

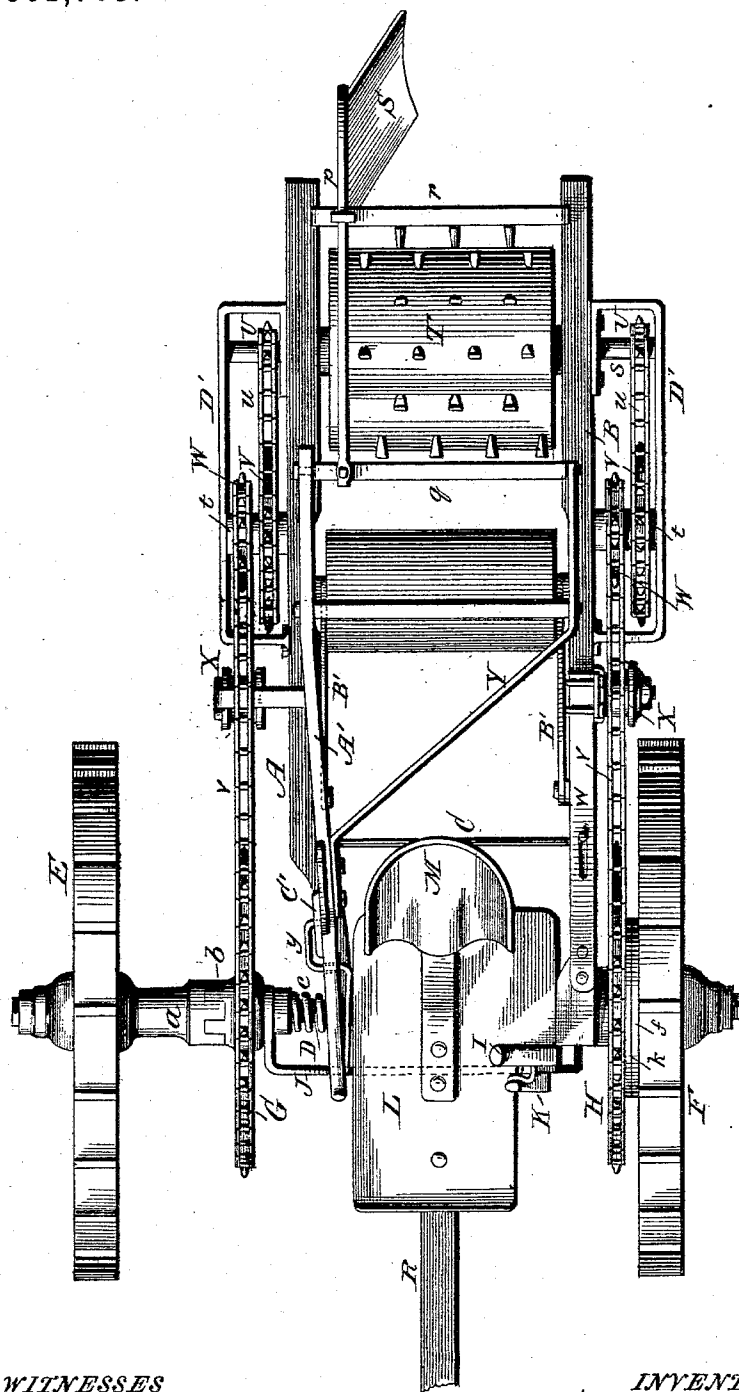
(No Model.)

2 Sheets—Sheet 1.

W. N. CURTIS.
WHEELED PLOW.

No. 561,768.

Patented June 9, 1896.



WITNESSES

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Wm. Burridge,

INVENTOR

William N. Curtis,
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Attorney

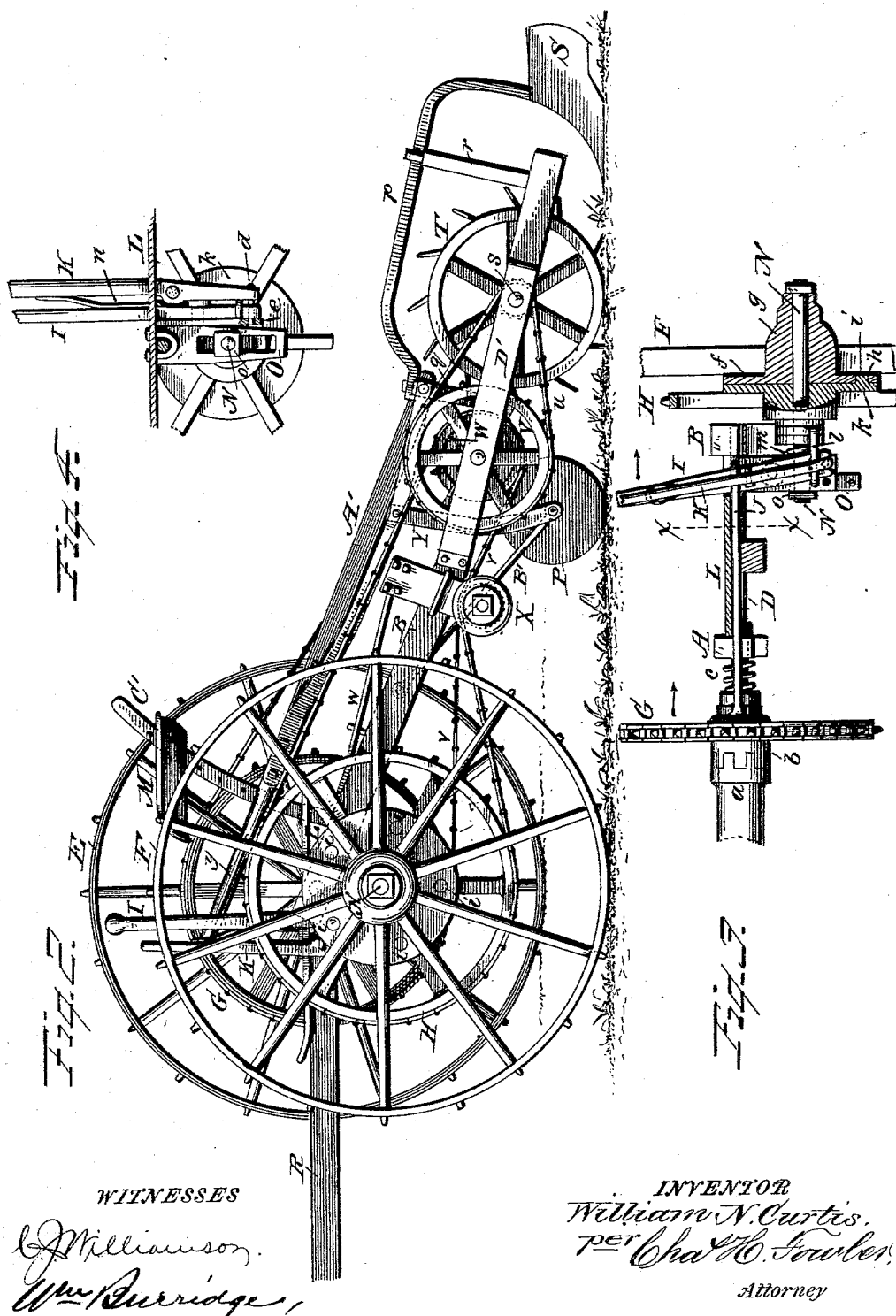
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UNITED STATES PATENT OFFICE.

WILLIAM NAPOLIAN CURTIS, OF ST. MARY'S, WEST VIRGINIA.

WHEELED PLOW.

SPECIFICATION forming part of Letters Patent No. 561,768, dated June 9, 1896.

Application filed April 8, 1896. Serial No. 586,721. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NAPOLIAN CURTIS, a citizen of the United States, residing at St. Mary's, in the county of Pleasants and State of West Virginia, have invented certain new and useful Improvements in Wheeled Plows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has for its object to provide a wheeled plow that will be perfect in its action in cutting the soil, possess the necessary strength and durability, as well as simple in construction and easy of operation; and the invention consists in a machine of the character named, of the form and construction substantially as shown in the drawings, and hereinafter described and claimed.

Figure 1 of the drawings is a top plan view of a wheeled plow embodying my invention; Fig. 2, a side elevation thereof; Fig. 3, a detail end view, partly in section, of the front sprocket-wheels, the front axle, hubs, and clutch-box mechanism for engaging and disengaging the sprocket-wheels with the front wheels of the machine; Fig. 4, a side view thereof, taken on line *xx* of Fig. 3.

In the accompanying drawings, A B represent two parallel beams, which are connected by a transverse brace C, said beams and brace forming together the frame of the machine, or in place thereof any suitable frame may be provided that would be found most desirable in supporting the several operating parts of the machine.

The front axle D has its bearings in the ends of the beams A B of the frame, said axle being stationary and having loosely mounted upon its ends the drive-wheels E F of the usual construction. Sprocket-wheels G H are loosely mounted upon the axle D and adapted to engage or disengage themselves with the drive-wheels E F, as circumstances require.

The sprocket-wheel G is engaged or disengaged with the drive-wheel E by means of the usual clutch-box, consisting of the two clutch-sections *a b* on the hubs of the drive-wheel and sprocket-wheel, respectively, as shown more clearly in Fig. 3 of the drawings. The two clutch-sections *a b* are retained in en-

gagement by means of a suitable spring *c*, which presses against the sprocket-wheel G to force the clutch-section *b* in engagement with the clutch-section *a*, thus enabling the drive-wheel and sprocket-wheel to rotate together when the machine is in operation.

When it is desired to disengage the clutch-section *b* from the clutch-section *a*, so that the sprocket-wheel G will not be affected by the rotation of the drive-wheel E, this disengagement is effected by means of the hand-lever I, which connects with the hub of the sprocket-wheel by means of a rod J, having its respective ends connected to the lever and hub of the sprocket-wheel. When the lever I is moved in the direction of the arrow indicated in Fig. 3 of the drawings, the sprocket-wheel G will also be moved in the same direction and the clutch-section *b* moved out of engagement with the clutch-section *a*, thus allowing the drive-wheel E to rotate independent of the sprocket-wheel. The sprocket-wheel is held in this inoperative position by means of a locking-lever K, suitably hinged or pivotally connected to the lever I, and at its lower end provided with a locking-pin *d*, which pin extends through a hole in the end of the hand-lever and its end engaging with a hole in a depending arm *e* upon the base-plate L, as shown in Fig. 4 of the drawings, said plate supporting the driver's seat M.

Having now described the sprocket-wheel G and mechanism for operating it, I will now describe the sprocket-wheel H upon the opposite end of the axle and the means employed for engaging and disengaging it with the drive-wheel F.

The drive-wheel F is unlike the drive-wheel E in that it has a disk *f* upon its hub *g*, having perforations or holes *h* to receive pins *i* upon a similar disk *k* upon the hub of the sprocket-wheel H. The sprocket-wheel H is adapted to slide longitudinally upon the axle in the same manner as the sprocket-wheel G and is operated by the same hand-lever I, said lever being connected with the sprocket-wheel by means of a link *l* at the lower end of the lever. When the pins *i* are in engagement with the holes or perforations *h* of the disk *f*, the sprocket and the drive-wheel will rotate together; but when the pins are out of engagement with the holes or perforations

the drive-wheel will rotate independent of the sprocket-wheel and the latter remain stationary.

The two sprocket-wheels G H are engaged or disengaged with their respective drive-wheels simultaneously, so that the parts will be in gear or out of gear, as found desirable.

A suitable spring *m* retains the disk *k* in engagement with the disk *f*, and it acts in the same manner and for the same purpose as the spring *c* upon the opposite end of the axle.

In order to retain the pin *d* upon the lower end of the locking-lever K in engagement with the hole in the arm *e*, as shown in Fig. 4 of the drawings, a suitable spring *n* is interposed between the two levers I K, or any other suitable means may be substituted for the spring, as found best adapted to the purpose.

The axle D, as previously stated, has its bearings in the ends of the beams A B of the frame of the machine; but this axle only supports one of the drive-wheels and sprocket-wheels, the drive-wheel F and the sprocket-wheel H being mounted on an independent axle N, which axle is on a lower plane than the axle D to bring the drive-wheel correspondingly low for sidehill plowing or for any other purpose desired.

The axle D is connected to the axle N by means of a slotted coupling-bar O, which bar is rigidly connected to the axle D in any manner found preferable. The axle N is screw-threaded upon its inner end, which end extends through the slot in the coupling-bar O, and said axle is held to the bar by means of a nut *o*, engaging the screw-threaded end of the axle, or by any other means found best adapted to the purpose that will admit the axle being adjusted vertically and held in its adjusted position to regulate the height of the drive-wheel E with relation to the drive-wheel F.

A tongue or pole R is suitably connected to the frame of the machine, to which the team may be hitched, and to the rear of the frame of the machine is a suitable plow S, which is provided with a curved arm *p*, connected in any preferred manner to the transverse bars *q r*, connected to the frame of the machine. Between these bars is located a toothed roller T, the shaft *s* of which has its bearings in the beams A B of the frame of the machine, and upon the ends of this shaft are sprocket-wheels U. These sprocket-wheels connect with larger sprocket-wheels V upon the outer end of short shafts *t* through the medium of sprocket-chains *u*. Upon the same shafts that support the sprocket-wheels V are smaller sprocket-wheels W, which sprocket-wheels connect with the sprocket-wheels G H by means of sprocket-chains *v*. This arrangement of sprocket wheels and chains imparts a rotary motion to the toothed roller T; but I wish it understood that I do not confine my invention to this sprocket-

gearing, as any suitable gearing may be employed that will effect the purpose desired, or any well-known means substituted for that shown that will impart to the toothed roller the desired rotary motion through the medium of the drive-wheels of the machine.

Guide-rollers X are provided for the sprocket-chains *v*, over which said chains pass, one of said rollers being connected with a spring-arm *w*, so that the sprocket-chain will be kept in working position to engage properly with the sprocket-wheels. One or both of the guide-rollers X may be connected to spring-arms *w*, as found desirable, the spring-arm enabling the rollers to act automatically in pressing up against the sprocket-chains.

The usual crushing-cylinder P is suitably journaled in a frame Y, which frame is provided with a hand-lever A', said hand-lever and frame being pivoted to the frame of the machine in any suitable and well-known manner. The frame Y may be of any suitable form, and, in addition to the frame which supports the crushing-cylinder, brace-rods B' are provided, which are pivoted at their respective ends to the beams A B of the frame and to the ends of the cylinder. By means of the hand-lever and the supporting-frame the crushing-cylinder may be elevated from contact with the ground and held suspended by means of the spring-catch *y* on the lever engaging with one of a series of perforations in the segment C', projecting up from the frame of the machine.

A very practical and effective wheeled plow or agricultural machine is provided that will successfully operate upon the soil in whatever condition it may be found.

Suitable brackets D' may be provided, which are secured to the frame of the machine for supporting the ends of the shafts *s t* or other means employed, as found desirable. Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wheeled plow, consisting of a suitable frame, a plow and toothed roller at its rear end, a crushing-cylinder with means for raising and lowering it, a long and a short axle, the latter having its bearing in the side beams of the frame, a slotted coupling-bar rigidly connected to the long axle and extending downward therefrom, and the short axle adjustably connected to the slotted coupling-bar, drive-wheels supported upon the outer ends of the two axles, and suitable gearing for connecting and disconnecting the toothed roller with the drive-wheels, substantially as and for the purpose set forth.

2. A wheeled plow, consisting of a suitable frame, a plow and toothed roller at the rear end thereof, a crushing-cylinder supported in an adjustable frame, brace-rods pivotally connected to the frame of the machine and to the ends of the crushing-cylinder, means for holding the cylinder suspended, a long and a

short axle, a slotted coupling-bar rigidly connected to the long axle and the short axle adjustably connected thereto, drive-wheels upon the outer ends of the axles, sprocket-
5 wheels upon the axles and means for engaging and disengaging the sprocket-wheels with the drive-wheels, a suitable sprocket-gearing connecting the sprocket-wheels with the toothed roller, and guide-rollers over which
10 the sprocket-chains pass, said rollers being

connected to spring-arms whereby they will act automatically, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the pres- 15
ence of two witnesses.

WILLIAM NAPOLIAN CURTIS.

Witnesses:

A. S. GRIMM,

T. W. HANES.