

C. WHEELER, Jr.

HARVESTER CUTTING APPARATUS.

No. 173,094.

Patented Feb. 1, 1876.

Fig. 1.

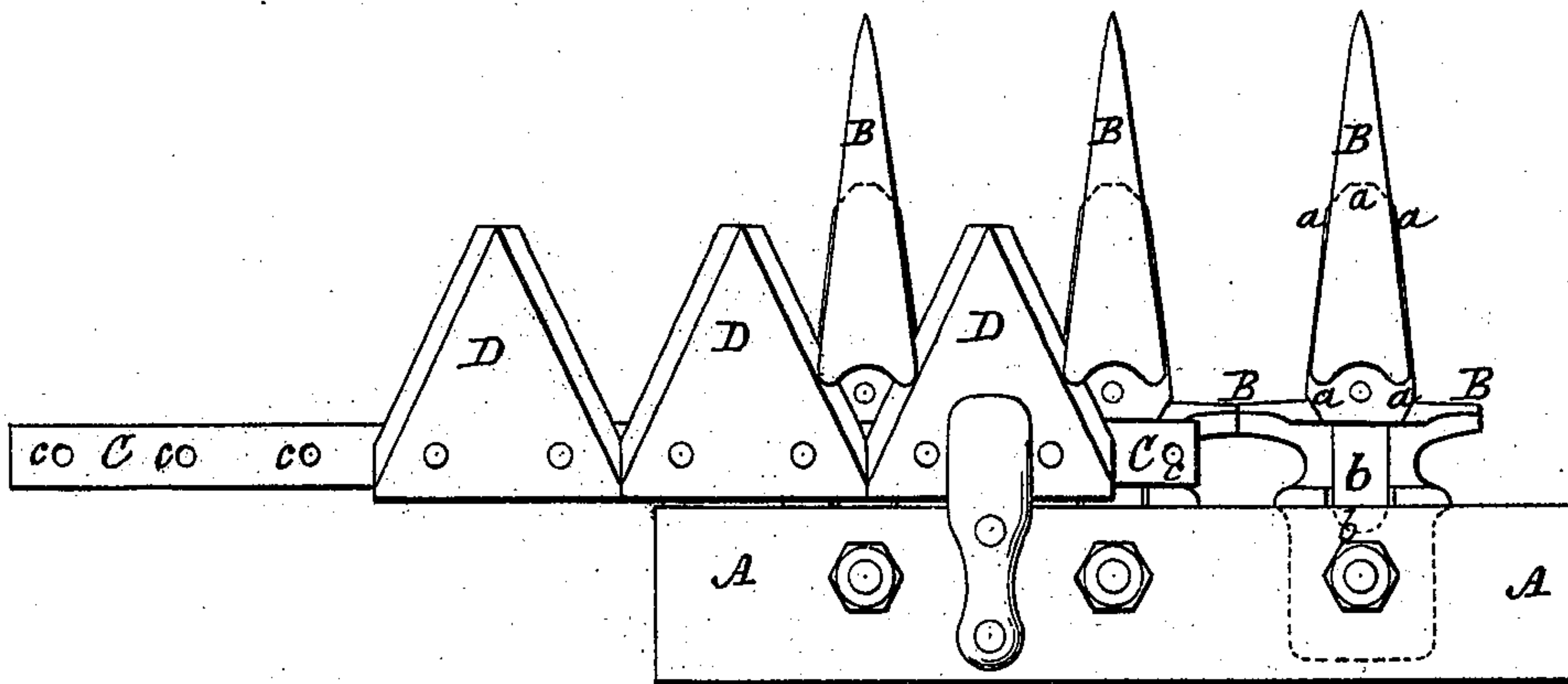


Fig. 2.

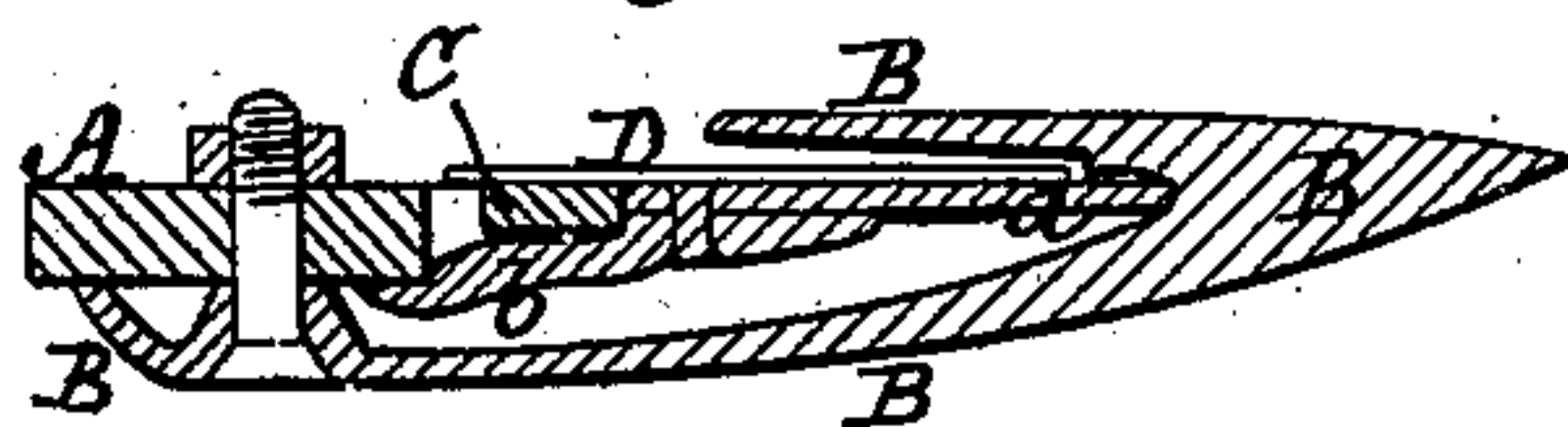


Fig. 3.



Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

CYRENUS WHEELER, JR., OF AUBURN, NEW YORK.

IMPROVEMENT IN HARVESTER CUTTING APPARATUS.

Specification forming part of Letters Patent No. **173,094**, dated February 1, 1876; application filed December 16, 1873.

To all whom it may concern:

Be it known that I, CYRENUS WHEELER, Jr., of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in the construction of the Cutting Apparatus of Harvesting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a portion of a cutting apparatus as arranged for operation on a harvesting-machine. Fig. 2 represents a longitudinal vertical section, taken through one of the guards or fingers, and showing the cutter as connected therewith. Fig. 3 represents the knife-bar with the rivet-holes for attaching the cutter-sections thereto. Fig. 4 represents a perspective view of the leger-plate connected with the guards, and over and against which the vibrating cutters work.

Heretofore, in securing cutter or sickle sections to their bar, it has been customary to use two rivets to each section, but so placed at or near the edges of said sections as to make two rivet-holes through the knife-bar so near together as to very much weaken said bar at its weakest part, and make it liable to bend or break, or necessitate its being made larger and heavier than is requisite with a judicious disposition of the rivet-holes, so that they will not weaken said bar at particular parts thereof. Where the knife-sections have been secured to the bar each by a single central rivet, the rivet-holes in the bar were near about equidistant, but the knife-sections being secured at a single point only, the rivet-holes simply weakened the bars, without any compensating stiffening effect from the knife-sections, thereby rendering it necessary to increase the weight of the knife-bar rather than making it practicable to diminish such weight—a matter of great importance, in view of the jar and racking effect produced by the necessarily rapid vibration of the knife-bar.

One of the objects of my invention is to overcome the difficulties recited; and to this end my invention consists, first, in forming the rivet-holes in the knife-bar at equal distances apart, and combining with said bar knife-sections,

provided each with two rivet-holes, so spaced as to exactly match any two adjacent holes in the knife-bar, thereby removing them to the farthest practicable point from the adjoining edges of the sickle-sections, consistent with uniting each section to the bar by two rivets, and the equidistant spacing of the rivet-holes in said bar, as hereinafter explained.

My invention further consists in a leger-plate, the portion over which the vibrating cutters work being of steel, and the tail by which it is held to the finger and finger-bar being of malleable cast-iron riveted thereto, and both made substantially as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

In Fig. 1, A represents the finger-bar; and B the guards or fingers, secured thereto in the usual well-known way. In the guards is placed a leger-plate, *a*, the tail or shank *b* of which projects under the finger-bar A to hold it securely in place at the rear, while the point of said plate fits into a slot or recess in the finger, which holds it at the front or forward end. The tail or shank *b* of this leger-plate is made of malleable cast-iron, of the form substantially as shown in Fig. 4, and is riveted to the under side of the leger-plate.

The knife-bar C, to which the cutter-sections D are attached, is punched or drilled with a series of holes, *c c c*, of precisely uniform distances apart, and the cutter-sections D are drilled or punched with two holes each, so spaced as that they will match exactly any two of the holes in the knife or cutter bar C, and the sections may, as now, abut against each other, so as to cover or nearly cover the knife-bar.

By making the rivet-holes in the bar C of uniform distances apart, no particular part of the bar is weakened more than any other part of it, as is the case when the rivets are put through near the edges of the sections, thus bringing two holes close together near to where the sections abut against each other, and where the bar is naturally the weakest and most liable to bend or break. The portions of the knife-bar grasped by the sickle-

sections, with their two fastening rivets each, will be stiffened and strengthened by said sections, while the rivet-holes, being removed from the adjoining edges of the sections, and away from each other at the intermediate portions of the bar not stiffened thereby, the full strength of the bar at that point is retained, rendering it practicable to reduce the weight of the bar as a whole, whereas in the case of knife-sections united each by a single central rivet, no stiffening of any portion of the bar is effected, and the bar, as a whole, is weakened by the rivet-holes, and is rendered the more liable to be flexed and broken through said holes, which form the weakest points in the bar, making it necessary to increase rather than diminish the weight of the bar.

Aside from the advantages above recited, each sickle-section being made to exactly match any two adjacent rivet-holes in the bar, any section may be applied at any point on the bar, and the bars and sections being uniformly drilled or perforated, any section may be used at any point upon any bar, rendering it practicable, when desirable, to give the sections an intermediate position, adapting the

bar to different machines, or to a change in the length of the pitman, a function of which, under the usual mode of drilling the bar and applying the sickle-sections, said sections are incapable.

I would state that I am aware that leger-plates have heretofore been made, some of cast-iron entirely, and some of steel entirely, and held in place by the finger and finger-bar. These I do not claim; but

What I claim is—

1. In combination with a knife-bar, having its rivet-holes punched or drilled at equal distances apart, the sections or cutters punched or drilled with two rivet-holes each, spaced to match said holes in the knife-bar, substantially as and for the purpose described.

2. I also claim a leger-plate, composed of the steel plate *a*, and malleable cast-iron shank *b* riveted thereto, and extending under the finger-bar, as and for the purpose described and represented.

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Witnesses:

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