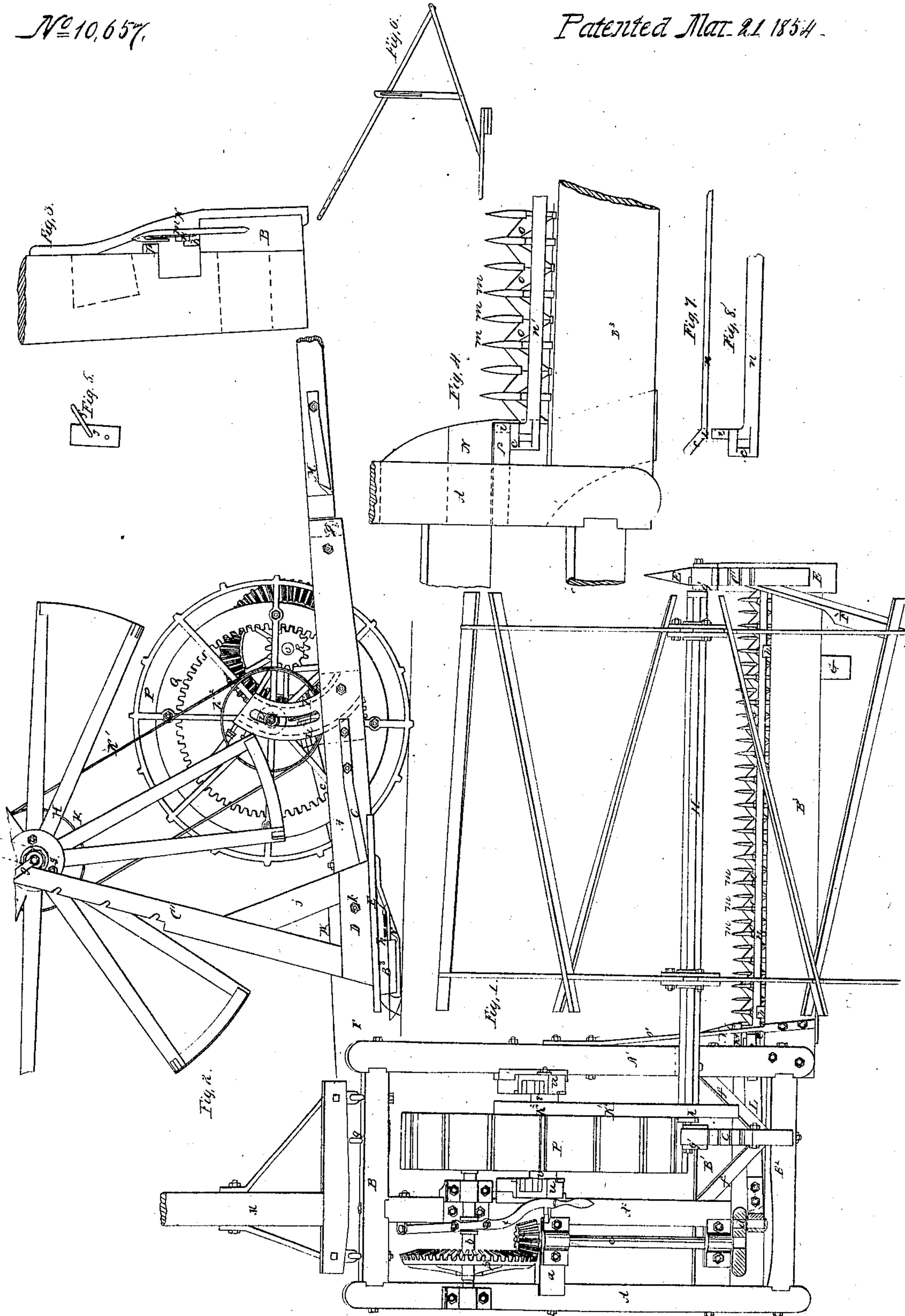


# H. Green.

## Grass Cutters.

No 10,657.

Patented Mar. 21 1854.





# UNITED STATES PATENT OFFICE.

HENRY GREEN, OF OTTAWA, ILLINOIS.

## IMPROVEMENT IN GRAIN AND GRASS HARVESTERS.

Specification forming part of Letters Patent No. **10,657**, dated March 21, 1854; antedated September 21, 1853.

*To all whom it may concern:*

Be it known that I, HENRY GREEN, of Ottawa, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting Grass, Grain, Flax, &c.; and I do hereby declare that the same is described and represented in the following specification and drawings.

The nature of my improvements consists in arranging the sickle-bars so as to operate a proper distance in advance of the sickle-stock, and traversing it in blocks fastened to said stock, and making a space in the rear of the sickle-teeth, which are extended back behind the bar and sharpened so as to cut off any grass-stalks, &c., which may collect between the sickle bar and stock; also, in constructing the carriage and connecting the sickle-stock to it in such a way and manner that the stock travels parallel with the ground, accommodating itself to the undulations of the surface, while the rear end of the carriage travels so high as to clear the grass, grain, &c., cut at a previous swath.

To enable others skilled in the art to make and use my improvements, I will proceed to describe their construction and the mode of using them, referring to the above-mentioned drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a plan or top view. Fig. 2 is an elevation as it is seen when opposite the right-hand end of the machine. Figs. 3, 4, 5, and 6 will be referred to in the description.

I construct a frame in the form represented, with two side rails, A A', connected together by three girts, B B' B<sup>2</sup>, with a center rail, A<sup>2</sup>, fastened to the girts B B', with a short girt, a, between the rails A and A<sup>2</sup>. This frame should be firmly fastened together by bolts or otherwise. I fasten two metal segments, u u, to the rails A' A<sup>2</sup>, constructed as represented, with curved slots in them in the form of the arc of a circle drawn from the center of the pinion R, so that the center of the box v v will always be the same distance from R when it is traversed in the slot.

The boxes v v are constructed to slide in the segments u u, and may be fastened to the proper positions in the slots by bolts or otherwise, as may be convenient.

The driving-wheel P may be made with pro-

jections on the tread, or otherwise, and is fastened to a shaft fitted to turn in the boxes v v, so that by changing the position of the boxes the frame will be carried the desired distance from the ground, supported by the wheel P.

The gear Q is fastened to the arms of the wheel P, and turns the pinion R upon the shaft b, which shaft turns in boxes fastened to A and A<sup>2</sup>, and carries the gear S, which drives the pinion T on the shaft c, which turns in boxes fastened to the girts a and B', and carries the disk W, with the stud d fastened in it, which disk and stud form the crank which traverses the sickle, being connected to it by the connecting-rod L, as represented.

The sickle-bar n is constructed with a raised shank, e, to which the connecting-rod L is fastened, and it also has a projection, i, upon it, which is fitted to traverse between the shoe N and the bar p, fastened to the rail A', so as to prevent the bar from turning and support it in the position required as it is traversed. A section of the bar n, with the shank and projection, is shown in Figs. 7 and 8.

The sickle-teeth o o are made nearly in the form of the letter V, with an angular space in the rear, and two parallel edges where they come together when fastened to the bar n (see Fig. 4) by riveting or otherwise, which teeth o o are made flat or plain upon the under side and beveled off on the top, so as to form a thin edge. The bevel on the teeth is scored with a chisel or otherwise, so as to form fine sickle-teeth upon the edge, which scores should be made parallel to the sickle-bar n, as it is found in practice, when they are made in the direction above mentioned, that the scores wear in or are worn in by the materials cut nearly as fast as the ridges between the scores wear off, so that the sickle will continue sharp to cut a much larger amount of grass, &c., than when the scores are made in any other direction.

The sickle-stock B<sup>3</sup> is fastened to the rail A', and is secured and supported in a proper position by the brace O' and shoe N, constructed as represented, or otherwise, which shoe N is shown enlarged in Figs. 3 and 4. The outer end of the sickle-stock is provided with a pointed cross or separator, E, to divide the grass or grain to be cut from that which is left standing.



The fingers *m m* are made in the form represented, with a shank which is inserted in the stock  $B^3$ , as represented in Fig. 3. The sickle lies upon the fingers, and the teeth are traversed across the spaces between them, so as to cut the grass, grain, &c., as they press it against the fingers. It is found that much fine grass, leaves, &c., are carried across the fingers, and in most machines clog them, so that the sickle cannot traverse freely; but in my machine the angles or openings in the rear of the sickle-teeth force the grass, &c., that collect upon the fingers back toward the stock, where they are sheared off by the edges of the interior angles, which are sharpened, when they extend behind the bar, for that purpose, and may be scored if preferred.

The sickle-bar *n* is held down and forward in a proper position by the blocks *h h*, which are fastened to the sickle-stock for that purpose.

The reel-standard *e* is fastened to the girt  $B^2$  and supported by the braces *f f*, fastened to  $B'$ . The standard *e'* and the brace *j*, which supports it, are fastened to the separator *E*. The boxes *I* for the pivots of the reel are supported and attached to the standards by the stirrups *I'*, which may be placed in either of the notches in the standard, so as to adjust the reel to the height required.

The reel *H* may be constructed in the form represented, with a pulley, *K*, for the band  $K'$  from the pulley  $K^2$ , fastened to the wheel to operate the reel.

There is a board, *D*, fastened to the standard *e'* and brace *j*, to which board the track-clearer *F* is fastened by the bolt *k*, so as to vibrate and accommodate itself to the surface of the ground, and the back end is turned up, so as not to catch in the ground when backing.

The tongue *M* is made in the usual form and hinged to the frame, as represented.

The double-tree, by which the machine is to be drawn, may be fastened to the hook *g* in the girt *B*, which hook *g* is placed in the lower part of the girt, so as to raise the fore end of the frame and depress the cutter or sickle stock, and is placed in such a position as to balance the frame and carry the sickle-stock at right angles to the line traveled. The shoe *G* is constructed in the form represented, and fastened to the sickle-stock to support the outer end.

Fig. 6 represents an apparatus which may be used to support the reel, if preferred to the standards heretofore described.

In the mowing and reaping machines which have been made heretofore the sickle-stock has been made to extend across the carriage, either before or behind the wheel, or set directly opposite the axle. When arranged in either of the forms above mentioned the heel

of the cutter-stock does not have the same opportunity to vibrate and accommodate itself to the surface of the ground that the outer end does. Consequently the stubble is frequently left much higher where the heel passes than it is at or near where the outer end is carried, thus cutting the grass or grain uneven, especially if the tongue is fastened to the frame so that it cannot vibrate unless the tongue vibrates with it; but by my improvements I have remedied the above-mentioned defects by hinging the tongue to the carriage so as to allow it (the carriage) to vibrate freely upon the axle of the wheel which supports it; also in fastening the sickle-stock below the carriage to one of the side rails, and so far behind the axle that it (the sickle-stock) or the shoes upon which it rests may drag upon the ground, as the sickle-stock does not extend across the frame, so as to interfere with the grass or grain cut in the previous swath. It will be apparent that the heel of my sickle-stock has the same opportunity to vibrate and accommodate itself to the undulations in the surface of the ground that the outer end does. Consequently the stubble is left of a uniform length all over the area cut; and, besides the advantages above enumerated, this mode of construction permits the attendant to seize the reel-standard and tip it forward, so as to raise the sickle-stock to pass stumps, stones, or other obstructions, and, the tongue being hinged, the team is not burdened with any weight except the end of the tongue.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The V-shaped space or zigzag shape of the rear of the sickle-teeth, or the equivalent thereof, the angles of which press the substances back which collect upon the fingers and prevent them from clogging the sickle.

2. Extending the rear ends of the sickle-teeth back behind the sickle-bar, whether made as represented in the drawings or broader or extended back to a point, also sharpening said rear ends, so as to cut off any stalks, grass, &c., which may collect upon the fingers between the sickle and the stock.

3. Terminating the sickle-stock  $B^3$  at the inside of the rail  $A'$ , and fastening them together substantially as described, thereby permitting the sickle and stock to travel near the ground and parallel with it, while the rear end of the carriage is carried so high as to clear the grass or grain cut at the previous swath.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

HENRY GREEN.

Witnesses:

DAVID P. JONES,  
JOHN V. A. HOES.