(No Model.)

J. J. FAULKNER.

MACHINE FOR DELINTING COTTON SEED.

No. 454,465. Patented June 23, 1891.

FIG. 1.

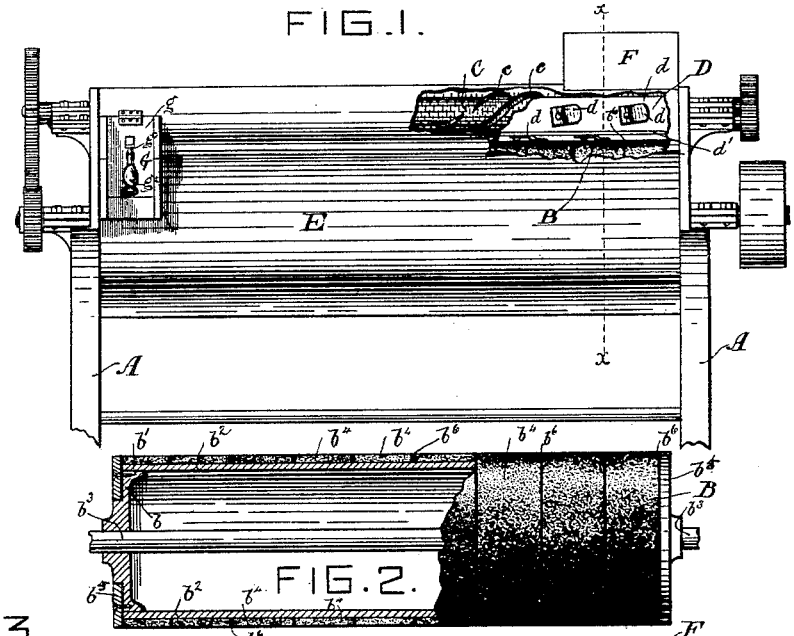


FIG. 2.

FIG. 3.

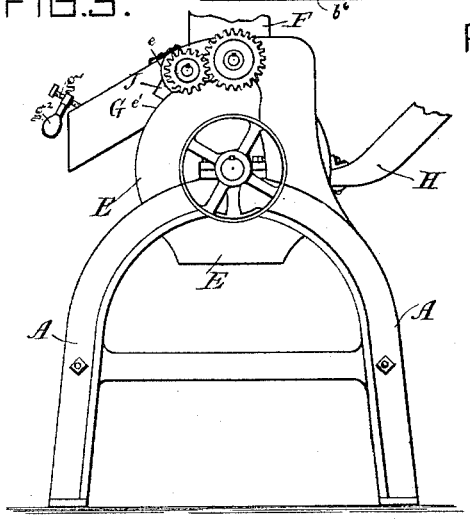
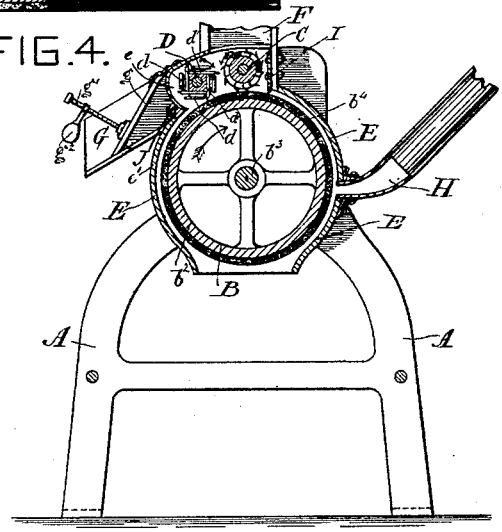


FIG. 4.



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UNITED STATES PATENT OFFICE.

JAMES JONES FAULKNER, OF MEMPHIS, TENNESSEE, ASSIGNOR TO THE NATIONAL COTTON SEED OIL AND HULLER COMPANY, OF SAME PLACE.

MACHINE FOR DELINTING COTTON-SEED.

SPECIFICATION forming part of Letters Patent No. 454,465, dated June 23, 1891.

Application filed September 4, 1890. Serial No. 363,951. (No model.)

To all whom it may concern:

Be it known that I, JAMES JONES FAULKNER, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Machines for Delinting Cotton-Seed, of which the following is a specification.

This invention relates to machines for delinting cotton-seed, and is an improvement upon my former invention for which Letters Patent were issued June 24, 1890.

The invention will be first fully described in connection with the accompanying drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, after which it will be particularly referred to and pointed out in the claims.

Figure 1 is a front elevation of my improved machine, part of the casing and the agitator at the head end being broken away to expose the working parts. Fig. 2 is a detail view, partly in elevation and partly in section, of the delinting-cylinder. Fig. 3 is an elevation of the head end of the machine. Fig. 4 is a vertical transverse section taken through line *x x*, Fig. 1, looking toward the tail end of the machine. The side of the discharge-spout is removed to expose the valve which controls the discharge.

Referring to the parts, A represents the supporting-frame of the machine, consisting of two side standards suitably braced together and provided with bearings for the shafts of the delinting-cylinder B, the feed-roll C, and agitator D. The outer casing, which may be of either wood or sheet metal, is represented by E.

F represents the hopper or feed-spout, and G the discharge-spout.

H represents a flume or lint-discharge trunk leading to a condenser or lint-chamber and having an exhaust-fan interposed in it between the machine and the condenser.

The fan and the condenser are not shown in the drawings, as they are too well known to require any specific directions to apply them. It is sufficient for the mechanic to know that it is required to interpose an exhaust fan or blower in the flume H to draw the lint from the casing E, and with such knowledge he can readily arrange any of the well-known exhaust-machines to carry the lint from the delinting-cylinder to the condenser or lint-chamber.

While the essential features of my invention inhere in the means I have devised for keeping the seeds in contact with a delinting-cylinder until they are thoroughly delinted, I have also invented the specific features which enable me to accomplish the desired result economically. I will first give a detailed description of these parts separately, and then describe how they operate when combined in the machine.

The body of the cylinder B is formed upon two heads b, which have inwardly-projecting flanges b', which enter the ends of the drum b^2, which may be formed of wooden staves or of iron. The heads b have centrally-perforated bosses or hubs to receive the shaft b^3. Over the cylinder so formed are placed rings or hoops b^4, which are formed, preferably, of corundum or concrete, and are held in place by rings b^5 at each end of the cylinder. One of these rings or flanges may be cast in one piece with one of the heads b, but the other is removable and is secured to the head by screws. By this means the rings b^4 are firmly clamped edge to edge upon the drum. To prevent the rings from slipping, paper washers b^6 are interposed between each two adjoining rings and between the outer edges of the end rings and the clamping-flanges. The feed-roller C has its exterior roughened to catch hold of the seed so long as any lint adheres to the hulls and convey them in contact with the delinting-cylinder. I have shown this roller with metal pins projecting from its periphery, and I prefer to make it so; but it may, if desired, be covered with concrete or corundum. This roller extends the full length of the machine, and is provided at its head end with spiral flights c, which serve to feed the seed toward the tail or discharge end of the machine. The agitator or float D also extends the full length of the machine, and at its head end is provided with inclined plates d, which serve to carry the seed toward the tail end of the machine. This winged shaft, which I term an "agitator" or "float,"

consists of a square shaft having blades d' secured upon its sides and projecting beyond the shafts to form troughs, which catch the seed and successively deliver it to the roller C and delinting-cylinder B, so long as there is any lint upon them to cause them to adhere together; but when the hulls are scoured clean or completely freed from lint they will drop away from the float and be carried along the chamber to the discharge-spout.

The feed-roll C is placed about one-half inch from the check-plate, which extends the full length of the machine, with its lower edge near enough to the delinting-cylinder to prevent the seed from passing it. The feed-roll is also placed about the same distance from the delinting-cylinder. The winged shaft or float D is also placed about one-half inch from the delinting-cylinder and the same distance from the outer casing.

The feed-roller C is geared to run at a slow speed, while the float D is geared to run much faster, so that the feed-roll and the delinting-cylinder are always amply supplied with seed.

I have found by experience that some kinds of seed must be subjected to the action of the machine longer than others, in order to thoroughly cleanse the hulls from the lint, while some kinds are so quickly delinted that the hulls are liable to be broken and the kernels injured if subjected to the action of the machine after the lint has been removed.

I have devised means whereby my machine may be readily adapted to delint any kind of seed without injuring hulls or kernels. This I do by controlling the discharge of the delinted seed from the machine. Referring particularly to Fig. 4, I will describe the means by which this result is accomplished. Within the discharge-spout G, I arrange a door or flap-valve g, which is hinged at its inner edge, so as to drop down at an angle by its own weight and close the discharge. Near the forward end of this valve I secure an upwardly-projecting screw-rod g', upon which I fix an adjustable weight g^2. The valve is held closed with more or less force by adjusting the weight farther from or nearer to the valve. The operator may therefore by inspecting the discharged seed determine whether it should be subjected to the action of the machine for a longer or shorter period of time. If the former, he has only to load the valve by adjusting the weight g^2 outwardly, thus holding the seed in the machine until they are properly treated, and if the latter the weight should be adjusted in the opposite direction to lighten the valve and allow the seed to pass out freely. The flume H is flattened at the end which connects with the casing, so that its opening extends the full length of the machine. From the casing it converges to the point of its connection with the fan. (Not shown.) The portion e of the casing which forms the seed-chamber is supported at its bottom edge upon a cross-bar J, which also sustains the front shell e', which covers the front of the delinting-cylinder. The casing is open at the bottom, and through this opening air is supplied to the fan-flume H.

In operating the machine the hopper F is kept well supplied with seed, which are caught by the toothed roller C and carried down to the delinting-cylinder B and carried by it against the check-plate I, and again taken up and carried around by the roller C. Such seed as drop past the roller C upon the side opposite the check-plate are carried around to the cylinder B by the winged shaft D until the lint has been entirely removed. The seeds are continually forced in the direction of the discharge-spout G, located at the end of the machine opposite the seed-receiving spout F, by the inclined flights upon the two feeders C D.

It is obvious that the delinting-cylinder of my former patent may be substituted for the particular cylinder here shown, and that other forms of feed-rolls may be substituted for the one here shown, and in place of the exhaust to remove the lint from the machine the brush of my former patent may be used. Such substitution being suggested, it only requires the skill of a mechanic to effect it. I would therefore have it understood that I do not limit myself to the precise details shown, but shall consider all mere mechanical changes as within the spirit and scope of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a machine for delinting cotton-seed, the combination of the supporting-frame, the delinting-cylinder having a rough or abrading surface mounted therein, the feed-roll C, and float D for supplying seed to said cylinder, the outer casing inclosing said cylinder, feed-roll, and float, and having a seed-receiving spout at one end and a discharge-spout at the opposite end, the check-plate arranged in proximity to the feed-roll to prevent the seed from passing around the delinting-cylinder, and an exhaust-flume, as H, to convey the lint from the machine, substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the supporting-frame and outer casing, the delinting-cylinder mounted in said frame, the hopper-spout F at the head of the machine and the discharge-spout G at the opposite end, the feed-roll C, having spiral flights c and roughened surface, said roll having its head end below the hopper-spout, the check-plate I in proximity to the feed-roll to arrest the seed and deflect them in the bite of the feed-roll, the float or winged shaft D to return the seed to the cylinder and feed-roll, the seed-chamber upon one side of the delinting-cylinder and the lint-discharge at the opposite side, and means, such as described, for removing the lint from the casing.

3. The combination, in a delinting-machine of the character described, of the frame, the

delinting-cylinder mounted therein, feed-rolls for delivering the seed to said cylinder, the outer casing inclosing said cylinder and its supply-rolls, the hopper at one end of said casing, the discharge-spout at the opposite end, and the adjustably-loaded valve for controlling the seed-discharge from said spout, substantially as shown and described.

4. In a cotton-seed-delinting machine, the combination of the delinting-cylinder and feed-roll for delivering seed to said cylinder, said cylinder and feed-roll having roughened peripheries, with the float D for returning the seed to the cylinder and feed-roll, said float being provided with inclined flights *d* at its head end, the outer casing having feed-spout at one end and the discharge-spout at the opposite end, substantially as shown and described.

5. The combination, substantially as set forth, of the supporting-frame, the delinting-cylinder mounted therein, the feed-roll C, having roughened exterior and spiral flights *c* arranged at its head end, the float D, having inclined feed-plates *d*, the casing E, having seed-chamber *e*, feed-spout F, discharge-spout G, the loaded valve controlling said discharge, the check-plate I, and exhaust-flume H, combined and arranged substantially as specified.

6. The delinting-cylinder consisting of the drum, the rings b^4, arranged to fit over said drum, the interposed washers b^6, and the flanges b^5 for clamping the rings upon the drum, substantially as shown and described.

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Witnesses:
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