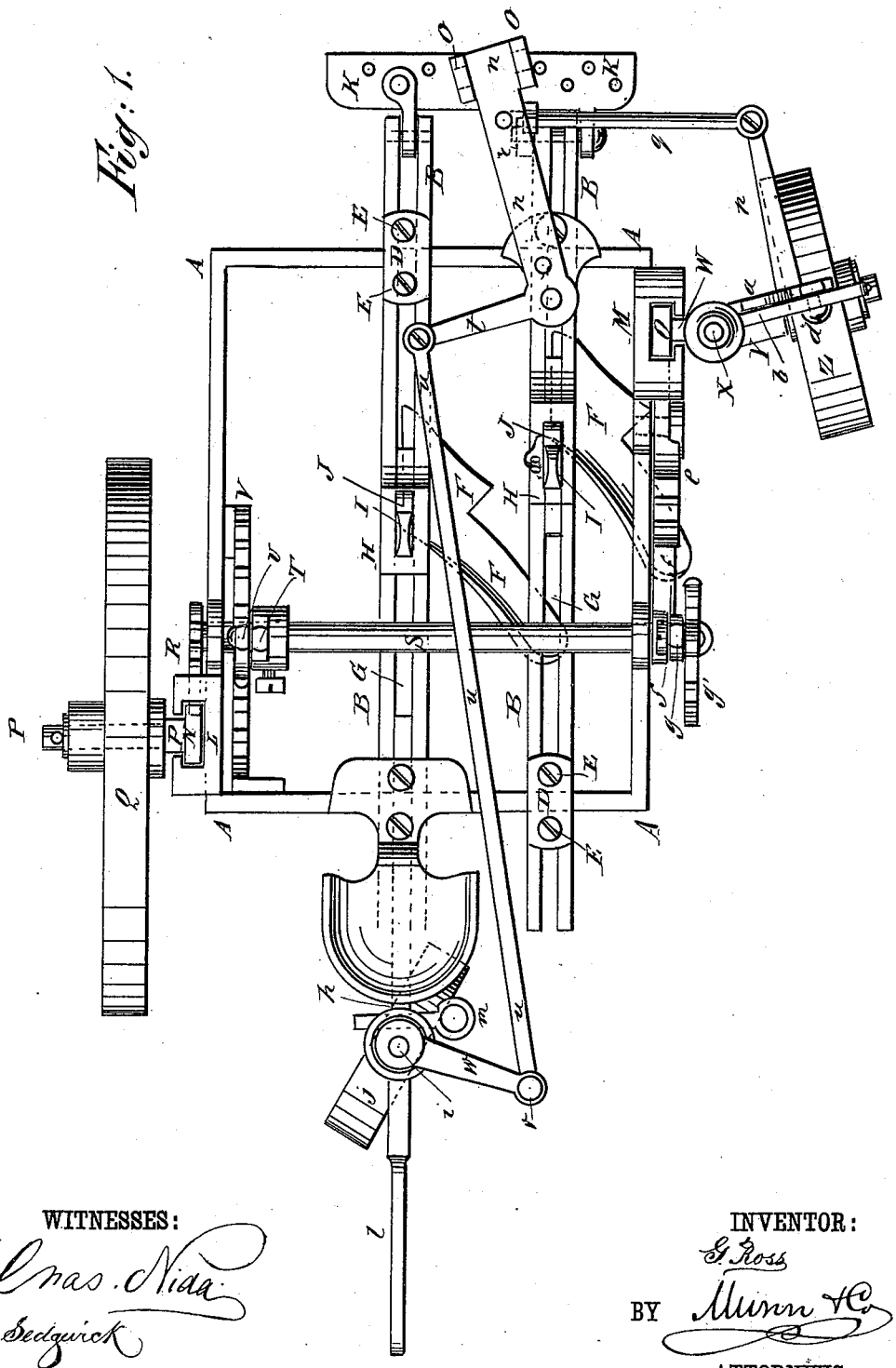
(No Model.) 2 Sheets—Sheet 1.

G. ROSS.

SULKY PLOW.

No. 342,637. Patented May 25, 1886.

Fig. 1.



WITNESSES:

Chas. Nida

C. Sedgwick

INVENTOR:

G. Ross

BY Munn & Co.

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

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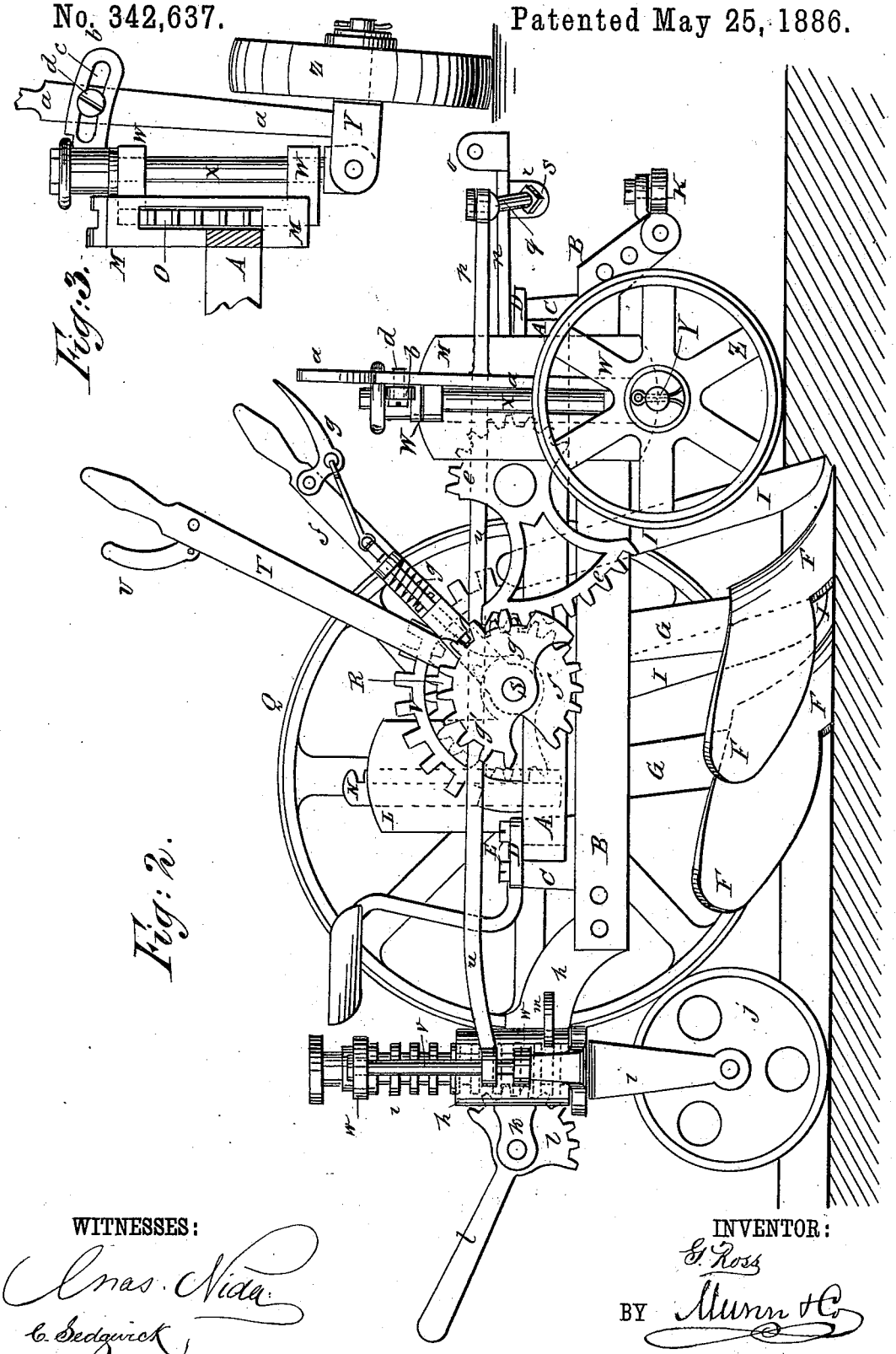

Fig: 3.

Fig: 2.

WITNESSES:

Thos. Nida.

C. Sedgwick

INVENTOR:

G. Ross

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE ROSS, OF CHATHAM, ONTARIO, CANADA.

SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 342,637, dated May 25, 1886.

Application filed September 29, 1885. Serial No. 178,548. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROSS, of Chatham, in the county of Kent, Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Sulky-Plows, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of one of my improved sulky-plows. Fig. 2 is a side elevation of the same. Fig. 3 is a rear elevation of the side furrow-wheel and its connections and showing a part of the frame.

The object of this invention is to provide sulky-plows constructed in such a manner that one or more plows can be used, and which can readily be adjusted and controlled.

The invention consists in the construction and combination of various parts of the sulky-plow, as will be hereinafter fully described and claimed.

A represents the frame of the machine, which is rectangular in form and may be of any desired length or breadth.

B are the plow-beams, each of which is formed of two parallel bars secured at their forward and rear parts to coupling-blocks C. The coupling-blocks C are slotted from their upper ends to receive the front and rear end bars of the frame A, and are secured to the said end bars by yokes D and bolts E, so that by loosening the said bolts the plow-beams B can be adjusted laterally, as may be desired. One, two, or more beams, B, can be used, according as it may be required to use one, two, or more plows.

F are the plows, the standards G of which pass up into the slots of the beams B, and are secured to the said beams by bolts, rivets, or other suitable means.

To the plow-beams B, in front of the plow-standards G, are secured blocks H, which have sockets formed through them to receive the shanks of the colters I. The shanks of the colters I are secured in the socket-blocks H by wedges J or other suitable means. The forward ends of the plow-beams B are inclined downward, as shown in Fig. 2, and have a number of perforations formed through them, so that the point of draft attachment can be arranged higher or lower, as may be required.

In case more than one plow-beam be used, the said forward ends of the said plow-beams are connected by a bar, K, secured at one end by lugs and a bolt and at the other end by an eye-bar and bolts, so that the bar attachments can be adjusted as the desired distance apart of the plow-beams may require. The draw-bar K has a number of holes formed through it, as shown in Fig. 1, so that the point of the draft attachment can be readily adjusted in line with the center of resistance to prevent side draft, and thus cause the machine to be drawn forward squarely.

Upon the rear part of the near side bar of the frame A and the forward part of the off side bar of the said frame are formed or to them are rigidly attached uprights L M, in the outer sides of which are formed vertical T-grooves, in which are placed slides N O.

To the slide N is rigidly attached or upon it is formed the axle P of the large wheel Q, which travels upon the unplowed land. Upon the forward edge of the slide N are formed gear-teeth, into which mesh the teeth of the segment R of a gear-wheel placed in a slot in the forward edge of the upright L and attached to the end of a shaft, S. The shaft S rocks in bearings attached to the side bars of the frame A, and to it is rigidly attached the end of the lever T, which is provided with a spring-lever pawl, U, to engage with the teeth formed upon the convex edge of the arched bar V, secured at its ends to the near side bar of the frame A, and thus hold the said lever securely in any position into which it may be adjusted.

To the upper and lower ends of the outer side of the forward slide, O, are attached or upon them are formed lugs W, which are perforated to receive the upright shaft X.

To the lower end of the shaft X is hinged the axle Y of the small side furrow-wheel, Z.

To the inner part of the axle Y is rigidly attached the lower end of the lever *a*, the upper end of which crosses the curved arm *b*, rigidly attached at its inner end to the upper

end of the upright shaft X, and serving as a collar to prevent the said shaft from dropping out of the lugs W.

In the arm *b* is formed a curved slot, *c*, to receive a screw or bolt, *d*, which passes through it and screws into the lever *a*, so as to hold the said lever securely in any position into which it may be adjusted. With this construction, by loosening the screw *d*, the lever *a* can be adjusted to give any desired side pitch to the wheel Z, so that the said wheel will hold the machine against side draft.

To a support formed upon or attached to the frame A is pivoted an unequal-armed lever, *e*, the ends of which are widened and provided with gear-teeth, forming segments of gear-wheels. The gear-teeth of the short forward arm of the gear-lever *e* pass through a slot in the rear edge of the upright M and mesh into gear-teeth formed in the rear edge of the slide O. The gear teeth of the long rear arm of the gear-lever *e* mesh into gear-teeth formed on the lower part of the lever *f*, which is pivoted to the shaft S, so that by operating the lever *f* the gear-lever *e* will be operated to raise or lower the slide O and with it the forward side wheel, Z.

The lever *f* is provided with a lever spring-pawl, *g*, which engages with the toothed edge of the catch-plate *g'*, rigidly attached to the off end of the shaft S. With this construction, by operating the lever T, both the side wheels, Q Z, will be raised or lowered to adjust the plows to work deeper or shallower in the ground or to raise them above the ground. With this construction also when the lever T is operated the near side of the machine will move faster than the off side, the effect of which is to incline the plow-points upward when the plows are raised, and thus cause the said plows to run out of the ground, and to incline the plow-points downward when the plows are lowered, and thus cause the said plows to enter the ground readily.

When the lever *a* is operated, the side furrow-wheel Z will be raised or lowered to cause the plows to cut a deeper or shallower furrow or to adjust the machine to travel from place to place.

Upon the rear end of one of the plow-beams B is formed or to it is attached a bracket, *h*, having a tubular socket at its rear end to receive the standard *i*, the rear end of which is forked, and to it is pivoted the small wheel *j*, that carries the rear end of the machine.

To the lugs *k*, formed upon the rear side of the socket-bracket *h*, is pivoted a lever, *l*, having a gear-segment formed upon or attached to its forward end, which enters a slot in the rear side of the socket-bracket *h*, and engages with annular corrugations upon the standard *i*, so that the said standard can be raised and lowered to regulate the pitch of the plows.

The standard *i*, when adjusted, is locked in place by a key, *m*, inserted in a slot in the socket-bracket *h*, and which engages with the corrugations of the said standard.

To a support attached to the front cross-bar of the frame A is pivoted the rear end of the plate *n*, the forward end of which is provided with upwardly-projecting lugs *o* to receive the hinging-bolt of the tongue, so that no down-draft from the machine can come upon the horses' necks.

To the tilting-lever *a* of the side furrow-wheel Z is rigidly attached the rear end of a forwardly-projecting arm, *p*, to the forward end of which is pivoted the outer end of a connecting-rod, *q*. The inner end of the connecting-rod *q* is passed through a lug, *r*, attached to the lower side of the forward part of the tongue-plate *n*, and is secured in place by nuts *s*, screwed upon it upon the opposite sides of the said lug *r*.

Upon the rear end of the tongue-plate *n* is formed or to it is rigidly attached an arm, *t*, projecting in the opposite direction from the connecting-rod *q*, and to the outer end of which is pivoted the forward end of the connecting-rod *u*, the rear end of which is perforated to receive the vertical rod *v*. The vertical rod *v* is attached at its ends to the outer ends of the arms *w*, the inner ends of which are rigidly attached to the upper and lower parts of the standard *i*, so that the said vertical rod will slide through the perforation in the rear end of the connecting-rod *u* as the standard *i* is moved up and down. With this construction, as the tongue is inclined toward one or the other side, the furrow-wheels Z *j* will be turned in opposite directions, as illustrated in Fig. 1, so that the machine can be turned easily and in a small space.

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

1. In a sulky-plow, the combination, with the end bars of the frame A and the plow-beams B, of the coupling-blocks C, the yokes D, and the bolts E, substantially as herein shown and described, whereby the said plow-beams are firmly secured to the said frame and can be readily adjusted, as set forth.

2. In a sulky-plow, the combination, with the shaft S, journaled to the frame A, and the sliding bar O, carrying the axle Y, of the side furrow-wheel Z, and provided with gear-teeth on its rear edge, of the unequal-armed lever *e*, having gear-teeth on its ends, and the lever *f*, having gear-segment, substantially as herein shown and described, whereby the said furrow-wheel can be readily raised and lowered to adjust the machine to cut a deeper or shallower furrow, as set forth.

3. In a sulky-plow, the combination, with the sliding bars N O, carrying the axles P Y of the side wheels, Q Z, of the shaft S, the gear-segment R, and the lever T, and the unequal-armed lever *e*, having gear-teeth on its ends, the lever *f*, having gear-teeth, and the spring lever-pawl *g*, connected with the said lever and engaging with the catch-plate *h*, attached to the shaft S, substantially as herein shown and described, whereby both the side wheels

can be raised and lowered at the same time, as set forth.

4. In a sulky-plow, the combination, with the rear end of the frame A and the plow-beams B, of the socket-bracket *h*, the standard *i*, carrying the rear wheel, *j*, and provided with annular corrugations, and the gear-lever *l*, substantially as herein shown and described, whereby the rear end of the machine can be readily raised or lowered, as set forth.

5. In a sulky-plow, the combination, with the sliding bar O, having lugs W, and the side furrow-wheel Z, of the vertical rod X, the hinged axle Y, the rigid lever *a*, attached to the said hinged axle, the slotted arm *b*, attached to the said rod, and the bolt *d*, substantially as herein shown and described, whereby the said furrow-wheel can be tilted laterally to hold the machine against side draft, as set forth.

6. In a sulky-plow, the combination, with the rear furrow-wheel, *j*, the side furrow-wheel Z, and the tilting-lever *a*, of the forwardly-projecting arm *p*, attached to the said lever, the connecting-rod *q*, the tongue-plate *n*, provided with the arm *t*, the connecting-rod *u*, and the arms *w*, attached to the upper end of the standard *i* of the wheel *j*, substantially as and for the purpose set forth.

GEORGE ROSS.

Witnesses:
GEORGE F. HORSFORD,
J. WOODS.