

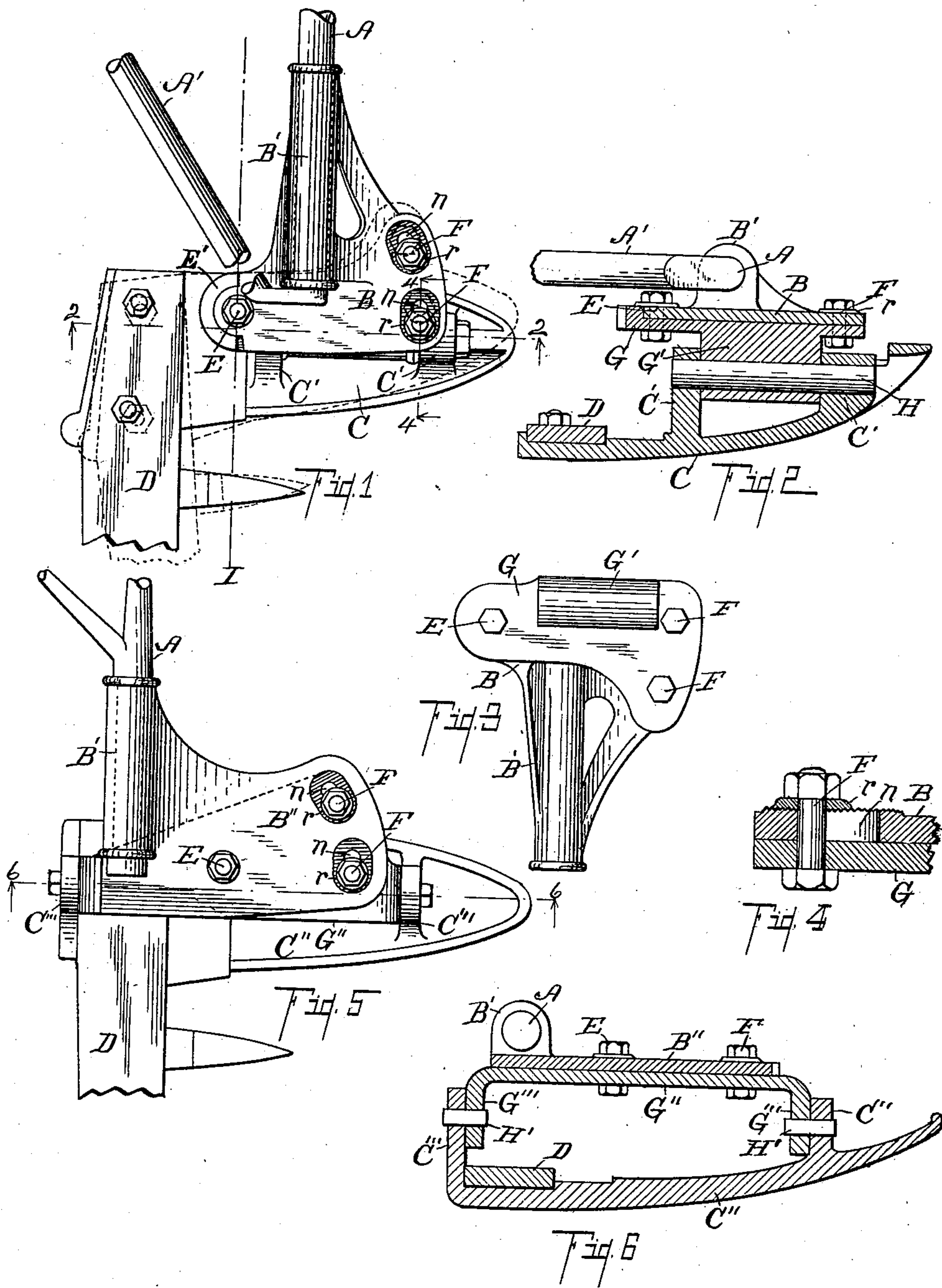
No. 668,649.

Patented Feb. 26, 1901.

P. E. KUHN.
MOWING MACHINE.

(Application filed Mar. 10, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

PHILIP E. KUHN, OF VICKSBURG, MICHIGAN.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,649, dated February 26, 1901.

Application filed March 10, 1900. Serial No. 8,233. (No model.)

To all whom it may concern:

Be it known that I, PHILIP E. KUHN, a citizen of the United States, residing at the village of Vicksburg, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a specification.

This invention relates to improvements in mowing-machines, and more particularly to the connection between the finger-bar and the main frame of the machine.

As heretofore constructed attempts have been made to adjust the finger-bar to keep it properly in line with the pitman; but they have had the effect of moving the entire structure and throwing it out of line rather than to correct the defect at which they have been aimed. It is obvious that the tendency of the pressure at the outer end of the finger-bar is always to throw it back, and after a time the wear and tear on the machine loosening its joints permits it to swing back, so that the cutter-bar no longer stands at right angles to the line of draft of the machine.

It is the object of my invention to effectually overcome this defect and still preserve the alinement of the finger-bar with the cutter-bar and its pitman.

My invention is adapted to any style of mowing-machine, and I show it in relation to two different forms and remark in this connection that it is adapted to any form that I have ever seen.

The inner end of the finger-bar—that is, the end next the machine—is provided with a shoe which is arranged beneath the connections to lower the finger-bar as near the ground as practicable. The finger-bar is hinged to a suitable support; and my improvement relates to the adjustment of these parts to compensate for any wear.

The objects of the invention will consequently fully appear from the description and drawings.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail view of the connections

between the finger-bar and the frame of a mowing-machine. Fig. 2 is a vertical sectional elevation taken on line 2 2 of Fig. 1. Fig. 3 is an inverted plan view of the part B appearing in Fig. 1. Fig. 4 is a detail sectional view on line 4 4 of Fig. 1, showing the corrugated washers used in that connection. Fig. 5 is a detail plan view of my invention adapted to a different form of finger-bar and connections. Fig. 6 is a detail sectional elevation on line 6 6 of Fig. 5.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the main bar connection between the finger-bar and the frame. The connection of this bar to the frame not being material to this invention it is not shown.

A' is a continuation of the bar and forms a brace, the opposite end being connected to a suitable part of the main frame of the machine, and this connection forms a pivotal support in the sleeve B' to permit the shoe of the finger-bar to rock up and down in passing over uneven ground or in rising over obstructions. This sleeve is secured to the plate B, which forms the main base of the connection to the finger-bar. Beneath this is arranged a plate G, having a downwardly-projecting portion G', which receives the pivot H, on which the shoe C of the finger-bar is hinged. Suitable brackets C' C', formed on the shoe, receive this pivot. The finger-bar D is secured by bolts or otherwise to this shoe, as clearly appears in all of the views. A strong efficient joint is formed between the plate G and the plate B at E, the rear end of the plate B being rounded and a rib E' being raised on plate G around the same to increase its strength. A bolt E extends through this point to clamp the parts securely. Bolts F are secured to the lower plate G and extend upwardly to receive nuts on their upper ends. They extend through slots *n n*, which are curved on a line concentric to the pivot-bolt E. Slight bosses are raised around these slotted holes, containing corrugations. (See particularly Fig. 4.) Corrugated washers *r* engage the corrugations, so that when the

bolts F are tightened the plate B is very securely held in position.

It will be observed that the pivot E is located substantially at the heel of the cutter-bar, so that by loosening the bolts F and carrying the cutter-bar forward its joint occurs at such position that it preserves the alinement between the pitman and the cutter-bar, so that it is possible by this device, no matter how much the different joints of the machine become worn, to adjust the same into proper alinement, thus making the machine as good as new so far as the operation of the cutter-bar is concerned. It greatly facilitates the assembling of the machine also.

In the modified structure shown in Figs. 5 and 6 the plate G'' is extended from the front to the rear of the shoe C'' and has two downwardly-projecting portions G'''. The shoe C'' has the two upwardly-projecting portions or brackets C''', and a support is effected for the plate G'' by the pins H', which form a pivotal connection between the parts, practically the same as in the main structure. In this structure the support A and the sleeve B' are back of the pivot E; but the position of the pivot is preserved in its relation to the position occupied by the cutter-bar in use, so that the adjustment throws the parts into line and does not form an elbow or throw the finger-bar out of alinement with the cutter-bar in the least.

From my remarks it will be clear that my improved connection can be varied in its details without departing from my invention. I have shown ordinary means for effecting the connection at this point and am aware that they can be greatly varied, though I believe the pivot-bolt and the slots *n* in the plate, with the corrugated washers, to be as simple and effective as any adjustable connection could be for use in a like relation.

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

1. In a mowing-machine, the combination of a finger-bar; the inner shoe therefor; pivotal connections for said shoe in line with the draft to a suitable plate or part; a second plate or part adjustably connected with said first plate by means of a vertical pivot situated above the heel of the cutter-bar and

suitable clamping-bolts for said plates, the said second part containing a horizontal pivot at right angles to the line of draft to provide for the oscillation of the shoe and finger-bar; and suitable connections from said pivot to the frame of the machine, all coacting substantially as described, for the purpose specified.

2. In a mowing-machine, the combination of a shoe C; the finger-bar D; the plate G connected to the shoe by a pivot H in line with the draft to form the hinge for the finger-bar; a plate B having a pivot E reinforced by a suitable rib connecting it with the plate G; bolts F in slots *n* in the plate B for adjusting the connection; and a pivotal connection B' transverse to the line of draft to afford the oscillation of the finger-bar; and connection A therefrom to the frame of the machine, all coacting substantially as described for the purpose specified.

3. In a mowing-machine, the combination of the shoe C; the finger-bar D; the plate G connected to the shoe by a pivot H in line with the draft to form the hinge for the finger-bar; a plate B having a pivot E connecting it with the plate G; bolts F with corrugated washers *r* thereon, arranged in slots *n* in the plate B, which is corrugated to receive the corrugations of the washers, for adjusting the connection; a pivotal connection B' transverse to the line of draft to afford the oscillation of the finger-bar; connection A therefrom to the frame of the machine, all coacting substantially as described, for the purpose specified.

4. In a mowing-machine, the combination of the finger-bar with its inner shoe; a plate pivotally connected to the inner end thereof to form the hinge for raising the bar; a plate with a pivot transverse to the line of draft connected to the machine; a vertical pivot toward the heel of the cutter-bar connecting the plates, means for adjustably connecting the two plates together, for the purpose of alining the finger-bar, as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

PHILIP E. KUHN. [L. S.]

Witnesses:

LEWIS C. BEST,
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