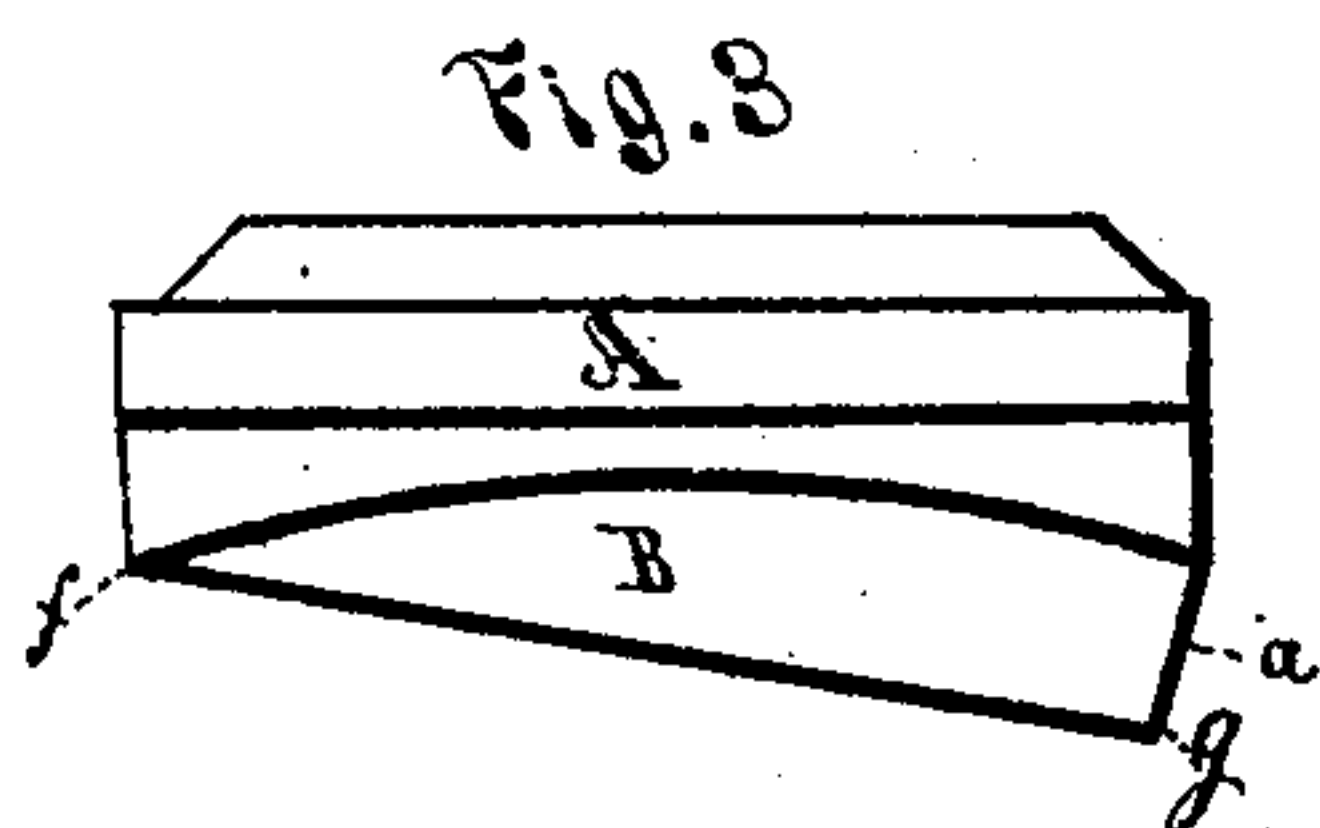
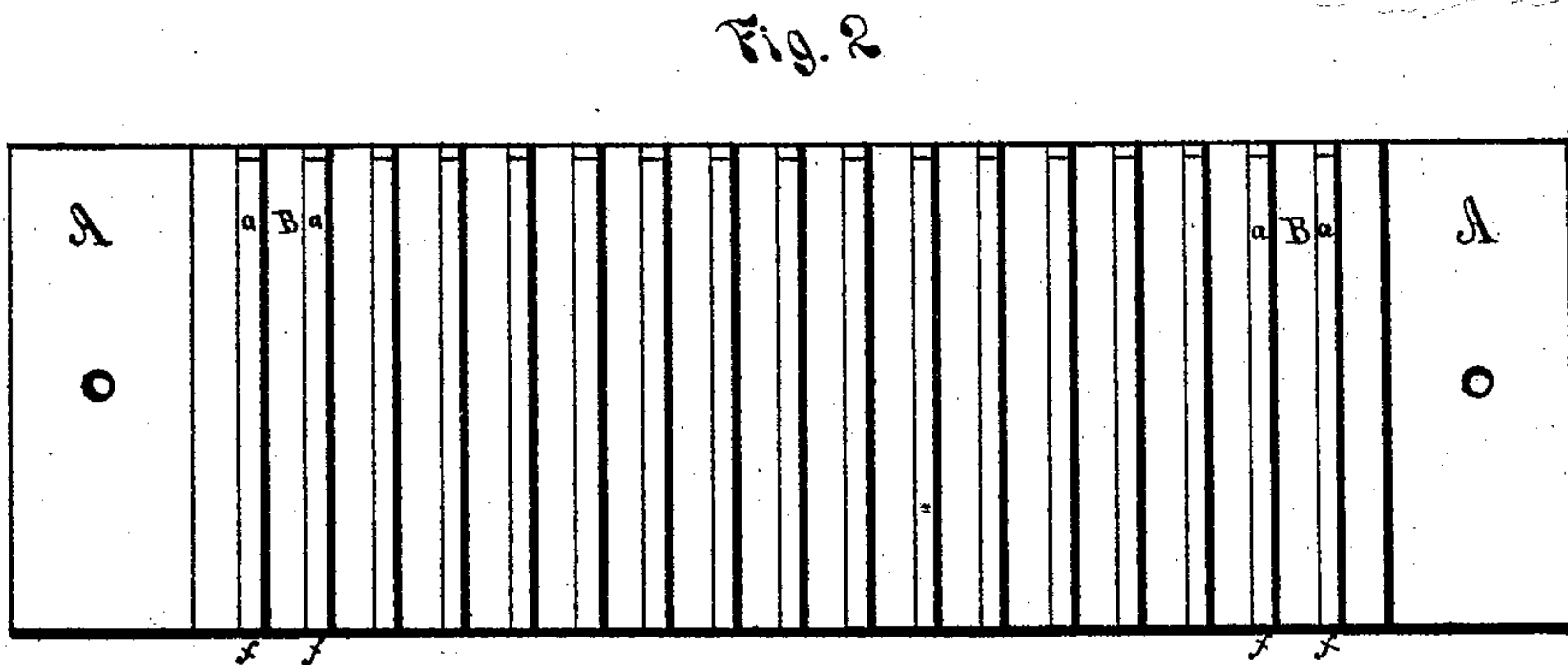
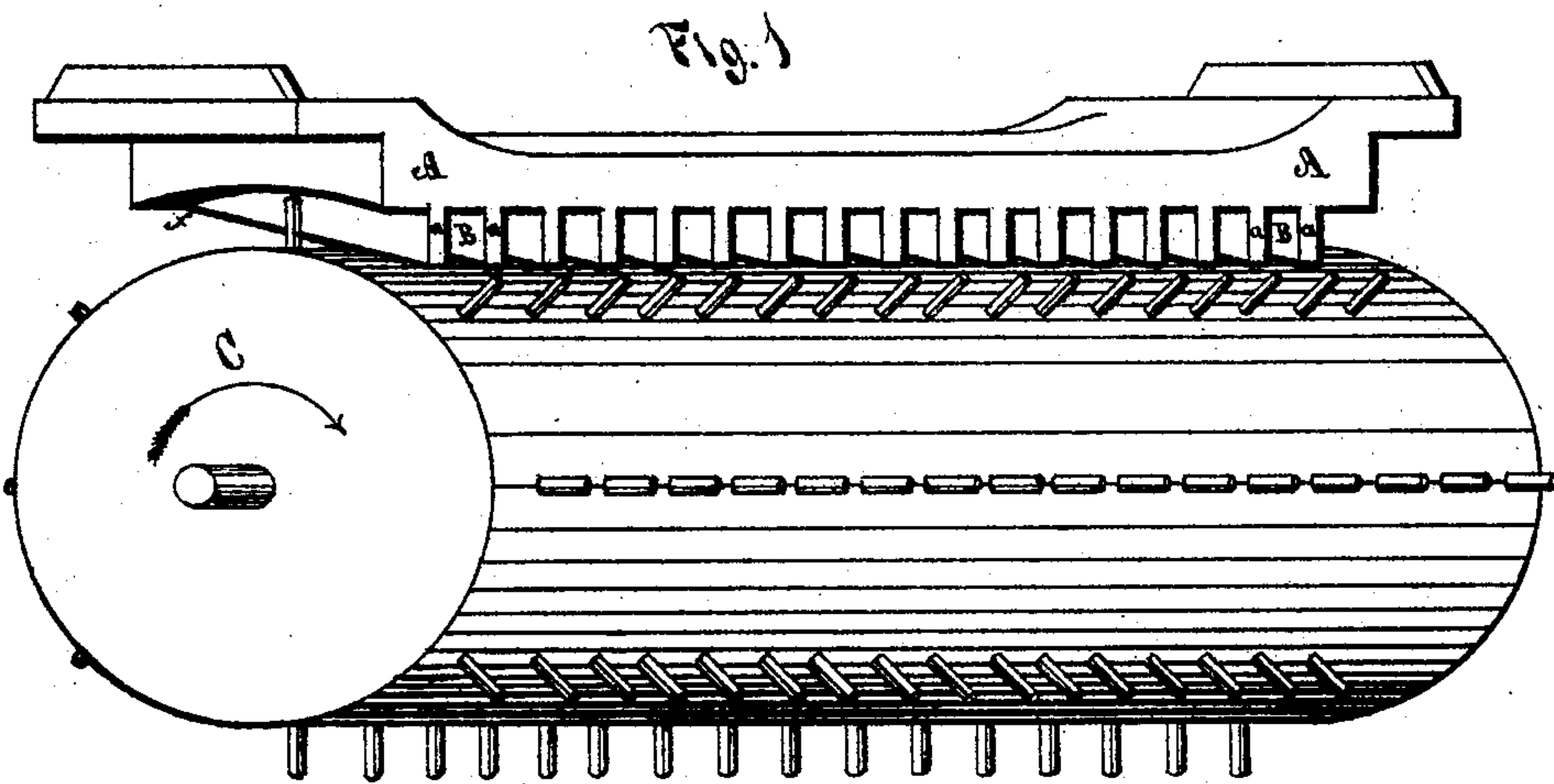


L. C. BICKINGS.

Concaves for Thrashing-Machines.

No. 145,044.

Patented Dec. 2, 1873.



Witnesses.

Ross S. Fitch
C. D. Taylor

Inventor.

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UNITED STATES PATENT OFFICE.

LEWIS C. BICKINGS, OF NORRISTOWN, PENNSYLVANIA.

IMPROVEMENT IN CONCAVES FOR THRASHING-MACHINES.

Specification forming part of Letters Patent No. **145,044**, dated December 2, 1873; application filed August 19, 1873.

To all whom it may concern:

Be it known that I, LEWIS C. BICKINGS, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and valuable Improvement in Concaves in Connection with Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective of the concave in connection with the detached cylinder of a thrashing-machine. Fig. 2 is a bottom view of the concave, showing the construction of the grooves. Fig. 3 is an end view of the same, showing the inclination and curve of the grooves.

My invention relates to a concave in connection with thrashing-machines; and consists in the construction and novel arrangement of the same, for the purpose of more completely thrashing out the grain without tangling, twisting, breaking, or otherwise injuring the straw, the latter passing through and coming from the machine straightly and evenly, as though thrashed with a flail, all of which is hereinafter more fully described, and shown by the accompanying drawing.

The letter A represents the concave, which is made of cast metal or other equivalent material, in one solid piece or casting, and is furnished with grooves B, through which the teeth of the thrashing-cylinder C pass, as shown by Fig. 1 of the drawing, thereby keeping the straw straight and even after it has been gripped between the said grooves and cylinder, and thus passing it out without injury, the important feature of this one of the purposes of my invention being to furnish an uninjured material for manufacturing articles which form a large and valuable portion of merchandise.

The grooves B are cast in the same piece with the concave A, and form a solid portion of the same. They may be of any desired number. The partitions formed and separated by them, as shown in Fig. 2, which are smooth on their inner sides, rectangular in shape, and parallel

with each other across the concave, may be of any required space apart, and the concave-plate be placed at such a suitable distance above the cylinder C, at any desired slope or inclination, as will give the roof or top and sides of each groove sufficient gripe upon the straw to draw it through head foremost, and also completely remove the grain from the stalks. The bottom or base of each partition *a*, as shown in Fig. 3, is inclined to the curve of the roof of each groove B, until it meets said curved line on the feeding side of the concave at *f*, for the purpose of pressing down the grain more and more, and giving the grooves *a* stronger and stronger gripe upon the contents therein, and upon the cylinder C, thereby preventing the cereal from passing through too rapidly, and before it has been removed from the stalk.

I lay claim to nothing new upon the cylinder C, which is of the ordinary construction, furnished with any suitable number of teeth, arranged in parallel rows lengthwise, and in straight lines around the periphery of the cylinder, as shown in Fig. 1. The concave, however, should be constructed of such a width as to have the grooves thereof swept entirely through from one end to the other, and from one side of the concave to the other, by the teeth of the cylinder at each of its revolutions. The concave is secured to the box or case of the thrashing-machine in any of the usual modes, either by fastening it to a cross-beam which may be hinged to the top of said casing, or it may be passed into slots or between cleats upon the sides thereof, or in any other suitable way, so that the concave be placed directly over the aforesaid cylinder, at any required slope or angle, allowing the teeth of the latter to pass freely through the aforesaid grooves.

What I claim as my invention, and desire to secure by Letters Patent, is—

The metal concave A, furnished in the same solid piece, with rectangular and parallel grooves B, made transversely across the concave, having the sides of the partitions and the curved top or roof of each of said grooves made smooth and even upon their surfaces, and also having the base of each such parti-

tion inclined in a straight plane from the feeding side of the concave at *f* to the discharging one at *g*, so as to form a diverging angle from its point of contact with the curved roof of each adjacent groove, until it meets the other end of the said partition, and thus causing said grooves to grow gradually deeper toward the said discharging end, said construction made, arranged, adjusted above the thrashing-cylinder C, and operated upon substan-

tially in the manner and for the purposes herewith shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEWIS C. BICKINGS.

Witnesses:

ABRM. D. HALLMAN,
WM. H. REIFF.