W. HARRIS.

Bran-Scourers.

No. 210,029. Patented Nov. 19, 1878.

Fig. 1.

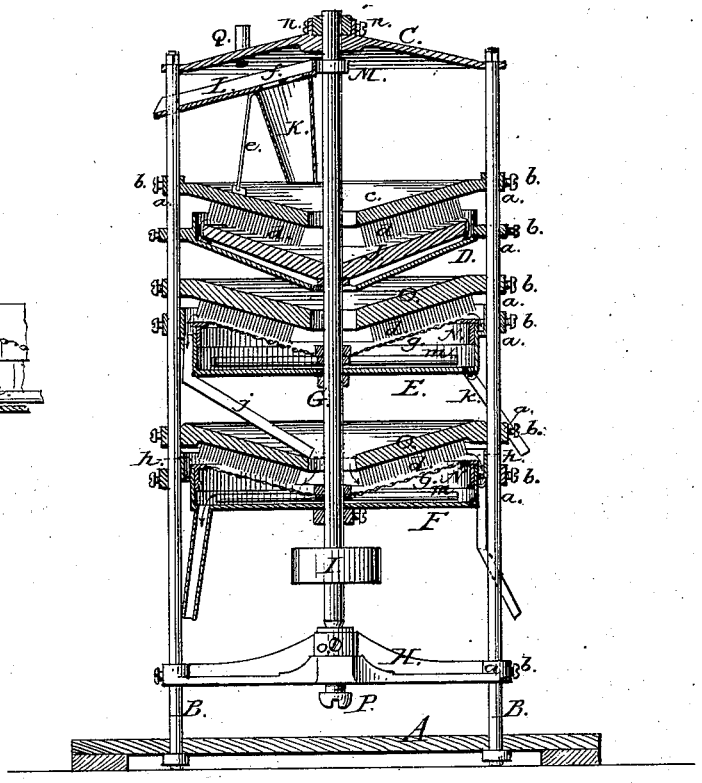


Fig. 6.

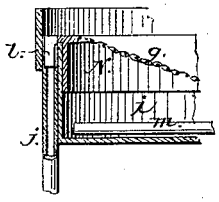


Fig. 2.

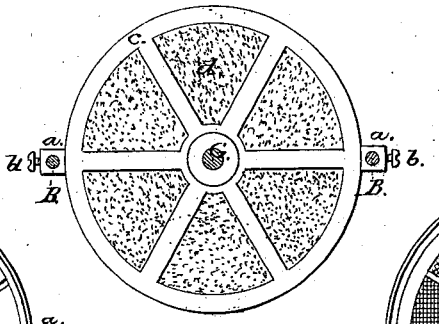


Fig. 3.

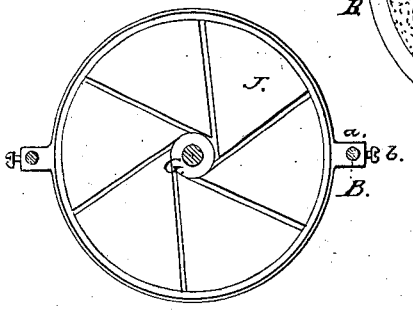


Fig. 4.

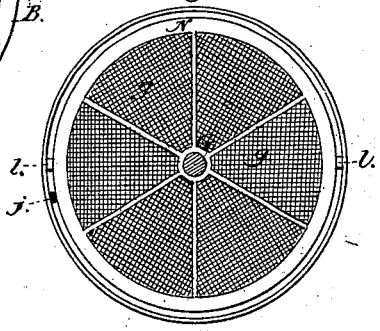
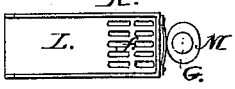


Fig. 5.



Witnesses:

Edw. W. Donn

P. M. Duncan

Inventor:

William Harris,

By. Parker & Sweet Jr. & Co.

Atty's.

UNITED STATES PATENT OFFICE.

WILLIAM HARRIS, OF GREENVILLE, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY R. WEEKS, OF MONTCALM COUNTY, MICHIGAN.

IMPROVEMENT IN BRAN-SCOURERS.

Specification forming part of Letters Patent No. **210,029**, dated November 19, 1878; application filed May 1, 1878.

To all whom it may concern:

Be it known that I, WILLIAM HARRIS, of the city of Greenville, in the county of Montcalm and State of Michigan, have invented certain new and useful Improvements in Bran-Scourers, or device for dusting the flour from bran after bolting; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 represents a vertical longitudinal section of my complete invention; and Figs. 2 to 6, inclusive, represent detail views of the same.

Similar letters of reference occurring on the several figures indicate corresponding parts.

My invention relates to improvements in bran-scourers, or devices for separating the flour from bran after it has been bolted; and the invention consists of a series of sieves and a corrugated plate arranged within inclosing jackets or hoppers secured between vertical frames or posts, and adapted for operation in connection with scouring-brushes and conducting-spouts, all as will be hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, A represents the base of my device, provided with upright circular posts B B, to the tops of which is secured the circular cap C, as shown. D E F represent the circular jackets or conductors, which are provided on two sides with sleeves *a*, which fit around the vertical posts B B, and secured thereon at suitable heights by clamping-screws *b*. Through the centers of these jackets D E F, which are left open for that purpose, passes a vertical driving-shaft, G, which has its bearings in the center of the cap C at the top, and at the bottom in the center of the cross-arm H, secured between and upon the posts B B, in a manner similar to that of the jackets, as already described, a pulley, I, being rigidly attached to said shaft near the bottom, for transmitting motion to the same by means of suitable power applied through an endless belt or chain. To this shaft G is secured the convexo-concave disk or plate J, corrugated on its upper surface, as shown in Fig. 3, and which revolves with said shaft and fits within the upper tapering jacket D, above which is arranged the circular frame *c*, carrying wire or bristle brushes *d*, said frame being suitably adjusted between and upon the posts B B by the sleeves *a* and clamping-screws *b*.

K represents the spout which conveys the bran to the scouring-surfaces, said spout being attached to the top of a vertical metallic spring, *e*, secured to the top of the circular frame *c*, and is provided with a sieve, *f*, and shoe L, for conducting the bran to the center of the apparatus, as shown in Figs. 1 and 5. This spout K is shaken back and forth by means of an eccentric or flattened wheel, M, secured to the driving-shaft G, as shown in Figs. 1 and 5.

N N′ represent circular frames covered with wire-gauze *g*, keyed fast to the shaft G, and fitting within the jackets E and F, as shown in Figs. 1, 4, and 6, said jackets having a raised projecting flange, *h*, around their upper parts, and a lower receptacle, *i*, below the frames N N′, a spout, *j*, leading from the flange *h* and a spout, *k*, from the lower receptacle, as shown in Figs. 1 and 6. To these frames N N′ are attached, on two sides of their circumference, sweeps or arms *l*, which, when the machine is in operation, move around in the flanged recesses *h*. The lower receptacles *i* are also provided with sweeps or arms *m*, which are keyed fast to the driving-shaft and revolve with the same.

Above the frames N N′ are secured the convexo-concave frames O, having central openings, and provided with wire or bristle brushes *d*, which press down upon the wire-gauze to scour the bran. It will be observed that the frames carrying the brushes *d*, and also the jackets D E F, can be adjusted on the posts B B by means of the clamping-screws *b*, so as to regulate the pressure of the brushes *d* upon the corrugated plate J and wire screens *g*, to insure the proper scouring of the bran, which passes between the same, as well as to compensate for the wear upon the brushes *d*. The same effect can also be pro-

duced by means of the clamping-screw P on the lower part of the cross-bar H, and upon which the bottom of the driving-shaft rests, which shaft is provided with clamping-screws *n* at the top and clamping-screws *o* at the bottom, to permit of the perfect adjustment of the several working parts.

The vertical adjustment of all the working parts—namely, the scouring-plates, the brushes, the sieves, and the jackets—not only permits compensation for wear, but the moving bodily up and down of all or any part of the scouring mechanism, for whatsoever purpose required, as inspection, repair, or adaptation to the place in which it is used.

The construction of my invention being as already described, I will now proceed to explain the operation of the same: The bran is fed in through the pipe Q upon the sieve *f* at the top of the machine, the collections of baked dough or large substances passing off the apron K, and the bran passing down through the shoe L is conducted to the center of the corrugated plate J, where the flour is broken loose from the bran by the action of the brushes *d*, and then conducted over the edges of the revolving plate down through the tapering jacket or hopper D upon the wire screen in the jacket E below. The wire brushes *d* then force the flour through the wire screen into the receptacle *i* below, the bran being carried to the outer portion of the revolving screens and deposited in the flanged recess *h*, from whence it is forced by the revolving sweeps *l* down through the spout *j* into the next lower jacket, F, to undergo the final scouring process. The flour, passing through the wire screens *g* down into the receptacle *i* beneath the same, is carried out into the distributing-spout *k*, from whence it runs into barrels or other vessels placed to receive it. The bran, which passes into the lower jacket F, undergoes the same process, and is finally thrown out by the sweeps *l*, while the flour in the receptacle *i* is carried out by the sweeps *m* into vessels placed to receive it. Two grades of flour are thus secured, that from the jacket E being the finest and best, while that from the lower jacket, F, is coarser, and not of the same value.

Having thus described my invention, what I claim as new and useful is—

1. The herein-described apparatus for scouring bran, consisting of the base A, posts B B, cap C, driving-shaft G, secured in bearings in the cap C and adjustable cross-arm H, corrugated plate J, frames N N′, having wire screens *g*, jackets D E F, spout K, attached to spring *e*, frames *c* and O O, said jackets and frames having sleeves *a* and clamping-screws *b* for adjustment upon posts B B, the several parts being constructed, arranged, and combined to operate in relation to each other, substantially as and for the purpose specified.

2. The jackets D E F and frames *c* and O O, each having sleeves *a* and clamping-screws *b*, in combination with the posts B B, driving-shaft G, having adjustable bearings in the cap C and cross-arm H, and carrying corrugated wheel or plate J, and frames N N′, having screens *g*, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I therefore affix my signature in presence of two witnesses.

WILLIAM HARRIS.

Witnesses:

ALEXANDER GLEASON,

ADONIRUM J. COLBURN.