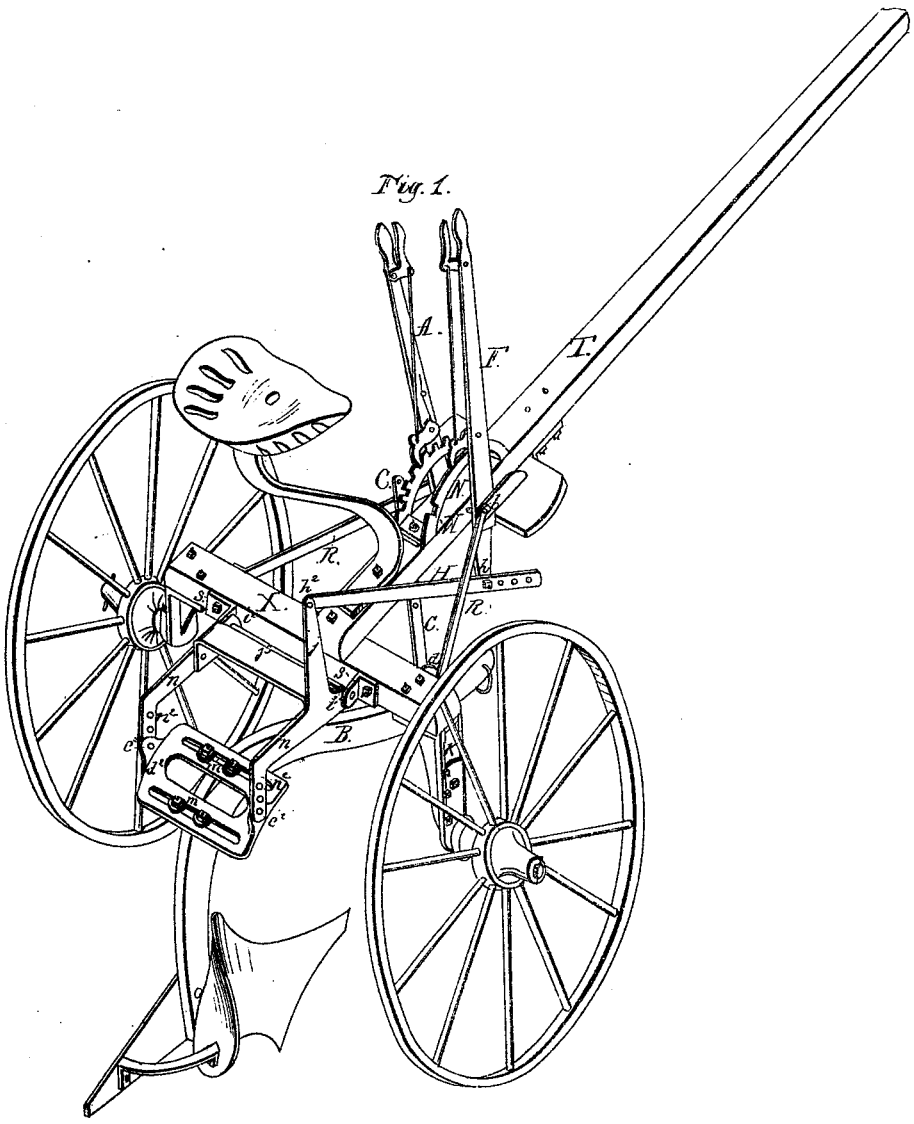
2 Sheets—Sheet 1.

S. F. WELCH.

WHEEL-PLOW.

No. 183,610. Patented Oct. 24, 1876.

Fig. 1.



Attest:

R. F. Shinn
Edwin Lewis.

Inventor:

S. Frank Welch

2 Sheets—Sheet 2.

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WHEEL-PLOW.

No. 183,610. Patented Oct. 24, 1876.

Fig. 2.

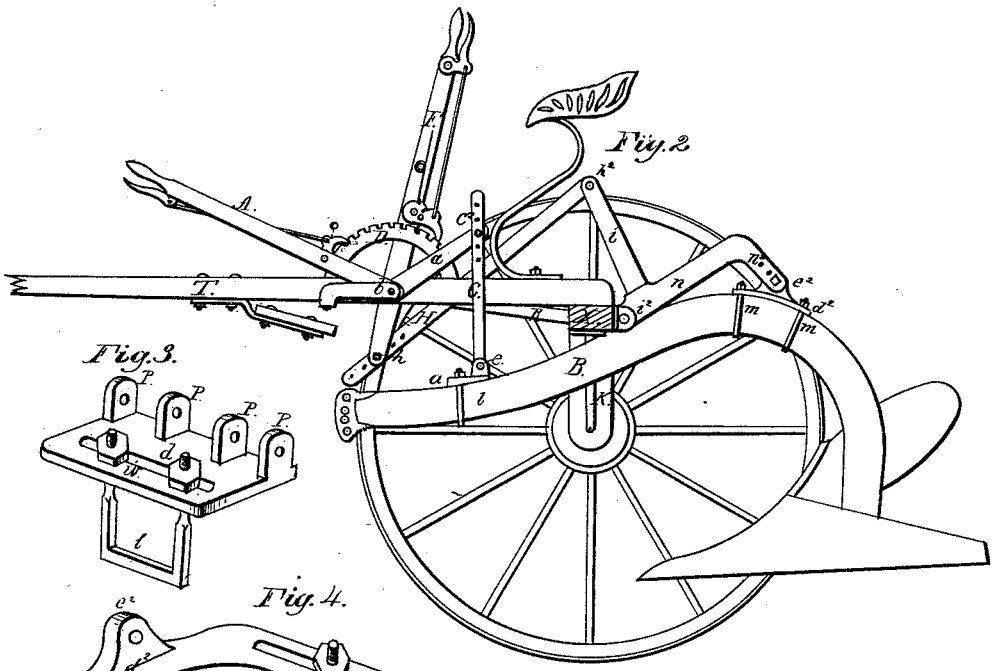


Fig. 3.

Fig. 4.

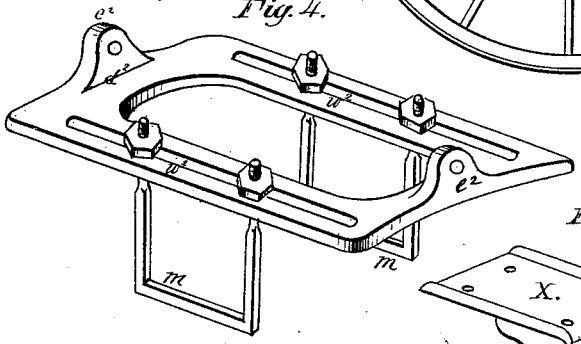
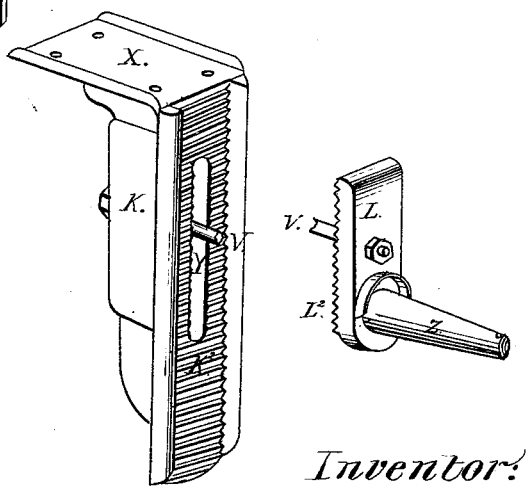


Fig. 5.



Attest:

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Edwin J. Lewis.

Inventor:

S. Frank Welch

UNITED STATES PATENT OFFICE.

S. FRANK WELCH, OF OTTAWA, ILLINOIS.

IMPROVEMENT IN WHEEL-PLOWS.

Specification forming part of Letters Patent No. **183,610**, dated October 24, 1876; application filed June 15, 1876.

To all whom it may concern:

Be it known that I, S. FRANK WELCH, of the city of Ottawa, State of Illinois, have invented a Sulky Attachment, of which the following is a specification:

The object of my invention is to construct a sulky or riding attachment, to be used in connection with plows or other implements, which shall be more simple and easily managed than any now in use.

In all the figures the same letters are used to represent the same parts of the machine.

T is the tongue, which is bolted to the axle X, as shown. The lever F is pivoted to the furrow side of the tongue at *b*, and to the adjustable connecting-bar H at *h;* and said bar H is pivoted to the lifting-frame *i* at h^2. The connecting-bar H is made adjustable by having several holes for the pivot-bolt at the forward end, to accommodate plows of different height of arch of beam. This lever F must be free to play back and forth, according to the variation in depth of plowing when the plow is in operation. When the plow is lifted from the ground, this lever holds it in position by means of the pawl o^2 engaging in the single notch N^2 in the segment N. The bent lever A *a* is pivoted at its angle *b* to the land side of the tongue at *b*. The same bolt pivots both of the levers F and A *a* to the opposite sides of the tongue. The short arm *a* of the lever A *a* is pivoted to the adjustable connecting-bar *c* at c^2, and the lower end of said bar *c* is pivoted to the front clip-plate *d*, Figs. 2 and 3, at *e*. R R are braces from the axle to the tongue. The lifting-frame consists of the upright arm *i*, the horizontal arms *n*, which are bent downward at the outer ends to form the arms n^2, all the said arms being rigidly fastened together by the cross-bar i^3. This lifting-frame is pivoted to the axle at i^2 i^2 by means of a rod through the lugs *s s*, and to the rear clip-plate d^2 by lugs at e^2 e^2 by means of bolts. The arms n^2 are pierced with several holes, to admit of vertical adjustment of the clip-plate d^2, for the purpose of leveling the plow. The front clip-plate *d* has on its rear side the lugs *p*, only two of which are shown. The bar *c* may be pivoted between any two of these lugs, according to the width of the plow or the set of the plow-beam. Near the front side of the clip-plate *d*, at right angles to the plow-beam, is the slot *w*, which receives the clamp *l*. The slot *w* is made long enough to receive and adjust a clamp adapted to a wooden-beam plow, and can be used with the smaller clamp, necessary when an iron beam is used. The said clip-plate *d* is placed on the top of the plow-beam a short distance from its forward end. The clamp *l* is placed around said beam, its ends passing up through the slot *w*, and by means of nuts the beam is clamped firmly to the plate, as shown. The rear clip-plate d^2 has a lug, e^2, at each end, and has two slots, w^2 w^2, as shown. The plate is set on the upper side of the beam near the rear of the latter, and the two are held firmly by the clamps *m m*. Fig. 1 shows the attachment of this plate to the plow-beam. The slots w^2 are made long enough to be adapted to plows of different sizes, the clamps *m m* being held in different portions of their respective slots, according to the width of the plow. The adjustable axle K is attached to the axle X at the furrow end of the latter, and its adjustability has reference to its adaptability to different depths of furrow, and to the use of the machine on level ground as a riding attachment to a harrow or other implement. The part K is made with the grooved surface K^2, and with the slot Y. The part L is also made with the grooved surface L^2, the grooves, like those of K, being across the face, and made to match into those of K. The journal Z, on which the furrow-wheel turns, is a part of L. The bolt *v* passes from the land or back side of K through the slot Y and through the part L. When the grooved surface L^2 is placed against the grooved surface K^2 of K, so that the ridges of one fit into the grooves of the other, and with the journal Z at any desired height, then, by tightening the bolt *v* by means of its nuts, the two parts K and L will be held rigidly together, thus entirely overcoming that looseness which is a defect in other adjustable axles.

In operation, the different parts of the machine being attached together as heretofore described, and as shown in Figs. 1 and 2, we will suppose the plow to be in the position shown in Fig. 2, and that it is desired to let down the plow into the ground, the team being attached to the plow-beam in the usual

manner. The driver, being on the seat, seizes the handle of lever F, and releases the pawl o^2 from the notch N^2 and drops the lever forward, thus permitting the heel of the plow to drop. He then seizes the lever A, and, releasing the pawl *o* from the notch in the segment D, in which it was engaged, draws the lever toward him, thus depressing the point of the plow and causing it to enter the ground. When it has entered to the required depth, he causes the pawl *o* to engage in the appropriate notch in the notched segment D, and thus the plow is held at the depth desired. When it is desired to take the plow from the ground, the driver throws the lever A forward until the point of the plow runs out of the ground, and then permits the pawl *o* to engage in the notch in D, which holds it at that point. He then draws the lever F backward until the heel of the plow is raised, when the pawl o^2 engages in N^2, and holds the plow in that position. The pawls *o* and o^2 are worked by hand-levers and springs, in the ordinary manner.

The attachment is adapted to two or more horses.

I claim as my invention—

1. The perforated leveling-arms n^2 n^2 of the lifting-frame *i* i^3 *n n* n^2 n^2, in combination with said frame, and with the lugs e^2 e^2 of the rear clip-plate d^2, and with said plate, substantially as described, and for the purpose specified.

2. The slotted clip-plates *d* and d^2, in combination with clamps *l* and *m m*, and with the plow-beam B, substantially as described, and for the purpose specified.

3. The special arrangement and combination of levers F and A, pawls *o* and o^2, notched segments N and D, connecting-bars *c* and H, the lifting-frame and clip-plates *d* and d^2, substantially as described, and for the purpose specified.

S. FRANK WELCH.

Witnesses:
R. F. SHINN,
EDWIN N. LEWIS.