J. ALLONAS.

Clover-Hulling Attachment for Thrasher.

No. 204,276. Patented May 28, 1878.

Fig. 1.

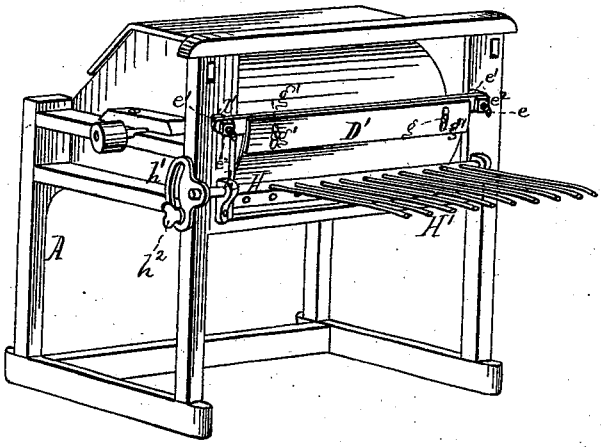


Fig. 4.

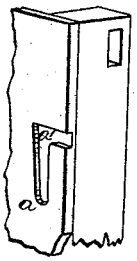


Fig. 2.

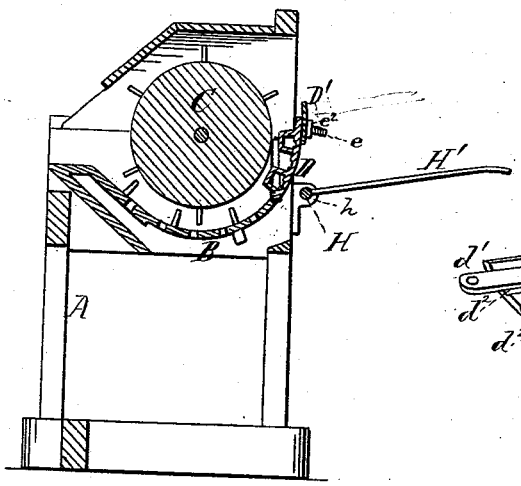


Fig. 3.

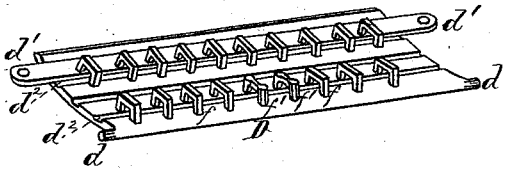
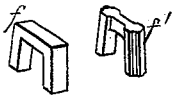


Fig. 5.



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IMPROVEMENT IN CLOVER-HULLING ATTACHMENTS FOR THRASHERS.

Specification forming part of Letters Patent No. **204,276**, dated May 28, 1878; application filed May 15, 1878.

To all whom it may concern:

Be it known that I, JOSEPH ALLONAS, of Mansfield, county of Richland, State of Ohio, have invented certain new and useful Improvements in Clover-Hulling Attachments to Thrashing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a thrashing-machine with my clover-hulling attachments applied. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a perspective view of the removable concave-extension forming the hulling attachment. Fig. 4 is a perspective view of a portion of the frame, showing one of the supports for the removable concave-extension; and Fig. 5 represents, in perspective, some of the hulling-teeth detached.

Similar letters of reference denote corresponding parts wherever used.

The invention relates, mainly, to a removable attachment to an ordinary thrashing-machine for adapting said machine to be used for thrashing and hulling clover-seed.

It consists, first, in the combination, with the thrasher-concave, of a removable and adjustable toothed extension, whereby the thrashing-surface is increased and adapted to the work of thrashing or hulling clover-seed, as hereinafter described.

It further consists in the combination, with the removable huller-extension to the thrasher-concave, of an adjustable tail-piece or apron, for increasing or diminishing the length of said huller-concave extension, as the nature of the work may require.

It further consists in the combination, with the rear discharging end of the concave, of an adjustable grate or adjustable fingers for regulating the degree of elevation of the straw as it is discharged from the concave, and assisting in effecting the separation of the grain therefrom, as hereinafter explained.

It further consists in certain details of construction and arrangement, hereinafter fully described.

In the accompanying drawings, A represents the frame-work of the machine; B, the thrasher-concave, and C the thrashing-cylinder, said parts being constructed and arranged in any usual or preferred manner. D is a supplemental concave, designed to be applied at the rear discharging end of the usual concave B, and to form a removable extension thereof, for adapting the machine to the thrashing and hulling of clover-seed. This concave-extension is shown detached in Fig. 3, and is provided at its lower forward end or corners with pivots *d*, which fit into bearing-socket plates attached to the side frame timbers at the heel or discharging end of the concave B, so arranged as to bring the forward end of the extension-piece into the same plane or arc with, and make it form a continuation of, concave B.

One or both of the pivot-bearings *a* is made open by means of an angular slot, *a'*, (see Fig. 4,) for adapting the supplemental concave to be inserted or withdrawn, according as the machine is to be used for hulling clover or for thrashing grain, while at the same time its form is such as to hold said concave firmly when in place. The upper end or corners of the supplemental concave D are provided with perforated lugs or ears d^1, which pass over threaded rods *e*, secured to and projecting from the rear of the main frame, as shown, nuts e^1 e^2 on said rods or bolts serving to hold the upper end of the concave at any desired point of adjustment thereon for setting the concave D nearer to or farther from the thrashing-cylinder, as the nature of the work may require. This supplemental concave D is provided with teeth *f*, made by preference in staple-form, as shown, and set in planes parallel with the path of the cylinder-teeth. These teeth may either be cast with the concave or they may be made separate, of wrought iron or steel, and riveted or bolted thereto. For giving them greater hold or grasp and efficiency in their action on the grain, I prefer to make them in the longitudinally fluted or corrugated form shown at *f'*; but for ordinary purposes the plain staple form shown at *f* is found to answer well in practice.

The teeth are made to stride grooves d^2 in the concave, crossing from side to side, and these, in connection with grooves formed be-

tween the rows of teeth, give a fluted or roughened face to the concave, which materially assists in the operation of hulling the clover-seed.

The supplemental concave has a sliding extension, D′, secured to its rear discharging end by means of set-screws *g* passing through slots *g′* therein and engaging with the concave D. By this arrangement the concave may be farther extended, as desired, for holding the clover still longer up to the action of the thrashing-cylinder, where the condition of the material operated upon shall require it.

H is a transverse rock-shaft, pivoted in suitable bearings *h*, at or near the rear end of concave B, and provided with a series of longitudinal rods or fingers, forming an adjustable grate or apron, H′, over which the straw passes from the concave B to the separator or shaker attachment. (Not shown.)

By rocking the shaft H in its bearings, the angle or pitch of the apron may be adjusted, as desired, for regulating its angle of inclination, the degree of elevation of the straw between the thrasher and shaker, and the measure of its resistance to the passage of the straw, as desired, for assisting in the operation of separating the thrashed grain therefrom.

The shaft H has a slotted crank-plate or segment, h^1, secured to it at one end for effecting its adjustment, a thumb-screw, h^2, passing through the slot in said plate into the frame, as shown, serving to hold the shaft and apron at any desired point of adjustment. Other devices may be employed in lieu of the slotted arm and set-screw for effecting said adjustment, if preferred. In addition to this feature of adjustability, it may sometimes be found desirable to connect the rock-shaft or apron H′ with a crank-arm for giving it a vibratory movement, and thereby still further assisting in the operation of separating the grain from the straw in the passage of the latter to the shaker.

By the construction and arrangement of parts above described—that is to say, by the addition to the ordinary thrasher-concave of the removable and adjustable concave-extension described—I am enabled readily and quickly to convert the ordinary grain-thrashing machine into an efficient clover-huller, and to adapt it to all the varying conditions of the clover to be operated upon.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The supplemental concave or concave-extension D, extending the entire length of the cylinder, and leaving an open discharge over its upper edge above the axial plane of the cylinder, substantially as and for the purpose set forth.

2. The removable concave-extension D, made adjustable to and from the cylinder, substantially as described.

3. The combination, with the thrasher-concave or concave-extension, of the adjustable tail-piece D′, substantially as and for the purpose described.

4. The combination, with the thrasher-concave, of the removable and adjustable supplemental concave or concave-extension, provided with the adjustable tail-piece, substantially as and for the purpose described.

5. The grate or fingers H′, applied at the rear end of the concave, and made adjustable independently of said concave, substantially as described.

6. The supplemental concave provided with teeth made in staple form, substantially as described.

7. The supplemental concave provided with the transverse grooves on its inner face, giving it a corrugated or fluted surface, as described.

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