(No Model.) 2 Sheets—Sheet 1.

A. NELSON.

COMBINED SULKY PLOW AND PULVERIZER.

No. 421,189. Patented Feb. 11, 1890.

Fig 1.

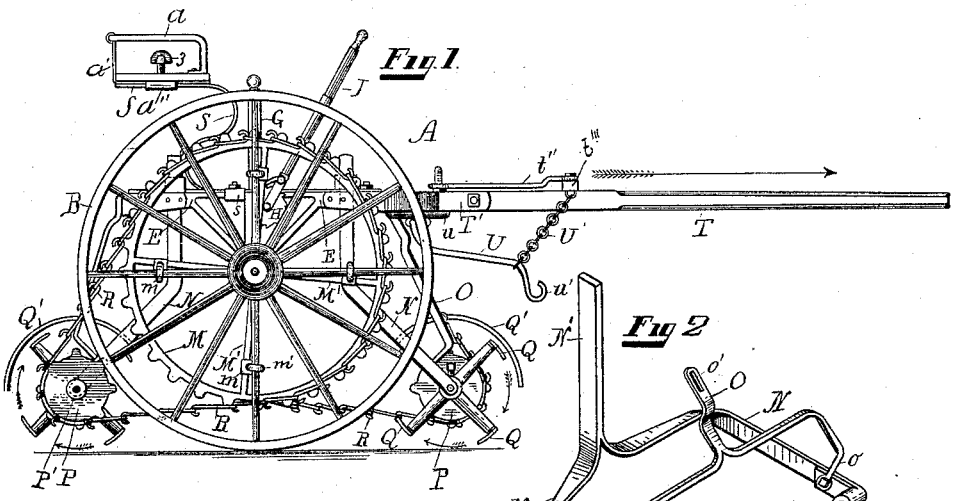


Fig 2.

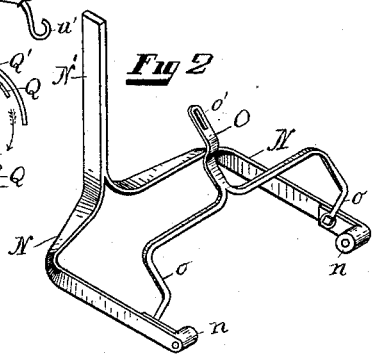


Fig 3.

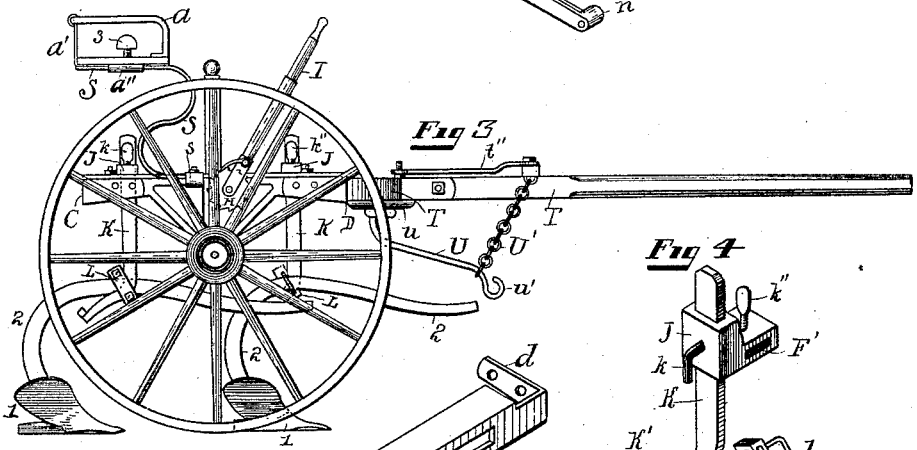


Fig 4.

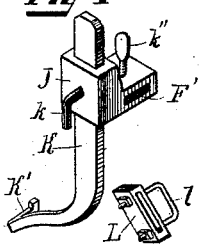


Fig 5.

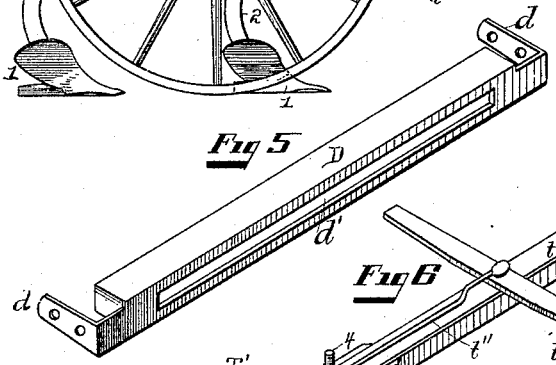
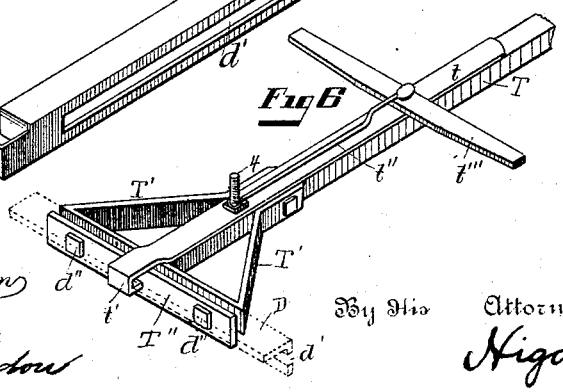


Fig 6.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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COMBINED SULKY PLOW AND PULVERIZER.

No. 421,189. Patented Feb. 11, 1890.

Fig 7

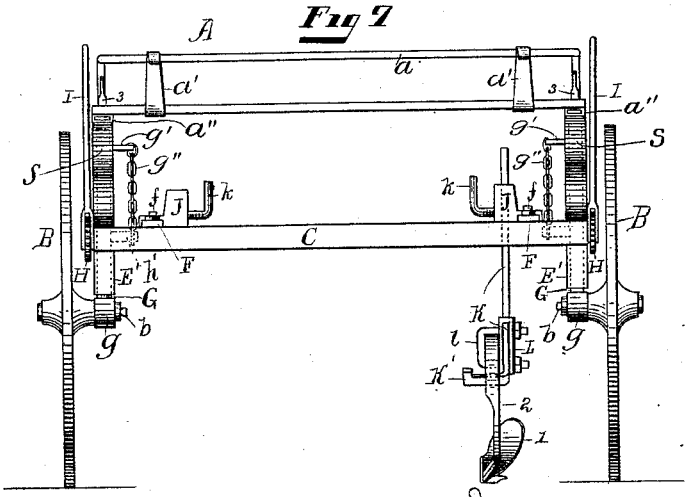


Fig 8

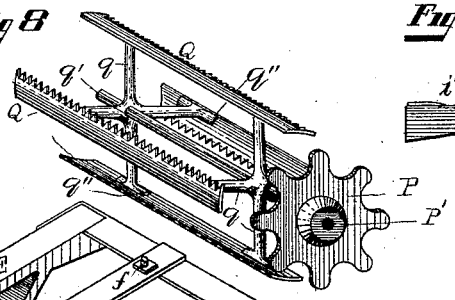


Fig 9

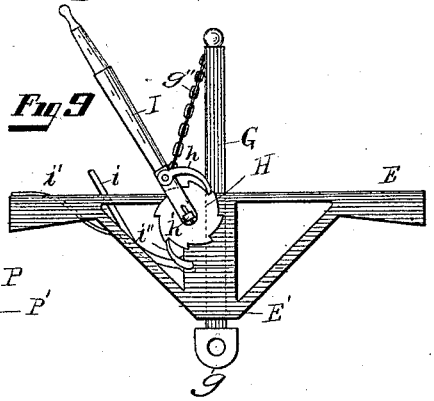


Fig 10

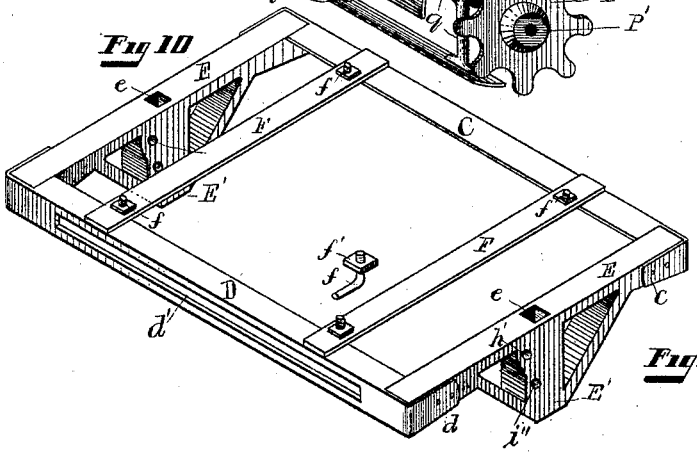
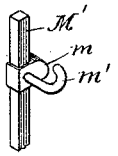


Fig 11



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLPH NELSON, OF ARMOURDALE, KANSAS.

COMBINED SULKY PLOW AND PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 421,189, dated February 11, 1890.

Application filed October 15, 1889. Serial No. 327,067. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH NELSON, of Armourdale, Wyandotte county, Kansas, have invented certain new and useful Improvements in Combined Sulky Plows and Pulverizers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in a combined sulky plow, cultivator, pulverizer, &c.; and it consists in the novel construction and arrangement of the different parts hereinafter set forth.

In the drawings which illustrate the manner of carrying out my invention, Figure 1 is a side elevation of the sulky having suitable wheels, tongue, &c., with my revolving pulverizer secured thereto. Fig. 2 is a detail in perspective of the braces which form the bearing-supports for the pulverizer and stalk-chopper. Fig. 3 is a side elevation of the sulky with the sprocket-wheels and revolving pulverizer removed and two plows substituted in their place. Fig. 4 is a detail in perspective of the upright plow-carrier secured in a suitable casting. Fig. 5 is a detail in perspective of the front bar of the carriage-bed, showing the slot in which operate the bolts for moving the tongue to either side. Fig. 6 is a detail in perspective of the tongue, showing the proper braces and bolts for strength and durability. Fig. 7 is a rear view of the sulky, showing one plow in position. Fig. 8 is a detail in perspective of the revolving pulverizer and stalk-chopper, showing the smaller sprocket-wheel attached to its axis at the outer extremity. Fig. 9 is a side elevation of the carriage-bed, showing the raising-lever I, the ratchet H, guide-post G, and raising-chain g''. Fig. 10 is a detail in perspective of the carriage-bed, showing the movable horizontal bars F, by which the plows or cultivators are secured in the desired position. Fig. 11 is a detail in perspective of the loop which is rigidly secured to the spoke of the sprocket-wheel, showing the hook m', which fastens around the spokes of the sulky-wheel to hold the sprocket-wheel in position.

Referring to the drawings by letter, A, Fig. 1, represents a sulky mounted on suitable wheels B, and provided with a tongue T.

M is a large sprocket-wheel fastened to the sulky-wheel B.

R is a chain engaging on sprocket-wheel M and on the smaller sprocket-wheel P, Fig. 8, secured to the axis of the pulverizer.

C is an angle-bar, which connects the ends of the carriage-frame E E, Figs. 3 and 10, at its rear.

D is a similar angle-bar, which connects the ends of said carriage-frame E, Figs. 5 and 10, but is provided with a slot d, in which operates the tongue T, said tongue T being held in position by means of a strap t, which is provided at its rear end with a loop t', (see Fig. 6,) which fits over the horizontal bearing-bar D and is designed to slide laterally, thus allowing said tongue T to be shifted to either side of the sulky. A triangular brace T′ is bolted to the rear portion of the tongue, the base of the said brace being at right angles to and at the rear end of the tongue. This brace bears against the front side of bar D, and on the rear side of the latter is a plate T″, which is connected to the brace by bolts d'', that extend through slot d'.

E E, Fig. 10, are the side frames of carriage-bed, which is held in position by means of the upright guide-posts G G, Fig. 7, posts G being rigidly secured to the spindles of the wheels B B.

F F, Fig. 10, are the horizontal bars held in position by eccentric screws f and nuts f', as shown in detail in the figure. These bars F F form a bearing, on which the casting J operates, and can be moved to any desired location on angle-bars C D, and secured by means of said central bolt and nut $f f'$.

H, Fig. 9, is a ratchet-wheel rigidly secured to the axle h', and is designed to raise or lower the carriage-bed by means of the dog h, being operated by the lever-arm I. The opposite end of the spindle h' is provided with a lug, to which is rigidly secured the lifting-chain g''. Thus when the lever I is pushed forward the dog h operates on the ratchet-wheel H and winds the chain around the spindle h'. Said chain g'' is secured at its upper end to lug g', said lug g' being formed on upright guide-posts G.

i is a foot-lever, which operates another dog i'', and which is held in position by a

flexible steel spring i'. This foot-lever i and dog i'' serve to hold the carriage at any desired height raised by the ratchet H and chain g''.

g is the lower terminus of the guide-post G, and is secured to spindle by suitable nuts.

J is a casting, which is provided with a perforation F', Fig. 4, in which operates the horizontal bar F, Fig 10. This casting is designed to move forward or backward, as may be desired, and is held stationary at its proper place by means of the thumb-screw k''.

K, Fig. 4, is an upright hanger, which operates in said casting J, sliding vertically, and is held in position by the set-screw k. This hanger is designed to form a guide for the plow-beam 2, said plow-beam 2 being secured to the guide K by means of a slotted sleeve L and a threaded staple l, with suitable nuts.

The tongue T, Fig. 6, may be shifted laterally in the slot d', Fig. 5, in which the bolt-heads d'' slide to afford bearing. The tongue is secured in this position by tightening the bolts d, Fig. 6, and by means of the curved lever U and chain U'. The revolving pulverizer illustrated in Fig. 8 may be substituted for the plows 1 1. For this purpose the set-screw k'' and casting J is slacked, thus releasing the hanger K, carrying the plows. A large sprocket-wheel M is then secured to the sulky-wheel. The brace N is placed in position, passing through the frame E. The chain is then passed around the sprocket-wheels M, Fig. 1, and P.

In Fig. 8, P' q' represent the bearings of the pulverizer or cultivator. Q Q represent the knives, which are toothed like a saw. $q\,q$ are the arms supporting the knives, which are spread out to afford a bearing for them at q'' q''.

In Fig. 2 the brace N is supported by the carriage N', and is braced in its proper position by an arm-stay O, furnished with the slot o' to secure it to the main body of the sulky by a suitable nut.

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

1. In a sulky plow or cultivator, the frame having the slotted cross-bar D, in combination with the tongue having the brace T', bearing on the front side of the bar D, the strap t, having the rearward-extending loop t', engaging the upper side of bar D, and the plate T'' on the rear side of bar D and attached to brace T' by clamp-bolts d'' in the slot of the said cross-bar, substantially as described.

2. In a sulky plow or cultivator, the frame consisting of the cross-bar D, slotted at d', the cross-bar C, the side bars E, and the longitudinal bars F F, adjustable laterally by the bolts and nuts $f\,f'$, substantially as set forth and described.

3. In a sulky plow or cultivator, a double-slotted casting J, provided with the slot F', reciprocating on the bar F, and fastened by the thumb-screw k'', and a suitable slot to engage the carriage K, fastening by the set-screw k, thus giving vertical and horizontal adjustment to the plows, substantially as set forth.

4. In a sulky plow or cultivator, the tongue T, adjustable laterally in the slot d' of the front bar D of the frame of the sulky, in combination with a fastening device t', and the releasing-lever U, and securing-chain U', substantially as set forth and described.

5. In a sulky plow or cultivator, the removable brace N, provided with a counter-brace O, and journal-bearings n n, for the insertion of the revolving cultivator, substantially as set forth and described.

6. In a sulky plow or cultivator, the combination of the frame, the vertically-movable posts G, the wheels having their journals carried by said posts, the chain-wheels M, attached to the said wheels, the braces N, attached to the frame and having the counter-braces O and the journal-bearings n, the revolving cultivators journaled on the said bearings and having the chain-wheels P, and the endless chains connecting the wheels M P, substantially as described.

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

ADOLPH NELSON.

Witnesses:

A. A. HIGDON,

R. A. BALDERSON.