

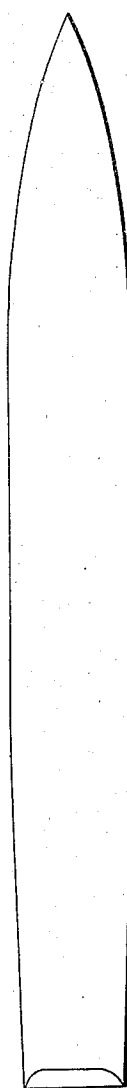
*A. Simonds.*

*Tempering Harvester Guards.*

*N<sup>o</sup> 54,652.*

*Patented May 8, 1866.*

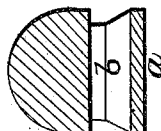
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*

*G. H. Strong.*  
*G. H. Washburn.*

*Inventor.*

*Abel Simonds*  
*by his attorney,*  
*R. H. Eddy*

# UNITED STATES PATENT OFFICE.

ABEL SIMONDS, OF FITCHBURG, MASS., ASSIGNOR TO HIMSELF, B. SNOW, JR.,  
ALVIN A. SIMONDS, AND GEORGE F. SIMONDS, OF SAME PLACE.

## IMPROVEMENT IN THE MANUFACTURE OF MOWING-MACHINE GUARDS.

Specification forming part of Letters Patent No. **54,652**, dated May 8, 1866.

*To all whom it may concern:*

Be it known that I, ABEL SIMONDS, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Mowing-Machine Guards or Teeth of Steel; and I do hereby declare the same to be described as follows, one of the said guards being represented in top view in Figure 1, in side view in Fig. 2, and in transverse section in Fig. 3, of the accompanying drawings.

Heretofore it has been found very difficult, if not impossible, to make of one entire piece of steel a mowing-machine guard provided with a lip, *a*, and a knife-recess, *b*, as shown in Figs. 1 and 2 of the drawings, and having the lower surface of such recess hardened and the top unhardened. As a necessity the guard has had to be constructed of iron, with a facing of hard steel for the bottom of the knife-recess, the lip being subsequently bent down over such facing.

In carrying out my invention I take a short bar of steel of the size required and block it out into a suitable shape for being swaged in dies to the necessary form of the guard without the knife-recess. Next I so swage it, and while it is red-hot, or in a suitably heated state, I form the said knife-recess by sawing a kerf into the heated metal, and subsequently, by means of a wedge driven into the kerf, such

wedge serving to raise the lip to the requisite inclination with the bottom face of the kerf. Next, and while the guard is in a state sufficiently heated for being hardened, I insert in the knife-recess a plate of metal, which I raise more or less off the lower surface of the kerf and cause to project beyond its opposite edges. Next I direct streams of cold water against the projecting parts of the plate in such manner as to cause such water to flow upon the lower surface of the kerf, or that surface on which the cutter of the mowing-machine is to run, and not against the lip. In this way I am enabled to harden such surface without hardening the lip or part projecting over it, which it is desirable to have in a soft or unhardened state, particularly at its junction with the rest of the guard, in order that such lip may not be easily broken off by the strains to which it is liable while the guard may be in use.

What I claim as my invention is—

The above-specified mode of hardening the knife-supporting surface of a mowing-machine guard and protecting the lip of such guard from being hardened at the same time.

ABEL SIMONDS.

Witnesses:

C. H. B. SNOW,  
CHARLES J. BILLINGS.