G. G. TAYLOR.

MANUFACTURING CUTTER BARS FOR HARVESTING MACHINES.

No. 45,879. Patented Jan. 10, 1865.

Fig. 2.

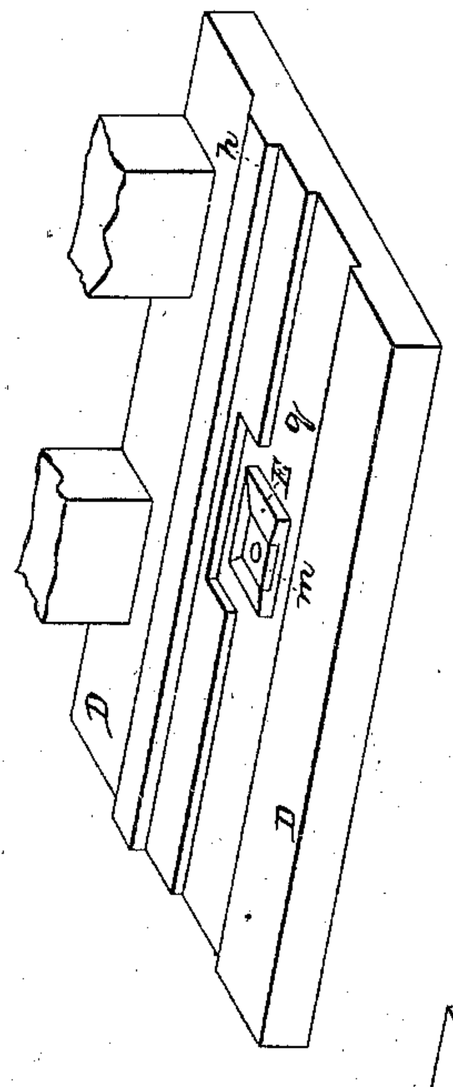
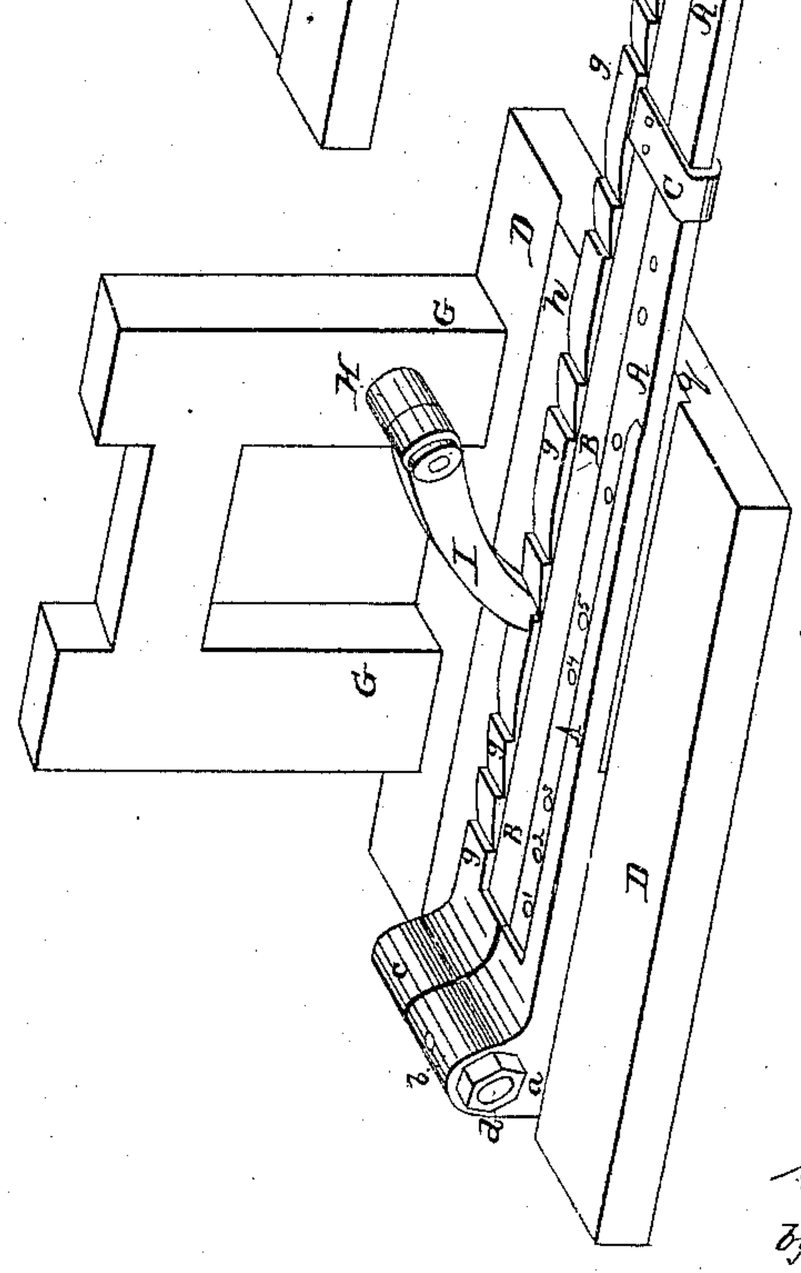


Fig. 1.



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GEORGE G. TAYLOR, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF, THOS. H. DODGE, AND ALZIRUS BROWN, OF SAME PLACE.

## METHOD OF MANUFACTURING CUTTER-BARS FOR HARVESTING-MACHINES.

Specification forming part of Letters Patent No. **45,879**, dated January 10, 1865.

*To all whom it may concern:*

Be it known that I, GEORGE G. TAYLOR, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in the Mode of Manufacturing Sickle Bars for Harvesting-Machines; and I do hereby declare that the following is a full, clear, and exact description of said invention, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of the bed-plate on which I punch my sickle-bar, the sickle-bar being placed thereon in the position to be punched. Fig. 2 represents a perspective view of said bed-plate without the sickle-bar.

Heretofore the holes in the sickle-bars for the rivets or bolts by which the knives are secured to it have been drilled. This is a tedious and very expensive operation, but it was found necessary to drill them, as by punching said holes the bar elongates in each direction, which renders it impossible to make the distances between the holes of the exact lengths. This, as is well known, is very essential, as not only the proper operation of each section of the knives depends upon its accurate position in relation to the guard-fingers, but also in fitting and securing the several knife sections, which are all made after the same pattern. Considerable delay and difficulties will occur unless the holes in the sickle-bar are made with great accuracy.

My invention, therefore, consists in the application of certain devices by which I am enab'ed to punch the sickle-bar so that all the holes will come true and at their proper places.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a section of a sickle-bar of a harvesting-machine, the part near its point being represented broken off. *a* represents the heel of the cutter-bar; and *b* the head, to which the pitman of the machine is attached. B represents a combined pattern and supporting bar. It is in shape similar to the sickle-bar, and is provided with a hinge joint, *c*. The two bars are firmly secured together by means of a screw-bolt, *d*, which passes through the joints *b c*, and also by means of the clasps C, which are secured at certain distances to the pattern-bar B, and which keep the cutter-bar from lateral motion. The bar B is provided with a number of ratchet-teeth, *g*, whose edges or projections correspond with the centers of the holes to be punched in the cutter-bar.

The cutter and supporting bars, having been firmly secured to each other in the manner above described, are placed upon a bed-plate, D, as represented in Fig. 1. This bed-plate is made of heavy cast iron or other suitable material, and is shaped as represented in the drawings. It has a groove, *q*, in which the cutter-bar rests, and a ledge or projecting flange, *h*, against which the outer side of the pattern-bar B bears to hold the latter in its true position. It is also provided with a punch-block or anvil, E, located at the proper distance from the edge *h*, and on which the cutter-bar is punched, so that the holes therein will come true in a longitudinal as well as in a lateral direction. The punch-block E is provided with a punch-die, *m*.

G represents uprights, which extend from the bed-plate, and to one of which the stud H is secured, on which the pawl I is pivoted.

When the cutter-bar and its supporting or pattern bar B are set properly upon the bed-block D, the rack-teeth *g* come under the pawl I, so that the latter will drop into the notches thereof. The cutter-bar and its pattern-bar being firmly bolted together at the heel and secured against lateral motion by the clamps C, it follows that the cutter-bar cannot elongate toward the heel, but it can do so toward its point.

The two bars, secured together as above described, are placed upon the bed-block D in their proper positions, and are pressed by hand or otherwise against the pawl I. The operation of punching is now commenced by means of a punch of any proper construction at the hole 1, the nearest to the heel, and as the cutter-bar A is firmly bolted to its pattern-bar, any elongation of the same can take place in the direction of the point only. The hole 2 is punched next, then the holes 3 4 5, &c., and consequently all the additional elongation can take place in the direction of the point of the cutter-bar only and always be ond the last hole punched; and when the sufficient number of holes are punched the cutter-bar A is removed and its point cut off at the proper length.

The operator may move the bars by hand and hold them against the pawl I; or said movement may be effected automatically by means of a rack or other self-operating device.

From the above it will be seen that no elongation of the cutter-bar can take place over that part of the bar which has been punched, and that the holes must become perfectly accurate and true, and actually more so than when they are drilled, as drills frequently run more or less eccentric, and the holes thus become inaccurate, and the slightest inaccuracy becomes very troublesome in fitting on the knife-sections; but the principal gain is in the saving of labor in the drilling of the holes, which constitutes an important item in the manufacture of the machines, not to speak of the labor and care which are necessary in marking off the holes preparatory to drilling, which is also saved by this apparatus.

Having thus fully described the nature of my invention, what I claim herein as new, and desire to secure by Letters Patent, is—

1. Forming the holes for the rivets or bolts by which the cutters are fastened to the cutter-bar, in reaping and mowing machines, by punching, in combination with holding the cutter-bar during the operation, so that it cannot elongate in the direction of the heel of the bar, for the purposes herein set forth.

2. The use of the combined pattern and supporting-bar B, as shown and described, to aid in the operation of punching cutter-bars, substantially in the manner herein described.

3. In combination with the pattern or supporting bar B, the bolt *d*, and stay-clasps C for holding the cutter-bar, substantially as herein set forth.

Witnesses:

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