(No Model.) 2 Sheets—Sheet 1.

W. M. McCALLISTER.

WHEEL PLOW.

No. 463,535. Patented Nov. 17, 1891.

FIG. I.

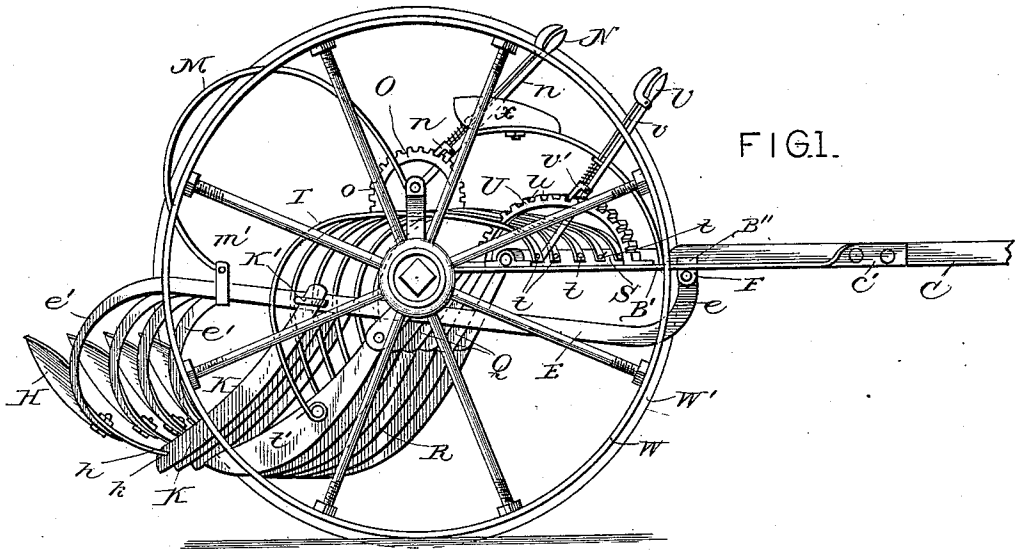
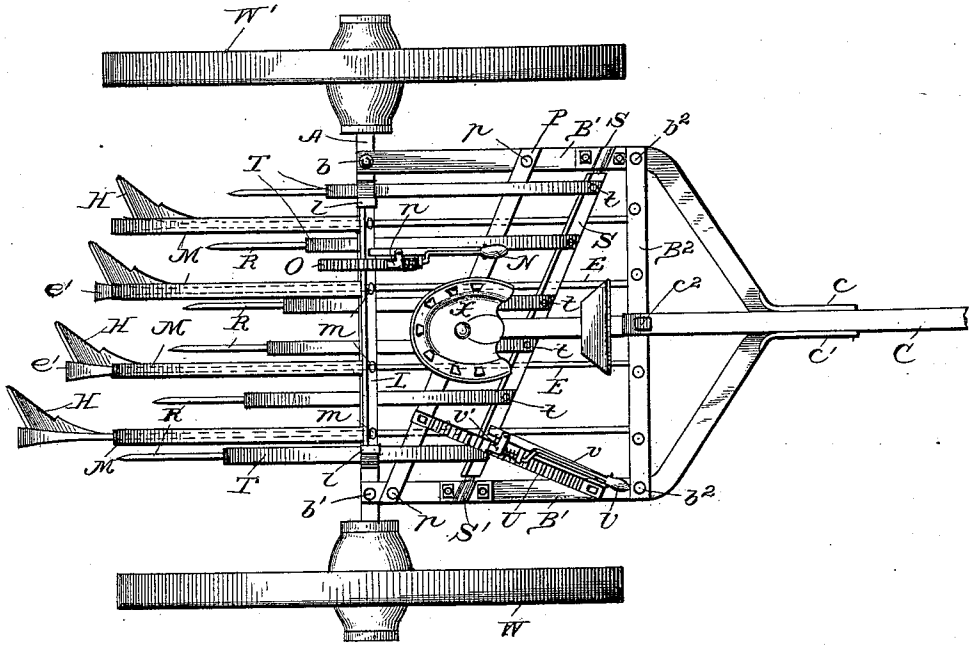


FIG. II.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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FIG. III.

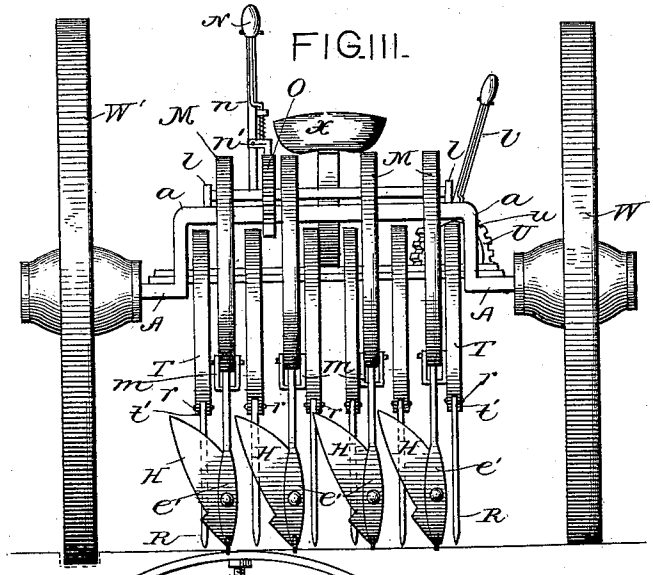


FIG. IV.

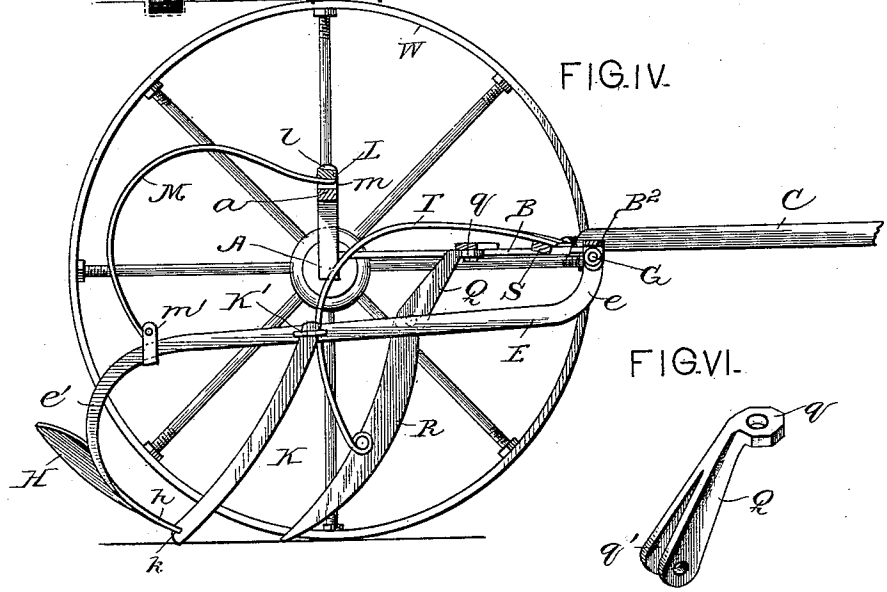
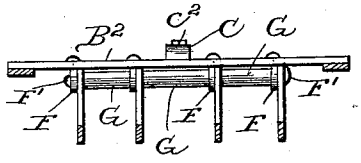


FIG. VI.

FIG. V.



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UNITED STATES PATENT OFFICE.

WILLIAM M. McCALLISTER, OF OWENSBOROUGH, KENTUCKY.

WHEEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 463,535, dated November 17, 1891.

Application filed April 13, 1891. Serial No. 388,722. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. McCALLISTER, a citizen of the United States, residing at Owensborough, in the county of Daviess and State of Kentucky, have invented certain new and useful Improvements in Wheel-Plows; and I do hereby declare that the following specification is a full, clear, and exact description of my improvements, such as will enable those skilled in the art to which they appertain to make and use the same.

My invention relates to improvements which are especially applicable to gang wheel-plows, and has for its object to simplify the construction of such machines and at the same time provide a machine which will be strong and durable as well as effective in its operation.

To this end my invention consists, principally, of four important features of novelty: first, of a pivoted plow-beam carrying the mold-board, and provided with a cutter or colter adapted to lift the mold-board over any obstruction; second, spring-arms, which serve the double purpose of holding the mold-boards to their work and connecting them to suitable means for raising them out of operating position; third, a series of spring-pressed sod-cutters arranged in front of the mold-boards, and, fourth, means for adjusting the spring-pressure on the plow-beams and sod-cutters.

My invention consists of other features of novelty, all of which will first be described with reference to the accompanying drawings, and then more particularly pointed out in the claims.

In said drawings, Figure I is a side elevation of my improved plow, the mold-boards and sod-cutters being raised out of operative position. Fig. II is a top plan view. Fig. III is a rear view, and Fig. IV is a sectional view taken on line *iv iv* of Fig. II. Fig. V is a sectional view taken on line *v v* of Fig. II and looking in the direction indicated by the arrow. Fig. VI is a detail perspective view of one of the hangers for the sod-cutters.

Like letters of reference indicate the same parts throughout the several views.

A represents the axle, having an upwardly-bent central portion *a*.

B, B′, and B^2 are frame-pieces, and C is the draft tongue or pole. The pieces B B′ are bolted to the axles inside of the wheels D, at *b b′*, and are attached to the draft-pole C at *c c′*. The cross-bar or frame-piece B^2 is attached at its ends b^2 to the frame-pieces B B′, and the inner end of the tongue C is bolted to said cross-bar at its center c^2. This simple construction and arrangement of the frame I have found to be very strong and durable.

E are the plow-beams, formed, preferably, with upwardly-bent front perforated portions *e* and downwardly-bent rear portions *e′*.

F is a series of perforated ears or lugs rigidly attached to the under side of the cross-bar B^2. The upwardly-bent front portions *e* of the plow-beams are pivotally connected to these lugs F by means of a rod or pin F′, passing through the perforations in the beams and lugs.

G is a series of bushings supported upon the pin F′ for confining the ends *e* of the plow-beams from shifting sidewise.

H are the mold-boards rigidly secured to the necks or downwardly-bent portions *e′* of the plow-beams E.

K is a series of rearwardly-curved cutters or colters carried by the plow-beams E. These colters K are attached to the plow-beams at their upper ends by means of staples K′, riveted thereto or by other suitable means. These colters are curved rearwardly from the point of attachment to the plow-beams to a point beneath the mold-boards H, where on the upper surface of their lower ends are formed notches *k*, into which the points *h* of the mold-boards fit to securely connect the ends of the colters with the mold-boards; or any other suitable means may be employed to connect them, it being the purpose to so arrange the colters upon the plow-beams with relation to the mold-boards that any obstruction which is encountered that is too tough or hard for the colters to cut through they will slide over by reason of their rearwardly-curved lower surface and lift the mold-boards over said obstructions.

Secured on top of the portion *a* of the axle A are bearings *l*, supporting a suitable rock-shaft L, parallel with the axle A. Rigidly bolted or riveted to this rock-shaft L at *m m*, &c., are a series of stout spring-arms M, which are curved down and pivotally attached to the plow-beams E by means of brackets *m′*.

N is an operating-lever rigidly attached to the rock-shaft and carrying a spring-pressed pawl *n* and operating mechanism *n'*. The pawl *n* is provided with a square bearing-nose.

O is a segment-rack secured to the central portion *a* of the axle A in proper relative position to the operating-lever N, said rack being provided with square edged teeth *o*, into which the square-nosed pawl *n* of the operating-lever H is adapted to engage for holding the rock-shaft in any desired position. The rack-teeth *o* and pawl *n* are formed with square bearing-surfaces to enable them to act in either direction—that is, either for adjusting the pressure of the spring-arms M upon the plow-beams E or for raising and holding the mold-boards H out of operative position.

It will be seen, as intimated above, that the object of the spring-arms M is twofold: first, to exert a spring-pressure upon the plow-beams, and, second, to connect the plow-beams with the rock-shaft L to enable them to be raised out of operative position, the same segment-rack and pawl serving to hold them in position whether they are up or down. By this means it is quite obvious that the pressure of the spring-arms upon the plow-beams can be adjusted to suit the condition of the ground.

P is a cross-bar or frame-piece arranged diagonally across the frame and attached at *p p'* to the frame-pieces B B', respectively. Bolted or riveted to the under side of this cross-bar P is a series of hangers Q, which are provided with a perforated flattened upper portion *q* and a perforated bifurcated lower portion *q'*.

R is a series of sod-cutters pivoted at their upper ends in the bifurcated ends of the hangers Q and arranged in front of the plows carrying the colters to break up the turf.

s s' are bearings formed upon the upper surface of the frame-pieces B B', in which a rock-shaft S is journaled, said rock-shaft being arranged parallel with the cross-bar P, diagonally across the frame.

Rigidly attached to the rock-shaft S at *t t*, &c., is a series of spring-arms T, which are pivotally attached at their lower ends to the sod-cutters R in any suitable manner. I have shown them attached by bifurcating the lower ends at *t'*, so as to straddle the cutters R and form eyes in these bifurcated ends, and through said eyes and suitable perforations in the center of the cutters pass a suitable pivot-pin *r*.

U is a segment-rack mounted upon the frame at right angles to the shaft S and formed with squared bearing-teeth *u*, and V is an operating-lever provided with a locking-pawl *v* and operating mechanism *v'*.

The spring-arms and rock-shaft and controlling mechanism operate in the same manner and for the same purposes as the spring-arms M in connection with the plow-beams. The pressure can be adjusted or the sod-cutters can be raised out of operative position by the same operating-lever.

It will be observed from the drawings that the mold-boards are arranged diagonally across the machine as customarily, which is done by forming the plow-beams of different lengths. The sod-cutters are also arranged on a diagonal with relation to the mold-boards by placing the supporting cross-bar P on a diagonal. The sod-cutters are adapted to precede and cut up the land in front of the plows, and any roots, stumps, or other obstructions which cannot be cut by either the sod-cutter or colters the plows are made to jump by the novel arrangement of the colters. The sod-cutters are arranged so closely together that they will be very effective in killing mice, moles, insects, &c., that are in the ground.

W W' are the wheels upon which the machine is supported, one of which W' is larger than the other W for the obvious reason of supporting the plows on a level while they are in operation. The larger wheel, being on the furrow side, enters the furrow and compensates for the lower level of that side.

X is the driver's seat arranged in convenient position for the operation of the levers N and V.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a wheel-plow, the combination of a suitable frame, a plow-beam pivoted to said frame and carrying the mold-board, and a colter carried by said plow-beam and attached to the mold-board, with a spring-arm supported from the plow-frame and bearing on the plow-beam, whereby the mold-board is held to its work with a yielding pressure and is enabled to jump any obstruction, as herein set forth.

2. In a wheel-plow, the combination of a suitable frame, a plow-beam pivoted to said frame and carrying the mold-board, a rock-shaft supported upon the frame, a spring-arm rigidly attached to said rock-shaft and connected to the plow-beam, a segment-rack attached to the plow-frame, an operating-lever rigidly attached to the rock-shaft, and a pawl and operating mechanism carried by said operating-lever, said pawl being adapted to engage in the segment-rack, as herein set forth.

3. In a wheel-plow, the combination of a suitable axle supported upon wheels, a suitable frame mounted upon said axle, plow-beams of different lengths carrying mold-boards and supported from said frame diagonally across the machine, a diagonally-arranged cross-bar P, attached to the frame, a series of sod-cutters pivoted to said cross-bar, a diagonally-arranged rock-shaft S, suitable arms connecting said sod-cutters with said rock-shaft, and means for operating said rock-shaft, substantially as set forth.

4. In a wheel-plow, the combination of a suitable axle supported upon wheels, a suit-

able frame mounted upon said axle, plow-beams of different lengths carrying mold-boards and supported from said frame diagonally across the machine, a diagonally-arranged cross-bar P, attached to the frame, a series of sod-cutters pivoted to said cross-bar, a diagonally-arranged rock-shaft S, suitable arms connecting said sod-cutters with said rock-shaft, a segment-rack U, mounted upon the frame at right angles to the shaft S, and an operating-lever V, provided with a locking-pawl and operating mechanism, substantially as set forth.

5. In a wheel-plow, the combination of a suitable frame and a series of plow-beams carrying mold-boards with a series of pivoted sod-cutters, a rock-shaft, and spring-arms connecting the sod-cutters with said rock-shaft, as herein set forth.

6. In a wheel-plow, the combination of a suitable frame, a series of plow-beams pivoted to said frame and carrying mold-boards, and colters attached to said beams and said mold-boards, with a series of spring-pressed pivoted sod-cutters arranged in front of said mold-boards and cutters, as herein set forth.

7. In a wheel-plow, the combination of a suitable frame, a series of plow-beams carrying mold-boards, a series of hangers Q, sod-cutters pivoted to said hangers, a rock-shaft, spring-arms connected to said sod-cutters and said rock-shaft, and suitable operating mechanism for said rock-shaft, as herein set forth.

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Witnesses:
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B. C. LONG.