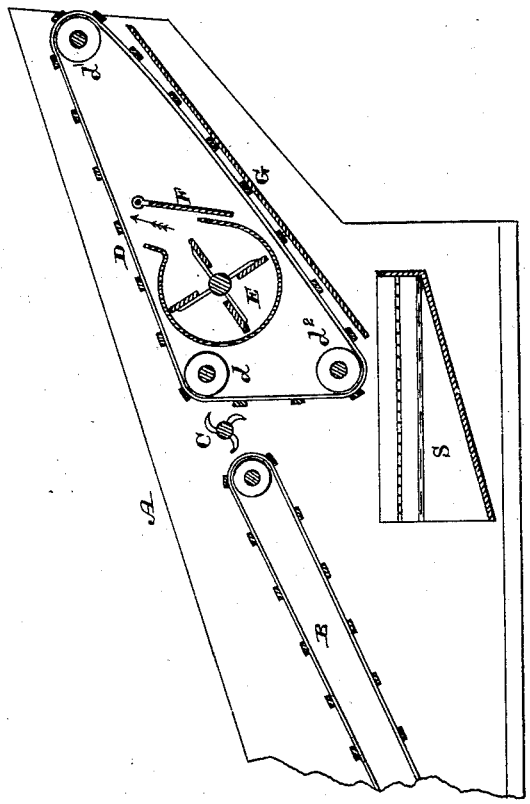
(No Model.)

L. A. RICHARDS.

GRAIN SEPARATOR.

No. 302,357. Patented July 22, 1884.



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UNITED STATES PATENT OFFICE.

LOVELL A. RICHARDS, OF GRAYSON, CALIFORNIA.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 302,357, dated July 22, 1884.

Application filed November 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, LOVELL A. RICHARDS, of Grayson, county of Stanislaus, and State of California, have invented an Improvement in Grain-Separators; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of grain-separators; and it consists in certain new and useful improvements in connection with the straw-carrier, whereby much of the grain which is usually carried off with the straw, and is discharged over the end of the machine, is separated and saved, being returned to the shoe, all as hereinafter described, and pointed out in the claim, reference being made to the accompanying drawings, in which the figure is a side elevation showing my improvements.

I have not deemed it necessary to illustrate or describe those portions of a grain-separator which do not pertain to my invention, but I have confined myself to the immediate locality of the parts improved, showing, however, for greater clearness, the top A of the main frame, the usual grain-carrier, B, which receives the straw and grain from the cylinder, and the picker C, between the grain-carrier and the straw-carrier D and the shoe S. The usual course of the grain is to drop off the end of the grain-carrier into the underlying shoe, while the straw is taken by the picker over onto the straw-carrier, and by it is discharged over the end of the machine. It is well known, however, that much grain is thus lost, for it cannot be completely separated from the straw, and various means have been employed to save it to some extent. My straw-carrier D is opened out, as shown, by the introduction of a third roller or drum, d^2, in addition to the two usual ones, d and d'. This gives me space for a fan, E, inside the straw-carrier.

F is a wind-board, which directs the blast from the fan upward, and causes it to pass through the upper side or layer of the straw-carrier about its middle, so that its effect is to blow the grain and straw up, the latter being carried over the end, while the former has still space enough to fall onto and through the straw-carrier between where the blast strikes it and the end of the carrier. Under the lower side of the straw-carrier is a sloping return-board, G, the rear end of which is supposed to be in connection with the shoe.

The straw-carrier is an open belt formed of spaced cross-slats, so that the grain which falls upon it has no difficulty in passing through both upper and lower sides, and falling on the board, down which it is scraped by the returning lower side of the straw-carrier until it is discharged into the shoe. The lower end of the wind-board is separated from the fan-casing by a small space, as shown, so that if any of the grain should fall back of the wind-board it will pass through and not get into the fan-casing to choke the fan.

The mention of a few of the obvious advantages of this arrangement will sufficiently demonstrate its utility. In the first place, I avoid the expense of an extra attachment with its supplementary carrier, its auger, and spout, &c., and yet accomplish the result. In the second place, I avoid the necessity of a double straw-carrier by placing my fan inside of the regular straw-carrier, for this reason: If I place, as has been done, the fan under the carrier, both layers of which travel above it, it is obvious that the separated grain cannot be scraped back by this carrier for it encounters the blast on its return. Before the grain can be carried back it must drop below the blast, and therefore a second carrier lower down has been used; but by opening out the regular carrier I make its lower side, which is thus below the blast, carry or scrape back the grain to the shoe. This arrangement is inexpensive, and can readily be adapted, whether by the exact arrangement of rollers I have here shown or by another arrangement, is immaterial, provided the carrier be opened out sufficiently to permit the introduction of a fan within it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a grain-separator, the straw-carrier D, opened out, as shown, and the return-board G, over which its lower side scrapes in returning, in combination with the fan E within and between the upper and lower sides of the straw-carrier and the wind-board F, substantially as herein described.

In witness whereof I have hereunto set my hand.

LOVELL A. RICHARDS.

Witnesses.
H. C. LEE,
S. H. NOURSE.