(No Model.)

J. BUCHANAN.

PLOW.

No. 277,987. Patented May 22, 1883.

Fig. 1.

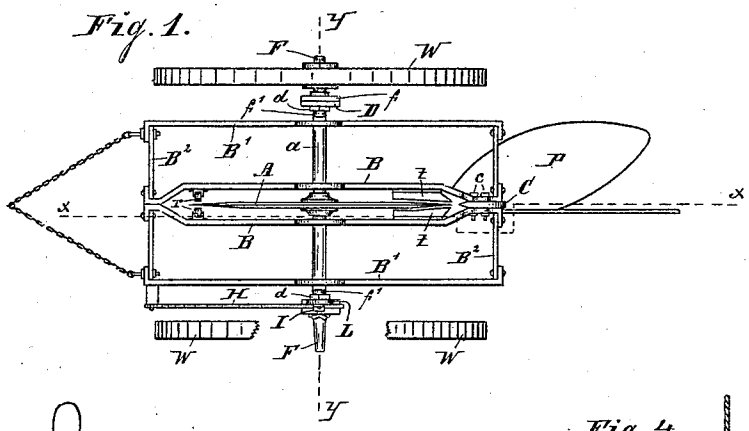


Fig. 2.

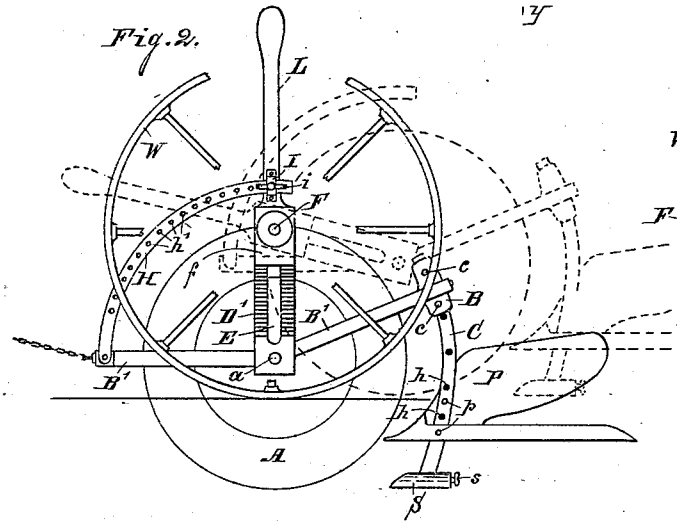


Fig. 4.

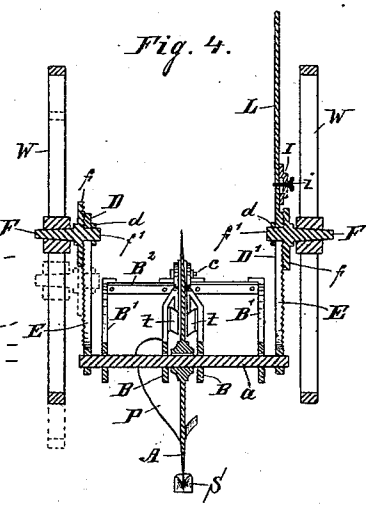
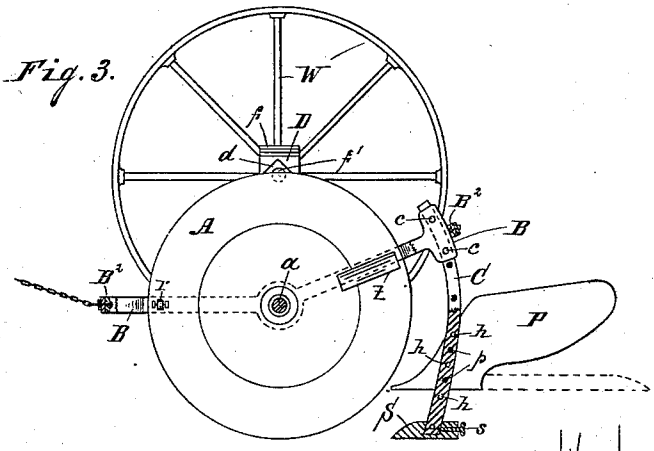


Fig. 3.



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UNITED STATES PATENT OFFICE.

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PLOW.

SPECIFICATION forming part of Letters Patent No. 277,987, dated May 22, 1883.

Application filed February 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES BUCHANAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Plows, of which the following is a specification.

My invention relates to improvements in plows; and the objects of my improvements are, first, to lighten the draft by increasing the size of cutting-disk and operating it on the axle to which the plow is attached; second, to break the soil to a greater depth than usual, and to enrich the land by exposing more of it to atmospheric action; third, to facilitate drainage by the attachment of an adjustable drain-cutter that will form a continuous channel below the plowed surface under each furrow; fourth, to produce a plow that will work equally well either single or in gangs of two or more. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a single plow. Fig. 2 is a side view of the plow, showing the plow raised out of ground by dotted lines. Fig. 3 is a longitudinal vertical section on line *x x* on Fig. 1. Fig. 4 is a vertical cross-section on line *y y* on Fig. 1.

Similar letters refer to similar parts throughout the several views.

Wheels W W operate on spindles F F. On said spindles are flanges *f f*, with ratchets on inner surfaces to receive ratchet-plates D and D′. Said ratchet-plates are bolted to flanges *f f* on bolts *f′ f′*, which form a part of spindles F F. Ratchet-plates D and D′ have slots E E for bolts *f′ f′* on spindles F F to operate in when it is desirable to raise or lower axle *a* in regulating the depth of furrow to be plowed. On ratchet-plate D′ is a lever, L, to raise the entire plow from the ground during transportation, or, while operating the plow, to avoid a stump or stone. Said lever L on ratchet-plate D′ is held in the position desired by stay-bar H passing through slot I, which is formed on lever L, and by bolt or thumb-screw *i*, that passes through slot I and either of holes *h′* in stay-bar H and through lever L. Stay-bar H is bolted to the fore end of frame B′. Axle *a*, on which operates frame B′ B′, draft-beams B B, and cutting-disk A, is bolted to ratchet-plates D and D′. To the fore ends of beams B B are secured anti-friction rollers *r r*, to steady the fore end of disk A. To rear end of beams B B are bolted plates *t t*, to clean the cutting-disk A as it leaves the ground, and also to steady the same. Frames B′ B′ and draft-beams B B are kept in their relative position to each other by braces B^2 B^2. All are bolted together. Between the flanges at the rear end of draft-beams B B is bolted colter or standard C, with bolts *c c*. Colter C can be raised, as desired, when drain-cutter S is to be dispensed with. In colter C are bolt-holes *h h*, by which the mold-board of plow P is secured in the desired position, either high or low, as is desirable to have depth of furrow. To the lower end of colter C is bolted drain-cutter S by bolt *s*. To the fore end of frames B^2 B^2 and B′ B′ are secured the draft-chains.

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

1. The combination, in a plow, of wheels W W, spindles F F, with bolts *f′ f′*, flanges *f f*, with ratchet-surface, ratchet-plates D and D′, with slots E E, axle *a*, and cutting-disk A, substantially as described, and for the purpose specified.

2. The combination, in a plow, of spindles F F, bolts *f′ f′*, ratchet-flanges *f f*, ratchet-plates D and D′, lever L, bolt *i*, slot I, stay-bar H, with holes *h′ h′*, frame B′ B′, braces B^2 B^2, draft-beams B B, with anti-friction rollers *r r*, cutting-disk A, and plates *t t*, as described and specified.

3. The combination, in a plow, of axle *a*, frame B′ B′, braces B^2 B^2, beams B B, colter C, with holes *h h*, and plow P, substantially as described and shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES BUCHANAN.

Witnesses:

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CARL P. FETSCH.