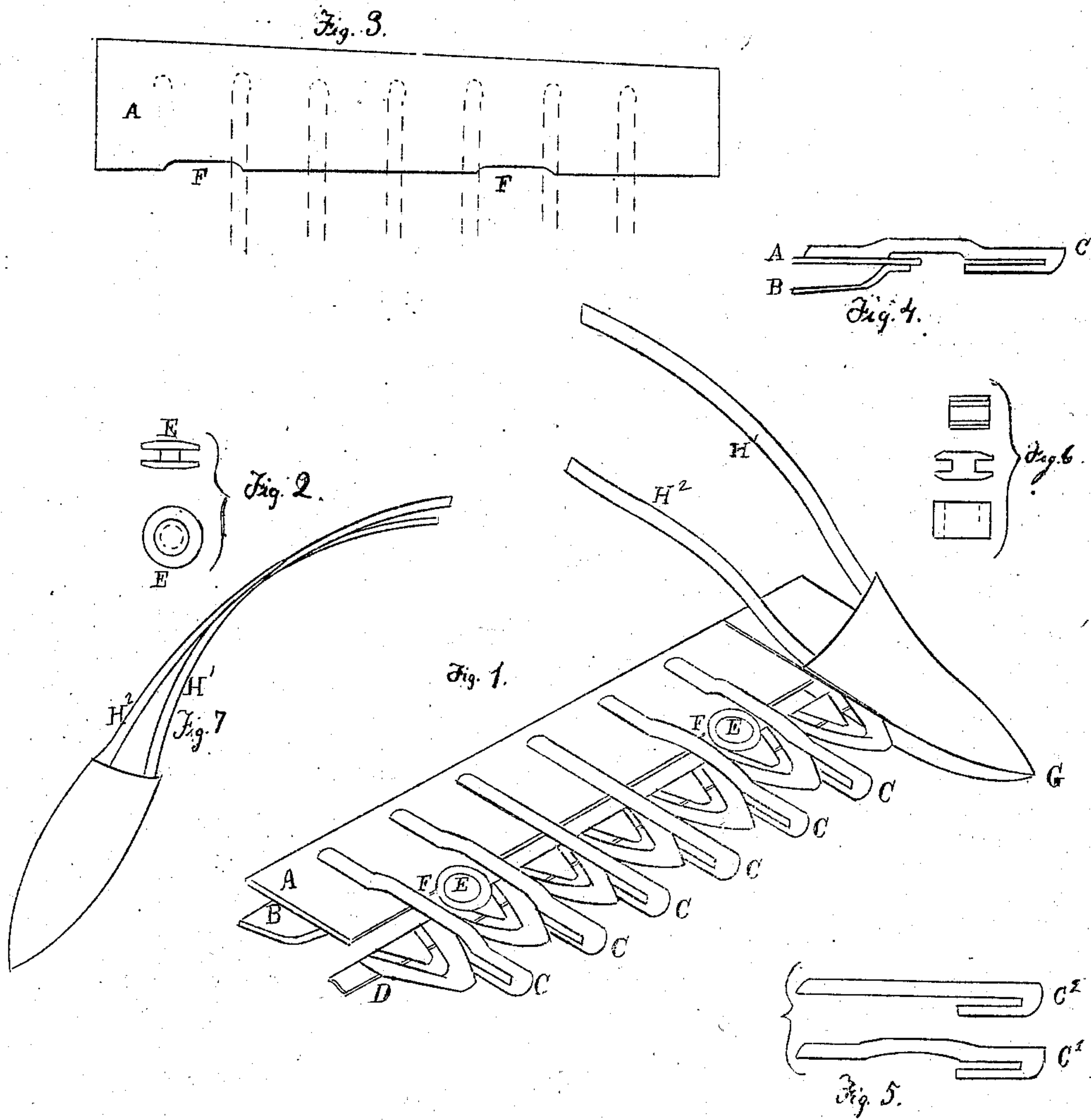


*I. S. Love,*  
*Harvester Gutter.*

*No. 15855*

*Patented Oct 7 1856*



*Witnesses*  
*Wm B Arnold*

*Ira S. Love*



# UNITED STATES PATENT OFFICE.

ISRAEL S. LOVE, OF BELOIT, WISCONSIN.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 15,855, dated October 7, 1856.

*To all whom it may concern:*

Be it known that I, ISRAEL S. LOVE, of Beloit, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in the Construction of Harvesters for Grass and Grain, which is calculated to make them more durable and to render their operation more perfect, at the same time that it shall require less power to perform the same work; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of a part of the sill of a grass-harvester with a divider and the fingers (or guards) attached, and with a corresponding part of the grass-cutting blade in place, supported by the movable rolling guides. A and B represent the two pieces of metal of which the upper and the lower part of the sill are composed; C C, &c., the fingers, (or guards;) D, the grass-cutting blade; E E, the movable rolling guides which hold the cutting-blade D in its place and allow it to move with the greatest ease. F F are notches in the edge of the sill, which prevent the rolling guides from being shaken out of place, but do not hinder their complete motion, as the blade, with the guides, moves backward and forward; H' H<sup>2</sup>, the rods of metal or wood which make the divider.

Fig. 2 represents two views of one of the rolling guides.

Fig. 3 shows a top view of the sill, with the notches F F for the rolling guides, the dotted lines showing where the fingers are attached.

Fig. 4 is a section of the sill at right angles to its length to show its shape when constructed of two pieces of metal. This section is made through one of the notches F, and shows the shape of the next finger, (or guard,) which is bowed upward to allow the flange of the rolling guide E to pass partly under it.

Fig. 5 shows the difference in the form of two of the fingers, (or guards,) of which C' is next to the notch F on the sill A B, and the other of which, C<sup>2</sup>, is not next to it.

Fig. 6 is a sliding guide which may be used in place of the rolling guide E to answer the same purpose imperfectly.

Fig. 7 is a top view of the divider.

The practical operation of harvesters as they

are usually constructed tends to show that a very large part of the power applied to them is wasted in the friction accompanying the quick reciprocating motion of the cutting-blade. This is in a great degree caused by the necessity of holding the cutting-blade exactly in its place in the fingers, against which it cuts and from which it must clear away everything that has a tendency to catch and be drawn in so as to clog it. This clogging is also liable to happen in the guides which usually hold the back of the cutting-blade in place, as well as in the fingers, where the cutting-edges of the blade come. These hinderances to the perfect operation of harvesters is still further increased when the grain or grass is lodged by the imperfect operation of the dividers in present use.

It will be observed that when the grass or grain leans strongly toward that which is to be left standing the common dividers fail to divide it effectually, so that when cut it does not fall upon the platform of the reaper or over the sill of the mower, but clings to the uncut grain or grass, and is dragged off from the machine to be in the way of the next swath. Sometimes, moreover, a part of it is beaten down under the wheel which runs next to the grain, making very slovenly and wasteful work.

My improvements, which are designed to obviate these defects, affect the form of the divider, the construction of the sill, and the working of the cutting-blade.

My divider is made of two or more rods of metal or wood, rising from the shoe and presenting very nearly the form of a spiral curve, which curve begins near the point of the shoe. One rod, H', Figs. 1 and 7, rises from the outside of the shoe with a considerable curve and twist, so as to bring its hinder extremity over that of the other rod, H<sup>2</sup>, Figs. 1 and 7, which starts from near the inside of the shoe and has a less curve as it reaches back, as represented in the drawings, Figs. 1 and 7. If more than two rods should be used, their proper shapes will be between the shapes of those already described. By the peculiar form of this divider the lodged grass or grain is gradually raised as the harvester moves forward till it is brought to an upright position and completely separated from that to be left standing for the next swath, and then allowed to fall upon the platform of the reaper or over the sill of the mower. This divider, when used upon



a reaper, is to be placed farther forward upon the sill than when used upon a mower, as represented in the drawings. Still further to improve the operation of my harvester, I place between the cutting-blade and the sill rolling guides E E, with flanges which shall hold the cutting-blade in its place, and at the same time allow it to move with the least possible obstruction as the grass or grain presses it back toward the sill. These rolling guides, it will be observed, have a tendency, by their motion upon the sill and also upon the back of the cutting-blade, to continually clear themselves from the fine grass and other substance that can catch upon the cutting-blade to impede its motion.

My sill is also made in an improved manner to adapt it completely to the rolling guides, although these latter may be used with a sill of different construction. My sill, as represented in the accompanying drawings, Figs. 3 and 4, is made of two pieces of metal, the one, A, which forms the top, being flat, and the other, B, which forms the bottom, being bent, as it is represented in the cross-section, Fig. 4. These pieces A and B are fastened together by rivets or screws at suitable distances and make a sill of great strength, stiffness, and durability, on account of the peculiar double bend in the bottom plate, B. The front edge of the lower

plate, B, agrees with the front edge of the plate A in the notches F F, and both together are of a thickness corresponding with the back of the cutting-blade and fitting the groove between the flanges of the rolling guides E E. The back part of the sill may be stiffened by rivets or screws, or by having a piece of wood inserted between the top and the bottom plates. The rolling guides herein described may, however, be used with a wooden sill having a top plate or a front bar of metal attached to it or having only sections of metal fastened upon its edge where the rolling guides come.

Sliding guides with flanges, as represented in Fig. 6, may be made and used in the place of the rolling guides, Fig. 2, as that form embraces a part of my invention and will imperfectly answer the same purpose.

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

The use of the movable rolling guides placed between the cutting-blades and the sill of the harvester, whether they be used with a sill made entirely of metal, or partly of wood with more or less metal attached to the same.

ISRAEL S. LOVE.

Witnesses:

WM. D. ARNOLD,  
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