W. S. McCormick
Harvester Cutter.

No. 26777
33681.

Patented Nov. 5. 1861.

Fig. 2.

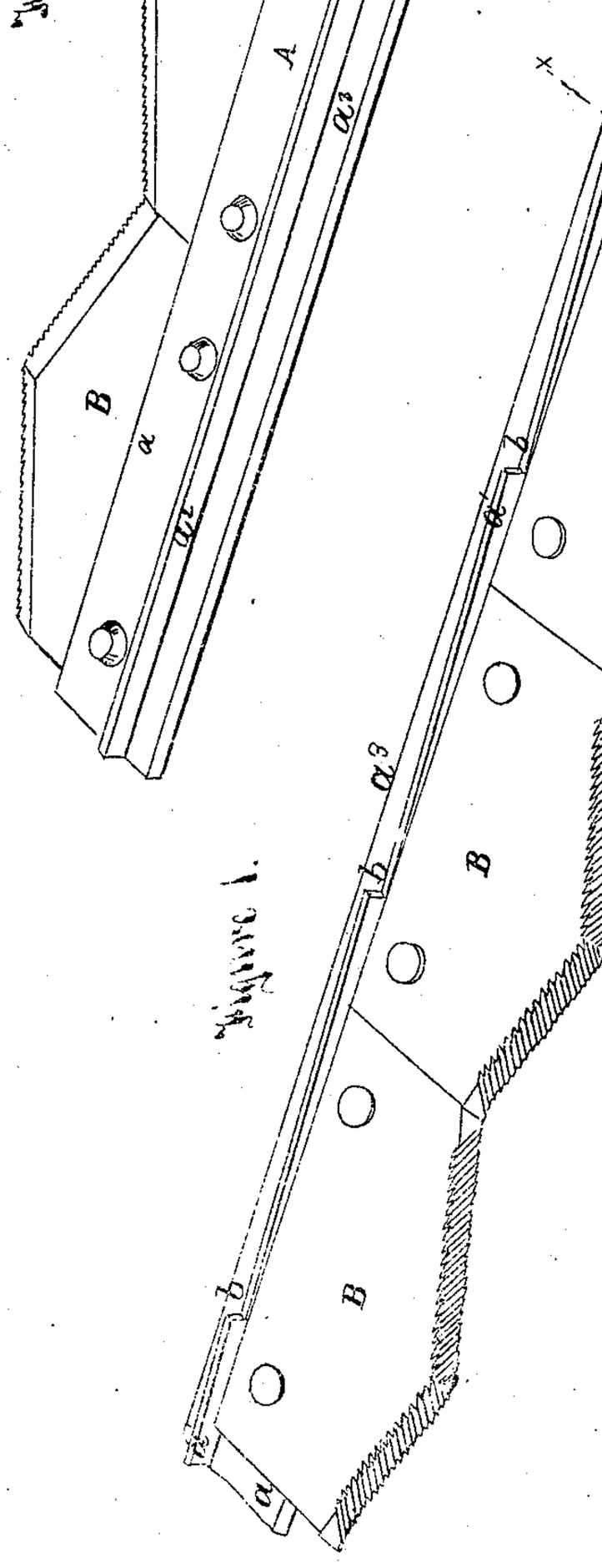
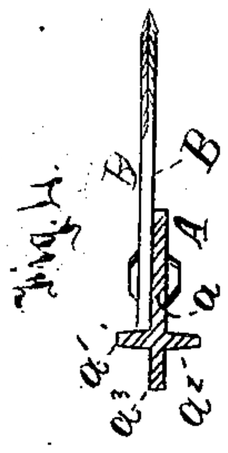


Fig. 1.

Fig. 3.

Fig. 4.



UNITED STATES PATENT OFFICE.

WM. S. McCORMICK, OF CHICAGO, ILL., ASSIGNOR TO CYRUS H. McCORMICK.

IMPROVEMENT IN CUTTERS FOR REAPING AND MOWING MACHINES.

Specification forming part of Letters Patent No. **33,681**, dated November 5, 1861

To all whom it may concern:

Be it known that I, WILLIAM S. McCORMICK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cutters for Mowing-Machines and Reaping-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view in perspective of a portion of a cutter embracing my improvements. Fig. 2 represents a similar view of the under side of the same. Fig. 3 represents an elevation of the rear of the same, and Fig. 4 represents a section at the line *x x* of Fig. 1.

It is desirable to make a cutter for mowing and reaping as light as is consistent with a due degree of strength, because from the rapid motion at which the cutter is vibrated a great waste of power is involved in moving any superfluous weight. In addition, however, to the requisite strength, the cutter must have bearing-surfaces of adequate width to prevent abrasion, to slide in contact with the guides, which keep it in place while at work. I have found that by making the blade of the cutter narrow and the indentations shallow and working it in the McCormick slotted finger, in which the back angles hold the stalks from yielding forward to the pressure of the edge of the blade while cutting, I can use a very thin and light bar to rivet the blade to; but such a bar has not the requisite stiffness to support it properly against the end-thrust and backward pressure while cutting. To avoid this difficulty without increasing too much the weight of the bar, I make the bar even still thinner than heretofore, and then give it stiffness and, when necessary, more rear bearing-surface by making a vertical rib or flange on one or both of its sides behind the blade, and extending the bar in rear of the vertical flange far enough to form a horizontal flange, and arranging one or more of these flanges to slide against the bearings of the guides, and notch one or more of the flanges of the cutter-bar to make them take hold more readily of obstructing matter and detach and discharge it from the guide in which they slide. The notches in the opposite flanges may be inclined in opposite directions, so that the oppositely-inclined series of notches may push alternately, and thus maintain with an intermittent action, as near as may be, an equable resistance to the cutter while it is performing the cleaning function.

The bar A, to which the blade B is riveted, may be made of a single piece of metal, forged or rolled or cast into the proper shape; or it may be a composite bar, consisting of three pieces—a broad bar, with two vertical flanges or ribs, a' a^2, made separately, and then either riveted, screwed, brazed, or otherwise secured to the sides of the bar.

The blade B is riveted to the front part, *a*, of the bar. The rear part, a^3, of the bar, back of the top and bottom ribs, forms a horizontal flange to give additional horizontal stiffness and strength to the blade; and the rear side of this part may bear against the guides in which the cutter slides.

The part *a* should be pierced with a series of holes for the rivets which fasten the blade. These holes I prefer to make by drilling; but they may be made by punching.

The notches *b* in the flanges may be made of any convenient form; but I prefer to make them like a series of ratchet-teeth.

If the cutter-bar and its flanges should be made of steel, the points of the ratchet-teeth might be made sharp and tempered.

The rear side of the flanges, as well as the back of the bar, may be made to bear against guides arranged for the purpose. Such a guide may be formed in the finger-beam, in the slot of the fingers, or in brackets attached for the purpose to the finger-beam; or the guide may be partly in two or in all three of them, as the structure of the finger-beam or fingers, or other circumstances may render expedient.

The blade may be made in one piece of steel or in sections. I prefer the latter.

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

The flanged cutter-bar with notches in one or more of the flanges, substantially as described.

In witness whereof I have hereunto subscribed my name.

WM. S. McCORMICK.

Witnesses:

JAMES T. SNIFFIN,
GEORGE W. EVARTS.