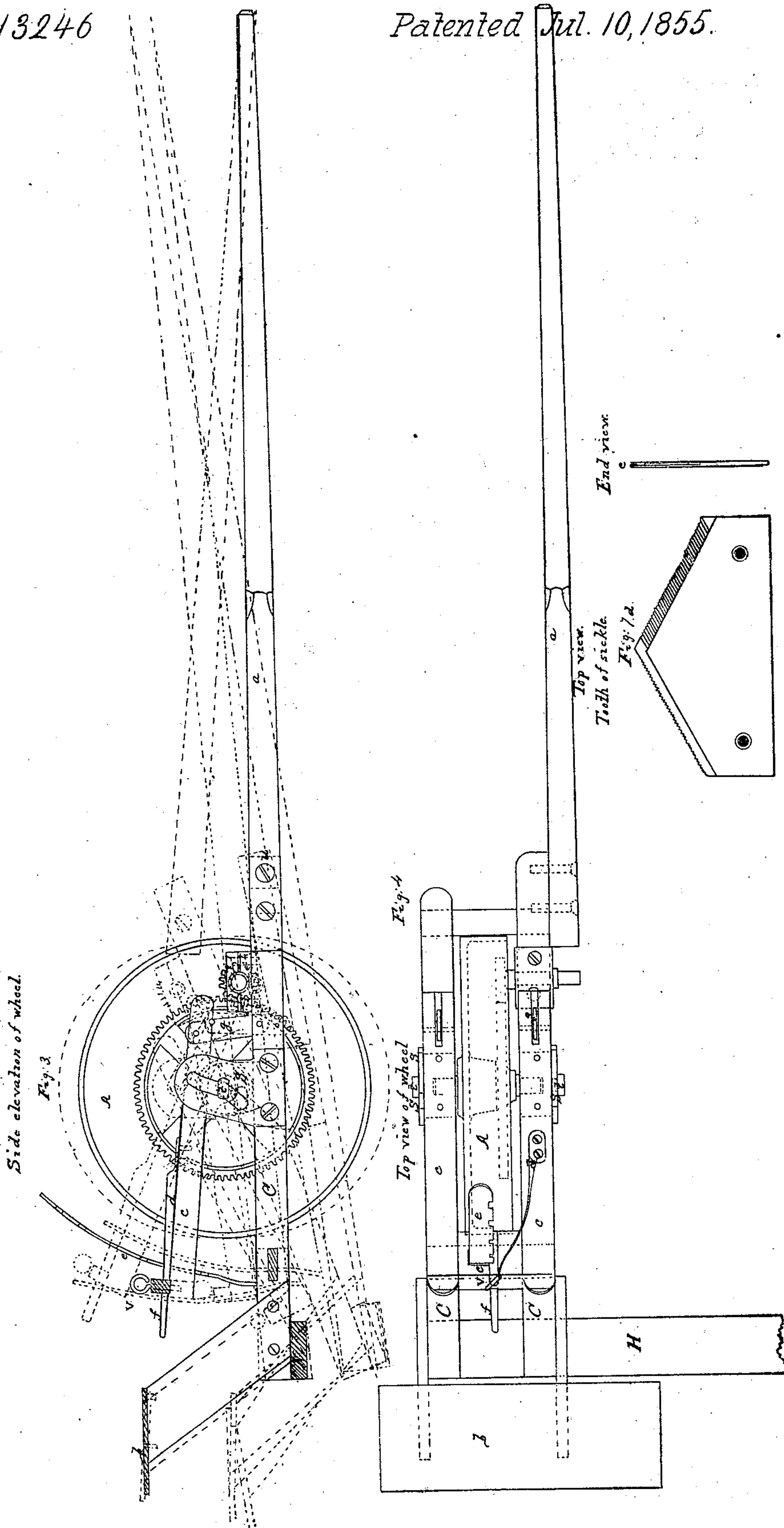


A. Whiteley.

Mower.

N^o 13246

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UNITED STATES PATENT OFFICE.

ABNER WHITELEY, OF CLARKE COUNTY, OHIO.

IMPROVEMENT IN GRAIN AND GRASS HARVESTERS.

Specification forming part of Letters Patent No. 13,246, dated July 10, 1855.

To all whom it may concern:

Be it known that I, ABNER WHITELEY, of the county of Clarke and State of Ohio, have invented several new and useful Improvements in Grain and Grass Harvesters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

This improvement consists in making the finger-bar a center of oscillation; also, in a mode of giving the master-wheel and finger-bar each an independent adjustment to the ground, while the angle of the fingers and cut are preserved; also, in an arrangement by which the driver can raise and lower the edge and alter the angle of the finger-bar at his pleasure while the team is in motion without moving the finger-bar off the ground.

In the accompanying drawings, Plate II, Figure III is a side elevation; Fig. IV, a top view.

A is the master-wheel.

H is the finger-bar, and is secured to the frame C C at the rear of the wheel A, the tongue *a* being secured to the front by means of a single bolt, forming a flexible joint, or two bolts to form a rigid joint.

c c is a frame-lever placed on the top of the frame C C.

t t are boxes for the master-wheel shaft, and secured to said frame-lever, and having T-heads, which pass through slots in plates S S, which are bolted to the frame C C. The circular part of said slots retain the cog-wheel O in gear while raising or lowering said frame C C through that part of its elevation and depression which is designed to change the angle which the fingers and cutters make to the ground; but when said frame is so elevated as to cause the heads of said boxes to pass into the reverse part of said slots, then said cog-wheel will pass out of gear. The links *g g* are made to hold said frame-lever and frame together by means of iron pins passing through the sides of said frame C C, and the lower end of said links and others passing through the sides of said frame-lever *c c* and the upper end of said links.

e is an iron bar with notches in it, and fastened to the rear of the frame C C and passing up through the frame-lever *c c*.

f is an iron lever on the frame-lever *c c*, which latches into the notches in the iron bar, and is held in said notches by the spring *d*, and when it is desired to use the machine in this form for cutting grain the other bolt, as shown at *u*, must be passed through the tongue, so as to dispense with the flexible joint and suspend the whole frame-work above the ground. The grain-wheel, divider, and platform should also be attached, and then it will be seen that all the foregoing applies to raising, lowering, and throwing out of gear, as before, and the iron pins, passing through the ends of links *g g* and sides of frame C C and frame-lever *c c*, form flexible joints and permit the frame-lever *c c* to move backward and forward in the passage of the T-heads of boxes *t t* up and down in the slots in plates S S, and accommodate it to elevating and depressing the frame C C, and also permit it to move back when the heads of boxes *t t* pass into the reverse part of said slots to throw the machine out of gear, and it will be seen that by using the links *g g* and plates S S, I can make the short end of the frame-lever from the slots to the pins in the upper ends of the links much shorter than they would be to extend from the master-wheel shaft to the line of the pinion-shaft, making the flexible joint, with its center of motion, the same as the center of the pinion-shaft, which would, if so made as to support the master-wheel independent of any other connection with the frame-work of the machine, and permitted to work freely up and down during the operation of the machine, accomplish the same object, so far as giving the master-wheel A and finger-bar H each an independent adjustment to the ground, but for raising and lowering the frame C C to oscillate it, having the finger-bar as a center of oscillation, and change the angle of cut when using the machine for mowing. Since the links *g g* and plates S S enable me to make the short end of the lever shorter, it of course makes it the more easily operated, and also enables me to throw the machine out of gear, and it will be seen that the flexible joints connecting the tongue *a* to the frame C C and flexible joints connecting the frame C C and frame-lever *c c* are all necessary to permit the frame C C to be oscillated to raise and lower the angle of cut when the team is in motion.

To give the master-wheel A and finger-bar

If each an independent adjustment to the ground, the master-wheel must be hung in a separate frame and connected to the wheel-frame by a flexible joint or joints, and secured in gear by some suitable means. Now, in this case the master-wheel A is hung to the frame-lever *c c*, and said frame-lever is connected to the frame C C by the links *g g* with flexible joints, and the plates S S secure the wheels in gear while raising and lowering the frame, and also hold the master-wheel shaft parallel to the pinion-shaft, and the links *g g* hold it parallel to the plane of the wheel-frame; and it will be seen that by throwing out of gear in this manner the cogs are made to part from each other and pass out of gear, while the shafts carrying said wheel remain in their parallel position to each other, and thus the liability of breaking or wearing off the corners of the cogs by moving one end only of the shaft is avoided. Further, if it is desired to mow with the tongue stiff, it is only necessary again to detach the platform, &c., and fasten back the iron lever *f* with the pin V, when it will be seen that the finger-bar H will immediately descend to the ground, and the master-wheel A and finger-bar will each have an independent adjustment to the ground without affecting the angle of the fingers and cutter.

The various ways in which this machine can be made to perform its work are shown in dotted lines in Plate II, Fig. III. The curved dotted lines above and below the wheel A show its greatest elevation and depression while passing over uneven ground, and the front end of the tongue is the stationary point, and is shown at the lowest point to suit a small team and at the highest point to suit a tall team, (the size of the horses causing the end of the tongue to vary in height,) and when both bolts are in the tongue, making it stiff, the ascent and descent of the finger-bar on uneven ground are shown in dotted lines, and when the bolt at U is withdrawn the elevation and depression of the front end of the frame C C are shown, and the different positions of the frame-lever *c c* in elevating and depressing the front end of the frame C C are also shown in dotted lines.

The operation of this machine is as follows for mowing: The finger-bar H being secured to the rear end of the frame C C, and the driver being placed in the rear of the iron lever *f* on the frame-lever *c c*, and with his hand can move the lever to any point he desires while the team is in motion, the shaft of the master-wheel A being the fulcrum on which the frame-lever *c c* works, and the frame C C being fastened to the front end of the frame-lever *c c*, and when the driver depresses the rear end of the frame-lever *c c* it will raise the front end of frame C C, which will raise the front edge of the finger-bar H, which carries the fingers and cutters so as to make them run with ease over any obstruction, and when he raises said frame-lever *c c* it will throw the edge down again to cut the fine grass close to the ground. Thus he can change the angle of the cut from high

to low or throw the machine out of gear while passing over a space of two or three feet, the team being in motion. Thus, if it is necessary to raise the edge to pass over lumpy ground, crawfish-nests, or gravelly spots of ground to avoid injuring the edge of the cutter, he can do it and throw the edge down again to cut the fine grass without stopping the team, and when the bolt at U is put in through the tongue it will easily be understood that the whole arrangement will be adapted to reaping, the other appendages having been attached. It will also be seen that by fastening back the iron lever *f* with the pin V the finger-bar H will descend to the ground ready to mow. The tongue *a* now being stiff, the master-wheel A can ascend or descend without affecting the finger-bar H and cutter, the heads of the boxes *t t* playing up and down in the slots in plates S S to suit the unevenness of the ground. The finger-bar H can ascend or descend without affecting the master-wheel, the plates S S working up and down on the heads of boxes *t t*, and thus the master-wheel A and finger-bar H each have an independent adjustment to the ground; and thus it will be seen that in passing over uneven ground the master-wheel A can ascend or descend without affecting the finger-bar H, wheel-frame C C, or tongue. Thus the angle of the fingers and cutters is preserved when passing over uneven ground, and the difficulty of the fingers and cutters running into the ground when the master-wheel drops into a hole, as they will, with the flexible joint connecting the wheel-frame and tongue *a*, is effectually overcome.

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

1. So constructing the machine that when the joint between the tongue and frame is flexible the latter may, while the team is in motion, be raised and lowered in a sector of a circle whose center is the finger-bar, and thereby enable the operator at once to change the angle of cut, and this I claim irrespective of the mechanical device by which the motion is produced.

2. The frame-lever *c c*, provided with means of fixing its position at will, and linked, as described, to the main frame C C, in combination with the guiding slotted plate S S as a means, when used with the flexible joint between the tongue and frame, (for mowing,) of oscillating the frame about the finger-bar as a center, and thus varying the angle of cut, and when used with a rigid joint (for reaping) of raising and depressing the frame and finger-bar.

3. The combination, with the links *g g*, of the receding curve in the bottom of the slots in plates S S, in which the axis of the driving-wheel plays, or of their equivalents, respectively, for the purpose of enabling the driver to throw the cutter-pinion out of gear, substantially as described.

4. Suspending the main frame C C and its attachments from the driving-shaft, substan-

tially in the manner set forth and described, in order that, whether used in reaping or mowing, the driving-wheel and the finger-bar may be independently adjustable, and the wheel may rise over obstructions or descend into depressions without altering the angle of cut or otherwise affecting the cutters.

In testimony whereof I have hereunto signed name.

ABNER WHITELEY.

Witnesses:

CHS. P. WANNALL,
G. W. CHERRY.