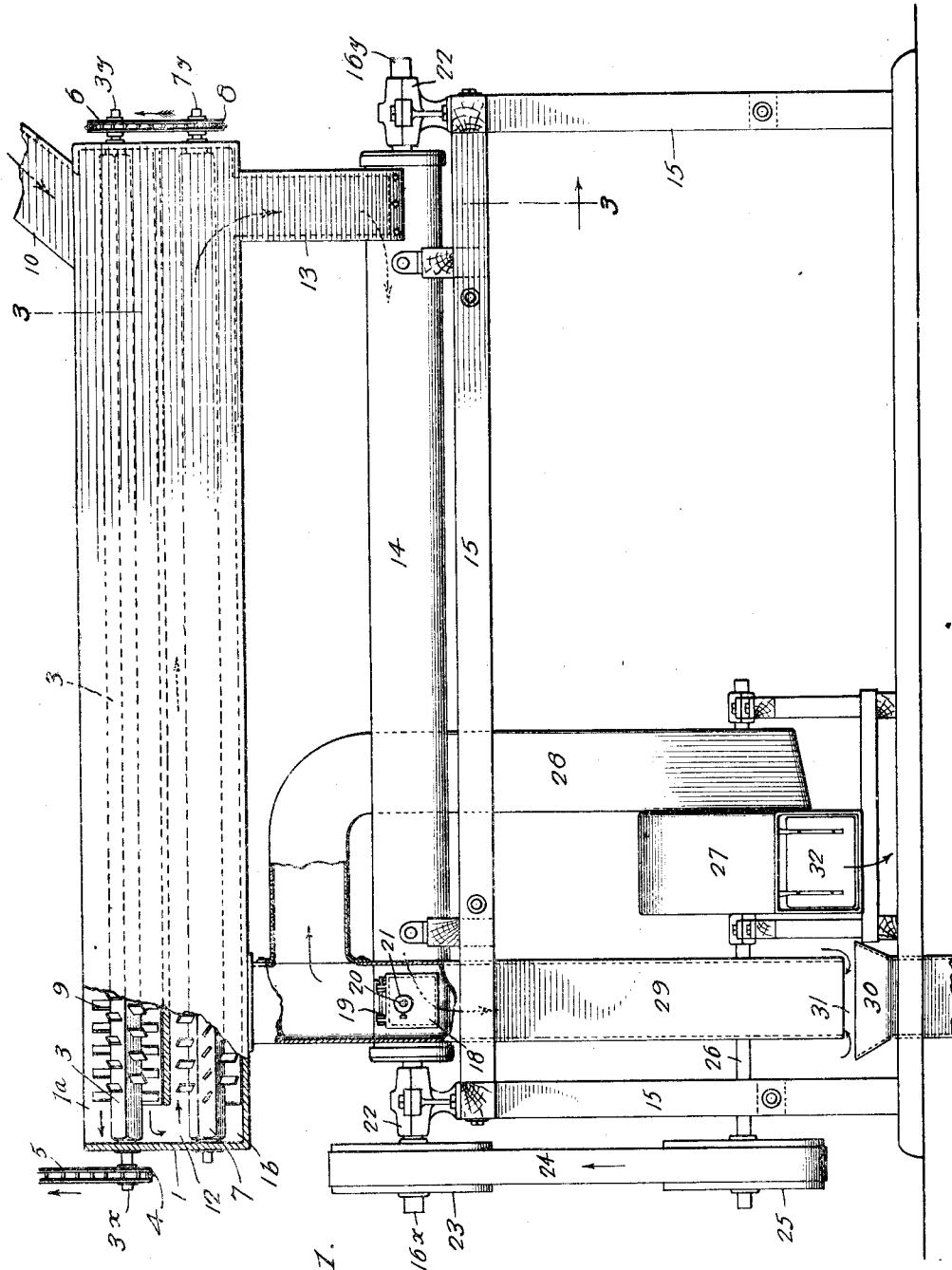


1,055,854.

C. J. BARBEAU.
 DEVICE FOR TREATING GRAIN.
 APPLICATION FILED NOV. 7, 1911.

Patented Mar. 11, 1913.

2 SHEETS—SHEET 1.



WITNESSES

L. H. Spence
R. H. Stanley

Fig. 1.

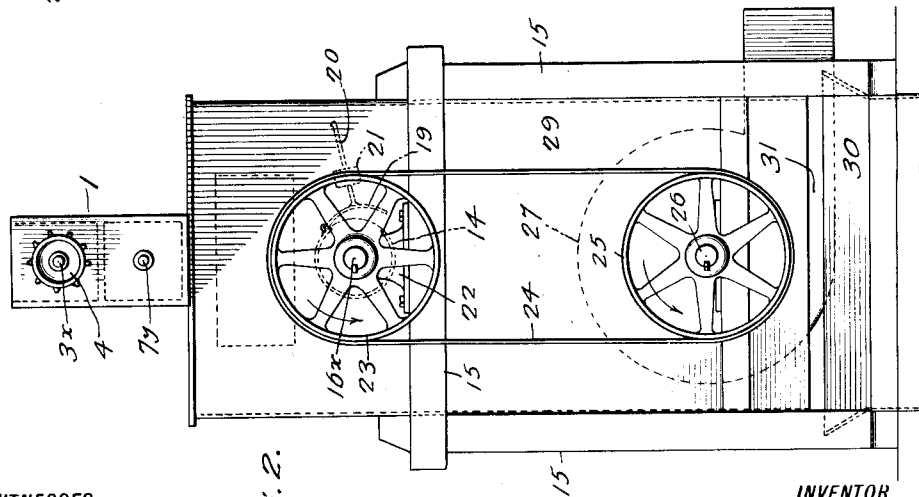
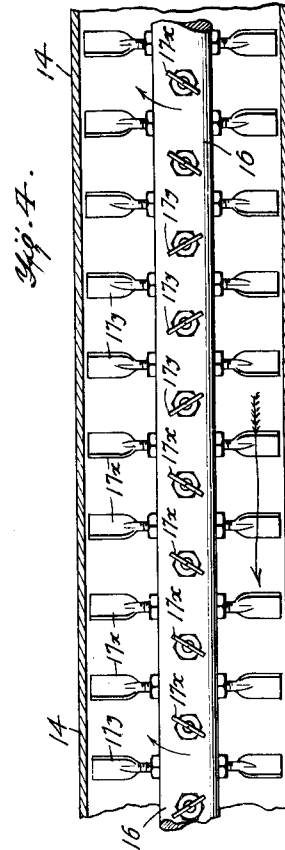
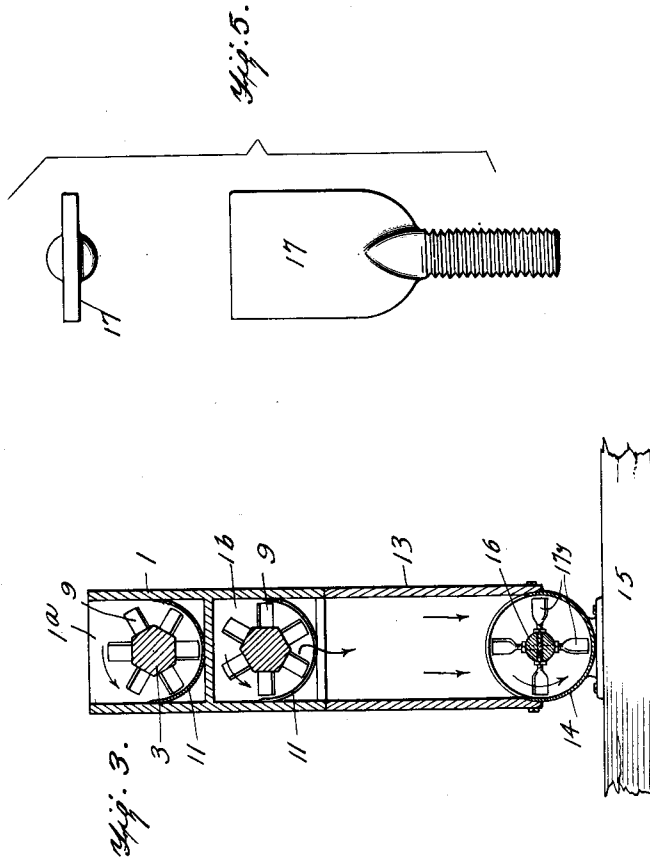
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CHARLES J. BARBEAU, OF ST. HENRY, OHIO.

DEVICE FOR TREATING GRAIN.

1,055,854.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed November 7, 1911. Serial No. 658,968.

To all whom it may concern:

Be it known that I, CHARLES J. BARBEAU, a citizen of the United States, and a resident of St. Henry, in the county of Mercer and State of Ohio, have invented a new and useful Improvement in Devices for Treating Grain, of which the following is a full, clear, and exact description.

My invention relates to devices for treating grain, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a device by means of which the outer hard, flinty coat of such grain as wheat, oats, etc. may be removed preparatory to cooking the grain, and canning it for use as a breakfast food.

A further object of my invention is to provide a device by means of which the outer hard portion may be removed without crushing the grain, so as to leave the latter in practically the same form or shape as it had before being treated.

A further object of my invention is to provide a special form of receptacle, in which the operation is carried out, with means for causing a passage of the grain from one end of the receptacle to the other, and for retarding it in its progress, thereby insuring the complete removal of the outer coat.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming part of this application, in which similar reference characters indicate like parts in the different views, and in which—

Figure 1 is a side view of the apparatus, certain parts being broken away to show the interior mechanism; Fig. 2 is an end view; Fig. 3 is a section along the line 3—3 of Fig. 1 looking in the direction of the arrow; Fig. 4 is a longitudinal section of a portion of the main receptacle; and Fig. 5 shows a side and end of the blades or vanes.

In carrying out my invention I provide a casing 1 which is divided into two longitu-

dinal compartments 1^a and 1^b. Disposed centrally of the compartment 1^a is a shaft 3 which has a reduced portion 3^x at one end journaled in the wall of the casing 1, and being provided with a sprocket wheel 4, around which a sprocket chain 5 passes. The opposite end of the shaft 3 is provided with a reduced portion 3^y journaled in the end wall of the casing and provided with a sprocket wheel 6.

Within the lower compartment 1^b is a similar shaft 7 which is journaled in the ends of the casing 1 and whose reduced end 7^y is provided with a sprocket wheel. Both of the shafts 3 and 7 are provided with the radially extending blades 9 which are turned so that when the shaft is revolved in the direction indicated by the arrows in Fig. 3 it will cause the grain which is delivered into the upper compartment 1^a, through the chute 10, to travel from the right to the left. Each of the compartments is provided with a semi-circular metal bottom 11 which is just cleared by the revolving blades 9. An opening 12 permits the passage of the grain from the upper to the lower compartment. A chute 13 establishes communication between the lower compartment 1^b and the main receptacle 14. The latter is carried upon the frame work 15 and is provided with a central tubular shaft 16. Disposed in rows along the central shaft 16 is a series of blades 17 like that shown in Fig. 5. These blades are screwed into the shaft as shown in Fig. 4. The plane of certain of the blades is such as to move the grain from the right to the left of the casing 14 as shown in Fig. 1, while the plane of certain other of the blades is such as to retard the grain. It is this feature of the device to which I desire to call particular attention. In Fig. 1 it will be seen that there are four consecutive blades in each row which are turned so as to give the grain a movement in the direction of the arrow, i. e., from right to left. These blades are shown at 17^x. The three blades in each row immediately preceding and following the blades 17^x, i. e., the blades 17^y, are turned so as to retard the grain. This arrangement of the blades is followed throughout the

length of the shaft 16 so that the ratio of the number of blades which force the grain from the discharge chute 13 along the cylinder, to those that tend to retard it, is 4 to 3, although any other suitable ratio might be used without departing from the spirit of the invention.

At one end of the cylinder 14 is a door 18 which is hinged at 19 to swing outwardly and which may be provided with a laterally extending arm 20 (see Fig. 2) bearing a weight 21 capable of adjustment along the arm. The shaft 16 has reduced end portions 16^{*} and 16^v journaled in bearings 22. The portion 16^{*} is provided with a drive wheel 23 connected by a belt 24 with the wheel 25 on the shaft 26. A suction fan 27 is also disposed on the shaft 26 and communicates by means of a pipe 28 with the upper part of a chamber 29. The latter forms a draft or suction chamber and completely surrounds the discharge end of the cylinder 14.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. The grain, as stated, enters the compartment 1^a of the casing 1 through the chute 10, whence it is forced along by the blades 9. During this movement along the compartment 1^a it may be subjected to the action of water, such as a fine spray. The motion of the blades tends to turn the grain so that it is thoroughly exposed to the softening action of the water. When it reaches the end of the compartment 1^a it drops into the lower compartment 1^b and is carried back toward the chute 13 where the grain is discharged into the main receptacle 14 in a "tempered" condition, *i. e.*, in condition to have the outer coating removed.

The rapidly revolving blades 17^{*} project the grain against the sides of the cylinder and against the adjacent blades so that the outer hard, flinty coat is beaten off. The grain is forced along until it meets the blades 17^v which tend to retard it in its movement. I have found that unless the grain is retarded in this manner it will pass directly through the cylinder and the outer coating will be only partially removed. The retardation of the grain, however, tends to cause the rubbing or abrading action of the particles of grain upon themselves, and this effectually removes the outer coat. The grain, however, is gradually forced along the cylinder due to the fact that there is a greater number of blades turned so as to force it in a forward direction. As the grain reaches the door 19 it is forced through the latter. As a further retardation I may use the weight 21 which may be adjusted on the arm 20 as desired. The denuded grain and the fibrous outer

coat fall into the suction chamber 29, the grain passing downwardly into the hopper 30. The light fiber, however, is carried by the current of air which enters at 31, upwardly through the pipe 28 and out of the exit 32.

It will be seen that I have provided a device which insures the removal of the outer coat of the grain. The grain comes out in practically the same shape or contour that it had in the beginning. It is not crushed but the outer coat has been completely removed.

I am aware that other forms of the device based on the same general plan might be made but I consider as my own all such modifications as fairly fall within the spirit and the scope of the invention.

I claim:—

1. In a device for treating grain, a main receptacle arranged to receive the grain, a central shaft in said main receptacle, a plurality of rows of blades secured to the shaft and extending radially therefrom, each of said rows comprising a series of groups of blades arranged to force the grain in one direction, a second series of groups of blades arranged to force the grain in the opposite direction, the number of blades in each group in said second named series being less than the number in the first named series, and one series of groups alternating with the other series of groups along the row.

2. In a device for treating grain, a main receptacle arranged to receive the grain, a central shaft in said main receptacle, a plurality of rows of blades secured to the shaft and extending radially therefrom, each of said rows comprising a series of groups of flat blades secured to the shaft and extending radially therefrom, each of said rows comprising a series of groups of blades having their faces turned at an angle approximately 45° from the axis of the shaft and arranged to force the grain in one direction, a second series of groups of blades having their faces turned at an angle of approximately 90° from the faces of the first series of groups and arranged to force grain in the opposite direction, a number of blades in the second named series comprising approximately three-fourths of the number in the first named series, and one series of groups alternating with the other series of groups along the row.

3. In a device for treating grain, a cylinder having a uniform diameter from end to end, a central shaft in said cylinder, a plurality of parallel rows of blades secured to said shaft and extending radially therefrom, each of said rows comprising a series of groups of blades arranged to force the grain in one direction, a second series of groups of blades arranged to force the grain

in the opposite direction, the number of blades in each group of said second series being less than the number in said first named series, and one series of groups alternating
5 with the other series of groups along the row, the outer edges of each of said blades being spaced from the walls of the cylin-

der, and all of said blades being of the same length.

CHARLES J. BARBEAU.

Witnesses:

WALTER D. MYERS,

FRED J. RENGNS.