Whiteley, Fassler & Kelly.

Manufacture of Guard Fingers.

No. 65,977. Patented Jun. 18, 1867.

Fig. 1.

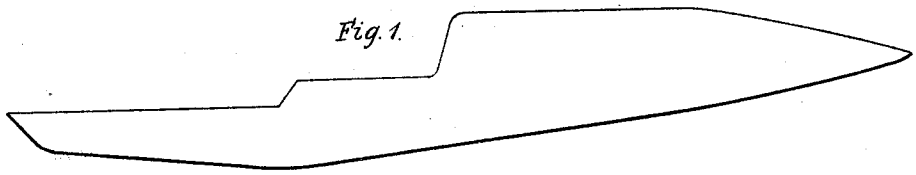


Fig. 2.

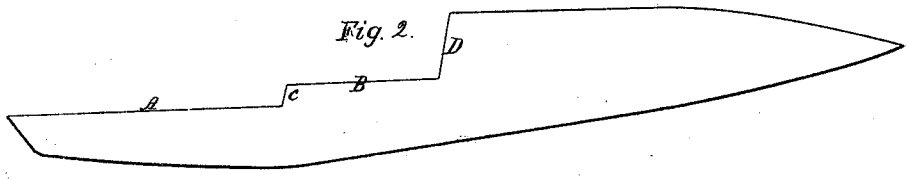


Fig. 3.

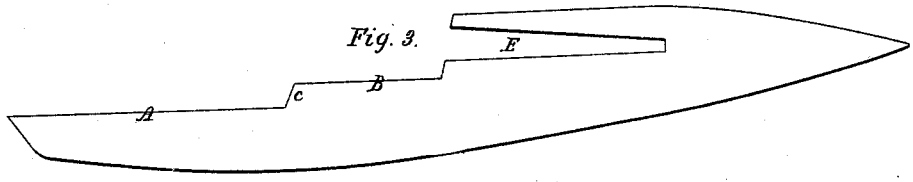


Fig. 4.

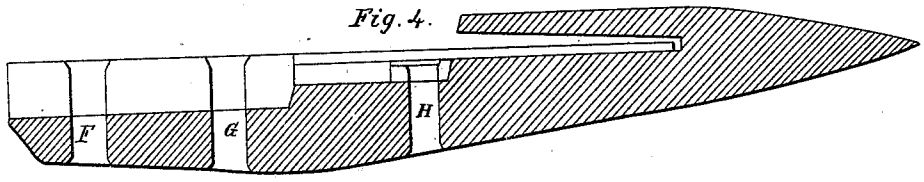
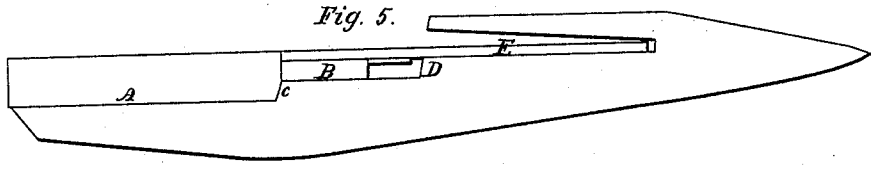


Fig. 5.



Witnesses.

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Letters Patent No. 65,977, *dated June* 18, 1867.

IMPROVEMENT IN THE MANUFACTURE OF HARVESTER GUARD-FINGERS.

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, WILLIAM N. WHITELY, JR., JEROME FASSLER, and O. S. KELLY, of Springfield, in the county of Clark, and State of Ohio, have invented a new and useful Improvement in the Manufacture of Guard-Fingers for Harvesters; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figures 1, 2, 3, 4, and 5 exhibit the different stages of manufacture.

Our invention consists of a peculiar order and process of manufacture in making guard-fingers for harvesters, whereby many advantages are secured, and a much better article is produced than any hitherto in use.

1. Our guard-fingers are first forged in the form shown in fig. 1, being a rough blank of the finger.

2. This blank is then set in the milling machine, and the surfaces A B and shoulders C D are rendered smooth and true, as it is desired to have them. The surface A rests against the under side of the finger-bar, and the shoulder D against the front edge of the nail-rod. These are shown in red in fig. 5.

3. When the second operation has been completed, the slot E, for the passage of the cutters, is sawed in the solid metal, as shown in fig. 3.

4. The blank is now placed in the drill-press, a proper gauge being employed which insures the drilling of the holes F G H uniformly in the proper places.

5. The blank is now placed in the hands of the grinder who reduces it to its proper form and proportions, as shown in fig. 5. Up to this point the guard-finger has been left in the softest condition possible, so as to facilitate the work of bringing it to the proper size and form.

6. The fingers are next packed in an iron box in company with a sufficient quantity of pounded charcoal. The cover of the box is luted on with clay, and the whole box and its contents are submitted to a high heat in a furnace during a period of about (12) twelve hours, at the end of which time the entire surface of the guard-fingers has been converted into steel, and may now be hardened and polished, after which they may be riveted to the finger-bar and nail-rod. The guard-fingers may be subjected to this same process, and with the same improvement, when they are made of cast iron and made malleable.

The advantages of this process and order of manufacture are, that the guard-fingers are thus made duplicates of each other, so that they are perfectly interchangeable, and further, they are made more durable and strong than any guard-fingers ever hitherto made, for the reason that the whole outer skin or surface is converted into steel and hardened, while the core or interior portion remains of iron, possessing greater strength to resist shocks. We are aware that guard-fingers have been made of iron cast over a chill to render them hard, but these are only hard in the slot, and are very brittle and liable to be broken. We are also aware that a hardened steel plate has been inserted, against which the knife should cut, but this is expensive, and the top of the slot is not hardened. But we are not aware that guard-fingers have ever been made with an interior or core of iron, and the entire outer surface of steel. If it is desired that the surfaces of the holes should not be hardened; they may be stopped with clay before carbonizing.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. Guard-fingers for harvesting machines made by the process and order of manufacture herein described.

2. A harvester guard-finger composed of a central portion or core of soft iron, and its entire outer skin or surface of hardened steel, substantially as and for the purpose set forth.

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Witnesses:

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