(No Model.) 2 Sheets—Sheet 1.

C. CLOSZ.

GRAIN CLEANING AND SEPARATING SIEVE.

No. 520,878. Patented June 5, 1894.

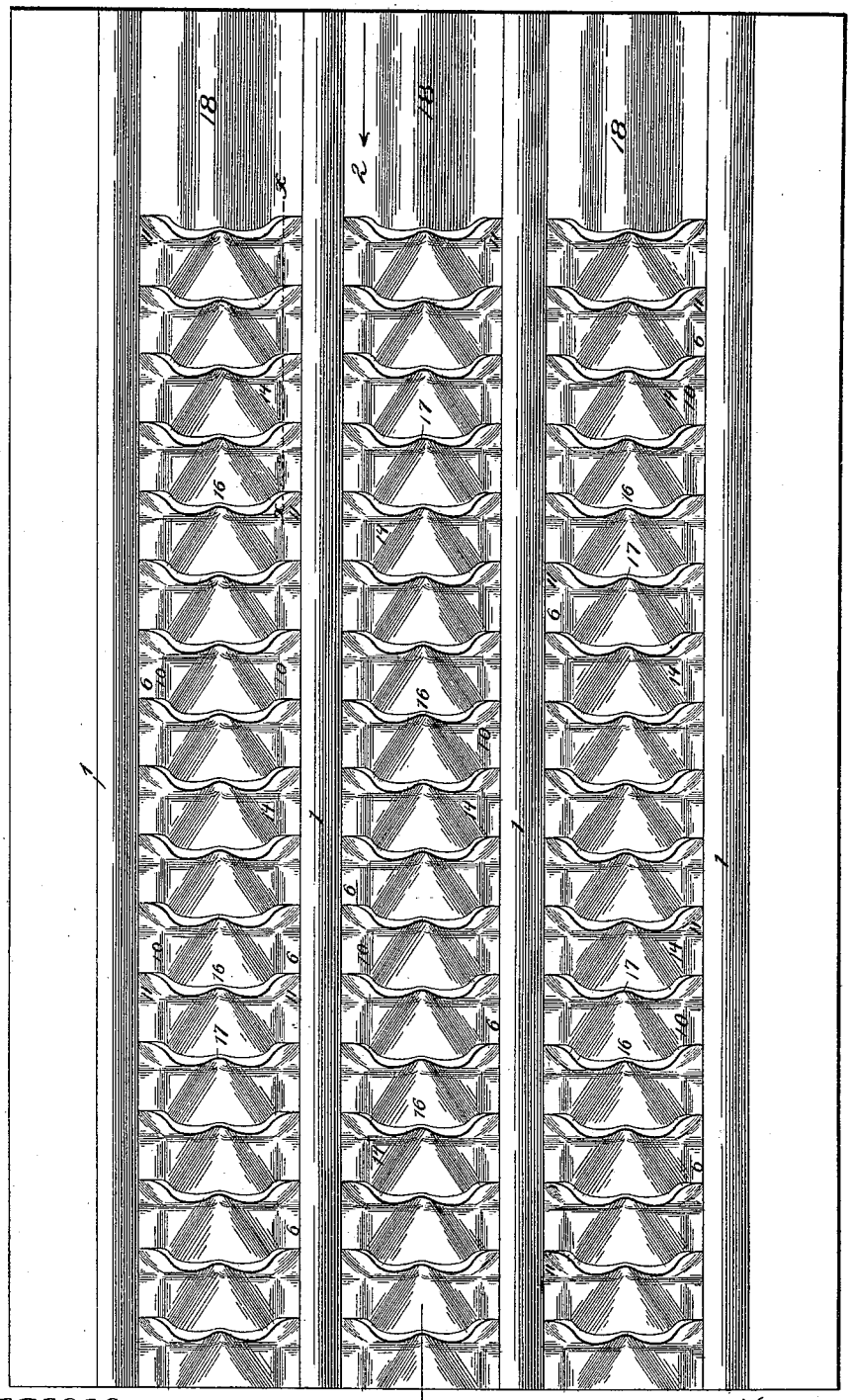

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

C. CLOSZ.

GRAIN CLEANING AND SEPARATING SIEVE.

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Fig. 2.

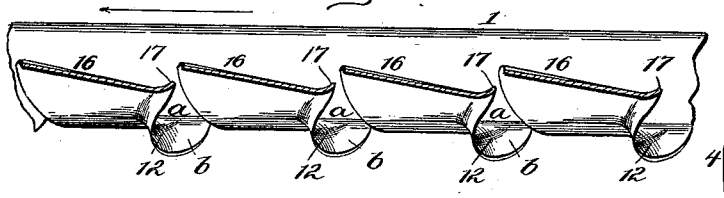

Fig. 9.

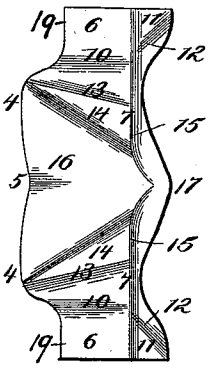

Fig. 3.

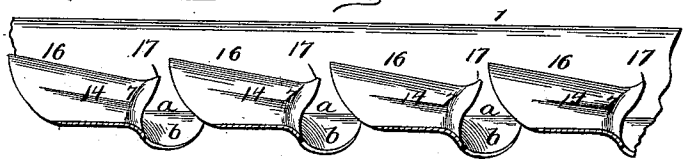

Fig. 4.

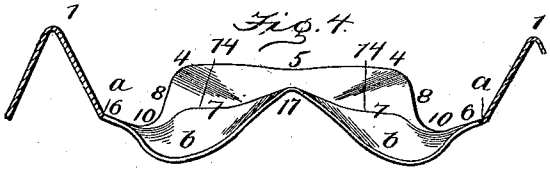

Fig. 5.

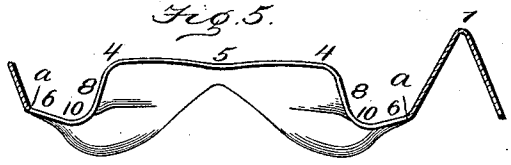

Fig. 6.

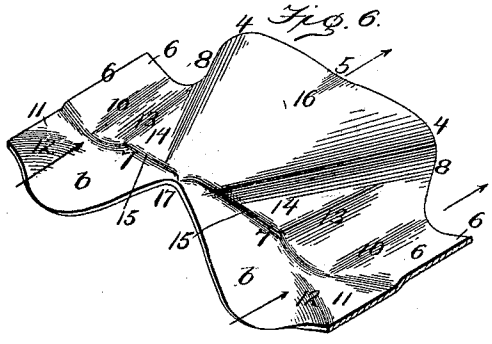

Fig. 7.

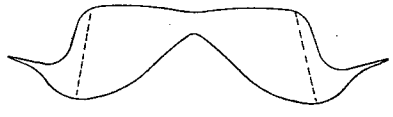

Fig. 8.

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THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES CLOSZ, OF WEBSTER CITY, IOWA.

GRAIN CLEANING AND SEPARATING SIEVE.

SPECIFICATION forming part of Letters Patent No. 520,878, dated June 5, 1894.

Application filed August 15, 1893. Serial No. 483,198. (No model.)

To all whom it may concern:

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

My improved sieve is of the sheet metal corrugated platform kind, and is adapted for all kinds of grain cleaning and separating machinery. In its construction the form or shape of the cuts for the surface openings, and the peculiar formation of the surface between the corrugations and the openings constitute my improvements whereby the sieve is rendered more effective and satisfactory in its cleaning and separating action on the grain as it moves forward over the openings and in its freedom from choking or clogging. The sieve is designed for operation with what is known as the "end shake" and in the movement of the grain over it, the pieces of straw, weeds, husks, silk and cobs, are carried off, while the grain is delivered through the openings. Its construction is also well adapted for separating oats from wheat.

In the claims concluding this specification I will designate the construction which constitutes my invention, and which is illustrated in the accompanying drawings, in which—

Figure 1 shows my improved corrugated sieve in top view. Fig. 2 is a vertical longitudinal section taken through the middle line of one of the rows of openings. Fig. 3 is a similar section taken on the line *x*—*x* of Fig. 1, along the grain delivery channel. Fig. 4 is a cross section of one of the rows of openings looking toward the delivery end of the platform. Fig. 5 is a similar cross section looking toward the feed end of the platform. Fig. 6 shows in perspective one of the surface divisions of a row of openings. Fig. 7 is a diagram of the shape of the opening. Fig. 8 shows the line of the cut; and Fig. 9 is a top view of one of the raised surface divisions.

Referring to the drawings the sieve is shown as formed of a single sheet of metal having longitudinal corrugations 1, between which the surface is formed with transverse openings, between, and in connection with which, the surface conformation is made according to my improvement. The openings are formed by cuts which extend transversely between the corrugations from the base of one to the base of the other and at such distance apart as to produce transverse sections having a width about half the length of the cuts. It is between these corrugations and over these cuts that the grain passes over the platform from its receiving end 2 to its delivery end 3 by the action of the longitudinal movement of the platform. I make the openings by a cut having the form known in archery as the "bow of Cupid," seen in Fig. 8, the position of the bow standing forward in the direction of the movement of the grain. The surface between the cuts is raised and formed as follows: The forward or bow-forming-edge of the cut is highest and is preferably below the level of the upper lines of the corrugations; while the corresponding rearward edge of each cut is below the plane of the base lines *a* of the corrugations. That part of the elevated bow-forming-edge between and including the lobes or convex lines 4, 4, is approximately horizontal, the lobes meeting in a slight concave 5, in a line longitudinally central between the corrugations. The surface 6 slopes downward from and slightly below the base line *a* of the corrugation and merges into a channel 10 which runs parallel therewith and intersects a ridge 7 Figs. 6 and 7 which crosses the raised surface near the lowest edge of the opening. These sloping surfaces 6, 6 join the lobes with a steep curve forming a nearly vertical wall 8 on each side. Horizontal longitudinal channels 10 are formed along the sloping sides 6 for the purpose of allowing the grain to be carried directly toward the openings. From the transverse ridge 7, the surface *b* slopes toward the lowest edge of the opening and this ridge divides this discharging sloping surface from the forward channel bearing surface 10. Joining this ridge 7 and extending along the base of the corrugation toward the lowest edge of the opening is a depression 11 of approximately triangular shape and serves to carry, or allow of the unobstructed forward movement of the long stuff in the grain over the opening to the ridge 7 and then guides it into the channel; this depression also serves to check the too free move-

ment of the grain over the sieve on the side toward the corrugation and facilitates the discharge of the grain by turning it toward the opening. A slight ridge 12 is formed along the lower edge of this depression and serves to form a bearing surface in connection with the depression for the purpose of carrying all long stuff toward the channel. It also serves to allow a sharper downward turn of the metal below it into the opening without breakage of the metal.

It is important to notice that the channel 10 does not join the corrugation, but is along the bottom of the sloping sides and extends in a horizontal line along the lowest part of the surface from the bow-forming-edge to the transverse ridge 7 as seen in Fig. 3 and, while it allows the grain to be carried directly toward the lowest part of the opening, allows of a free passage of straws, weeds, and other long stuff over the openings and conducts the grain to the openings in such a way as to cause a very free discharge. On the surface between the channel and the steep side wall 8, is a ridge 13, which bounds a narrow flat surface 14 which terminates in the surface of the wall 8 toward the bow-forming-edge and serves to check the movement of weeds or other long stuff toward the openings and prevent such stuff entering the openings over these wall sides 8. The flat ends 15 of these side surfaces serve to facilitate the passage of large stuff over from one raised surface to the next; and in this function these flat surfaces cooperate with the steep wall-sides 8, 8, to carry and guide all long stuff passing over the openings toward the channel and thereby prevent liability of the stuff wedging or clogging in the openings. The top surface 16 along the bow-formed-edge is substantially flat and terminates in the transverse ridge 7 so that the steep side walls 8, 8, extend obliquely from the highest point of the lobes toward each other and merge into the transverse ridge 7. From this ridge the surface slopes with a considerable pitch to the lowest edge of the preceding opening, but at the point of the middle line this sloping surface has a short upward turn just under the overhanging preceding bow-formed-edge, forming a point 17 like the pommel of a saddle. The overhanging lobes 4, 4, are on each side of and above the pommel-point 17, and the greatest width of the opening is between the lobes and the concave surface *b* below the transverse ridge 7, as shown by the dotted lines in Fig. 7. The top surface 16 slopes to the transverse ridge 7 and between this ridge and the lower edge of the opening, the surface on each side of the pommel-point, slopes with greater pitch and terminates in the concave surface *b*, which is the lowest part of the edge of the opening on each side of the pommel-point as seen in Fig. 4. The channels 10 are the lowest part of the surface between the forward edge and the transverse ridge, are parallel with the corrugations and deliver the grain to the widest part of the opening over said ridge; while the flat surfaces 14 carry the long stuff forward over said ridge into the channels. The cuts or slits which form the openings are made straight from the corrugations to the channel 10, as seen at 19 in Fig. 9 and from the channel the edge curves forward and upward into the lobes. The depressed edge of the opening curves forward from said cut 19 to the concave surface *b* and then rises to the upturned pommel-point as shown in Fig. 1. The surface across from lobe to lobe is substantially flat while the sides 8, 8, are steepest at the forward edge, see Fig. 6. The pommel-point of the lower edge divides and nearly closes the opening under and at a point mediately of the lobes as seen in Fig. 2. At the receiving end of the sieve it is corrugated so as to form a ridge 18 for a short distance in the line mediately of the lobes for directing the grain in the lines of the channels as in Fig. 1.

I claim as my improvement—

1. A sheet metal grain sieve having longitudinal rows of transverse openings, one edge of which is raised directly above the other, the under edge having the upturned pommel-point 17 dividing and partially closing said opening at the middle of the raised edge for the purpose stated.

2. A sieve formed of a sheet metal platform having longitudinal rows of openings in transverse relation, the raised edges of which openings have the form of a bow, the lowest edge having a raised point 17 mediately of and partially closing said opening, the surface between the openings formed with steep side-walls 8, obliquely extending from the lobes to said raised point and terminating in oblique flat surfaces 14 and channels 10 joining said flat surfaces and extending straight in longitudinal lines along said flat surfaces, substantially as described.

3. A sheet metal platform sieve having longitudinal rows of transverse openings one edge whereof is raised directly above the other, the upper edge having lobes 4, 4, and the under edge having up turned pommel-point 17 mediately of said lobes and partially closing said opening at the middle point between the lobes, the surface 16 being substantially flat across between the lobes and sloping to the transverse ridge 7, from which the pitch to the edge is greater, said sloping surface having steep sides 8, 8 and flat parts 14, 14 which terminate in said ridge for the purpose stated.

4. A sheet metal platform sieve having parallel longitudinal corrugations and transverse openings between them, the surface between the openings raised and having a bow-shaped forward edge forming lobes 4, 4, a substantially flat top between the lobes, which terminate in raised points 17 standing under and mediately of the lobes, the steep side walls 8, 8, the oblique flat side surfaces 14, 14, the cross ridge 7, terminating at the said raised

point, the channels 10, 10, the surfaces 6, 6, sloping from the corrugations to the channels, the depressions 11, 11, joining the sloping surfaces at the ridge, the oblique ridges 12, 12, joining the depressions and the surface sloping downward from said point along the transverse ridge 7 to the edge, substantially as described.

5. A sheet metal platform sieve having parallel corrugations and transverse openings between them, the surfaces between said openings raised and having bow-shaped forward edges forming lobes 4, 4, a substantially flat top surface 16, between said lobes sloping downward and having oblique sides, terminating in a raised point 17 at the lowest edge of said surface, the cross ridge 7 extending from said point and the surface therefrom having sloping pitch to the opening and dividing the same at the said raised point under and mediately of said lobes, substantially as described.

In testimony whereof I have hereunto signed this specification in the presence of witnesses.

CHARLES CLOSZ.

Witnesses:
C. A. WARREN,
WESLEY MARTIN.