JOHN E. SWEET.

Improved method of making Guards for Mowing and Reaping Machines.

No. 121,261. Patented Nov. 28, 1871.

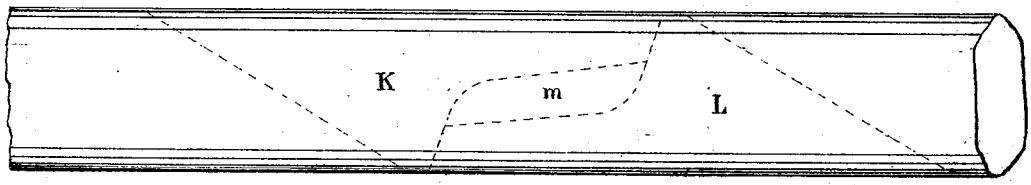


Fig. 1.

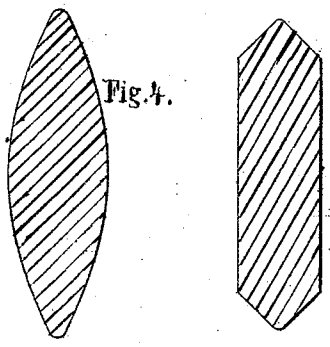

Fig. 4.



Fig. 5.

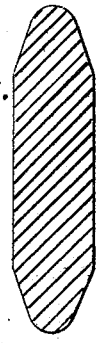

Fig. 6.

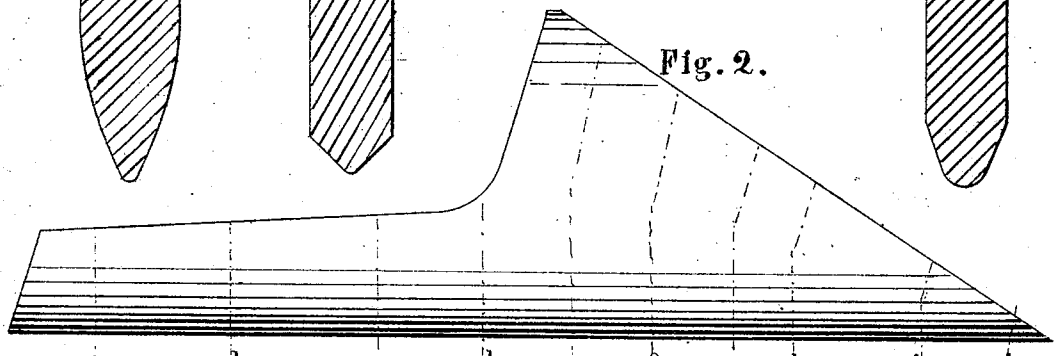


Fig. 2.

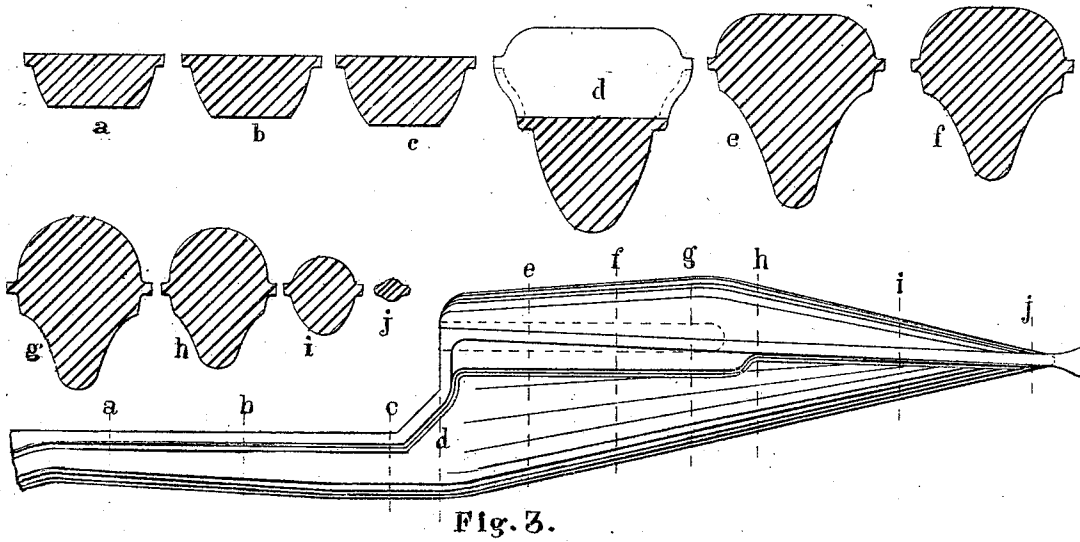


Fig. 3.

William G. Vincett } Witness,
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# UNITED STATES PATENT OFFICE.

JOHN EDSON SWEET, OF SYRACUSE, NEW YORK.

## IMPROVEMENT IN THE MANUFACTURE OF GUARDS FOR HARVESTING-MACHINES.

Specification forming part of Letters Patent No. 121,261, dated November 28, 1871.

*To all whom it may concern:*

Be it known that I, JOHN EDSON SWEET, of Syracuse, in the county of Onondaga and State of New York, have invented certain Improvements in the Method of Making Guards or Fingers for Mowing and Reaping-Machines, of which the following is a specification:

My invention consists in an improved method of determining the proper shape and area in cross-section of bars from which to cut blanks for harvester guard-fingers jointly with the production, by rolling of bars, of the shape and area so determined, and the subsequent reduction of such bar to the blanks by cutting the same in such manner as to result in the least possible waste of metal, and yet so that the cut surface of the blank shall nearly correspond to the shape required of the finished article, thereby dispensing with all necessity for previous forging, rolling, or shaping in any manner whatever.

Figure 1 represents a portion of a bar (half size) from which such a shaped blank (full size) may be cut, as shown at Fig. 2, and from which such a guard (full size) may be formed, as shown at Fig. 3 in the drawing. Figs. 4, 5, and 6 represent sections of various forms of bars from which the various forms of guards may be made. The other sections in the drawing represent the various sectional areas of the finished guard made at the transverse dotted lines in Fig. 3, and will be hereafter explained.

It will be found preferable, if the shape of the guard will admit of it, to have the iron rolled with as thin edges as indicated in Figs. 4 and 6, as such a thin surface of metal will be more easily forced into the deep parts of the die, and by the shape the blank has when cut from the bar a thin end or small quantity of metal is left to form the point of the guard, thereby greatly tending to preserve the dies, as also to greatly diminish the cost of power in their manufacture. To ascertain the amount of stock required and its proper distribution a counterpart of the finished guard is made of wood or other suitable material, and various sections are made of it, as indicated by the dotted lines and small sections in the drawing *a b c d e f g h i j*. Then, by determining the areas of the several sections and comparing them with the previously-known area of the bar, the form of the blank is readily and accurately determined. The shape of the blanks being determined they are then cut from the bar, as indicated at K and L, Fig. 1; or alternating with each other, so that many times no waste is produced, as evidently would be the case if the shank were made a little heavier or stronger in the guard shown at Fig. 3, as then the metal in the space at M, Fig. 1, would thereby all be used.

I am aware that guards have been formed from blanks by dies, said blanks having been brought to somewhat nearly the required shape by forging; but I am not aware that such articles have ever been made from bars of metal adapted by rolling to the filling of the dies, and by cutting therefrom the requisite quantity, according to the process herein described.

I claim—

The method hereinbefore described of determining the shape and area in cross-section of the blank bar jointly with the production of such bar, of shape and area so determined by rolling, and the reduction of said bar to blanks by cutting or punching, in the manner described and illustrated, as my improvement in the art of making guard-fingers for harvesters.

JOHN E. SWEET.

Witnesses:

WILLIAM G. VINCETT,
DAVID W. BROWN.

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