

**CONTINENTAL EAGLE CORPORATION'S
AUTOMATED LINT CLEANER LOUVERS**

**Dennis P. Steele
Continental Eagle Corporation
Prattville, AL**

Abstract

The USDA has patented automated louvers for saw type lint cleaners, and licensed exclusively, Continental Eagle Corporation to manufacture and sell these louvers for all models of lint cleaners. These automated louvers allow gin operators to select the amount of lint cleaning desired within a single lint cleaner.

Introduction

Within the cotton gin industry, typically, one or two stages of saw type lint cleaning is the accepted method of cleaning lint for most Upland varieties of cotton. Saw type lint cleaners do a good job of removing foreign matter, combing the fiber, and blending the fiber. However, due to the aggressive nature of the cleaning mechanism, some good lint is thrown away with the foreign material at each of the individual grid bars.

The total amount of material removed by the lint cleaner varies with harvesting practices, variety of cotton, and quality of cotton. And, according to various published papers, it is also dependent on the number of grid bars spaced around the saw (Anthony 2000). Many gins outfitted with two stages of lint cleaning have bypass valves so the gin operator can choose to process the cotton with one or two stages of lint cleaning. The automated louver system goes one step further. It allows the gin operator to select the proper number of grid bars within each lint cleaner. This would be used when, for example, one lint cleaner is too many or one lint cleaner is not enough but two is too many. The gin operator has little control over the harvesting practices, variety, or quality of cotton brought to the gin. However, depending on the condition of the cotton coming into the gin, with the automated louver system, the gin operator can now quickly nullify the effect of one or all (except for the first) of the grid bars of the lint cleaner to minimize fiber loss for the quality of the cotton being processed.

Discussion

The automated louver system accomplishes three things.

- 1) It leaves the grid bars unobstructed, and allows free passage of foreign matter between the grid bars when maximum cleaning is required.
- 2) It negates the cleaning effect of the grid bars if less cleaning is required.
- 3) It switches between the two configurations with little or no lost time.

Each individual louver consists of an aluminum bar specially formed for its specific location within the grid rack, and extends the entire length of the saw. This bar is attached to a rod that extends through the heads of the lint cleaner and is mounted at the heel of the grid bar directly above the bar it is designed to negate. One end of this rod is attached to a pneumatic cylinder through a linkage arm, and the pneumatic cylinder is connected to its own solenoid.

When the louver is disengaged, it is rotated upward by action of the pneumatic cylinder and linkage arm, which leaves the area between the two grid bars open. This allows the normal stripping action of foreign material

from the lint at the nose of the grid bar, and removal of the trash between the grid bars. When the louver is engaged, it is rotated downward by action of the pneumatic cylinder and linkage. In this position, the leading edge of the louver fits snugly and precisely at the nose of the grid bar, closing the opening between the grid bars and preventing the normal stripping action.

Each louver is operated by its own pneumatic cylinder and solenoid. Therefore, each louver can be activated independently of any other louver to obtain the proper amount of cleaning for any condition of cotton being processed. The control of the louvers can be as simple as a series of manually operated on/off selector switches, incorporated into a computerized gin process control system, or any combination in between.

Summary

The USDA has patented automated louvers for saw type lint cleaners, and licensed exclusively, Continental Eagle Corporation to manufacture and sell these louvers for all models of lint cleaners. These automated louvers allow the gin operator to negate the effect of individual grid bars independently within each lint cleaner to provide the appropriate amount of cleaning with minimum fiber loss. In addition, the grid bar configuration can be altered with little or no lost time by activating independently controlled pneumatic cylinders.

References

Anthony, W. S. 2000. Methods to Reduce Lint Cleaner Waste and Damage. Transactions of the ASAE. March 2000, Vol. 43, No. 2, pp. 221-229.