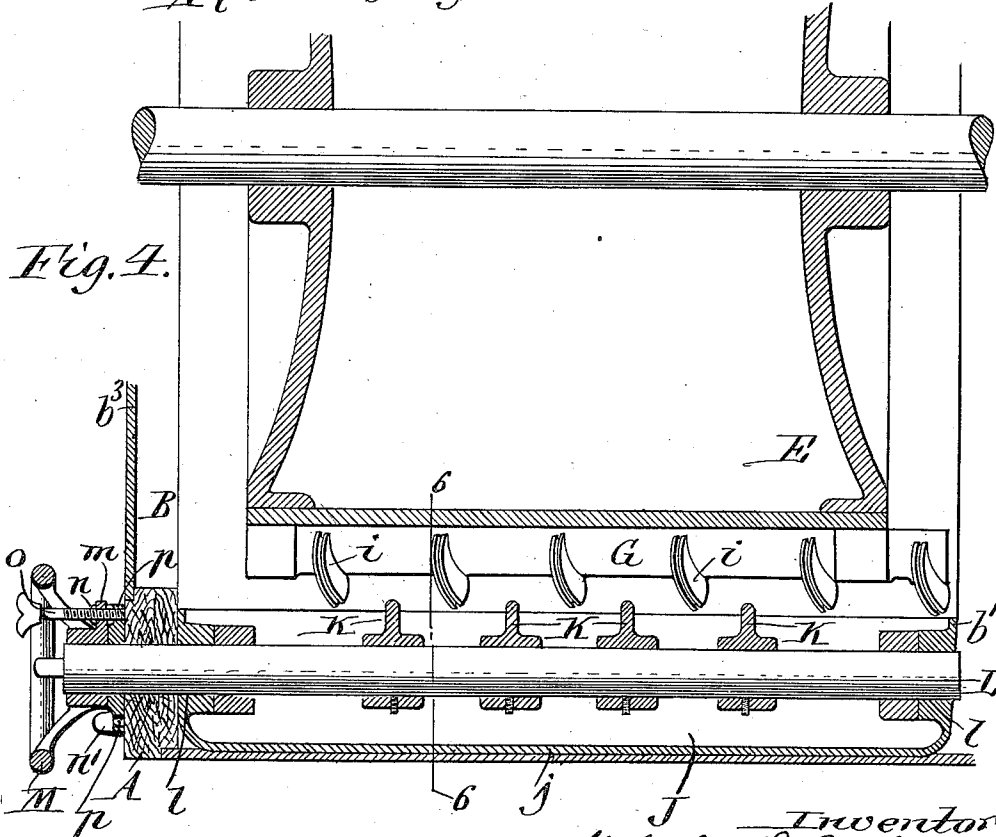
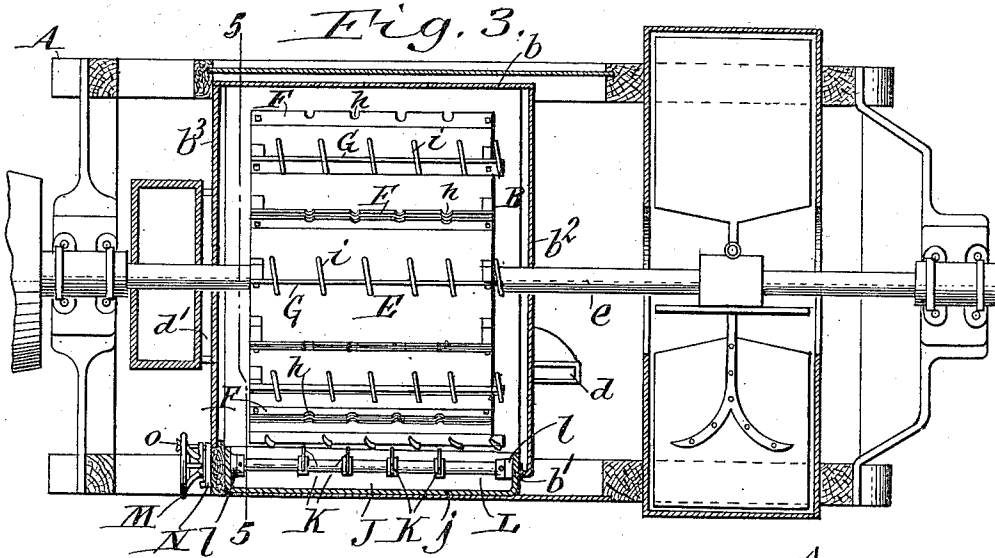
Inventor
Malcolm L. Barbeau
by Geyer & Papp,
Attorneys.

M. L. BARBEAU.
SCOURING MACHINE.
APPLICATION FILED OCT. 11, 1910.

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Patented Jan. 2, 1912.

3 SHEETS—SHEET 2.



Alfred Parkinbagen
Richard Sommer

Witnesses,

Inventor
Malcolm L. Barbeau
by Leyer & Papp
Attorneys.

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3 SHEETS—SHEET 3.

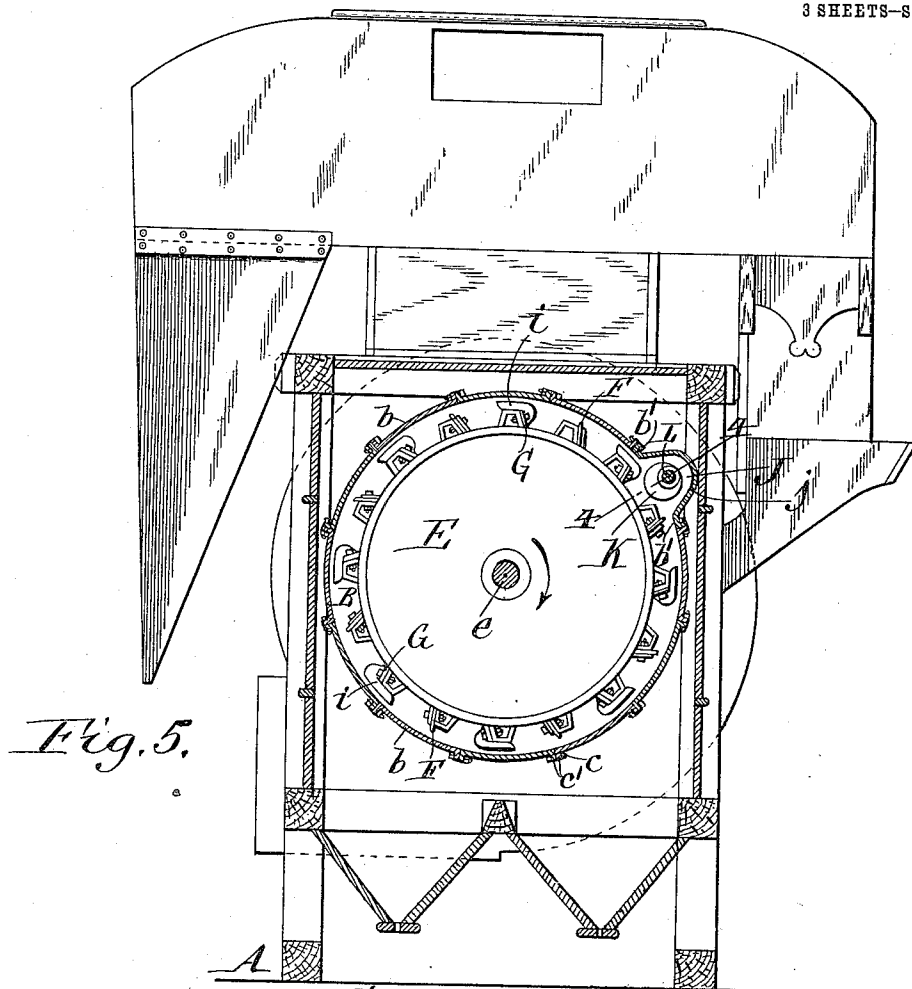


Fig. 5.

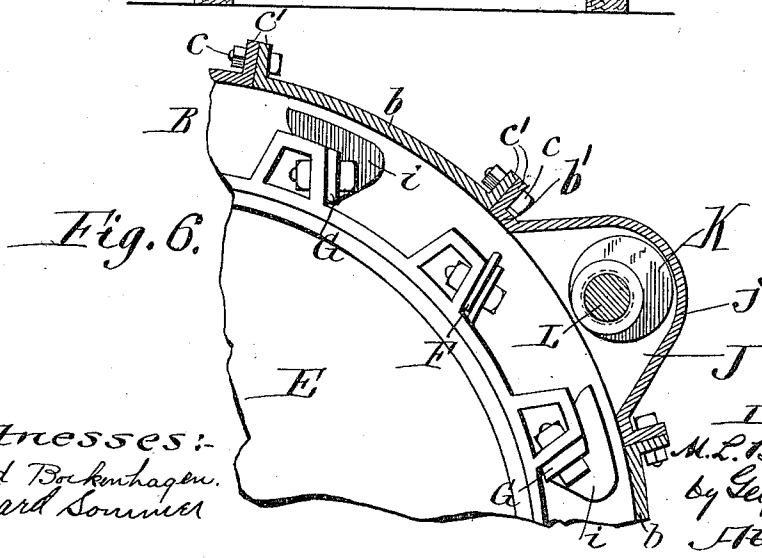


Fig. 6.

Witnesses:
Alfred Backmeyer.
Richard Sommer

Inventor
M. L. Barbeau
by Seyert Poph
Attorneys.

UNITED STATES PATENT OFFICE.

MALCOLM L. BARBEAU, OF SILVER CREEK, NEW YORK, ASSIGNOR TO THE S. HOWES COMPANY, OF SILVER CREEK, NEW YORK, A CORPORATION OF NEW YORK.

SCOURING-MACHINE.

1,013,526.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed October 11, 1910. Serial No. 586,495.

To all whom it may concern:

Be it known that I, MALCOLM L. BARBEAU, a subject of the King of England, residing at Silver Creek, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Scouring-Machines, of which the following is a specification.

This invention relates to a grain scourer or polisher and has the object to provide simple and efficient means whereby the scouring action of the machine may be regulated according to the character of the grain under treatment.

In the accompanying drawings consisting of 3 sheets: Figure 1 is a side elevation of a scouring or polishing machine equipped with my improvements. Fig. 2 is a fragmentary vertical transverse section, on an enlarged scale, in line 2—2, Fig. 1. Fig. 3 is a horizontal section in line 3—3, Fig. 1. Fig. 4 is a fragmentary horizontal section, on an enlarged scale, in line 4—4, Fig. 5. Fig. 5 is a vertical transverse section in line 5—5, Fig. 3. Fig. 6 is a vertical transverse section in line 6—6, Fig. 4.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents the main frame of the machine which may be of any suitable construction.

B represents the scouring chamber of the machine which is generally of cylindrical form and constructed of a plurality of horizontal longitudinal staves b , b^1 , front and rear heads b^2 , b^3 connecting the corresponding ends of the staves, said staves and heads being preferably constructed of cast iron. The several staves are preferably connected with each other by bolts c passing through external lugs c^1 on the staves b , b^1 .

The grain to be scoured is conducted to the front end of the scouring chamber by means of an inlet or supply spout d connecting with the front head of the scouring chamber and the scoured grain is discharged from this chamber through an outlet or discharge spout d^1 connecting with the rear head of this chamber.

Within the scouring chamber is concentrically arranged a scouring drum E which is of cylindrical form and mounted on a horizontal driving shaft e which is jour-

naled in suitable bearings on the main frame 55 of the machine. The diameter of the drum is less than that of the scouring chamber so as to form an annular scouring space between the same through which the grain is carried both circumferentially and also 60 lengthwise from the inlet to the outlet of the scouring chamber. During its passage through the scouring chamber the grain is scoured by means of a plurality of beaters F, G arranged on the periphery of the drum. 65 The beaters F consist of longitudinal bars which are provided at intervals with notches f and perform the sole function of stirring and agitating the grain so as to remove the particles or impurities therefrom. The 70 beaters G consist of longitudinal bars which are provided at intervals with conveyer blades, wings or flights g which trend in such direction that they not only operate to agitate the grain but also have a propelling 75 effect whereby the grain is gradually carried lengthwise through the scouring chamber.

On one side of the scouring chamber the same is provided with a laterally extending enlargement or tumbling space J which is 80 preferably formed by providing the stave b^1 with an outward bulging hood j , as shown in Figs. 1 and 3—6. As the grain while being carried around by the beaters of the drum reaches the space J the same is 85 released and tumbles around in the same for a time before again being caught by the beaters whereby the grain is mixed and shifts its position and the entire mass of the same is thoroughly and uniformly 90 scoured.

For the purpose of enabling the scouring action to be regulated according to the needs of the grain, retarding or baffling means are provided which may be projected more or 95 less into the path of the grain, so that the circumferential movement of the grain in the scouring chamber is retarded more or less and the scouring action is controlled accordingly. This baffling or retarding 100 means preferably comprises a plurality of cam or eccentric shaped baffles or retarders K which are arranged in the tumbling space and which are rotatably supported, so that the salient parts thereof may be projected 105 into or retracted from the circumferential path of the grain in the scouring chamber. For the purpose of scouring the grain only

slightly or moderately the baffles are turned, so that their salient or highest parts are retracted from the path of the grain, thereby permitting the same to move through its circular path practically unimpeded and without any perceptible obstruction or interference with its progress. When the baffles are turned so that their salient parts project farthest into the path of the grain the latter is held back and its flow is broken. This delays or obstructs the circumferential passage of the grain and causes the grain to be subjected to a prolonged retarding action of the baffles and the grain berries to rub frictionally against each other for a longer time and more severely, whereby the scouring effect on the grain or wheat berries is increased accordingly. It follows from this construction that the retarding effect and consequently the scouring action may be varied by turning the baffles so that their salient parts project more or less into the grain, this retarding effect being greatest when the baffles project to their fullest extent toward the drum, as shown in Figs. 3, 4 and 5 and least when the baffles are retracted their greatest extent from the drum, as shown in Fig. 6. The several baffles are in line with the spaces between the blades i and of the beaters F and in line with the notches h of the beaters G so that the baffles when projected do not interfere with the beaters. For the purpose of permitting the baffles to be turned uniformly and simultaneously into the desired position the same are mounted on a longitudinal shaft L which is journaled in bearings l at opposite ends of the hood j and which has one end projecting beyond the adjacent end of the hood. Outside of the hood the baffle shaft is provided with a handle M , preferably in the form of a wheel whereby the shaft and baffles are turned. Between the hand wheel and the adjacent part of the frame is arranged a support or plate N through which the baffle shaft passes and which is provided with two stationary stop lugs n, n^1 which are arranged on diametrically opposite sides of the baffle shaft. On one side of the hub of the hand wheel is arranged a movable stop lug m which is adapted to engage said stationary stop lugs n, n^1 . Upon turning the hand wheel so that its stop lug engages one of the stationary stop lugs then the baffles are retracted from the drum to the fullest extent but when the hand wheel is turned so that its stop lug engages the other stationary lug then the baffles are projected toward the drum to the fullest extent. The baffles may be held in either of these extreme positions or in different intermediate positions by means of a set screw o arranged in the movable stop lug of the hand wheel and adapted to engage with one or another of a plurality of openings p formed in the sup-

porting plate N and arranged in a row which is concentric with the baffle shaft in the manner of a dial, as shown in Figs. 2 and 4. By this means any desired degree of scouring action may be determined beforehand by setting the hand wheel in the desired position relatively to the dial. By mounting the baffles or retarders on a rotatable shaft it is possible to adjust the several baffles simultaneously and uniformly toward and from the periphery of the drum for varying the scouring action on the grain.

I claim as my invention:

1. A scouring machine comprising a scouring chamber provided with a lateral enlargement or tumbling space, a rotatable drum arranged in the chamber and having teeth on its periphery, and a retarding device arranged in said space and comprising a baffle adapted to be moved into and out of the space between the teeth of the drum.
2. A scouring machine comprising a scouring chamber provided with a lateral enlargement or tumbling space, and a retarding device arranged in said space and comprising a rotatable cam shaped baffle adapted to move its salient part toward and from said drum.
3. A scouring machine comprising a cylindrical scouring chamber provided with a longitudinal enlargement forming a tumbling space, a cylindrical drum rotatable in said chamber and provided on its periphery with beaters, and a plurality of cam-shaped baffles arranged in said space and adapted to move their salient parts toward and from the periphery of the drum.
4. A scouring machine comprising a cylindrical scouring chamber provided with a longitudinal enlargement forming a tumbling space, a cylindrical drum rotatable in said chamber and provided on its periphery with beaters, a rotatable shaft arranged lengthwise in said space, and a plurality of cam shaped baffles arranged on said shaft.
5. A scouring machine comprising a cylindrical scouring chamber provided with a longitudinal enlargement forming a tumbling space, a cylindrical drum rotatable in said chamber and provided on its periphery with beaters, a rotatable shaft arranged lengthwise in said space, a plurality of cam-shaped baffles arranged on said shaft, and means for adjusting said shaft circumferentially.
6. A scouring machine comprising a cylindrical scouring chamber provided with a longitudinal enlargement forming a tumbling space, a cylindrical drum rotatable in said chamber and provided on its periphery with beaters, a rotatable shaft arranged lengthwise in said space, a plurality of cam shaped baffles arranged on said shaft, stationary stops arranged on opposite sides of the shaft, and a movable stop turning with

said shaft and adapted to engage said stops for limiting the turning movement of the shaft.

7. A scouring machine comprising a cylindrical scouring chamber provided with a longitudinal enlargement forming a tumbling space, a cylindrical drum rotatable in said chamber and provided on its periphery with beaters, a rotatable shaft arranged lengthwise in said space, a plurality of cam shaped baffles arranged on said shaft, a stationary part provided with a plurality of openings which are arranged in a row concentric with said shaft and which is pro-

vided with stop lugs on opposite sides of the shaft, a handle secured to said shaft and provided with a movable stop lug adapted to engage with said stationary stop lugs, and a set screw arranged on the movable stop lug and adapted to engage with said openings. 15 20

Witness my hand this 8th day of October, 1910.

MALCOLM L. BARBEAU.

Witnesses:

PAUL F. MINEHAN,
HOLLY M. HAWKINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."