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FIRE BEATING ATTACHMENT FOR HULLING AND GRINDING APPARATUS.

APPLICATION FILED JUNE 11, 1912.

1,067,297.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

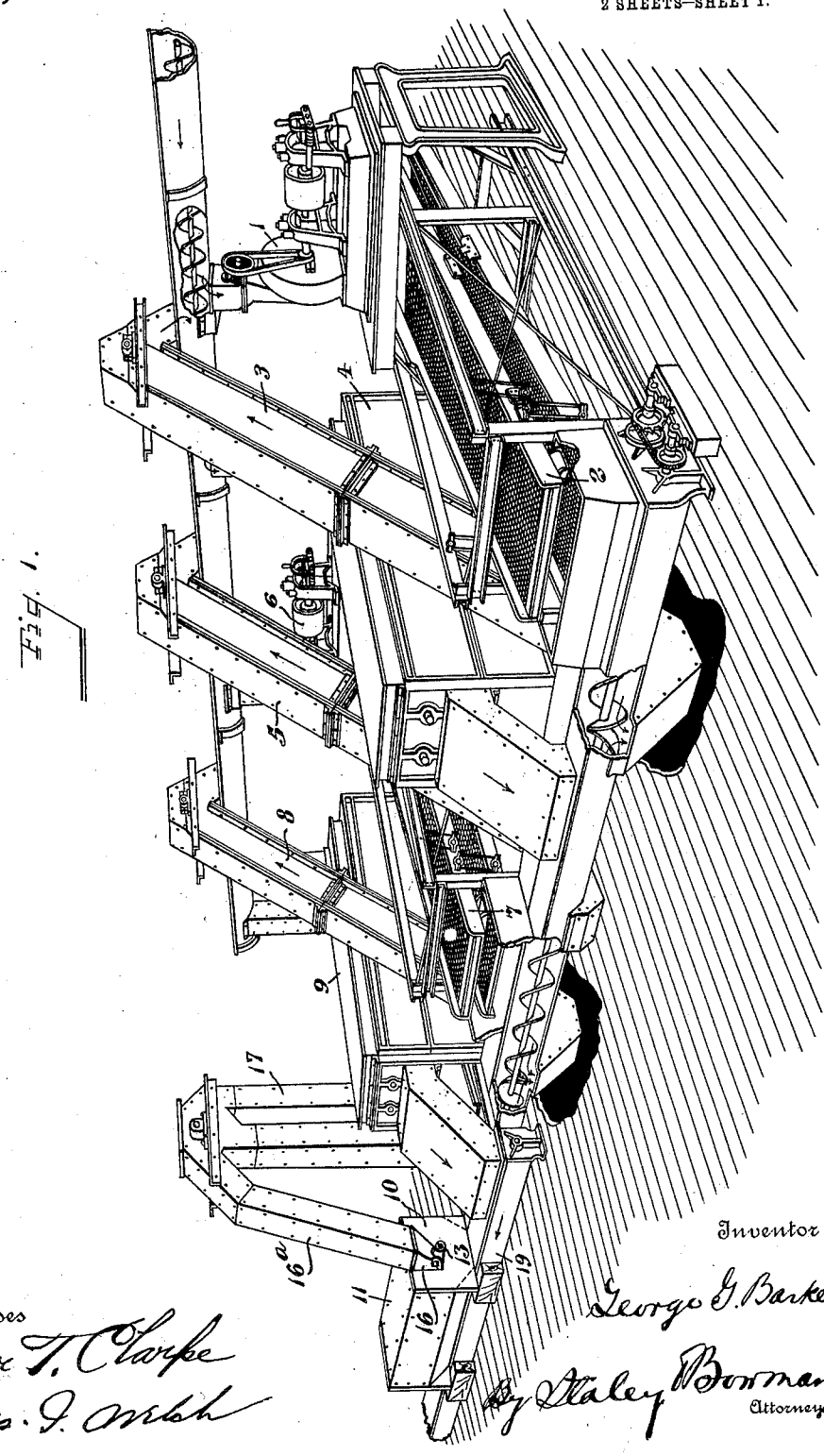


Fig. 1.

Witnesses

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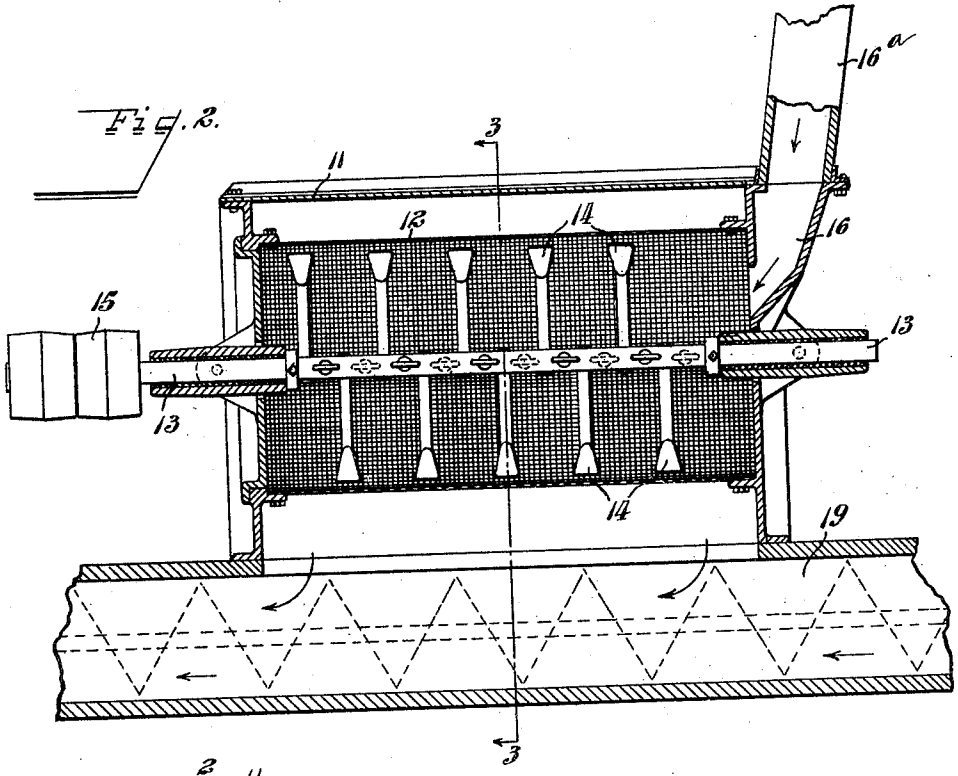
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2 SHEETS—SHEET 2.

Fig. 2.



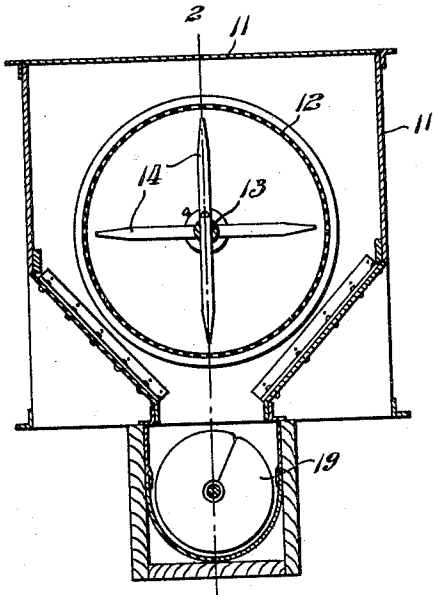


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE G. BARKER, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE BAUER BROTHERS COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

FIRE-BEATING ATTACHMENT FOR HULLING AND GRINDING APPARATUS.

1,067,297. Specification of Letters Patent. Patented July 15, 1913.

Application filed June 11, 1912. Serial No. 702,965.

To all whom it may concern:

Be it known that I, GEORGE G. BARKER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Fire-Beating Attachments for Hulling and Grinding Apparatus, of which the following is a specification.

This invention relates to improvements in machinery for treating cotton seed hulls and particularly relates to an attachment for extinguishing any smoldering fire that may occur within the hulls.

The various methods employed in treating cotton seed hulls necessarily cause some reduction of the hulls and thereby making possible a spark, causing the hulls to get afire. One general method employed in treating cotton seed hulls is illustrated in the drawings and known as a regrinding process and as explanatory of this process it should be stated that cotton seed hulls are reduced by initially passing through hulling mechanism and thereby crushed or cracked and then afterward subjected to a separating process whereby the meats are removed from the hulls and the hulls subsequently subjected to a grinding operation. In this method danger has heretofore existed from the fact that during both the hulling and grinding operation a spark may be generated sufficient to cause the hulls to catch fire and this is not readily detected until after serious loss is incurred by conflagration.

One main feature of this invention is to add an appliance which will be adapted to extinguish any fire that may be smoldering in the hulls and it is very important that the arrangements of the various devices should be such that this extinguishing device will be so located that it will follow the last hulling or grinding operation and throughout this application when the term reducing operation is used, it is meant either the grinding of the hulls or the further hulling of the seeds.

Referring to the drawings: Figure 1 is a perspective view of the machinery showing the extinguishing device preferably located at the extreme left side thereof. Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 3. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2.

Like letters of reference indicate like parts in the several views.

Referring to the drawings, 1 indicates the hulling apparatus which is preferably used in the particular method of treating the cotton seed hulls illustrated in this application, which is adapted to crush the cotton seed hulls. The separator is indicated by 2, and 3 indicates an elevator extending from the separator adapted to convey the hulls to the beater 4.

5 indicates the elevator extending from the beater 4 to the grinder 6 while 7 indicates the separator located in sequence with the grinder 6 and 8 indicates the elevator adapted to carry hulls to the beater 9. The extinguisher for the fire is indicated by 10 and is preferably shown to follow the beater 9, though it is evident that it need not be located at that particular place, but it is important that it be located to follow the last grinding or hulling operation in any of the usual methods employed for treating cotton seed hulls. This extinguisher (see Fig. 2) comprises a casing 11 and preferably a cylindrical screen located within the casing marked 12. This screen is formed with a mesh preferably coarse enough to allow the ground hulls to pass therethrough, and it has been found that it may be a $\frac{3}{16}$ size, though some other sizes may be used to advantage, provided the mesh is large enough to permit the material to be forced entirely through same. Within this cylindrical screen 12 is located the beater shaft 13 and whipper arms 14 are secured to said shaft so that they are rapidly rotated within the screen 12. The power necessary to operate the shaft 13 may be applied to a pulley 15 and the arms 14 are so arranged that they will coöperate with the cylindrical screen 12 to force the ground hulls through the mesh of the screen and for that purpose there is shown the inlet 16 (see Fig. 2) within which the ground hulls are adapted to be fed to said fire extinguisher and the spout 16^a (see Fig. 1) is part of the vertical elevator 17 so arranged that the hulls after the last grinding or hulling operation will be conveyed to the fire extinguisher where the mass of hulls will be forced through the screen of the fire extinguisher and thereby eliminate any possibility of smoldering fire within the hulls. After the material has been ejected from the

extinguisher by being forced through the mesh of the screen the arrangement is such that the material will fall into the extended conveyer 19 which is adapted to carry the finished hulls to the hull house preferably located at some distance from the machine. It is therefore apparent that the main feature of this invention resides in the fact that after the hulls have been subjected to a hulling or grinding operation the mass of material is substantially all forced through a screen in the manner previously described.

A main feature of this invention is in combining a particular type of fire extinguishing device that is adapted to coöperate properly with the balance of the machine, in that the fire extinguishing device does not in any way injure or impair the quality of the article and permits the grinding or hulling mechanism to operate to greater advantage without danger of fire. Furthermore the hulling or grinding operation is set to put the article in proper condition for passage through the screen 12 of the fire extinguishing device.

Having thus described my invention, I claim as follows:

1. In a machine for treating cotton seed hulls, the combination, with mechanism for reducing the cotton seed hulls by hulling or grinding same, mechanism for separating the meats from the hulls, of a fire extinguishing device, and means for conveying the reduced hulls from the reducing and separating devices to said fire extinguishing device, said fire extinguishing device comprising a screen together with means for forcing the reduced hulls through said screen without further separation.

2. In a machine for separating cotton seed hulls, the combination of devices for treating the cotton seed hulls to extract the meats from the hulls, including a reducing device operating thereon whereby the cotton seed hulls are either ground or hulled, separating devices for separating the hulls from the meats, a completely inclosed fire extinguishing device, means for conveying the separated and reduced hulls to said extinguishing device, the latter element comprising a screen having a mesh of sufficient size to operate upon said hulls after same have been reduced and means for forcing the reduced hulls entirely through said screen without substantially any further reduction thereof and without further separation, while maintaining the hulls in substantially the condition received by the fire extinguishing device, substantially as specified.

3. In a machine for treating cotton seed hulls, the combination of mechanism for reducing the cotton seed hulls by hulling or grinding same, a fire extinguisher device, means for connecting the fire extinguishing device to the reducing mechanism, a screen comprising a part of said fire extinguishing device having a mesh of such size that the reduced hulls can be forced through same, a casing for the extinguishing device, an inlet on one side of said screen and an outlet on the opposite side thereof, and means for forcing all the reduced hulls through said screen to said outlet for the purpose specified.

In testimony whereof, I have hereunto set my hand this 29th day of May 1912.

GEORGE G. BARKER.

Witnesses:
CHAS. I. WELCH,
ESTHER E. PFEIFER.

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