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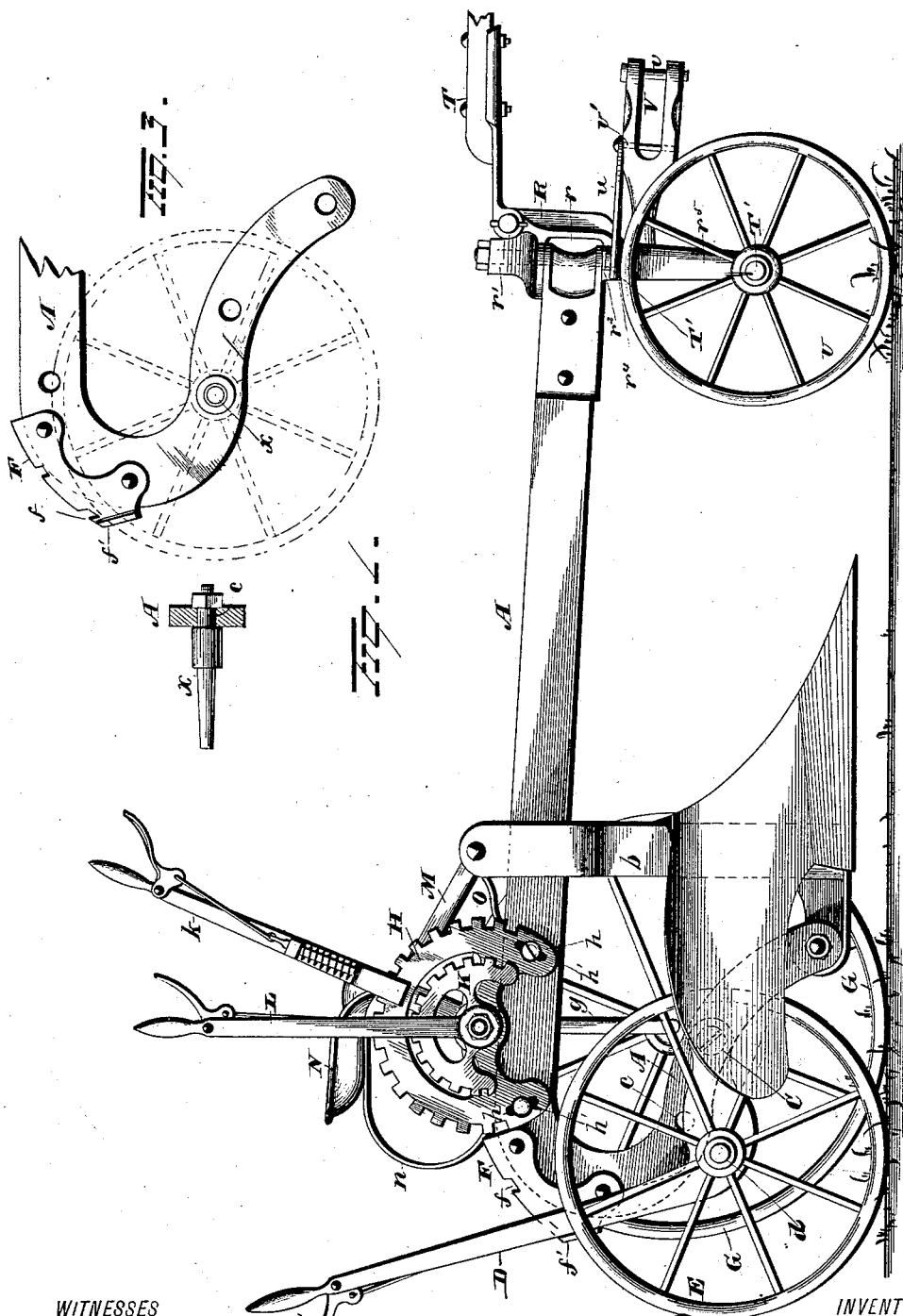
2 Sheets—Sheet 1

J. W. BARTLETT.

WHEEL PLOW.

No. 304,691.

Patented Sept. 9, 1884.



WITNESSES  
*E. D. Nottingham,*  
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INVENTOR  
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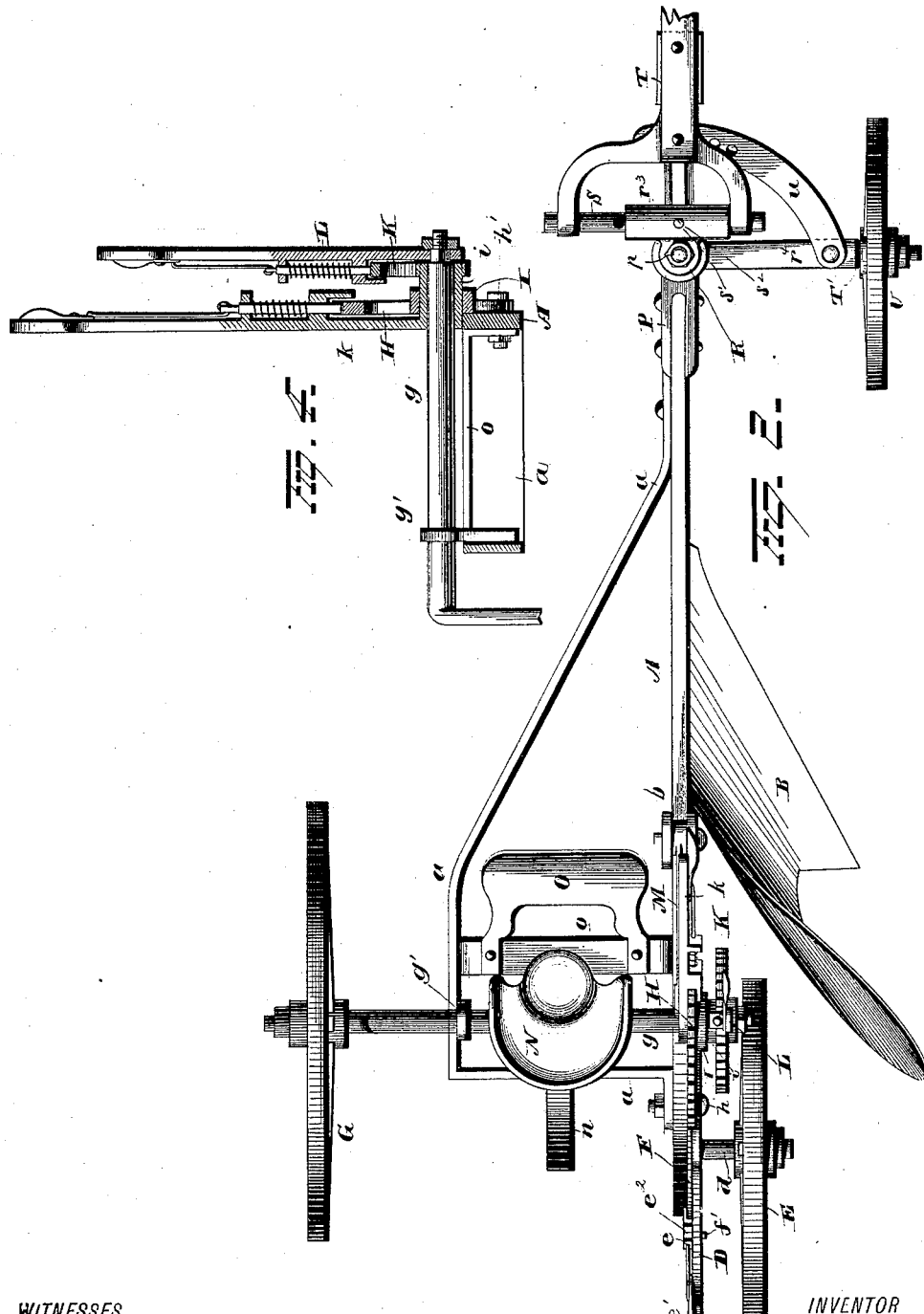
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*By [Signature] Attorney*

# UNITED STATES PATENT OFFICE.

JOHN W. BARTLETT, OF MOLINE, ILLINOIS.

## WHEEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 304,691, dated September 9, 1884.

Application filed April 11, 1884. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN W. BARTLETT, of Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in 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 relates to an improvement in wheel-plows, the object of the same being to provide an improved beam which shall form a support for the heel of the plow and either an adjustable or fixed furrow-wheel; a further object being to provide improved devices for raising and lowering the plow-frame and plow-point; a further object being to provide improved devices for attaching the forward supporting-wheel to the plow-beam, for holding the said wheel in horizontal adjustment, and for attaching the draft; a further object being to provide a plow of light draft, few parts, durable, and of moderate cost.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation. Fig. 2 is a plan view. Fig. 3 is a detached view of the rear beam, showing the removable stud in position for receiving the fixed furrow-wheel; and Fig. 4 is a transverse sectional view through the axle of the land-wheel.

A represents a metal plow-beam, curved downward and forward at the rear, as shown, to the lower end of which the heel of the plow B is pivoted. The plow proper is of any approved construction. The standard *b* is bifurcated at the upper end, the branches embracing the sides of the beam A, and allowing sufficient vertical play to give the point the different degrees of elevation or depression desired.

The plow-frame consists of the beam A, already mentioned, and an auxiliary metal bar, *a*, secured snugly to the beam A near the forward end, extending from thence gradually outwardly and rearwardly to a point transversely opposite the center of the plow, or thereabout, thence parallel with beam A to a

point transversely opposite the rear end of the plow, or thereabout, thence bending sharply at right angles to the beam A, to which it is secured by means of a lip formed on its end, which lies snugly against the beam A. The beam A is provided near its rear end with a laterally-extending stud, C, on which is pivoted the lower end of a bent lever, D. The lever D is provided with a laterally-extending stud, *d*, which forms an axle for the furrow-wheel E. The handle portion of the lever D extends upward within easy reach of the driver, and is provided with a spring-actuated dog, *e*, and dog-operating handle-lever *e'*—the former secured in perforated lugs *e''*, and the latter pivoted to the lever-handle in the usual manner. A plate, F, provided with notches *f* and a lip, *f'*, is rigidly secured to the upper curved portion of the beam A, and projects a short distance above the beam, forming a guide for the lever D, the lower perforated lug, *e''*, being recessed and adapted to embrace the edge of the said plate, while the dog *e* is adapted to engage the notches *f* and lock the wheel E in the required vertical adjustment. The lip *f'* serves as a stop to the rearward motion of the lever D. The beam A is further provided with a perforation, *c*, adapted to receive an axle bolt or stud, *x*, which is provided with a threaded end and nut for locking the same securely in the perforation *c*. The bolt *x*, when in position, serves as a fixed axle for the wheel E, when found desirable to exchange the adjustable wheel for a fixed wheel. The purpose of the wheel E is to bear the weight of the plow and its load when the same is in use, as well as to support the weight of the driver and a portion of the frame, thus relieving the friction on the foot of the plow and the consequent heavy draft. The wheel E also serves to form a convenient support in moving the plow from place to place, and the lower portion of the lever D is constructed to conform nearly or quite to the curve of the beam, which serves to hold it securely against lateral play.

A land-wheel, G, is mounted on a crank-axle, *g*. The latter is journaled in suitable bearings, *g'*, secured to the portion *a* of the frame, and in the sector-bar H, as will appear hereinafter.

H is a toothed sector-bar, preferably about

two-thirds of a circumference in extent, provided with oblong curved slots *h* at its ends, through which the set-screws *h'* pass and lock the bar *H* to the beam *A* in a limited rotary adjustment. A hub, *I*, at the center of the bar *H*, is provided with a perforation sufficiently large to admit a sleeve, *i*, loosely secured on the axle *g*, the said sleeve *i* being allowed a rotary motion in the hub *I*, and forming a bearing for the axle *g* in said hub. The sleeve *i* is provided on its furrow end with a smaller toothed sector-bar, *K*, and on its land end with operating-lever *k*, both of which are rigidly secured thereto. The axle *g* extends through the sleeve *i*, and projects a sufficient distance beyond the sleeve on the furrow end to form a bearing for the operating-lever *L*, which is rigidly secured thereon. The levers *k* and *L* are each provided with a spring-actuated dog, operated by an angle-lever within the grasp of the hand on the handle of the operating-levers *k* and *L*, which dogs are adapted to engage the teeth on the sector-bars *H* and *K*, respectively.

A link, *M*, bifurcated at one end, is pivoted through the branches to lever *k*, which the branches partially embrace, and the other end is pivoted between the branches of the plow-standard above the beam, thus serving to communicate the motions of the lever *k* to the plow-point and locking the standard to the beam.

From the construction as described it will be seen that the motions of the lever *k* forward and backward while the lever *L* is locked to the sector-bar *K* will serve to elevate the land-wheel by throwing it backward, and depress the plow-point by throwing the standard forward, and vice versa, respectively; and, further, that the depth of cut may be regulated by the combined effect of the teeth on the sector-bar *H* and the rotary adjustment of said bar to the highest degree of accuracy. By releasing the lever *L* from the bar *K* the action of the lever *k* will effect the plow-point alone, and by moving the lever *L* while the lever *k* is locked to the bar *K* the land-wheel *G* will be raised or lowered as the lever is thrown backward or forward, respectively.

A driver's seat, *N*, is secured to the upper end of a curved band-spring, *n*, the lower end of the spring being secured to the rear portion of the bar *a*.

A foot-rest, *O*, is secured in a convenient position to a cross-bar, *o*, the latter being secured to the parts *a* at one end and the beam *A* at the other, and serving to strengthen the frame as well as to support the foot-rest. The forward end of the plow-beam is provided with a strong clip, *P*, the branches of which embrace the end of the beam and are securely fastened thereto, the forward end of the clip being provided with a vertical perforation adapted to receive a king-bolt, *p*.

A peculiar-shaped casting adapted to serve the purposes of a fifth-wheel axle-arm and tongue-bearing is constructed as follows: A solid piece, *R*, is provided with a recess, *r*,

adapted to receive the perforated end of the clip *P*. The portion of the piece *R* above the recess is provided with a vertical perforation, *r'*, and the portion below the recess with a perforation, *r''*, which are adapted to register with the perforation in the end of the clip *P* and receive the king-bolt *p*. The upper front portion of the piece *R* is further provided with a transverse sleeve, *r'''*, formed integral therewith, in which sleeve a cylindrical bar, *S*, is secured. To the end of the bar *S* the tongue *T* is secured. The bar *S* is provided with perforations *s*, adapted to register with a perforation, *s'*, in the sleeve *r'''*, and receive a pin, *s''*, by means of which the bar and hence the tongue is locked in lateral adjustment. The object of this lateral adjustment is to keep the pole in the proper position, whether two or three horses are attached. The lower end of the piece *R* is provided with a laterally-extending arm, *r''''*, formed integral therewith, said arm terminating in a downwardly-extending sleeve, *r'''''*. The upward-extending portion of the bent axle *T'* is rigidly secured in the sleeve *r'''''*, the outwardly-extending portion of said axle carrying the furrow-wheel *U*. The bent axle *T'* projects a short distance above the sleeve *r'''''*, and forms a bearing for one end of the perforated curved bar *u*, which is held against displacement by a pin or other suitable device.

A clevis, *V*, provided at its rear end with a vertical perforation to receive the king-bolt *p*, terminates forwardly in two branches, through the end of which a key-bolt, *v*, passes. The clevis *V* is further provided with a perforation, *v'*, in its upper surface, adapted to register with the perforations in the curved bar *u*, and to receive a bolt, by which the wheel *U* is held in the required adjustment with reference to the line of draft.

The advantages of the front attachments described consist in their compactness, latitude, and simplicity of adjustment, firmness when locked in their respective positions, and durability, due to the limited number of frictional contacts. These advantages, combined with those which appear in the construction of the other parts, serve to make my improved plow as a whole one of the most, if not the most, efficient, lightest draft, and durable plows ever produced.

I do not claim, broadly, in this application a plow pivoted at its heel to depending projections from the beam, and devices for elevating and lowering the point of the plow, nor, broadly, to an adjustable furrow-wheel located behind the plow, but reserve the right to claim the same in my pending application No. 118,819.

It is evident that many slight changes may be made in the form and construction of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

Having fully described my invention, what

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

1. In a wheel-plow, the combination, with a plow-beam extending downward and forward at its rear end, and a furrow-wheel supported by said downward and forward extending portion of the beam, of a plow pivoted to the extreme lower end of the beam in front of the furrow-wheel.
2. In a wheel-plow, the combination, with the plow-beam curved at its rear end, as described, said curved portion of the beam being provided with an opening for the attachment of a removable furrow-wheel, of a plow pivoted at its heel to the extreme lower end of the beam, and provided with a standard, the upper end of which embraces the straight portion of the beam, substantially as set forth.
3. In a wheel-plow, the combination, with the beam curved at its rear end, as described, the bent lever D, pivoted to said curved portion of the beam, a spindle secured to said lever, a furrow-wheel journaled on said spindle, and the notched plate F, of a plow pivoted at its heel to the extreme lower end of the plow-beam, and provided with a standard, the upper end of which loosely embraces the straight portion of the beam, substantially as set forth.
4. In a wheel-plow, the combination, with the beam curved at the rear end, as described, the bent lever, and the furrow-wheel journaled to said bent lever, of the plow pivoted at its heel to the extreme lower end of the beam, and the mechanism, substantially as described, connected with the upper end of the plow-standard for elevating and depressing the plow-point, substantially as set forth.
5. In a wheel-plow, the combination, with a pivoted plow, a sector secured to the plow-beam, said sector being provided with a hub, of a sleeve journaled in the sector-hub, a lever rigidly secured to said sleeve, a link connecting the lever and plow-standard, and a spring-actuated dog for locking the lever to the sector, substantially as set forth.
6. In a wheel-plow, the combination, with a pivoted plow, a sector secured to the beam, said sector being provided with a hub, and a sleeve journaled in the sector-hub, said sleeve having a lever and a sector rigidly secured thereto, of a crank-axle having the land-

wheel mounted on one end thereof, and its opposite end journaled in said sleeve, a lever secured to the axle and adapted to be locked to the sector on the sleeve, and a link connecting the plow-standard and lever secured to said sleeve, substantially as set forth.

7. In a wheel-plow, the combination, with a plow-beam provided with a vertically-perforated forward end, of a combined fifth-wheel axle-arm, and sleeve for attaching the pole, substantially as set forth.

8. In a wheel-plow, the combination, with a plow-beam provided with a re-enforced perforated forward end, of a combined fifth-wheel sleeved axle-arm and pole-bearing, formed integral, substantially as set forth.

9. In a wheel-plow, the combination, with a plow-beam provided with a vertical perforation in its forward end, of a fifth-wheel adapted to embrace the upper and lower edges of the beam, a furrow-wheel mounted on an axle secured in a vertical sleeve, said sleeve being formed integral with the fifth-wheel, and devices for locking the furrow-wheel in any required adjustment with respect to the line of draft, substantially as set forth.

10. In a wheel-plow, the combination, with a plow-beam and a fifth-wheel adapted to embrace the upper and lower edges of the beam, the fifth-wheel being provided with a transverse sleeve formed integral therewith, of a rod or bar adjustably secured in the transverse sleeve, whereby the pole secured to said rod is laterally adjusted, substantially as set forth.

11. In a wheel-plow, the combination, with a fifth-wheel provided with a sleeved axle-arm, and a plow-beam secured in a recessed portion of the fifth-wheel, of a clevis secured to the king-bolt, and a perforated curved bar, one end of which is secured to the sleeved axle-arm, and the other adjustably secured to the clevis, substantially as set forth.

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

JOHN W. BARTLETT.

Witnesses:

O. F. ANDERSON,  
SOLOMON HIRSCH.