No. 769,133. PATENTED AUG. 30, 1904.

R. E. GRANT.

MOWING MACHINE.

APPLICATION FILED SEPT. 12, 1903.

NO MODEL.

Fig. 1.

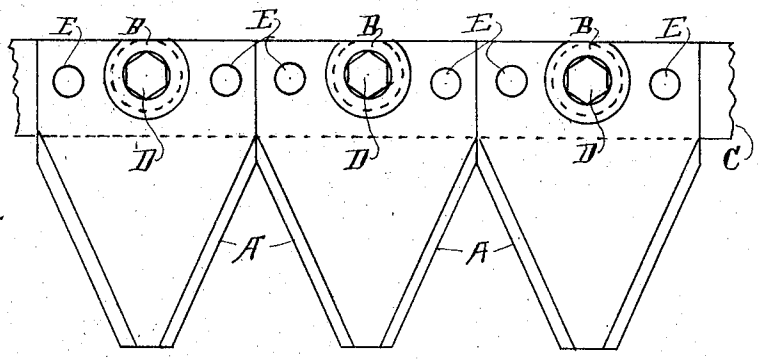


Fig. 2.

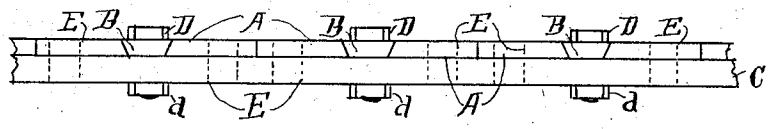


Fig. 3.

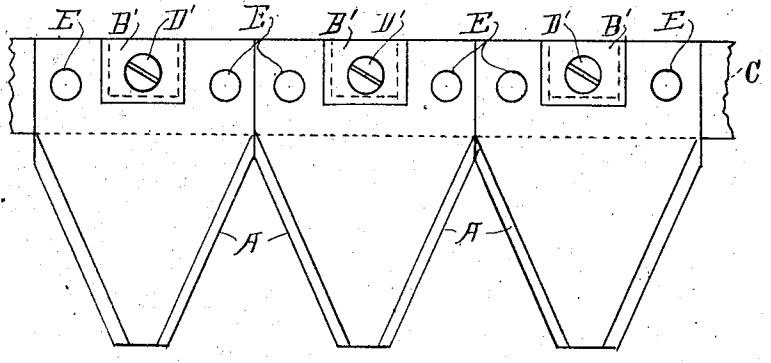
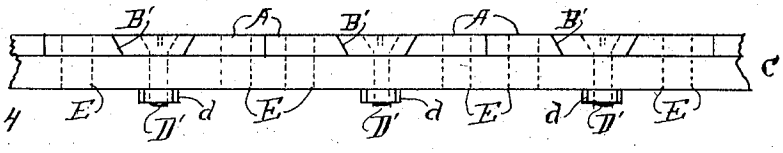


Fig. 4



Inventor

Witnesses

A. Allgier

C. V. Cilley.

By

Robert E. Grant.

Ethiel J. Cilley

Attorney

No. 769,133. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

ROBERT E. GRANT, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO JOHN A. CAVANAUGH, OF GRAND RAPIDS, MICHIGAN.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 769,133, dated August 30, 1904.

Application filed September 12, 1903. Serial No. 173,001. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. GRANT, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a specification.

My invention relates to improvements in the manner of securing the sections or cutters to the cutter-bar of mowing and reaping machines; and its objects are, first, to provide for readily and easily removing and replacing the sections without removing the cutter-bar, and, second, to avert the danger of the sections becoming loose upon the cutter-bar.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan of a piece of a cutter-bar with sections attached. Fig. 2 is a back elevation of the same. Fig. 3 is a top plan of the same with a modified form of bolt and clamp. Fig. 4 is a back elevation of the same.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings, A represents the cutting-sections, and C represents a piece of the cutter-bar. For the purpose of securing the section A to the cutter-bar C, I form a countersunk opening in the section and provide a washer B correspondingly beveled to fit into the countersunk or beveled opening. I prefer in all cases that the back portion of the apertures be left open, whether a round washer B or a square washer B′ be used, so that there will be no trouble in prying the washers out when removing them. To hold the sections from becoming loose upon the bar by reason of the reciprocating motion of the bar and the resistance of the grass or grain being cut, I secure two pins E into the bar for each section, the projecting ends of which are to pass through and fit closely into apertures in the sections, as shown.

When the section A has been placed upon the bar C with the pins E properly inserted, I insert the washer B and passing a bolt D or D′ through it screw it solidly through the bar C, and then to avert the danger of its becoming loose I place a jam-nut *d* upon the bolt, screwing it solidly to place against the bar. By this construction the sections are not only drawn solidly upon the bar, but are held absolutely safe from an oscillating motion thereon and are as firmly seated thereon as by the ordinary form of riveting, with the advantage that they may be easily and readily removed and replaced either singly or in groups without the danger of bending and distorting the bar or removing it from the machine, as is necessary where the sections are riveted fast to the bar.

I show two forms of bolt-heads—a square projecting head D, as in Figs. 1 and 2, to be manipulated by a wrench, and a flat countersunk head D′, having screw-slots, as shown in Figs. 3 and 4, either of which may be used successfully, the former being desirable, for the reason that it can be screwed down much more securely with a wrench than the latter can with a screw-driver, while the latter is somewhat better, for the reason that it does not project above the surface of the section. The germ of my invention, however, lies in the combination of the retaining-pins E, the beveled washer B, and the bolt D, though the bolt and pins may be used without the washer without materially departing from my invention; but I greatly prefer the use of all three elements, as I find them much more satisfactory for properly securing the sections.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In combination with the cutter-bar of a mowing-machine, rivets securely attached thereto and projecting from the upper surface, a series of sections each section having aper-

tures engaged by two of said rivets, and a central circular countersunk aperture open at the back, a circular beveled washer fitted into said central aperture and a square surface formed at the back corresponding with the open portion of the aperture, bolts passing through said washers and screwed through the cutter-bar, and a jam-nut on the projecting end, substantially as and for the purpose set forth.

Signed at Grand Rapids, Michigan, September 9, 1903.

ROBERT E. GRANT.

In presence of—
EDWARD L. GOUGH,
I. J. CILLEY.