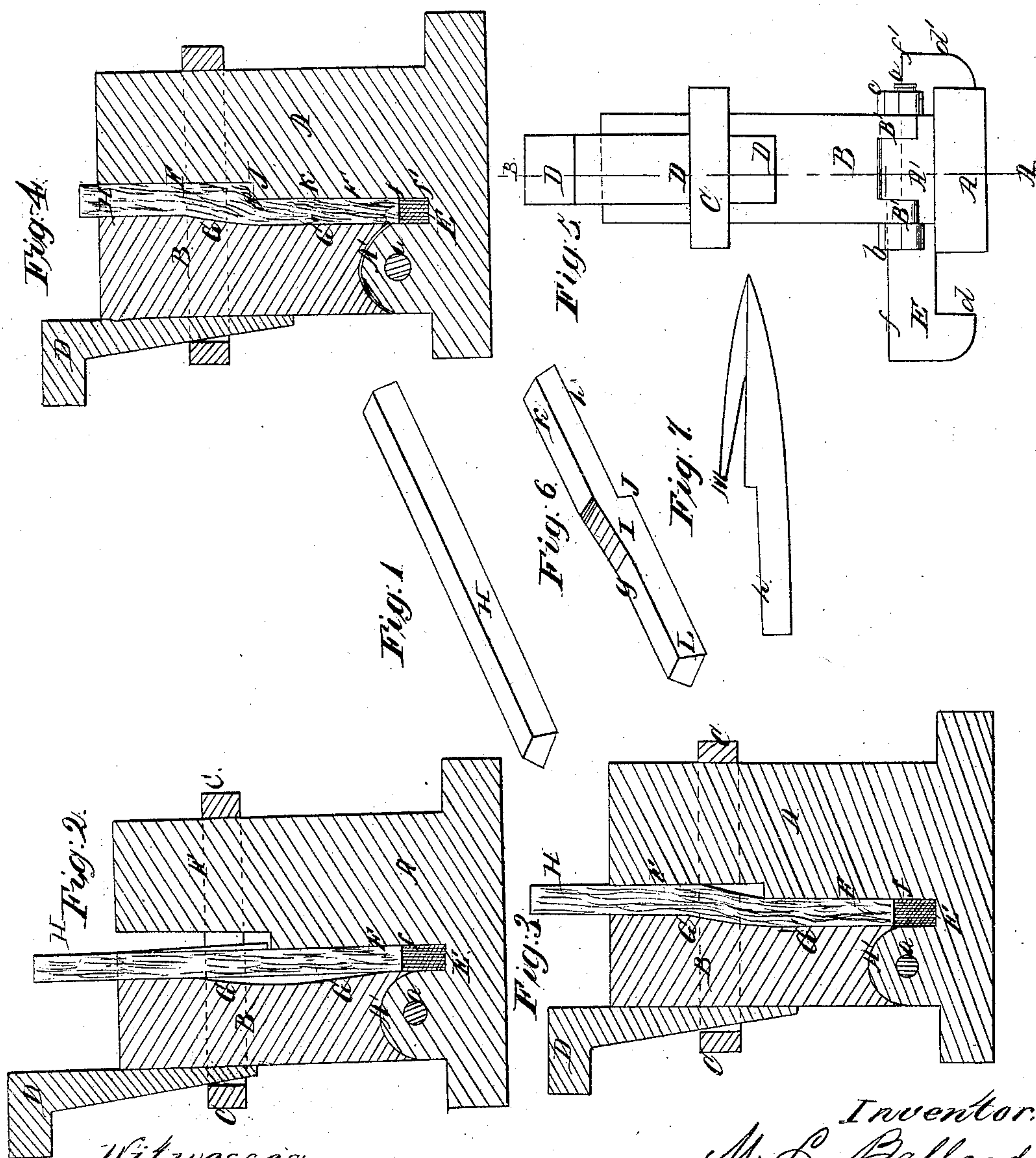


M. L. Ballard, Harvester Iron

N^o 31,219.

Patented Jan. 29, 1861.



Witnesses:
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UNITED STATES PATENT OFFICE.

M. L. BALLARD, OF CANTON, OHIO.

MAKING FINGER-GUARDS FOR HARVESTERS.

Specification of Letters Patent No. 31,219, dated January 29, 1861.

To all whom it may concern:

Be it known that I, M. L. BALLARD, of Canton, in the county of Stark and State of Ohio, have invented a certain new and useful Improvement in the Mode of Manufacturing Wrought-Iron Guards or Fingers for Reaping and Mowing Machines; and I do hereby declare that the following is a clear, full, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

The nature of my invention consists in forming the front shoulder of the guard, or the shoulder against which the cutter-bar works, by "staving up" the bar instead of drawing down a large bar, or of welding on a piece to form the shoulder.

To enable those skilled in the art to make and use my invention, I will proceed to describe one practical way in which my said invention can be carried out.

The operation, in this instance, is as follows: The iron is rolled out into long bars or rods of the size and shape to form the shank of the guard, and then cut up into sections of just sufficient length to make one guard or finger. Such a piece or section is shown in Figure 1 and lettered H. The piece or section H, is then heated near its middle and dropped into a groove G, in a hinged iron jaw B, as seen in section Fig. 2, the bottom of the piece H, resting on the surface *f*, of a sliding key E. Wedge D, is now driven down between clasp or ring C, and jaw B, whereby said jaw is made to close upon the piece H, causing it to be forced against the faces F, and F', of the stationary iron jaw A, whereby the piece H, is made to assume the form shown in section in Fig. 3. Key E, is now forced back so that its ends *d*, and *d'*, will occupy the position shown in Fig. 4, thus bringing the surface *f'*, of the key E, directly under the groove G, and consequently under the piece H, and leaving a space below the lower end of H, and the surface *f'*, of the key E, as shown in dotted lines Fig. 5. The operator now applies a hammer or sledge to the upper end of H, and drives the piece H, down until its lower end rests on the surface *f'*, of the key E. By this operation, the

piece H, is made to assume the position shown in section, Fig. 5, and whereby the shoulder J, is formed, while the part which forms the shank *k*, is left in nearly the same condition as when it left the rolling mill.

I, Fig. 6, represents the blank guard or finger after the shoulder J, has been formed, while K, represents the shank of the guard L, the part which is to be subsequently drawn out, and turned up to form the lip M, of the complete guard as shown in Fig. 7, and N, represents the surface which fits against the finger-beam.

It will thus be seen that I am able to first roll all of the iron down to the size of the shanks of the guards, and then form the shoulder by partially shortening the piece in connection with bending, as fully shown in the drawings, and which operation I call "staving up" the piece or section of iron to form the shoulder J, of the blank guard or finger I. By this operation I can get all of the shoulders J, and shanks K, even and alike in each guard; while the tedious operation of drawing down a large bar to form the shoulder J, is obviated, as well as the operation of welding on a piece to form the shoulder as practiced by some, with a view to obviate the labor of drawing down a large bar by hand.

By my plan, wrought iron guards or fingers can be manufactured with great celerity and precision, while at the same time they are far better than those made by either drawing down a large bar, or of welding on a piece to form the shoulder. When a piece is welded on to form the shoulder, there is great danger of imperfect guards, since it is often difficult to get a perfect weld. By my plan too, the fiber of the iron is bent and so "staved up," that a strong and durable shoulder is formed.

In the drawings one way is shown for carrying out my invention which device consists of iron jaws A, and B, hinged together by a bolt *a*, passing through ears B', B', of the jaw B, and tongue A', of the jaw A,—bolt *a*, has a head *b*, and nut *c*.

C, is a ring or clasp made fast to the stationary jaw A, and in which the jaw B, moves.

Figs. 2, 3, and 4, are sections of the jaws
on line A B, Fig. 5.

Having described my invention I do not
confine myself to any particular mechanism
5 to be employed, but

What I claim and desire to secure by Let-
ters Patent, is—

Forming the shoulder of wrought iron

guards or fingers by “staving up” the sec-
tions of iron substantially as described.

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In witness whereof I have hereunto signed
my name.

M. L. BALLARD.

Witnesses:

A. J. ALBEN,
DANIEL GOTSHALL.