

Jan. 31, 1956

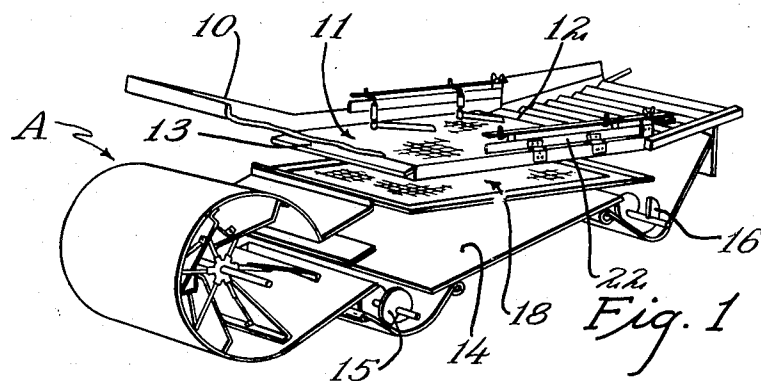
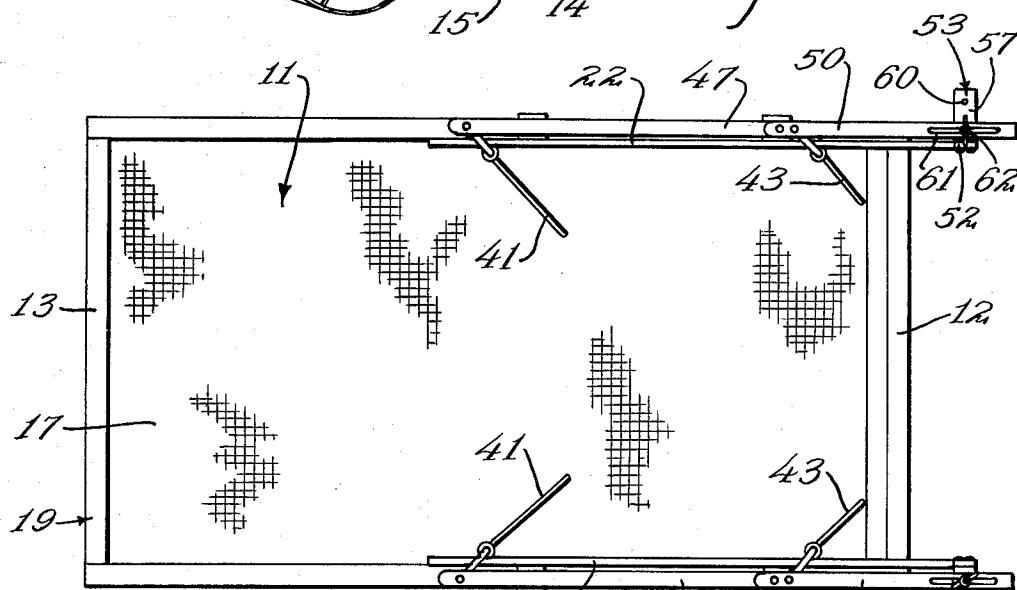
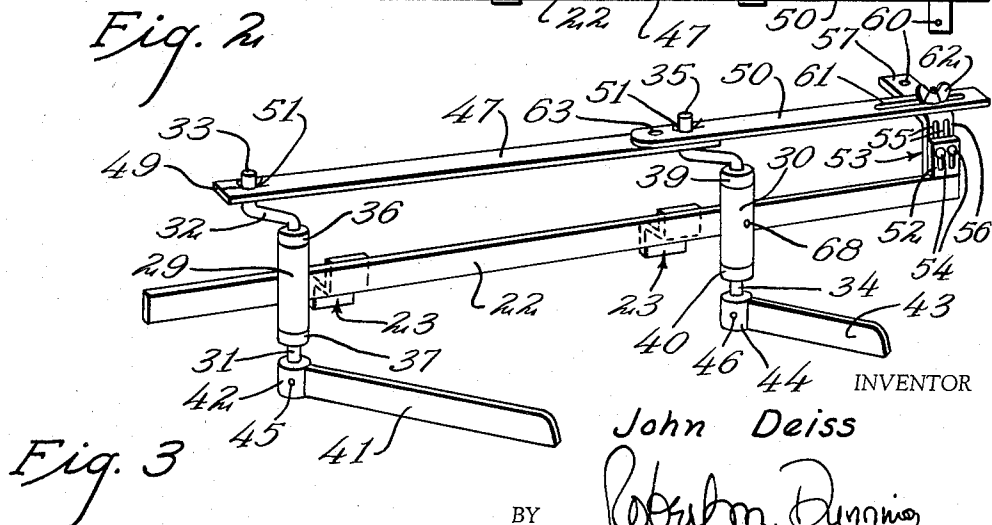
J. DEISS

2,732,941

COMBINE ATTACHMENT

Filed June 15, 1953

2 Sheets-Sheet 1



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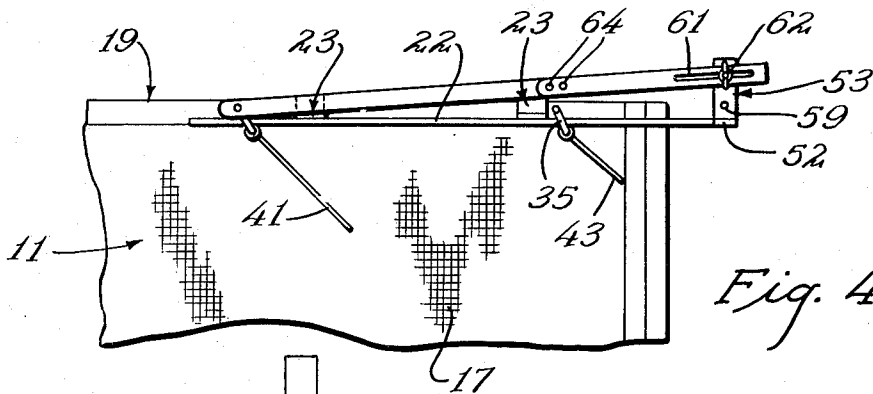
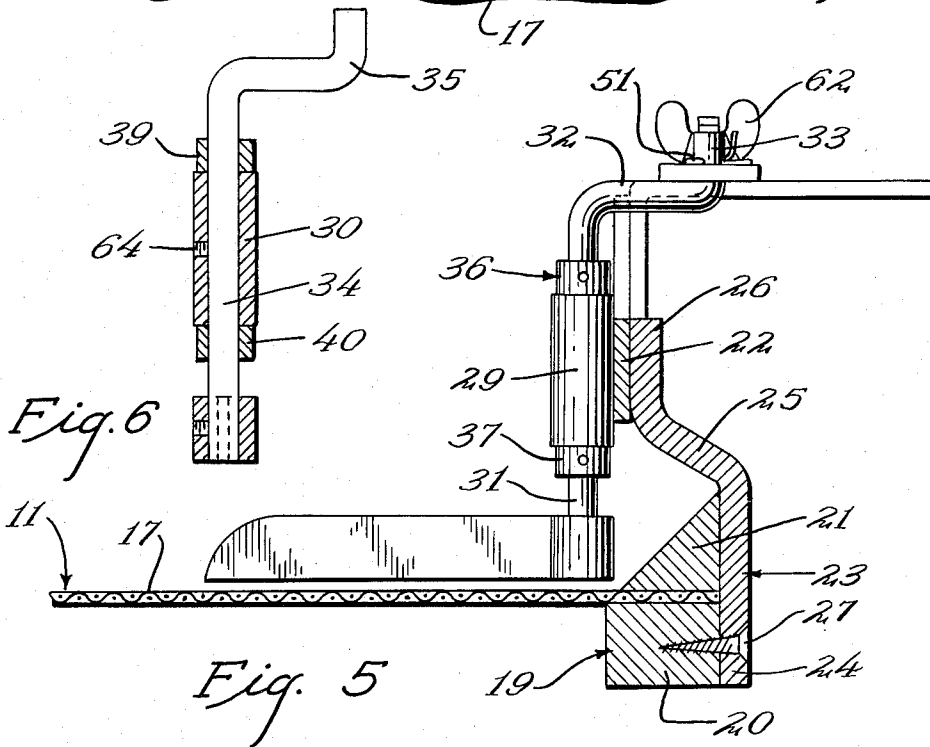
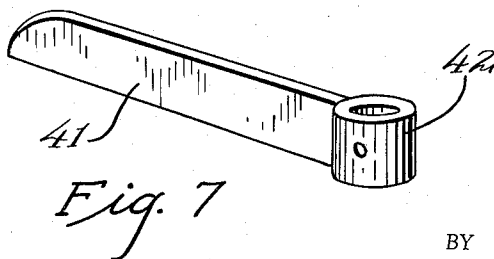
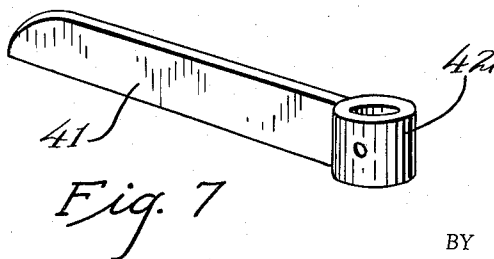
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2 Sheets-Sheet 2



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COMBINE ATTACHMENT

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5 Claims. (Cl. 209—261)

This invention relates to an improvement in combine sieve attachments and deals particularly with a baffle arrangement designed to prevent the loss of grain and to improve the separating operations.

In the use of combines it is common practice to surround the separating screens or sieves with a frame which is designed to confine the grain and retain it on the surface of the screen. I have found that from time to time as the combine travels over hilly ground the grain tends to build up in depth, particularly near the lower corners of the screen, and in some instances the grain will flow over the edges of the screen and be lost. Furthermore, when the grain builds up to a considerable depth the cleaning operation is greatly impaired.

An object of the present invention resides in the provision of a series of baffles which are mounted on the sides of the screen and which tend to direct the grain inwardly toward the center of the screen. As a result the grain is distributed more uniformly on the surface of the screen and the separation of the grain is more complete.

A feature of the present invention lies in the provision of baffles which are supported by the sides of the screen and which extend diagonally inwardly toward the interior of the screen and toward the lower edge thereof. As the grain moves down the surface of the screen it tends to engage the baffles and be guided inwardly thereby.

A feature of the present invention resides in the provision of a grain separation sieve having a pair of baffles extending inwardly and downwardly toward the lower end of the screen and which are spaced somewhat above the surface of the screen. As a result these baffles permit a uniform film of grain to pass beneath the baffles but guide any deep bank of grain toward the center of the screen.

An added feature of the present invention lies in the provision of a grain separating screen, having a pair of baffles extending diagonally across the lower corners of the screen and in substantial contact with the screen. These baffles tend to prevent grain from overflowing over the lower corners of the screen.

A further feature of the present invention lies in providing baffles in conjunction with a separator screen which are adjustable. Means are provided for adjusting the angle of the baffles from a point at the rear of the screen.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specifications and claims.

In the figures forming a part of my specification:

Figure 1 is a perspective view of a portion of the interior screen assembly of a combine showing the arrangement of parts therein.

Figure 2 is a top planned view of a grain separator screen showing the baffles mounted thereupon.

Figure 3 is a perspective view of a portion of the baffle structure.

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Figure 4 is a top planned view of a portion of the screen shown in Figure 2 of the drawings, showing the adjusting mechanism in a different position.

Figure 5 is a sectional view through a portion of the screen showing one of the baffles supported upon the same.

Figure 6 is a sectional view through one of the baffle supporting arms.

Figure 7 is a perspective view of one of the baffles.

The combine is not shown in its entirety in the drawings, but a portion of the interior of a typical combine is indicated by the letter A in Figure 1 of the drawing. This combine is shown to include a grain pan 10 which directs grain to a sieve or screen 11. This screen is inclined in position with the rear end 12 thereof lower than the forward edge 13. A second cleaning sieve 18 is positioned below the sieve 11 and is generally parallel thereto. An inclined wall 14 beneath the second sieve 18 directs the material passing through the sieve 18 to a clean grain auger 15. A tailings auger 16 is positioned to receive material passing over the lower end of the sieve 18.

The sieve 11 is best indicated in Figure 1 of the drawings. It is shown as having a foraminous body 17 having openings therethrough of proper size and shape to permit the clean grain to pass therethrough. The body 17 is encircled by a frame 19. This frame is shown in section in Figure 5 of the drawings. Beneath the screen body 17 is provided a rectangular frame which is rectangular in section. A frame member portion is shown at 20. A frame member 21 which is triangular in section overlies the edge of the sieve 17 and tends to confine the grain on the body of the screen.

Where the combine is used upon level ground the grain tends to flow evenly down the sieve. However, when the combine moves over hilly ground there is a tendency for the grain to build up in banks upon one side or the other of the screen. As a result some of the grain flows over the frame member 21 and is not properly separated and in many constructions of combines this grain is lost.

In order to avoid this difficulty I provide an elongated bar 22 which extends along each side of the sieve 11, this bar extending at least along the rear half of the sieve 11. Brackets 23 are provided for holding the bar 22 in spaced parallel relation to the sides of the sieve frame. Each bracket 23 includes a vertical bottom portion 24, an inwardly extending intermediate portion 25 and a vertical upper portion 26. The lower portions 24 are secured to the sieve frame by screws 27 or other suitable means, and the upper portion 26 of each bracket is connected to the bar 22. Accordingly the bar 22 is supported above the edges of the sieve 11 inwardly of the frame member 21.

A pair of sleeves 29 and 30 are secured in vertical relation upon the inner surface of the bar 22 by welding or other suitable means. A rod 31 having a crank shaped upper end 32 terminating in a vertical portion 33 extends through the sleeve 29. A second rod 34 having a shape similar to that of the rod 31 extends through the sleeve 30 and terminates in a crank arm 35 which extends vertically. Collars 36 and 37 are secured to the rod 31 above and below the sleeve 29 to support the rod 31 from vertical movement. Similar collars 39 and 40 are provided on the rod 34 for holding the same from vertical movement.

A baffle arm 41 is provided with a sleeve 42 welded at one end thereof to accommodate the rod 31. A similar shorter baffle 43 is provided with a sleeve 44 thereupon to accommodate the rod 34. Set screws 45 and 46, respectively, extend through the sleeves 42 and 44 to hold the baffle arms in proper position for rotation with the rods 31 and 34.

An adjustment arm 47 is provided with an aperture 49 to accommodate the upper extremity 33 of the crank arm 32. The arm 47 is provided with a second aperture not illustrated to accommodate the upper extremity of the crank arm 35.

An operating link 50 is also apertured to accommodate the crank arm 35. Removable fastening means, such as cotter pins 51, may be inserted through the crank ends 33 and 35 to hold the arm 47 and link 50 in position.

A bracket support 52 is butt welded to the upper surface of the bar 22 at the rear end thereof. An angle bracket 53 is adjustably supported by the support 52. Bolts 54 may extend through slots 55 in the vertical flange 56 of the angle bracket 53, and through the support 52 to hold the horizontal flange 57 of this bracket 53 at a desired elevation. The slots 55 permit adjustment of the blades 43 to be suspended and supported by link 50 and arm 47 in adjustable spaced relationship to the sieve 11. The setting of collars 36 and 37, or 39 and 40, on rods 31 and 34 determine the relative suspended position of blades 41 and 43, respectively over the sieve 11.

The flange 57 of each angle bracket 53 is provided with two spaced apertures 59 (see Figure 4) and 60 (see Figures 2 and 3). The link 50 is provided with an elongated slot 61 to accommodate a clamping bolt 62 extending through the aperture 59. By moving the link 50 longitudinally, the cranks 32 and 35 may be rotated about the axes of the sleeves 29 and 30, thus changing the angle of the baffles 41 and 43 with respect to the sides of the frame 19.

In some instances it is desirable to adjust only the forward baffles 41 without moving the rear baffles which are more readily accessible for individual adjustment. An extra pair of apertures 63 may be provided in the overlapping portions of the arm 47 and link 50. If desired, bolts 64 may be inserted through the aligned openings in the arm 47 and link 50 to hold these elements in alignment. In doing this, the arm and link are disconnected from the crank 35. The clamping bolt 62 is then inserted through the aperture 60 of the angle bracket 53 and through the slot 61 to hold the arm and link outwardly of the crank 35 as in Figure 4 of the drawings. In this event, the rod 34 on each side of the frame may be held from rotation and at a desired elevation by a set screw 68 through the corresponding sleeve 30.

As illustrated in Figures 2 and 3 of the drawings, the baffles extend inwardly and rearwardly so as to guide the grain toward the center of the screen and to prevent a large bank of grain from building up on either side of the screen, particularly as the combine travels over hilly ground. By tightening the bolt 62 the baffles may be held in adjusted position. Individual adjustment may be initially provided by loosening the set screws 45 and 46.

I have found that excellent results are obtained if the forward baffles 41 are supported in a suspended relationship slightly above the surface of the sieve so as to permit a thin film of grain to pass beneath the same. The rear baffles 43 are usually supported or suspended close to or in contact with the sieve. As both structures on opposite sides of the screens will automatically be in re-

versed relation, only one side of the structure has been described in detail.

In accordance with the patent statutes I have described the principles of construction and operation of my sieve attachment for combines and, while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. An attachment for improving the separating operations and preventing loss of grain from a combine sieve mounted in a frame work positioned on an incline comprising an elongated bar extending along at least one side of the forward inclined end of the sieve, brackets holding said bar in spaced relationship upwardly and inwardly to the side of the sieve frame, bearings mounted upon the said bar, vertically adjustable pivotal rods provided with crank ends secured in pivotal relationship in said bearings, front and rear baffles mounted on the other end of said relatively adjustable rods, arm and linkage means connecting the crank end of said rods, and adjustable bracket means connected to said linkage means for raising and lowering said rods and varying the angles of said baffles relative to said sieve and with respect to the sides of said frame.

2. The structure of claim 1 wherein the adjustable bracket means and said linkage means are each provided with elongated relatively adjustable slots which accommodate clamping means for securing the said baffles at a desired vertical height with respect to said sieve and a desired angle with respect to said side.

3. The structure of claim 1 wherein a forward baffle is of relatively lesser length than a rear baffle, and is provided with adjustment means whereby the said forward baffle is adjustable independently of said rear baffle.

4. The structure of claim 1 wherein a rear baffle is of relatively greater length than a forward baffle and adjustment means is provided for said rear baffle which is operable independently of said forward baffle.

5. Attachments for improving the separating operations and preventing loss of grain from a sieve mounted in a framework positioned on an incline comprising elongated bars extending along each side of the forward inclined end of the sieve, brackets holding said bars in spaced relationship upwardly and inwardly of each side of said sieve frame, sleeves mounted upon the said bars, vertically adjustable pivotal rods provided with crank ends secured in pivotal relationship in said sleeves, front and rear baffles mounted on the other ends of said relatively adjustable rods, arm and linkage means connecting the crank ends of said rods, and adjustable bracket means connected to said linkage means for raising and lowering said rods and varying the angle of said baffles relative to said sieve and with respect to the sides of said frame.

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