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CLEANING MECHANISM FOR SAW GINS.

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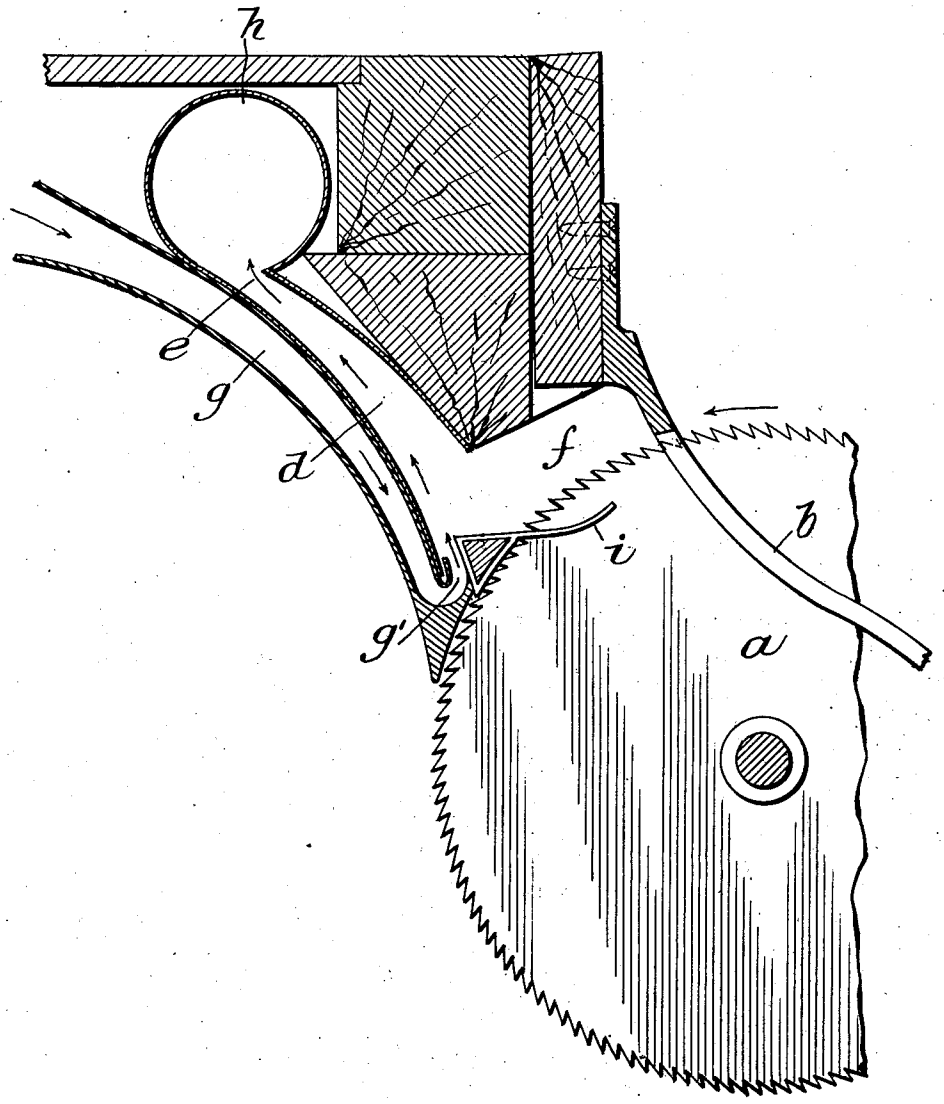
**1,010,731.** Patented Dec. 5, 1911.




Witnesses.

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# UNITED STATES PATENT OFFICE.

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## CLEANING MECHANISM FOR SAW-GINS.

1,010,731. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed June 8, 1909. Serial No. 500,843.

*To all whom it may concern:*

Be it known that I, JAMES G. DICKSON, a citizen of the United States, residing at Little Rock, county of Pulaski, and State of Arkansas, have invented certain new and useful Improvements in Cleaning Mechanism for Saw-Gins; 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 which it appertains to make and use the same.

This invention relates to cleaning mechanism for saw-gins and is intended as an improvement in the mechanism for the same purpose which is described in Letters Patent No. 897,883, granted to me on September 8, 1908.

The novel features of the invention will appear clearly from the following description and claims.

The accompanying drawing illustrates in vertical section a portion of a saw-gin to which the invention is applied.

Referring to the drawing, *a* denotes one of the gin saws, and *b* one of the gin ribs, said rib being formed by slotting the breast plate in the usual manner to permit the movement of the saw therethrough. The breast plate is secured to the frame of the gin in any convenient manner, such as that illustrated.

Adjacent to the upper rear portion of the saw is located a trash duct *d* which leads in oblique direction radially of the saw and away from its periphery, said duct delivering into a transverse trash flue *h*. The flue *h* and the trash duct *d* extend throughout the width of the gin, that is to say, they cooperate with all of the saws of the battery, and the communication between the trash duct and flue is effected by means of a constricted opening or neck portion *e* formed at the lower part of the trash flue, which is preferably of circular cross section as illustrated. The trash duct *d* is wider at its lower end where it communicates with an open space or trash chamber *f* located just behind the breast plate and at the upper portion of the saw.

Extending parallel to the trash duct *d* is an air duct *g*, located immediately beneath the trash duct and decreasing in cross section from the upper to the lower end. At the lower end or outlet of said air duct the same is provided with a relatively sharp reverse bend or hooked portion *g'* that debouches into the lower enlarged end of the trash duct. This curved outlet or nozzle of the air duct is of reduced cross section as compared to the main part of the air duct and serves to direct the air which is forced or sucked in downward direction through the air duct upward into the trash duct, whence such air passes into the flue *h*.

When the teeth of the saw pass through the gin ribs into the space *f*, the lint which adheres to them carries a certain amount of motes, dust, and other trash, and this is removed from the lint and conducted to the air blast by means of a device *i* of appropriate character which may, if desired, comprise a stripping finger extending along the saw face to a certain extent, as shown. This stripping finger may be omitted in some instances, in which event the centrifugal force induced by the rotation of the saw is relied upon to throw off the trash from the saw teeth, but in any case the device *i* guides the liberated trash to the air blast, at the point where said blast is emitted from the outlet or nozzle *g'*, so that such trash is carried to the trash duct and thence out of the machine. In case stripping fingers of the kind illustrated are used, they are located alongside both faces of the saws, as will be understood, and it will be obvious that the trash in dropping off of the lower ends of these fingers will fall directly into the air blast which is directed along the finger ends.

The important features of the invention are the reverse bending of the air duct so that there is obtained an upwardly directed nozzle of relatively small area discharging the air into the trash duct at the lower end of the latter, and also the provision of the means by which the foreign matters are effectively removed from the saw teeth and conducted to the air blast, through the intermediary of which they are removed from the gin. The particular relation of the air duct and trash duct is especially advantageous in obtaining a strong upward draft which will effectively carry away all of the trash, and this result is obtained by a compact and simple arrangement. The improved construction is adapted for use with both brush and air blast gins, and may, of course, be operated either by the injection of air into the air duct or by suction. In the latter case, the suction is preferably effected from

the trash flue, which can be connected with a suction pump in any convenient manner.

It is to be noted that owing to the fact that the trash duct enters the trash flue at the bottom of the latter, and in a substantially tangential direction, the trash will move in a spiral course as it passes outward through the trash flue, thus preventing obstruction of the flue by the settling of the foreign matters therein. In other words, after each substantially circular movement of the body of trash in the trash flue, during the outward passage of the trash, the air from the trash duct strikes such body and tends to hold it in the center of the flue.

Without limiting myself to the precise construction shown, I claim:—

1. In cleaning mechanism for saw gins, the combination of a saw, means to direct a blast of air in proximity to but out of contact with the periphery of the saw, and means to guide to the air blast the trash thrown off from the saw.

2. In a saw gin, the combination with the saws, of a trash flue at the rear of the same, a trash chamber in advance of said flue and into which the trash is thrown from the saw teeth by centrifugal force, and a duct connecting said chamber with said trash flue and into which a blast of air is discharged, said blast of air being out of contact with the saws.

3. In cleaning mechanism for saw-gins, a trash duct to conduct the trash away from the periphery of the saw, an air duct parallel with the trash duct and having a sharp reverse bend by which the air is discharged into the lower end of the trash duct, and means to guide the trash from the saw teeth into the blast in the trash duct.

4. In cleaning mechanism for saw-gins, a trash duct to lead the trash upward and away from the periphery of the saw, an air duct directing the air downward and toward the periphery of the saw and having a reversely curved discharge bend through which the air is discharged into the lower end of the trash duct, and a stripping device to strip the trash from the saw-teeth and deflect it into the trash duct.

5. In cleaning mechanism for saw-gins, a trash duct to conduct the trash upward and away from the periphery of the saw, a downwardly extending air duct parallel to the trash duct and having at its lower end, which communicates with such trash duct, a reverse bend of reduced cross section by means of which the air is turned in its course and directed upwardly through the trash duct, and means to guide the trash from the saw-teeth into the blast in the trash duct.

6. In cleaning mechanism for saw-gins, a trash duct extending radially with respect to the saw at the upper rear portion of the latter, an air duct beneath the trash duct and parallel thereto, said air duct leading the air in downward direction toward the periphery of the saw, a sharply curved nozzle portion of reduced cross section at the lower end of said air duct by which a blast of air is discharged in upward direction into the lower end of the trash duct in order to entrain the trash, and means to guide the trash from the saw-teeth into the trash duct adjacent said nozzle.

7. In cleaning mechanism for saw-gins, the combination of a saw, means to direct a blast of air away from the periphery of the saw, and means to strip the trash from the saw-teeth and guide it to such air blast.

8. In cleaning mechanism for saw-gins, the combination of a saw, a trash duct leading away from the periphery of the saw, means to direct a blast of air into said trash duct, the saw teeth being out of the air blast, and a stripping device to guide the trash from the saw teeth into the air blast.

9. In cleaning mechanism for saw-gins, the combination of a saw, a stripping finger located along the edge of the saw, and along which the trash is guided, and means to direct a blast of air in proximity to the end of said stripping finger from which the trash drops off in order to remove such trash, the saw teeth and the main part of said stripping finger being out of the air blast.

10. In cleaning mechanism for saw-gins, the combination of a saw, a trash duct leading away from the periphery of the saw, an air duct communicating with the inlet end of the trash duct, and a stripping device coacting with the saw and guiding the trash from the saw into the air blast at the junction of said ducts.

11. In cleaning mechanism for saw-gins, the combination of a saw, a trash duct to conduct the trash away from the periphery of the saw, an air duct substantially parallel with the trash duct and communicating therewith at the lower end of the trash duct, the lower end of the air duct being curved reversely in order to turn back the air blast and cause it to enter the trash duct, and a stripping device which strips the trash from the saw teeth and guides it to the point where the air is discharged from the air duct.

12. In cleaning mechanism for saw gins, a saw, means to direct a blast of air in proximity to the saw but out of actual contact therewith, and means to strip the trash from the saw teeth and guide it to such air blast.

13. In cleaning mechanism for saw gins, a saw, means to direct a blast of air in proximity to the saw teeth but out of actual contact therewith, and a relatively fixed stripping finger to strip the trash from the saw teeth and guide it to such air blast.

14. In a cotton gin, a gin saw, a dust chamber adjoining the upper portion of the saw, a discharge chute leading from the bottom of the chamber and inclining upwardly and outwardly, and an air-blast passage directed into the mouth of the discharge chute at the bottom of the said chamber, and curving around the lower end of the lower wall of the chute, said saw arranged out of the path of the said passage.

15. In a cotton gin, a gin saw, a dust chamber adjoining the upper portion of the saw, a chute leading from the lower portion of the chamber, a whipping board cooperating with the saw, and a nozzle to direct a blast of air into the chute, directed thereto between the lower wall thereof and the whipping board.

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

JAMES G. DICKSON.

Witnesses:

R. M. S. BUTNER,

A. W. JOHNSON.