
(19)		Canadian Intellectual Property Office	Office de la Propriété Intellectuelle du Canada	(11)	CA 426128	(13)	A
		An Agency of Industry Canada	Un organisme d'industrie Canada	(40)	13.03.1945		

(12)

(21) Application number: **426128D**

(51) Int. Cl:

(22) Date of filing: ..

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(54) **COMBINE AUGER CONVEYER**

(54) **CONVOYEUR A TARIERE DE MOISSONNEUSE-
BATTEUSE**

(57) **Abstract:**

This First Page has been artificially created and is not part of the CIPO Official Publication

426128

March 13, 1945

S P E C I F I C A T I O N

TO WHOM IT MAY CONCERN:

Be it known that I, Thomas Carroll, a citizen of Canada and resident of Toronto, in the Province of Ontario, and Dominion of Canada, have invented certain new and useful improvements in

AUGER CONVEYOR FOR
COMBINES,

of which the following is a full and clear description, reference being had to the accompanying drawings which form a part of this specification.

Generally stated, an object of the present invention is to provide means for conveying the grain from the cutter bar to a relatively narrow elevator which is simple, easily manufactured at low cost and capable of continuous operation in all crop conditions without the attention of the operator.

When wheat and the like are ready to be harvested, it is important that it be harvested without delay; therefore it is an object of my invention to provide means for moving the grain into the outlet of the trough which will be positive in its operation and without danger of moving the grain to the elevator in bunches or unevenly.

I accomplish the foregoing objects by means of a suitably shaped trough having grain moving augers, guiding means and especially designed means for moving the grain from between the ends of the augers into the elevator as uniformly as it is cut by the cutter bar.

To these and other useful ends, my invention consists of parts, combinations of parts, or their equivalents, and mode of operation, as hereinafter set forth and claimed and shown in the accompanying drawings in which:

Fig. 1 is a top view of the preferred form of my device illustrating fractionally the elevator which received the grain from the trough outlet.

Fig. 2 is a transverse sectional view of the device shown in figure 1, taken on line 2-2 of this figure.

Fig. 3 is a fractional top view of a modification of the device shown in figure 1 but illustrating the auger turned 90° from that shown in this figure and omitting the cutter bar and its fastening to the pan.

Fig. 4 illustrates fractionally the device shown in figure 1 but showing a modification of the pan.

As thus illustrated, the cutter bar in its entirety is designated by reference character A. The pan is designated in its entirety by reference character B. The elevator in its entirety is designated by reference character C and the shaft and augers, including the grain moving means between the augers are designated in their entireties by reference character D.

Member A is a standard commonly known cutter bar. The pan, as illustrated in figures 1 and 2 is secured at its front end to member A as at 10 in any well known manner. The pan is made from sheet metal, the forward and rear bottoms 11 and 12 of which are preferably flat, the flat portions being connected together by a curve as at 13 so as to form a channel 14 directly under member D.

The pan is provided with a rear upwardly extending guard panel 15 which is preferably vertical, as illustrated in figure 2 and is connected to member 12 by means of a curved portion 16. The pan and members 15 are strengthened by means of a number of L-irons 17, one for each end of the pan and at least one on opposite sides of an outlet 18 which is positioned preferably midway the ends of the pan and cut out of member 15, the cut-away portion terminating as at 19 at the top and somewhere within curve 16 for the reception of the receiving end of elevator C.

Member C is provided with suitable side, top and bottom panels and preferably an endless elevator apron 20. This member C is too well known to require further illustration or description.

In order to stiffen the top of member 15, I provide an L-iron boom 21 which extends the full length of the pan. The ends of the pan are partially closed by means of plates 22-22. Member D comprises a shaft 30 preferably a large tube, the ends of which are filled by means of members 31 into which are concentrically mounted stub shafts 32-32, the shafts protruding through member 22 and being mounted on this member by means of anti-friction bearings 33-33.

At one end of one of shafts 32 I mount a sprocket 34 which is driven by a suitably positioned shaft and chain (not shown). Tube 30 has mounted on opposite ends auger conveyor members 35 and 36, these members extending from the ends of member 30 inwardly, terminating as at 37-37.

On the inner ends of members 35 and 36, I provide rearwardly extending extensions 38-38 which are, as illustrated in figure 1, preferably positioned at right angles to the axis of member 30. I provide plates 39-39 which are secured to the rear ends of members 38 and terminate at their other ends as at 40-40. Members 39 are positioned on opposite sides of member 30.

It will be seen that the grain will be moved toward the center of the platform where it will be engaged by members 38 and 39 and moved rearwardly through outlet 18, these members acting to confine the grain and urge it into elevator C.

Clearly member 15 will act to prevent the grain from moving rearwardly out of the pan. Members 39 will engage the grain and positively move it into outlet 18 because members 38 will prevent it from moving transversely past the ends of the outlet.

In figure 3, I illustrate by dotted lines a modification wherein augers 45 and 46 terminate as at 47-47. In this design, members 39 are attached directly to the inner ends of the augers and a short portion of the inner ends of members 45 and 46 may be notched as at 48 similar to notches 41 in members 38. Members 39 may terminate as at 47 or extend further on as in figure 1.

One end of plates 39 is preferably the same height as member 51, the other end being preferably somewhat narrower as at 52. The outer edges of plates 39 are preferably notched as at 53-53; thus it will be seen that the device shown in figure 3 will operate similar to the device shown in figures 1 and 2.

In harvesting some grain and under some conditions, notches 53 may not be needed. In this event, smooth edged plates 55 may be attached to members 39.

Referring again to figures 1 and 2. On member 12 and someplace between members 13 and 16, I position an L-iron 54 which is preferably angled somewhat as illustrated in these figures. This L-iron extends from the outer ends of the pan to the adjacent sides of outlet 18; thus as the grain is moved rearwardly and inwardly by members 35 and 36, it will be engaged by this angle iron and the grain will be urged toward the center of the pan. In some installations, members 38 may be notched as at 41, these notches answering to grip the grain and assist in moving it toward the outlet. Notches 41 and 53 also act to turn down standing grain and prevent it from standing in front of the auger.

Referring now to figure 4. Members A, C and D and members 11 and 14 in this figure may be similar to that shown in the other figures; however the bottom portion 60 of the pan is provided with one or more corrugations 61. As illustrated in this design, the corrugations will act similar to L-irons 54 to urge the grain toward the center of the pan. These corrugations may be either parallel to the axis of member D or angled similar to member 54.

It will be noted by scrutinizing figures 2 and 4 that members 12 and 60 are flat; thus forming a convenient surface on which to attach member 54 or to form members 61 either at an angle or parallel to the axis of member D.

It will be seen that I have disclosed a very simple cutting mechanism having positive means for moving the grain toward the center of the pan and out the outlet in the rear of the pan. Clearly many minor detail changes may be made without departing from the spirit and scope of the present invention as recited in the appended claims.

Having thus shown and described my invention,
I claim:

i. A grain cutting and conveying device of the class described; comprising a cutter bar, a grain pan secured to the rear side of said cutter bar, a shaft positioned over said grain pan and rotatably mounted at its ends to the ends of the pan, an outlet at the rear of said pan intermediate the ends of the pan, grain moving means mounted on said shaft comprising auger elements extending from the ends of the pan to adjacent the sides of said outlet, relatively short transverse elements having their forward ends secured to the inner ends of one of said auger elements, longitudinal elements, one end being secured to the rear ends of said transverse elements, the other ends terminating short of the other sides of said outlet, said longitudinal elements being arranged on opposite sides of shaft and adapted to cooperate with said transverse elements to confine the grain longitudinally after leaving the augers and move it into said outlet, said auger elements being positioned a distance from the bottom of said pan, said pan at its rear having an upwardly extending shield, the front and rear sides of said pan being substantially straight transversely and being connected together at their centers by a curved portion whereby a depression is formed under the augers to thereby retard the rearward movement of the grain and urge it toward said outlet, scraper bars mounted in said pan in rear of said curved member and being angled rearwardly toward said outlet and terminating adjacent the sides of the outlet.

2. A grain cutting and conveying device of the class described; comprising a cutter bar, a grain pan secured to the rear side of said cutter bar, a shaft positioned over said grain pan and rotatably mounted at its ends to the ends of the pan, an outlet in the rear of said pan at one end thereof, grain moving means mounted on said shaft comprising an auger element extending from one end of the pan to the adjacent side of said outlet, a relatively short extension on the inner end of said auger element and positioned transverse to said shaft, a longitudinally positioned element secured to the rear end of said extension and to said shaft and adapted to cooperate with said relatively short extension to confine the grain and move it into said outlet.

B 3. A grain cutting and conveying device of the character described; comprising a cutter bar, a grain trough secured to the rear side of said cutter bar, a shaft positioned over said grain trough and being rotatably mounted at its ends on the ends of the trough, an outlet in the rear of said trough intermediate the ends of the trough, grain moving means mounted on said shaft, comprising oppositely directed auger elements extending substantially from the ends of the shaft to adjacent the transverse plane of the adjacent end of the outlet and with their inner ends positioned on opposite sides of the shaft, sector plates secured to said shaft and to the inner ends of said auger elements and extending rearwardly for a distance, longitudinally positioned plates secured at one end to the rear end of a

sector plate with their other ends secured to the other auger element, whereby pockets are formed on the opposited sides of the shaft to thereby confine the grain being moved into the outlet to a width less than the length of said outlet.

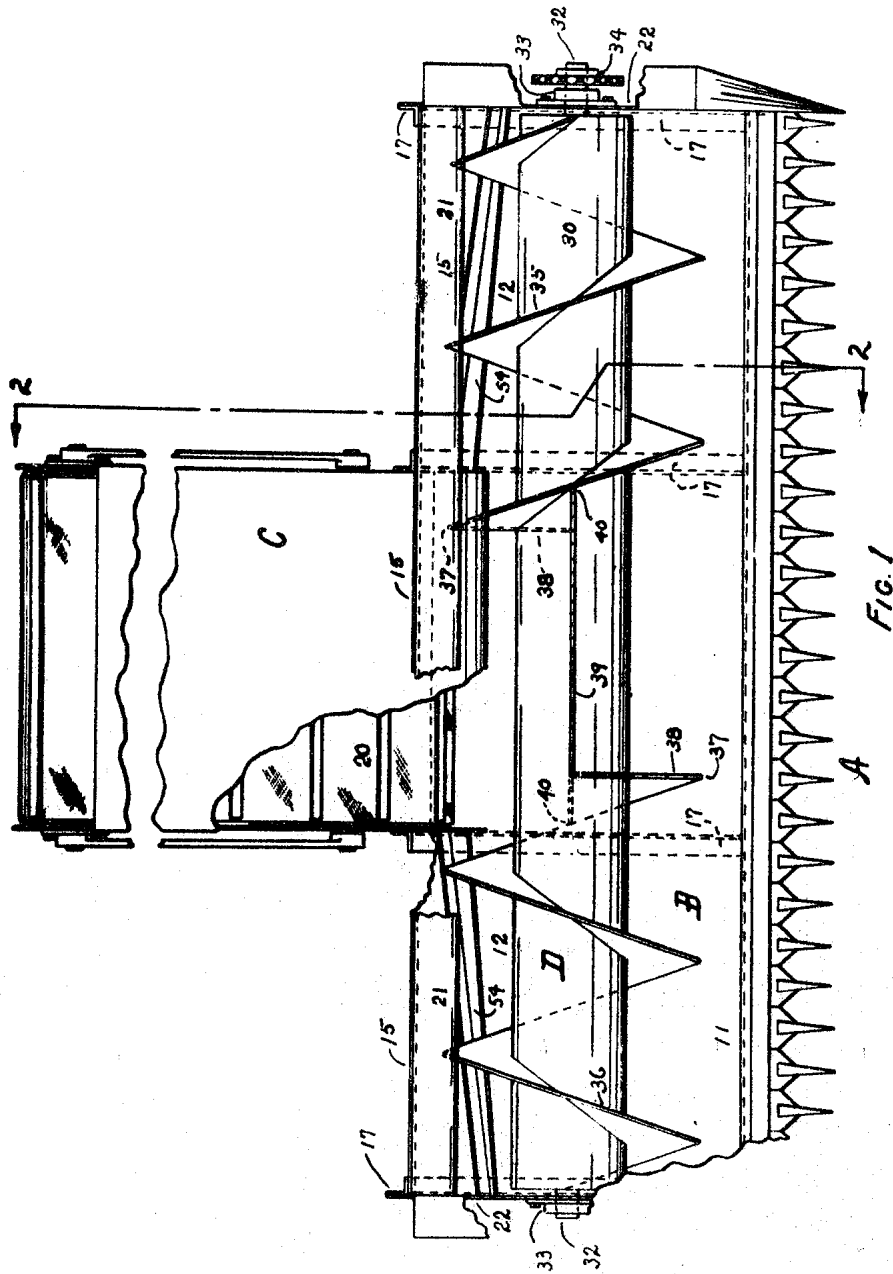
4. A device as recited in claim 3 including; the periphery of said auger elements being positioned a short distance from the bottom of the trough, said trough at its rear having an upward extending portion which terminates a distance above the top of said outlet.

5. A device as recited in claim 3 including; said trough being corrugated under said auger elements to thereby retard the rear movement of the grain and cooperate with the auger elements to urge the grain towards the said outlet.

C 6. A device as recited in claim 3 including; said pan comprising front and rear surfaces which are flat and being joined together by a curved surface which is positioned substantially on a vertical plane with said shaft and having a radius less than the radius of the outside diameter of the auger elements, a scraper bar mounted on the rear flat surface of the pan and being angled rearwardly toward the outlet and terminating adjacent the transverse plane of the adjacent side of the outlet.

~~In witness whereof I hereunto affix my signature, at
Toronto, Ontario, Canada, this 19th day of August, 1942.~~

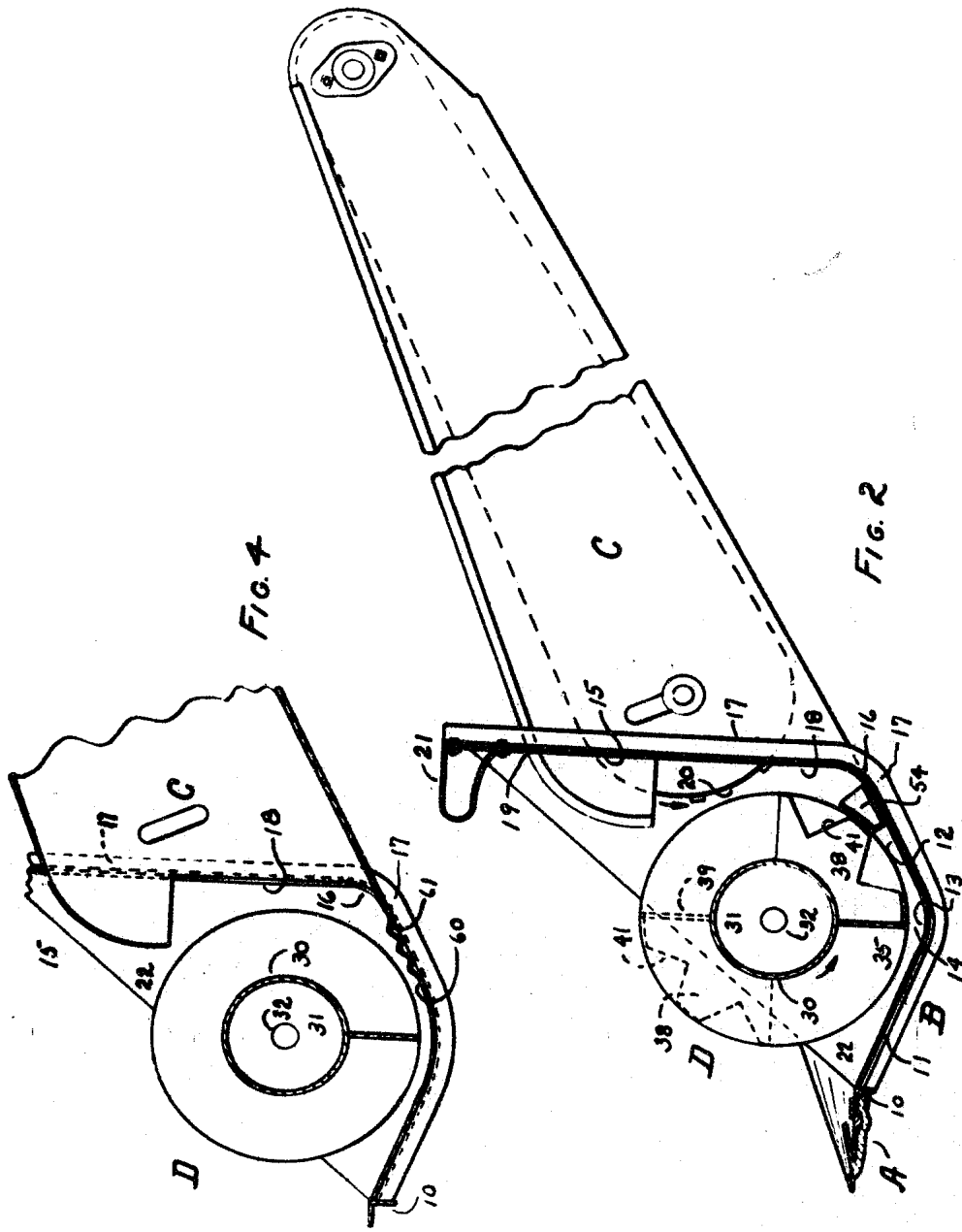
~~(Sgd.) Thomas Garrell~~



THOMAS CARROLL
Inventor

Certified to be the drawing referred to
in the specification hereunto annexed
Ottawa, Canada, October 2, 1942.

Harold K. Higgins & Co.
Attorney



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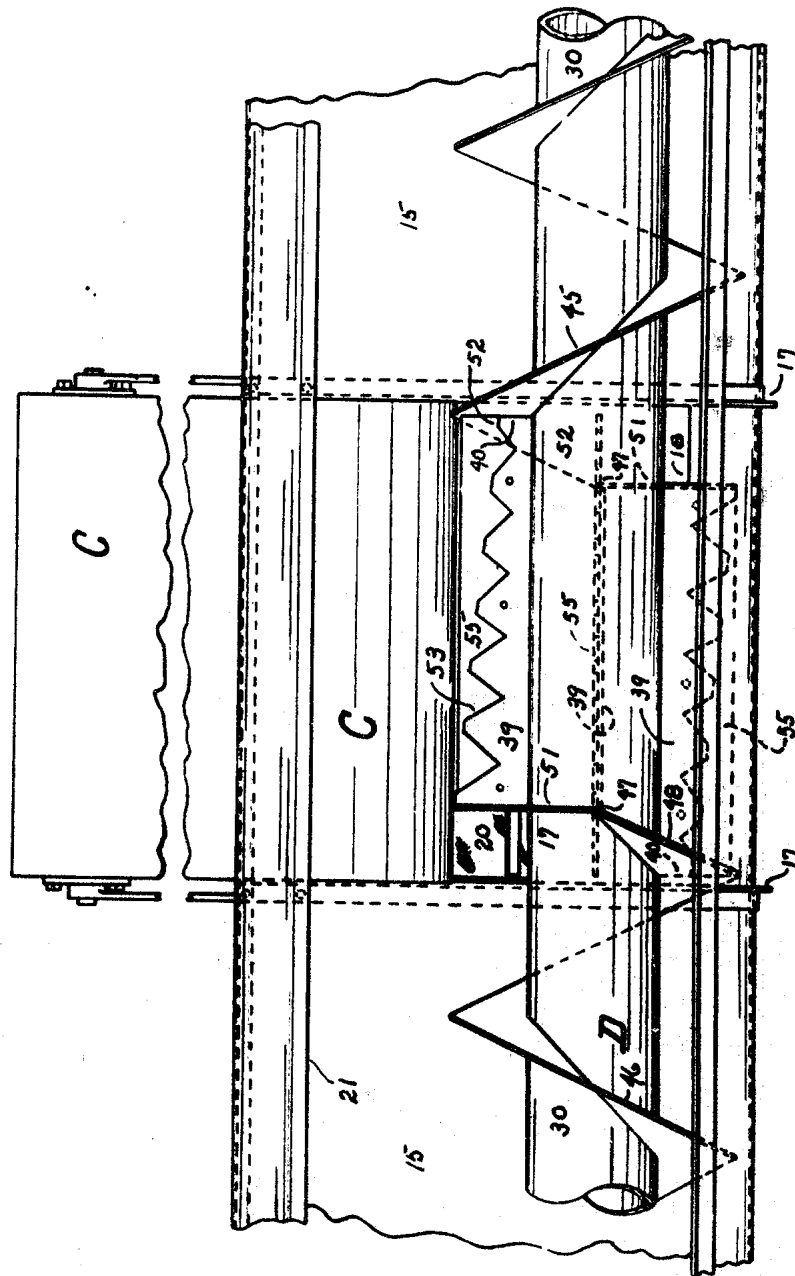


Fig. 3

Certified to be the drawing referred to
in the specification hereunto annexed
Ottawa, Canada, October 2, 1942.

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