(No Model.)

B. F. BUTLER.

THREE WHEEL PLOW.

No. 419,180. Patented Jan. 14, 1890.

Fig. 1.

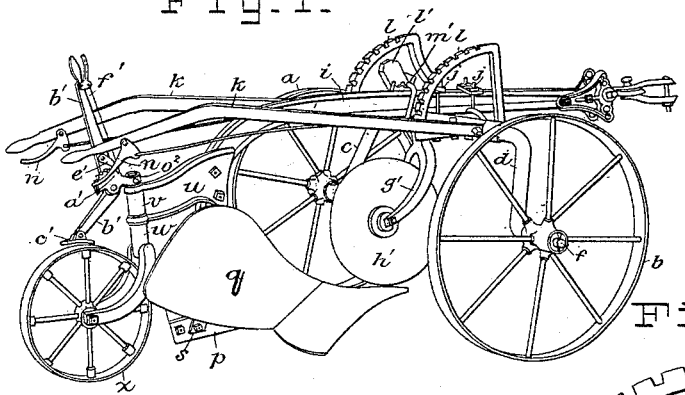


Fig. 8.

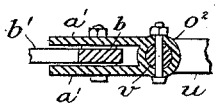


Fig. 4.

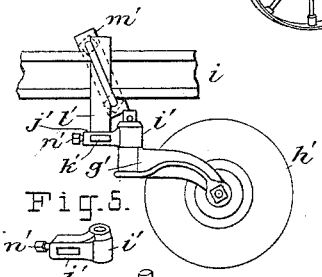


Fig. 5.

Fig. 6.

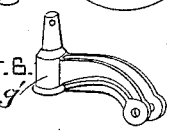


Fig. 7.

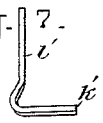


Fig. 9.

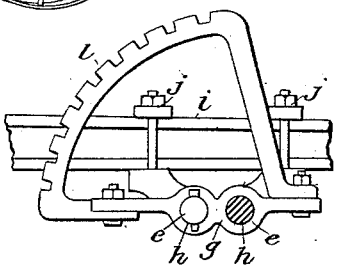


Fig. 2.

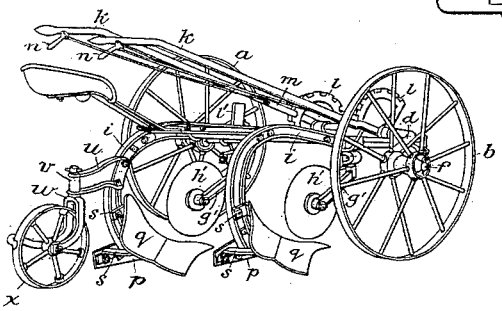


Fig. 10.

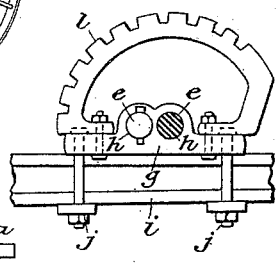
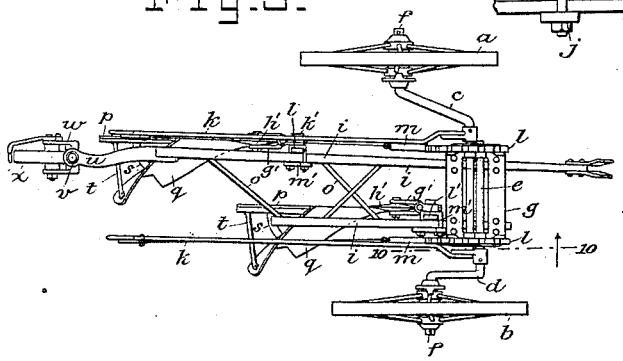


Fig. 3.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. BUTLER, OF ROCKFORD, ILLINOIS.

THREE-WHEEL PLOW.

SPECIFICATION forming part of Letters Patent No. 419,180, dated January 14, 1890.

Application filed March 15, 1889. Serial No. 303,448. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. BUTLER, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Three-Wheel Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists of the improvements in construction and arrangement of tongueless three-wheel walking or riding single or gang plows, hereinafter described and claimed, whereby it is designed to provided simpler and at the same time easier working and more efficient plows than such as are now in use, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of the single walking-plow as I construct it. Fig. 2 is a perspective view of the gang-plow, also adapted for a walking-plow and provided with a seat for riding, if desired. Fig. 3 is a plan of the gang-plow without the seat. Fig. 4 is a side elevation of the colter and part of the beam, showing the mode of attaching the colter to the beam. Figs. 5, 6, and 7 are perspective views of parts of the colter attachment. Fig. 9 is a transverse section of the axle and end view of the frame by which the axles and beam are coupled, as in Fig. 1. Fig. 10 is a transverse section and end view of the same parts as in Figs. 2 and 3 and on the line 10 10 of Fig. 3; and Fig. 8 is a detail of the caster-wheel attachment in section, these last three figures being on a larger scale than the rest.

The wheel *a* of the land side and wheel *b* of the furrow side have an independent cranked axle, as *c d*, respectively, of which the long arms *e*, parallel to the journals *f* and between the respective cranks, are located side by side in close proximity to each other, and in a frame *g* of somewhat greater length along the axles than transversely, and having two bored holes *h* through each end for reception of the said parallel arms *e* of the axles, which being inserted and secured therein against endwise motion, the two independent axles are coupled together as one compound axle, and are at the same time free to be turned independently of each other for altering the level of the machine by either part alone or both together. Besides so coupling the two parts of the said compound axle, this frame is also the means of coupling the beam or beams *i* of the plow and the axles, said beams being clamped thereto either above, as in Figs. 1 and 9, or below, as in Figs. 2 and 10, by the yokes *j*, in which the beams may be readily shifted along the frame forward or backward, and be secured at any desired point to gage the plows relatively to the axle and wheels, as may be required from time to time, according to the varying conditions of the work.

Each part of the axle has an adjusting-lever *k* keyed fast to it next to one end of the frame, and on said frame is a notched quadrant *l* to each lever for locking the levers by the spring-latches *m* to hold the axles in the positions in which they are set, said latches having the usual connection with the trip-handles *n* at the handles of the levers. These quadrants are firmly bolted onto the axle-frame at the corners, as shown in Figs. 9 and 10, in a simple and inexpensive mode of attachment.

When two or more plows are used in a gang, the beams *i* are preferably coupled back of the axle-frame by braces *o*, bolted or riveted to the sides of the beams, respectively. For the beam or beams I use metallic (preferably steel) channel-bars suitably bent at the rear to form and constitute the stock for direct attachment of the landside *p* to the end and for the connection of the mold-board *q* by the brackets *s* and brace *t*, and to this bent portion of the beam a suitable distance above the plow I attach the rearwardly-projecting arm *u* by bolting it to one side of the beam, as shown, which arm has the socket at *v* in the rear end for the pivot of the forked caster-wheel standard *w*, in which the caster-wheel *x*, carrying the rear end of the machine, is mounted. In a gang-plow this one caster-wheel attachment serves alike as in a single plow, and it is attached to the left-hand or most landward plow of the gang. I extend the pivot of said standard a suitable distance above the socket and secure it in the socket by a collar o^2 and set-screw, which col-

lar has a forked and ratchet-notched quadrant a' extended backward over the caster-wheel, and having the bell-crank brake-lever b' pivoted in it, said lever carrying the brake-shoe c' and the pawl e' and trip device f', by which the caster-wheel may be locked at any time to make a rigid truck that works better in the absence of a tongue to guide it in transporting the machine with the plows above ground than when the caster-wheel is free to vibrate.

For attaching the caster rolling colter h', as I propose to do in practice, I mount the forked standard g', in which the colter is journaled, in a socket i', having a slotted arm j' fitted to the laterally-projecting arm k' of the vertical attaching-bar l', employed to secure the colter to the beam by the clamp-yoke m', the said slotted arm of the socket being adjustable along the arm k', which projects laterally to the direction in which the plow moves, and is secured thereto by the set-screw n' for a means of readily shifting and adjusting the colter sidewise relatively to the plow, which is frequently required under different circumstances and conditions.

It will be seen that the arrangement of independent axles and adjusting-levers greatly facilitates the adjustments for leveling the machine and adapts it for side hills, as well as for level ground, and it enables both cranks of the axle to be set upright for carrying the plows above ground.

I claim as my invention—

1. In a wheel-plow, the combination of wheels a b, independent cranked axles c d, the separate adjusting-lever and holding-quadrant to each axle, the parallel arms e of said axles, the coupling-frame g, having said arms fitted and secured in it side by side and coupling them independently of the beam or beams, and the plow beam or beams clamped adjustably and severally on said frame, substantially as described.

2. The combination of the independent cranked axles and wheels, the axle and beam coupling-frame, on which the beams are severally adjustable, the parallel arms of the axles fitted and secured in bearings in both ends of said frame independently of the beams, the holding-quadrants attached to the ends of the frame, respectively, and the independent adjusting-lever to each axle and quadrant, substantially as described.

3. In a three-wheel plow, the combination, with the caster-wheel socket-arm, the caster-wheel, and its stock, of the brake and the supporting-arm for the brake-lever, said arm being attached to the caster-wheel stock above the socket arm and having the ratchet-quadrant for the brake-lever pawl, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN F. BUTLER.

Witnesses:
J. A. LUNDGREN,
G. W. THOMPSON.