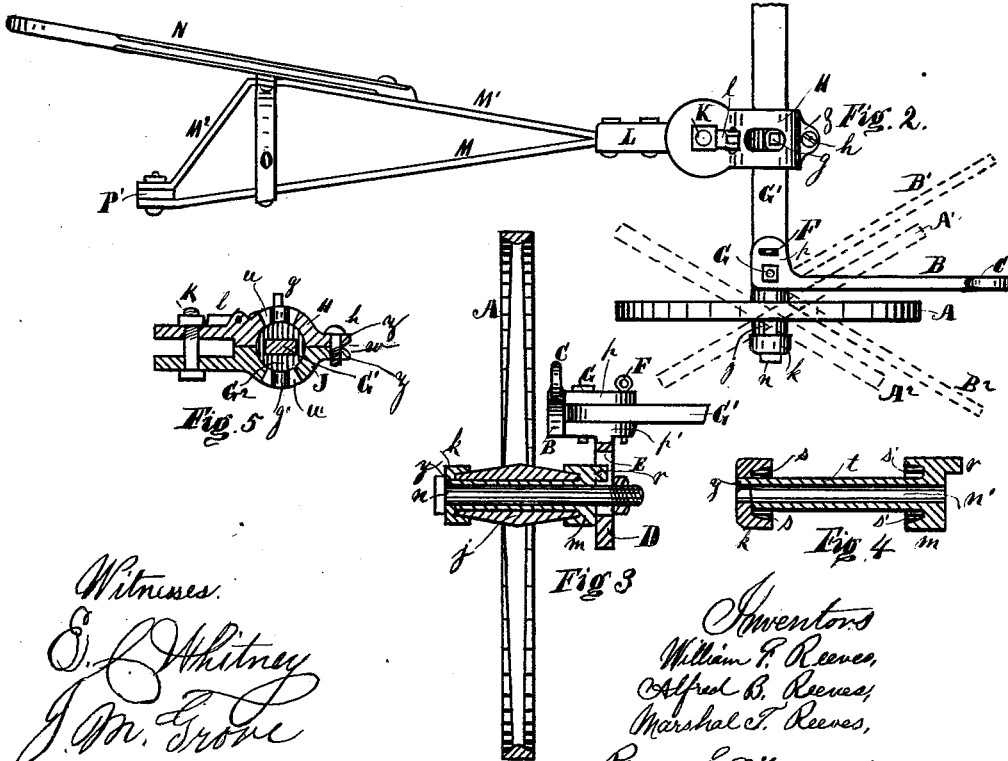
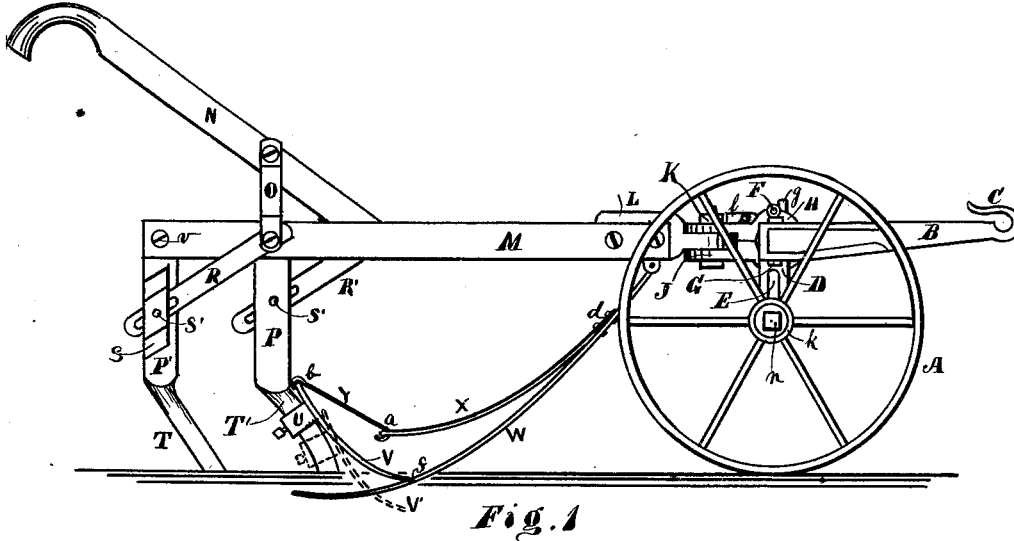


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TONGUELESS PLOWS.

No. 187,983.

Patented March 6, 1877.



Witnesses:
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UNITED STATES PATENT OFFICE

WILLIAM F. REEVES, ALFRED B. REEVES, AND MARSHAL T. REEVES, OF
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IMPROVEMENT IN TONGUELESS PLOWS.

Specification forming part of Letters Patent No. 187,983, dated March 6, 1877; application filed
October 10, 1876.

To all whom it may concern:

Be it known that we, WILLIAM F. REEVES, ALFRED B. REEVES, and MARSHAL T. REEVES, of Columbus, county of Bartholomew, State of Indiana, have invented certain new and useful Improvements in Tongueless Plows, of which the following is a description, reference being had to the accompanying drawings.

Our invention consists in the construction, arrangement, and combination of parts, as will be hereafter fully described, and set forth in the annexed claims.

Figure 1 represents a side elevation of our improved tongueless plow. Fig. 2 is a plan view of one-half of the same. Fig. 3 is a sectional view of the wheel, axle, and its connections with the arched axle. Fig. 4 is a sectional view of the axle-spindle and caps. Fig. 5 is a sectional view of the boxes that support the arch.

A represents the wheel of the plow, which has its hub *j* bored out and turned upon the outside at each end. The spindle *t*, Figs. 3 and 4, is formed with a cap, *m*, at one end, which may be provided with a lug, *r*, as shown, to operate in a slot, *E*, formed in the downward-projecting arm *D* of the arm *B*, which will be hereafter described. Said arm, however, may be solid or slotted. The cap *m* incases one end of the hub *j* in the annular recesses *s' s'*, and the lower part may be cut away to allow any dirt that may accumulate to drop out, as shown in the drawings. The main part of the spindle *t* is turned to fit in the hole formed in the hub *j*, and is formed hollow to receive the bolt *n*.

The outer end of the spindle *t* may be provided with a projecting lug, *y*, which extends beyond the hub *j*, and enters a recess formed in the cap *k*, as shown; or there may be other modes of securing the cap *k* to the spindle *t*, so as to prevent it from turning, without departing from the spirit of our invention, thus preventing the cap *k* from turning as the wheel *A* revolves. The cap *k* also has an annular recess that incases the end of the hub *j*, and it may be cut away on its lower side, to allow dirt to pass out; and when secured on the hub *j* with the spindle *t*, by means of the bolt

n, the wheel *A* is free to revolve, and the open sides of the caps remain down.

The spindle *t* is secured to the projecting arm *D* of the hooked arm *B C* by the bolt *n*, as shown in Fig. 3.

The lug *r* on the cap *m* of the spindle *t* is designed to operate in the slot *E* or hole drilled in the arm *D*, and prevent the spindle from turning around. The hooked arm *B C* is formed with two side-projecting wings or jaws, *p p'*, in the ordinary manner; but the downward-projecting arm *D* is located at or near the inner end of the lower jaw *p'*, as shown in Fig. 3. The design of this position of the arm *D* is to allow plenty of room below for a long hub to the wheel *A*; also throw the draft on the hook-arm *B C* as close to the wheel as possible. The feature gives great advantage in draft and length of bearing of the hub of the wheel, and durability to the hooked arm *B C*, by having the weight and strain evenly proportioned over the joint, and also, for the same reason, gives more durability to the hub.

The old plan of attaching the spindle to an arm, *D*, projecting down from the outer end of the jaws *p*, throws a great strain on the joint of the arch-bar, and also on the spindle, causing them to soon give out; also, by the old position of attaching the arm *D* to the hooked arm *B C*, if the wheel meets with obstruction it is much more liable to deviate from a straightforward line than by our arrangement thereof.

The jaws *p p'* are pivoted to the arch-bar *G¹* in such a manner that any lateral movement of the hook-arm *B C* will carry with it the wheel *A*, as indicated by the dotted lines at *B¹ A¹ B² A²*. The jaws *p p'* extend far enough beyond the bolt *G* to receive a pin or catch, *F*, which passes through the arch-bar *G¹*, as shown in Figs. 2 and 3. By this arrangement, the hook-arm *B C* and wheel *A* are securely held at right angles to the arch-bar *G¹*, and if removed will allow an angular position to be given to the wheel *A* and hooked arm *B C*, as before described, thus forming a rigid axle or an adjustable axle, as may be required. The precise form shown for securing the jaws *p p'* to the arch-bar *G¹* in a rigid manner may be

varied, so that the desired effect is produced without departing from our invention.

The boxes H J are designated as supporting-boxes to the arch-bar G¹, to hold it in its position, and at the same to form an adjustable or pivoted connection with the plow-beams M.

The upper and lower halves of the box H and J are formed to encircle the sleeve G², and work thereon, said sleeves having lugs *g g'* above and below, which operate in elongated slots *u u'* formed in the half-boxes J H, as shown in Fig. 5. The sleeve G² is designed to fit onto the arch-bar G¹, as shown, and by being provided with the lugs *g g'*, which operate in slots *u u'*, the forward and backward oscillation of the arch-bar G¹ is regulated. The box H is provided with a nut-lock, *l*, so arranged and pivoted to the top of the box H as to engage with the nut or bolt K, and prevent it from working off. The two half-boxes J H are united to the plow-beams by the pivot-plate L and bolt K, which also secures the two halves J H together, and forms a pivoted bearing for the plow-beams M. The front edges of the half-boxes J H have lugs *z z* united by means of the screw-bolt *h*. The inner front edges of these lugs *z z* are beveled off, as shown at *w* in Fig. 5, the design of which is to prevent the lugs *z* from being broken off in case the rear bolt K should be detached, for if the rear bolt K should become lost then a forward motion of the wheels A, and resistance of the plows, would cause the two halves of the boxes J H to spread open, which would (if the front lugs *z* were square at their union) cause them to break off, while by giving them the bevel shown in Fig. 5 they will allow the bolt *h* to bend or break, but will not break themselves, the advantage of which can be readily seen.

The plow-beam M M¹ M² is formed of flat bar-iron in the shape shown in Fig. 2. To the front end the pivot-plate L is securely fastened by bolts or rivets, as shown. The handle N is secured in the usual manner, and braced by the bar O. The shovel-arms P P' are pivoted to the frame M M¹ by the screws or bolts *v*. On the side of the shovel-arm are slide-loops S, in which operates the break lock-strap R, one end of which is pivoted to the frame M, and the other end slides in the loop S. This end has a slot or series of holes, in which is inserted the wooden pin S' to be operated in the usual manner.

The lower end of the shovel-arms P P' may be made straight, as shown at T, with the proper angle given to allow the shovel V, when attached, the proper pitch; but we find that the curved shank T', as shown on shovel-arm P, is far superior, as by it we can obtain any required pitch to the shovel V, as shown in Fig. 1, which is of great value to a shovel-plow.

The slide W of itself is old, and to this we make no broad claim; but only to the addition of the spring-board X, which is se-

cured, as shown, to the slide W, and made to hook over the top of the shovel V by hook Y, thus holding the shovel with its point *f* in a hole formed in the slide perfectly firm, not allowing the shovel to jump off the slide, as heretofore.

Our improvements, as hereinbefore set forth, are of great value to the machine to which they are adapted.

We do not broadly claim the hooked arm B C, slide W, and pivot-coupling L K, as they are old.

What we claim as new, and wish to secure by Letters Patent, is—

1. The spindle *t*, formed with a cap, *m*, said cap having an annular recess, *s'*, between its front edge and spindle to receive the end of the hub *j*, and having a projecting lug, *y*, at the front, to enter a corresponding recess formed in the front cap *k*, all constructed and arranged as shown and described, for the purposes set forth.

2. The spindle *t*, formed with a cap, *m*, which is provided with a lug, *r*, at its rear, and an annular space, *s'*, to incase the end of the wheel-hub in front, and said spindle being further provided with a projecting lug, *y*, at its front end, to engage with the front cap *k*, and adapted to be secured to the arm D of the hooked arm B C, in the manner and for the purposes set forth and described.

3. The combination of the pivot hook-arm B C, constructed as described, the arch-bar G¹, pivot-bolt G, and stop F, in the manner and for the purpose set forth and described.

4. The slide W, provided with spring-board X and hook Y, all arranged and adapted to be operated in the manner shown, for the purposes specified.

5. The hooked arm B C, having a downwardly-projecting arm, D, constructed as described, and placed at or near the inner end of the lower jaw *p'*, in the manner set forth and described, for the purposes specified.

6. The two half-boxes J H, constructed to clasp the sleeve G², and to come in contact with each other at their central joint, in combination with the sleeve G², said sleeve being provided with a hole having one or more flat faces that fit on corresponding shaped axle G¹, the sleeve G² being provided with lug *g* or lugs *g g'*, arranged to operate in elongated notches *u* or *u u'* of the boxes J H, in the manner and for the purposes set forth and described.

7. The lower end of the shovel-arm P, provided with the curved shank T', said curved part being bent or curved backward, (not forward,) and adapted to receive the shovel V, and to allow said shovel to be adjusted up or down for the purpose of regulating the pitch of the shovel, as set forth and described.

8. The hooked arm B C, having a downwardly-projecting arm, D, located at or near the inner end *p'*, combined with the bar G¹, and with a pin, F, adapted to openings in the arm and bar, as set forth.

9. The combination of the pivoted arm B'C, having a slotted arm, D, the hollow spindle *t*, having a lug, *r*, and the bolt *n*, adjustable with said spindle in the slot of the arm D, and confining the spindle to said arm, as set forth.

10. The two half-boxes J H, arranged to clamp the pivot-plate L in a loose manner at the rear, and to extend over and clamp in a loose manner the sleeve G², and to come together at their inner faces in front of the sleeve G², at the lugs *z z*, said lugs having their inner front edges beveled off to allow

the half-boxes J H to spread apart in case of the rear bolt *k* being lost, and prevent breaking the lugs *z z'*, in the manner set forth and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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MARSHAL T. REEVES.

Witnesses:

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