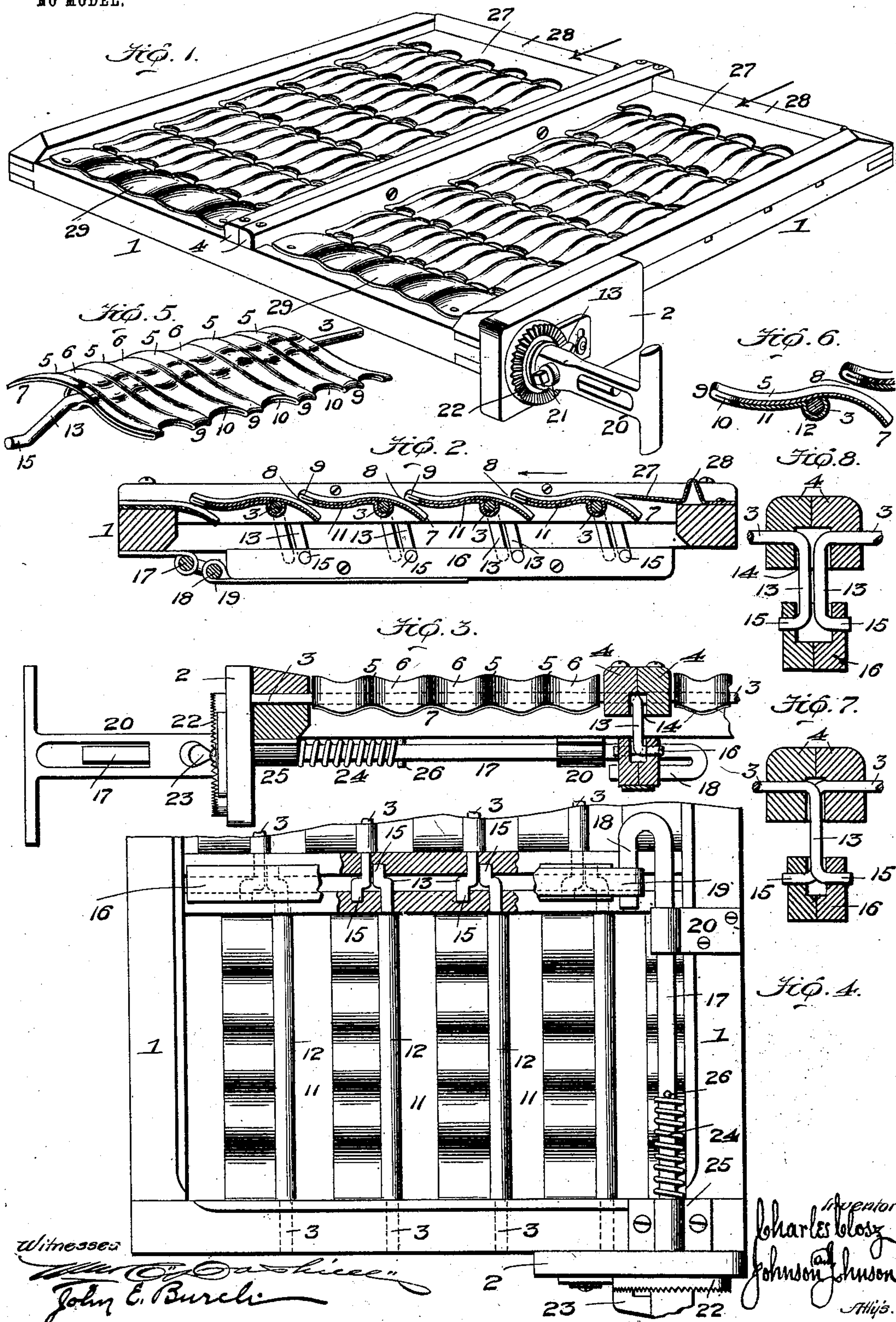


No. 721,940.

PATENTED MAR. 3, 1903.

C. CLOSZ.
GRAIN SEPARATING SCREEN.
APPLICATION FILED MAR. 4, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

CHARLES CLOSZ, OF WEBSTER CITY, IOWA.

GRAIN-SEPARATING SCREEN.

SPECIFICATION forming part of Letters Patent No. 721,940, dated March 3, 1903.

Application filed March 4, 1902. Serial No. 96,689. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CLOSZ, a citizen of the United States, residing at Webster City, in the county of Hamilton and State of Iowa, have invented certain new and useful Improvements in Grain-Separating Screens, of which the following is a specification.

The accompanying drawings illustrate my present improvement in grain-separating screens, and the claims appended hereto will set out the precise improvement.

In the drawings, Figure 1 shows in perspective a screen of adjustable slats embodying my improvements. Fig. 2 shows a vertical longitudinal section of the same. Fig. 3 is a transverse section of the same. Fig. 4 is a bottom view of the same, showing the slat-rods out of alinement and their connecting adjusting-bar partly broken away. Fig. 5 shows one of the adjustable slats. Fig. 6 is a transverse section of the same, showing the approximate S shape of the slat, which is a feature of my improvement. Fig. 7 is a transverse section of Fig. 2, showing the novel construction of connecting the pivot-rods 3 of two slat-sections by angle-arms side by side engaging the adjusting-bar; and Fig. 8 is a like view showing a modification of such construction in which the angle-arms stand side by side with the slat-rods arranged in alinement.

The screen is used in threshing-machines and is of the type of adjustable pivoted slats having a surface construction particularly adapted for the separation of chaff from the grain by air-currents through openings formed by and between the slats. The screening-surface, however, is adapted for separating different kinds of grain or seed by the adjustment of the slats.

The screen-frame 1 is secured in a shoe-frame for endwise movement in the usual manner, and in Figs. 1, 3, and 4 let 2 indicate a portion of one side of this shoe-frame.

The screen may be of two or more slat-sections, each formed of metal slats fixed to rods 3, the ends of which are journaled in the sides of the frame and in an intermediate bar, preferably of two parts 4 4, Figs. 3, 7, and 8. At their delivering edges the slats are scalloped, and they are corrugated crosswise, forming

thereby convex ridges 5 and concave surfaces 6 between the ridges. Transversely the slats are of approximately S shape, Fig. 6, each slat curving upward at its scalloped edge and in the opposite direction at its inner edge 7, and the arrangement of the slats is such that their scalloped edges overhang the contiguous slats and form the screening-openings 8 between them. In Fig. 2 the slats are set closed, with the ends 9 of the scallops resting on the ridges 5, the concave surfaces 6 being open, while in Fig. 6 the slats are set in open relation. The overhanging edge is doubled under from a straight edge corresponding with the ends of the scallops, and it is in this straight doubled edge that the scallops are formed by punching out the concave hollows 10, forming thereby the fingers. The under doubled part 11 provides a bearing and soldered fastening 12, Fig. 6, for the slat pivot-rod and gives strength and rigidity to the overhanging edge of the slat, which is important in making this edge scalloped. The upward curve of the slat at its scalloped edge is important to give the proper direction to the blast and also serves the better to collect the grain along the screening-openings. The reverse curve at the underhanging edge of the slat gives a better gathering action of the underblast and a better effect in turning the blast-currents to suit the adjustment of the slats for different kinds of grain or seeds.

Now looking at Figs. 2, 4, and 7 it is seen that the pivot-rods 3 of each slat-section are not in alinement, that each rod is formed with a right-angle arm 13, which stand downward from a groove 14 in the under side of the frame-bar 4, that these arms stand side by side in close relation in the groove, and that each arm terminates in a right-angled end 15, which stand in opposite direction—that is, outward—from each other. On these angle ends 15 is hung a horizontal bar 16, preferably of trough shape and of two parts, making it convenient for each part to be joined as a single bar on the angle ends, while arranging the arms side by side in close relation gives a compact construction for operating the slat-sections.

The frame-bar parts 4 are screwed together

and to the frame, and the hanging-bar parts are also screwed together, and the means whereby it is caused to adjust the slats is the rock-rod 17, fixed to the frame by keepers 5 and having the return-bend 18 slidably engaging an eye 19 on the rear end of said bar, so that by rocking the rod will move the bar in or out, and thereby moving the arms 13 all together rock the slats and regulate the size 10 of the screening-openings to suit the work to be done.

The outer end of the rock-rod extends through and beyond the shoe side and is of square cross-section to receive a tubular handle 20, which is fastened by a set-screw 21 to the square end. A rack 22, preferably circular, is secured to the outer side of the shoe-frame, and through a central opening in this rack the square end of the rock-rod passes. 20 A dog 23 on the handle engages the rack to hold the rock-rod in the position in which it may be set to give the screen-slats the desired adjustment. The locking-dog is held in its engagement with the rack by the tension of a coil-spring 24, with one end against the keeper 25 of the rod, the other end against a pin 26 on the rod, so that the tension of the spring being inward on the rod holds the dog 23 in engagement with the rack and by pulling out the handle 20 will free the dog of the rack and allow the rock-rod to be turned to adjust the slats. 30

By removing the handle the rock-rod will be free to be pulled through the side of the shoe to disengage the rock-rod from the shoe and the return end of the rock-rod from the adjusting-bar to allow the removal of the screen-frame from the shoe when from any cause it may be found necessary. 35

At its receiving end the frame has a fixed plate 27, its inner end scalloped and having a raised corrugation 28, which prevents the grain from working back of the screen, while 40

the scalloped edge gives a free passage of the stuff onto the corrugated slats. 45

At its delivery end the frame has a plate 29, corrugated like the pivoted slats, but fixed to the frame, so that the adjacent pivoted slat overhangs the inner edge of this fixed plate. This causes the chaff and short straw 50 to pass freely from the screen.

I have shown in Figs. 7 and 8 the angle ends 15 of the pivot-rods as standing from each other in the different close positions of the angle-arms 13, and in the modification 55 Fig. 8 it will be noted that the slat-rods are journaled in alinement; but the angle-arms stand close side by side in their engagement with the adjusting-bar.

I claim— 60

1. In a grain-separating screen and in combination a frame, a screening-surface consisting of slats grouped in sections, the slats of one section having pivot-rods journaled in the frame, the ends of said pivot-rods having 65 cranks depending between the slat-sections, each crank terminating in a return angle end 15 standing in opposite directions from each other, a bar engaging said angle ends, and means for adjusting said bar. 70

2. A grain-separator consisting of slats grouped in sections, the slats of one section having pivot-rods journaled in the frame out of alinement with the slats of the other section, the ends of the pivot-rods having cranks 75 depending side by side between the slat-sections, each crank terminating in a return angle end 15 standing in opposite directions from each other a bar engaging said return angle ends, and means for adjusting said bar. 80

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES CLOSZ.

Witnesses:

W. J. BIERNATZKI,
C. BIERNATZKI.