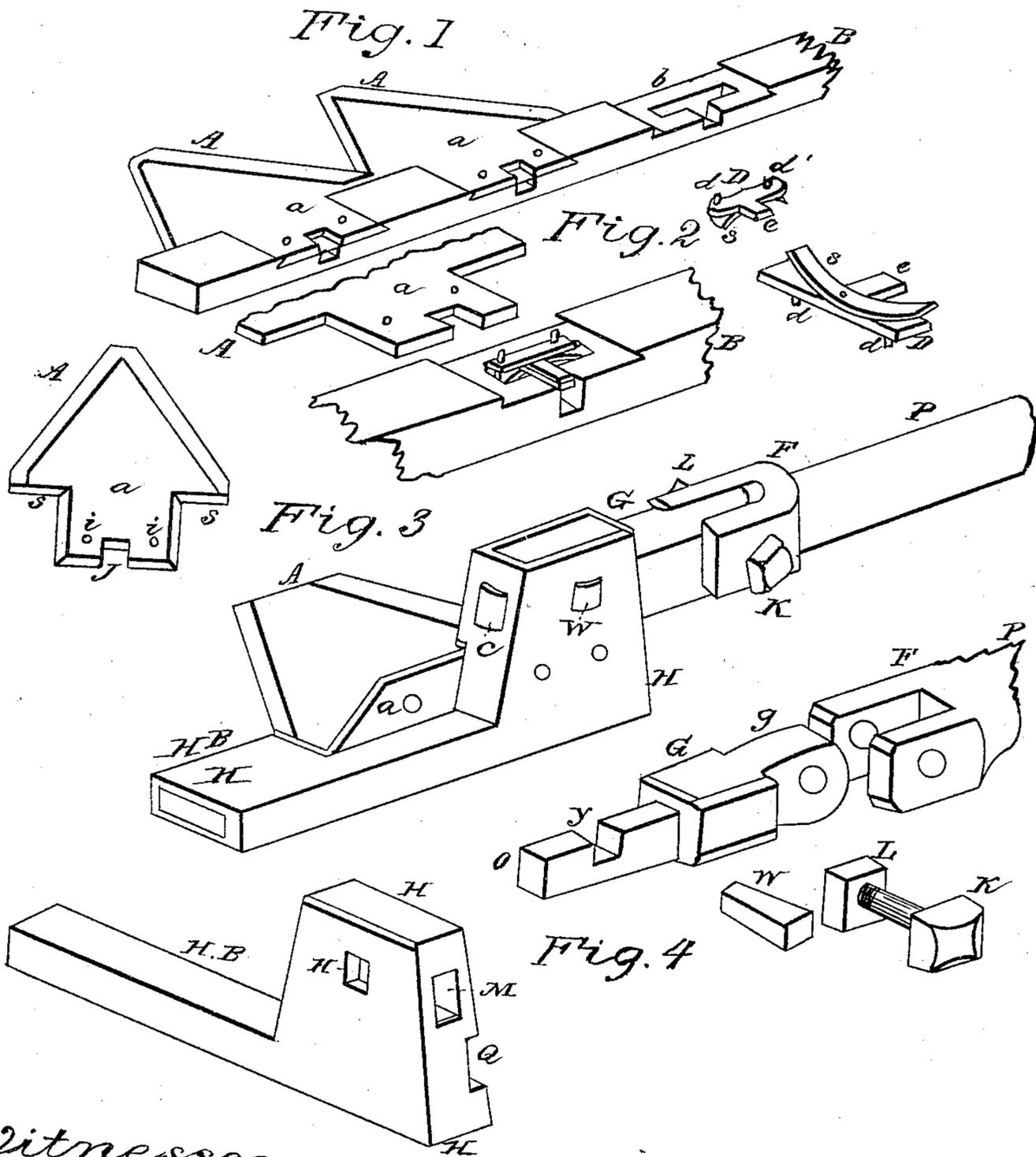


BONHOLTZER & SHOPP.

Harvester Cutter.

No. 94,705.

Patented Sept. 14, 1869.



Witnesses
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HENRY BONHOLTZER AND JACOB S. SHOPP, OF CUMBERLAND COUNTY, PENNSYLVANIA.

Letters Patent No. 94,705, dated September 14, 1869.

IMPROVEMENT IN HARVESTER-CUTTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, HENRY BONHOLTZER and JACOB S. SHOPP, of Cumberland county, (near Mechanicsburg,) in the State of Pennsylvania, have invented new and useful Improvements on Reaping and Mowing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a portion of a cutter-bar, with two sickles or cutters in place, and one removed, to show the chamber for the spring, a detached cutter, and springs, showing the upper and lower sides, with

Figure 2 for further illustration, showing the spring in place.

Figure 3, a perspective view of our heel to the cutter-bar.

Figure 4, the several parts detached.

The nature of our invention consists in the manner of making and attaching the knives to the cutter-bar, so as to be easily removed, for grinding, and replaced, without the ordinary bolt, screw, or rivet-fastening.

Also, in the manner of constructing the heel and connection with the pitman, in order to save time and expense in repairing the wear and tear on the same.

To enable others skilled in the art to make and use our invention, it is only necessary to refer to the drawings, with a brief explanation.

First, our sickles or cutters A are clearly shown detached, and also attached to finger-bar, in fig. 1. They are provided with a neck, *a*, bevelled on the sides, with a square notch, *j*, cut out behind.

The shoulders *s* fit against the edge of the bar B.

The bevelled neck *a* slides, dovetail fashion, in sunken portions, *b*, of the bar, made to receive them, and present a level surface on the top of the combined cutter and intermediate raised portions of the bar.

At the base of the triangular cutters A, the sides adjoin each other, so as to allow grinding-surface, say, of one-fourth to half an inch, abutting against each other.

Two holes *i i* are made in the neck *a* of the cutter, for the reception of the pins *d d*, on the spring-plate D.

The face of the sunken portion *b*, with its bevelled sides, has an oblong recess, opening outward to the rear of the bar, for the spring-plate D and its projecting ear or end *e*.

This bar D has two pins *d d*, made to fit the holes *i i*, in the neck or narrow part *a* of the cutters afore-

said, and is pressed upward by a bow-spring, *s*, riveted centrally to the bar, as shown.

By pressing this plate down, the spring yields, to allow the narrowed neck *a* of the cutters to slide in the bevelled groove up to the shoulders *s*, when the pins are forced up, and catch in the holes adapted for their reception.

Through the open notch *j*, the spring can be depressed, and the cutters removed, for grinding them with ease.

Screws are objectionable. When the slot becomes damaged, or the head broken, there is more trouble in removing the screw than a rivet. No catch of any kind would be required so long as the knives are in action upon grain or grass, but, in turning, the motion might tend to throw them out, while in rapid motion, without resistance. Therefore this spring-catch arrangement answers every purpose; and, by reaching under with a tool for the purpose, the spring is sooner pressed down than to draw a screw, however easy, for which, also, a tool will be necessary. Thus the knives can be ground on an ordinary grindstone with ease, saving much trouble and labor.

The heel to the cutter-bar, which is soon worn at its connection with the pitman by the friction of the crank-action, whether hooked in the old manner, having a side-action, or, by a forked joint, directly to the lug of the heel, soon produces an oval hole for the bolt, and a tendency to give the bar a vertical or jumping motion.

To prevent the expense of throwing away the whole heel, and to remedy the jumping action, we form our heel as shown by figs. 3 and 4.

Instead of an ordinary rounded lug or fulcrum, with a hole, for the bolt, through the sides H, we form a square or oblong hole longitudinally with the bar in H, marked M, and a square side-hole, N, for a wedge, W.

We have an extra piece, G, with a shank, O, and notch V, and shouldered and rounded end *g*, with a hole, for the bolt K.

This extra piece G O is inserted into M, in H, and fastened by the wedge W, driven through the side-hole N and notch V, which firmly secures it.

The pitman P, with its forked end F, is now connected with the extra piece G *g*, and the headed bolt K secured by the nut L, in the ordinary manner.

This arrangement gives the cutter-bar a more uniform horizontal motion. The joint, being further removed, not only allows of a free up-and-down motion, but also a more central action in a line with the motion of the bar, obviating all side-friction or lateral chafing of the pitman, and is believed to be durable and efficient in use.

When the eye of the extra piece is worn out, it can

be replaced by a new piece, without removing the head of the heel, or the whole connection with the bar, and also at a less expense and delay.

Such an extra piece or pieces might be kept on hand, if desirable, and by it the machine could be used without any delay when necessary otherwise to remove the heel, and replace it by a new one.

We are aware that the "Excelsior Reaper" uses a forked pitman bolted to the lug or fulcrum of the heel; therefore we do not claim the fork-attachment; but we are not aware that such an attachment has ever been made to an intervening or extra piece, as herein shown and described; therefore,

What we claim as our invention, and desire to secure by Letters Patent, is—

The construction and mode of applying the cutters A, with bevelled narrower ends *a*, notch *j*, and holes *i*, in combination with the recess *b*, and spring-plate D, and cells formed in the cutter-bar B, in the manner and for the purpose shown and specified.

HENRY BONHOLTZER.
JACOB S. SHOPP.

Witnesses:

JOHN PALMER,
JACOB MILLER.