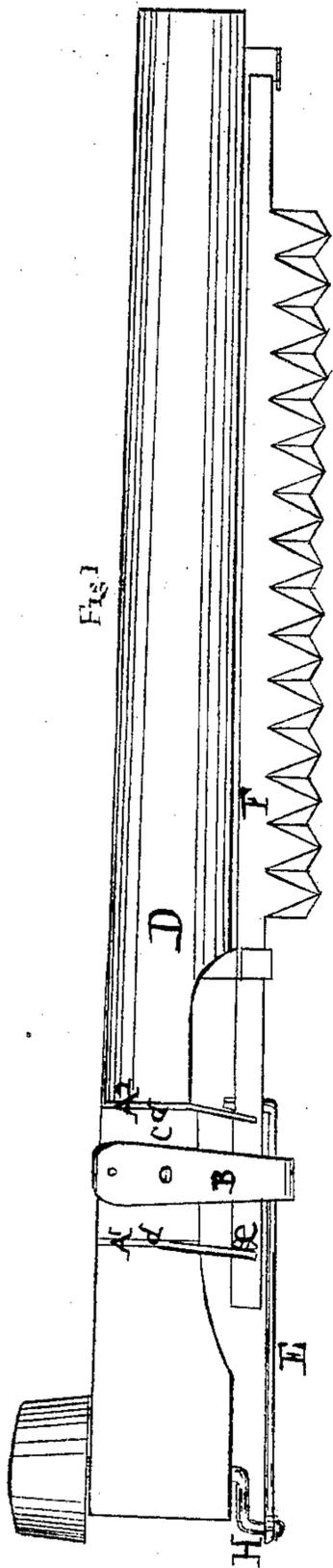
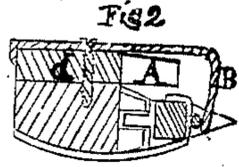


*D. Warren,  
Harvester Cutter.*

*No. 37,187*

*Patented Dec. 16, 1862.*



*Witness*

*Charles Alexander  
Edmund F. Brown,*

*David Warren*

*per J. H. Alexander atty*

# UNITED STATES PATENT OFFICE.

DAVID WARREN, OF GETTYSBURG, PENNSYLVANIA.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **37,187**, dated December 16, 1862.

*To all whom it may concern:*

Be it known that I, DAVID WARREN, of Gettysburg, Adams county, and State of Pennsylvania, have invented certain new and useful Improvements in Knife-Bars and Cutter-Bars for Reapers and Mowers; and I hereby declare that the following is a true and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to construct a cutter-bar and knife-bar to be used as an attachment to reapers and mowers, and so formed as to overcome the dead-points in crank motion, and thus prevent that violent jarring which proves so destructive to the machinery of reapers and mowers in consequence of the necessarily rapid revolutions of the crank H. By my invention I have completely remedied this evil by interposing two strong steel springs between the dead-points of the crank, which partially arrests its motion, and thus carry it over the dead-points without the least jar, without strain to the gearing of the machine, and with a great saving of power.

In the annexed drawings, Figure 1 represents a plan view of the cutter-bar D and of the knife-bar F. Fig. 2 gives a side view of the guide B and of the block C, which is firmly attached to D between the crank and the end of the pitman that drives the knife-bar.

The block C is made thick at its edges *d d*, to support the springs A' and A<sup>2</sup>, which rest with their edges on D and their flat sides against C. The springs A' and A<sup>2</sup> extend over

to the knife-bar and act on the bolt *e*, which passes through F, near its end. When the knife-bar F is in motion, the bolt *e* plays between the springs A' and A<sup>2</sup>, striking each alternately half an inch before the pitman reaches the dead-points of the crank, gradually impeding its motion and enabling the wrist of the pitman to pass these points without a jar, an advantage which has never yet been secured by any known arrangement. To prevent the pitman from receiving a sudden wrench at every turn of the crank, in place of confining it to F by causing it to pass through F and securing it with a bolt, I have substituted the guide B, which is simply a plate of metal of sufficient width and thickness to give it strength, and firmly attached to the surface of C, and extending a little beyond the pitman E, is bent down at a right angle, so as to reach a little below E. By this arrangement the pitman is allowed sufficient play to adapt itself to the continually-changing position of the crank without injury from sudden jerks.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The springs A' and A<sup>2</sup>, the bolt *e*, and the guide B, the whole arranged in the manner and for the purpose herein specified.

DAVID WARREN.

Witnesses:

CHARLES ALEXANDER,  
EDM. F. BROWN.