

(No Model.)

4 Sheets—Sheet 1.

A. J. VENTZKI.

ADJUSTING DEVICE FOR WHEEL PLOWS.

No. 400,977.

Patented Apr. 9, 1889.

Fig. 1.

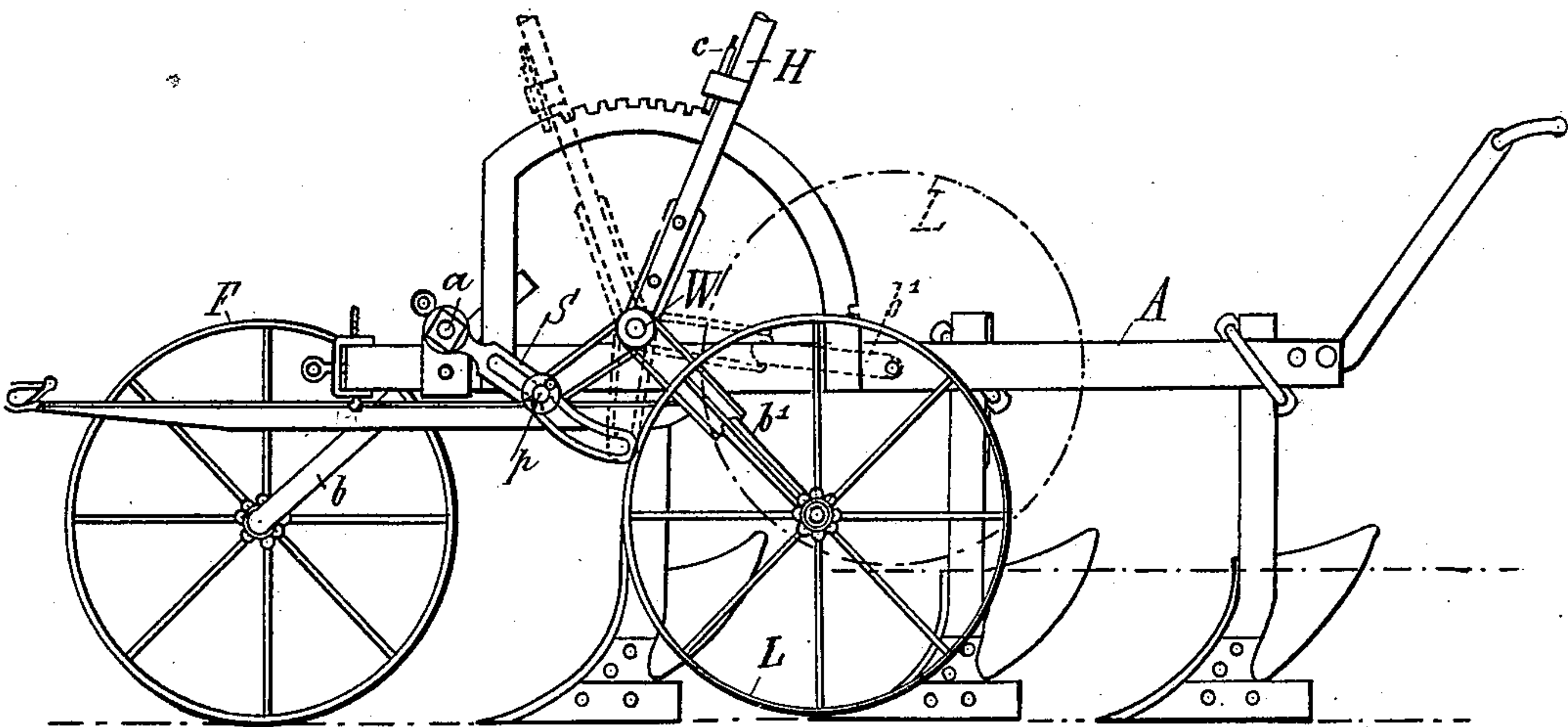
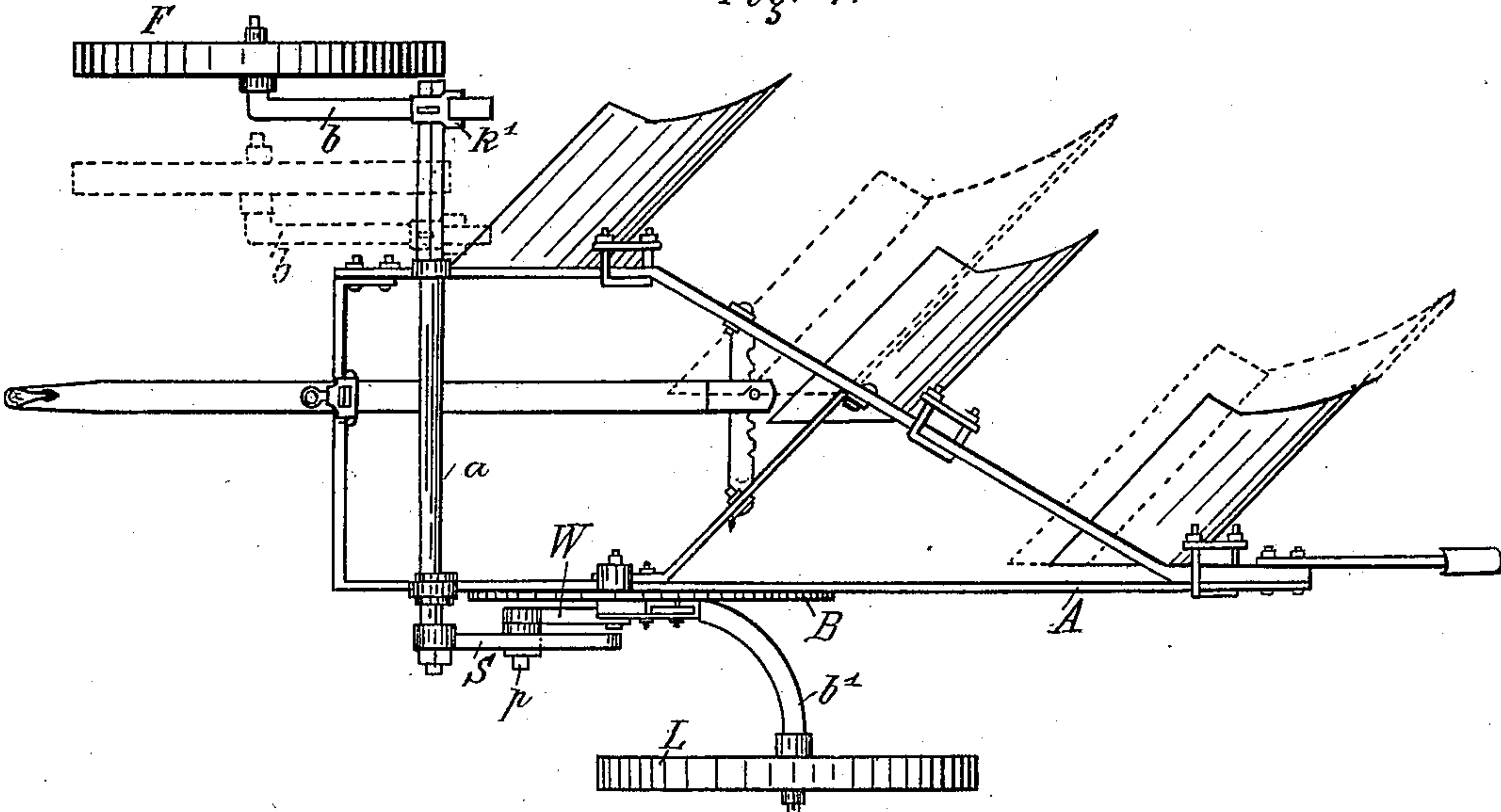


Fig. 4.



Witnesses:

E. R. Brown
E. L. Richards

Inventor:
August Jacob Ventzki.

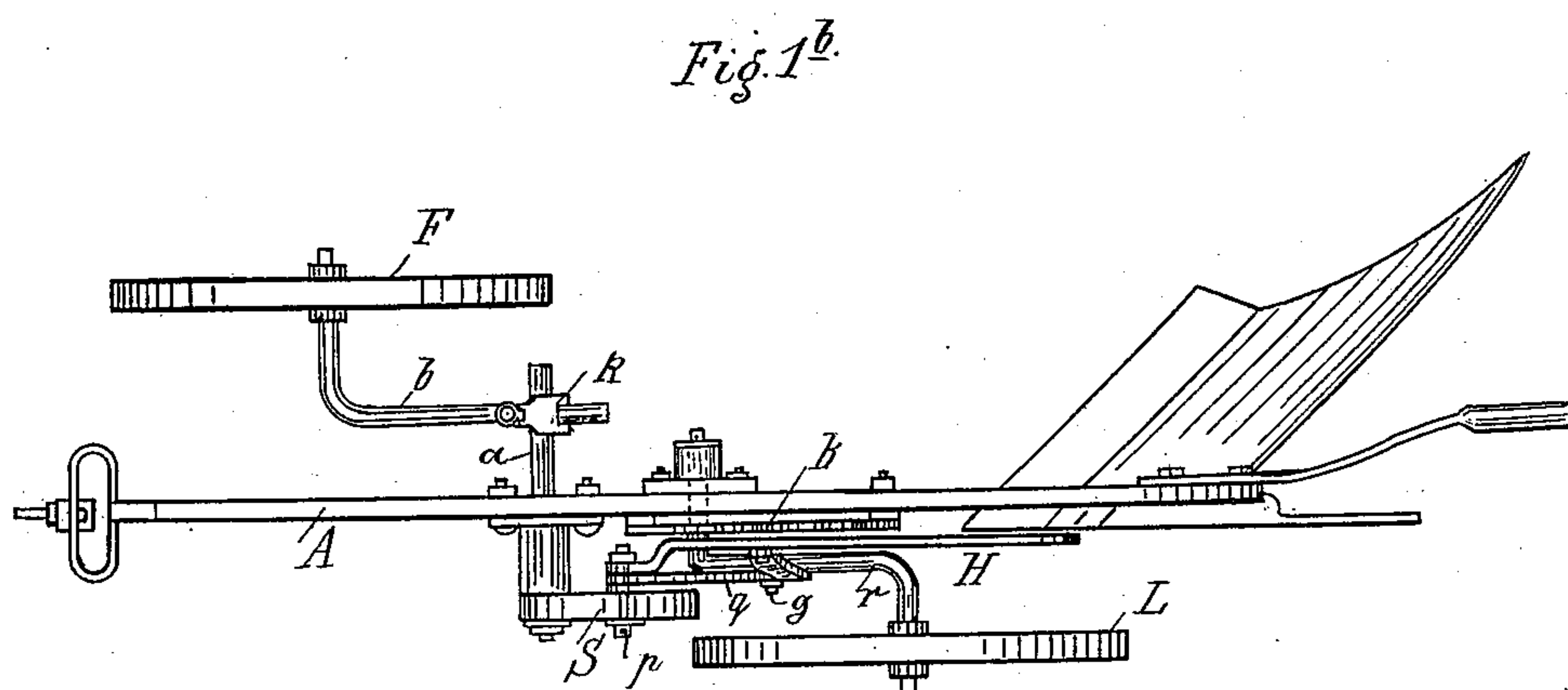
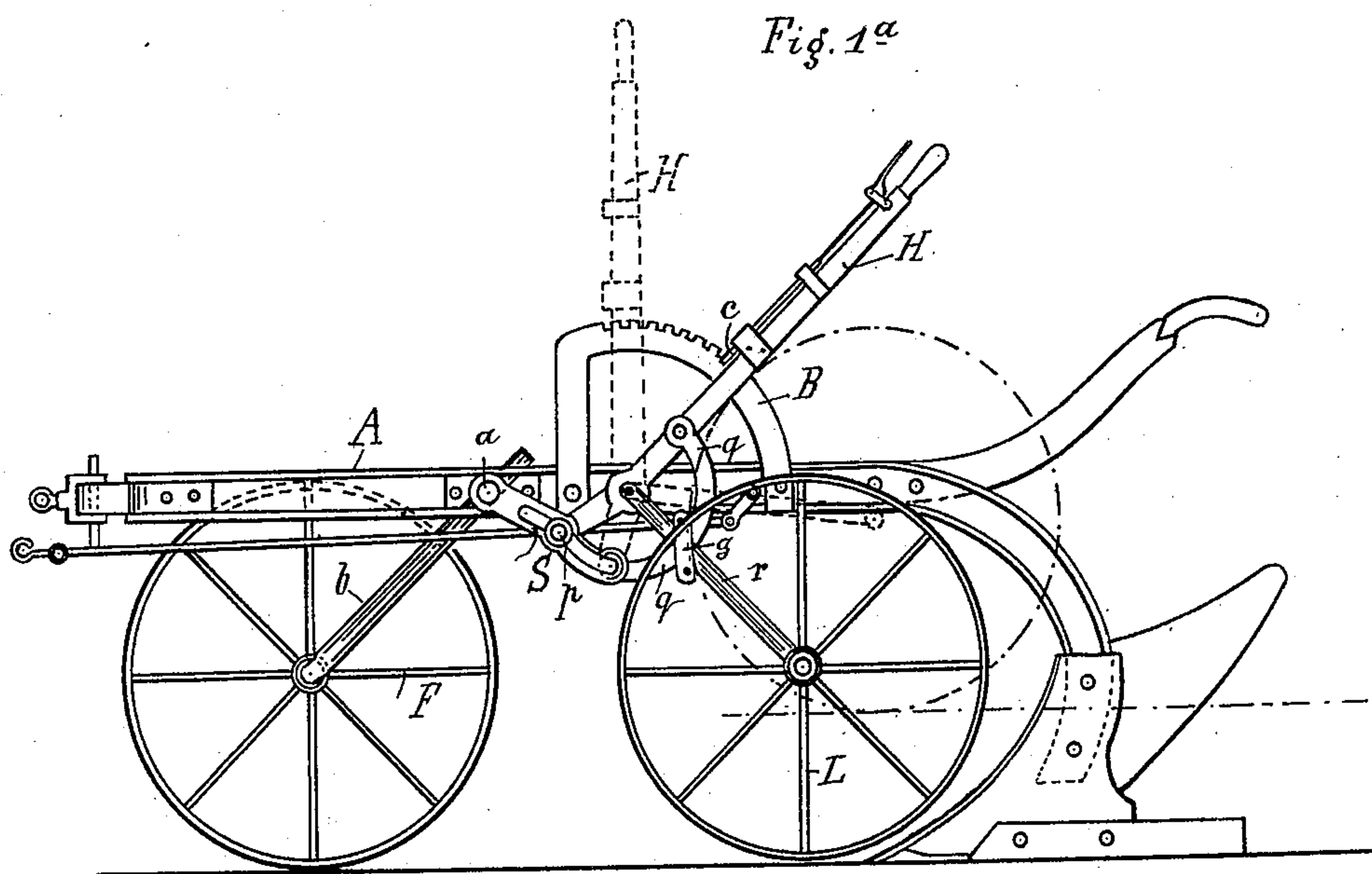
By

Richards & Co.
Attorneys,

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Patented Apr. 9, 1889.



Inventor:

August Jacob Ventzki.

Richardson

Attorneys,

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Fig. 2.

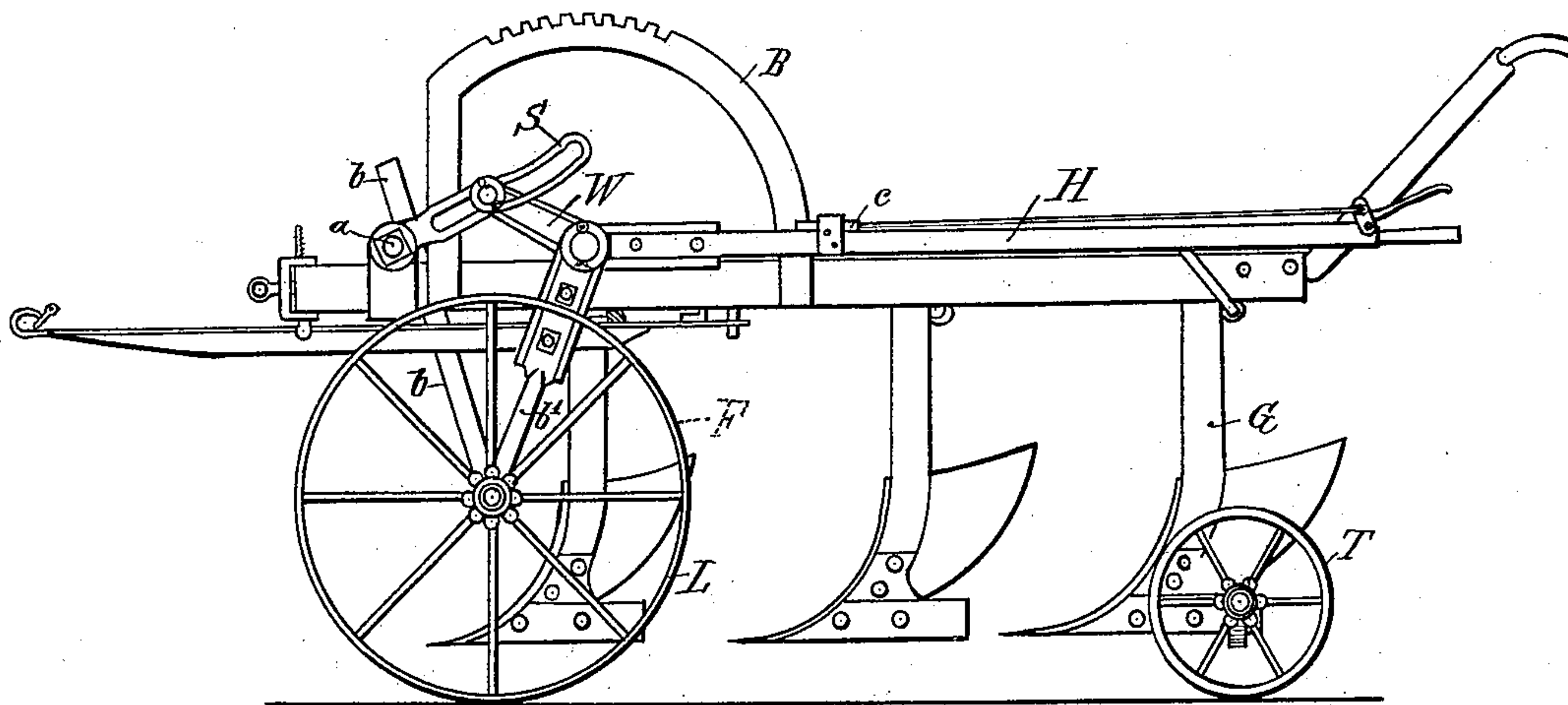
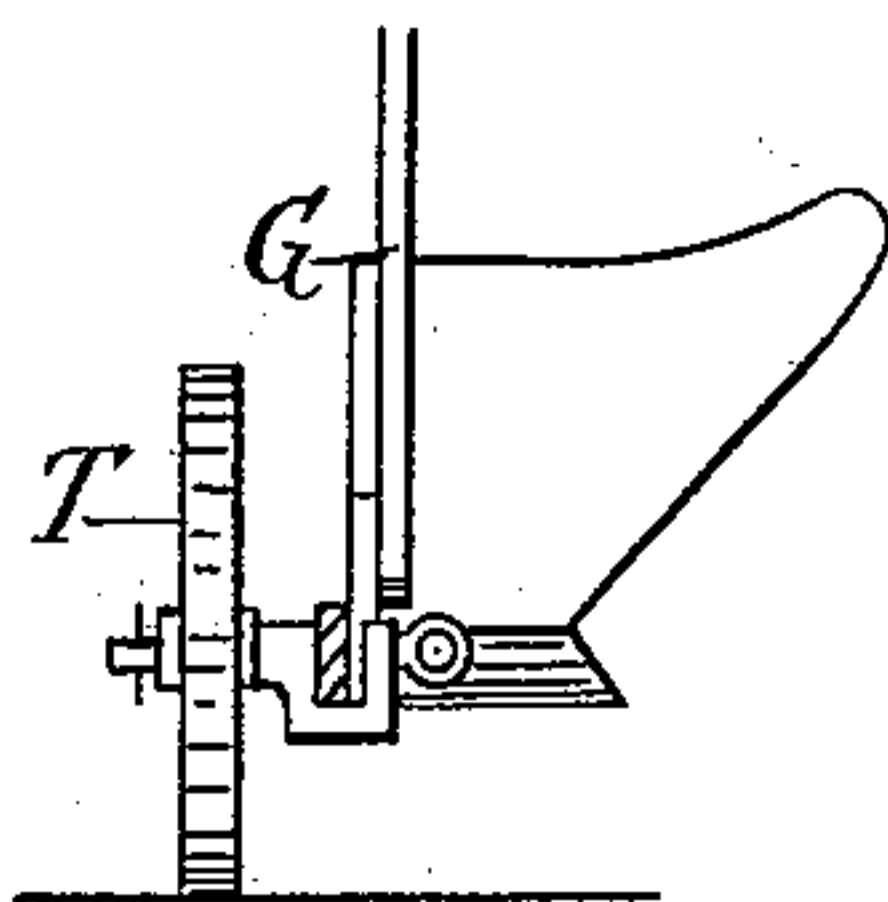


Fig. 3.



Witnesses:

E. R. Brown
E. L. Richards

Inventor:

August Jacob Ventzki,

By

Richardson

Attorneys,

(No Model.)

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A. J. VENTZKI.

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Fig. 2^a

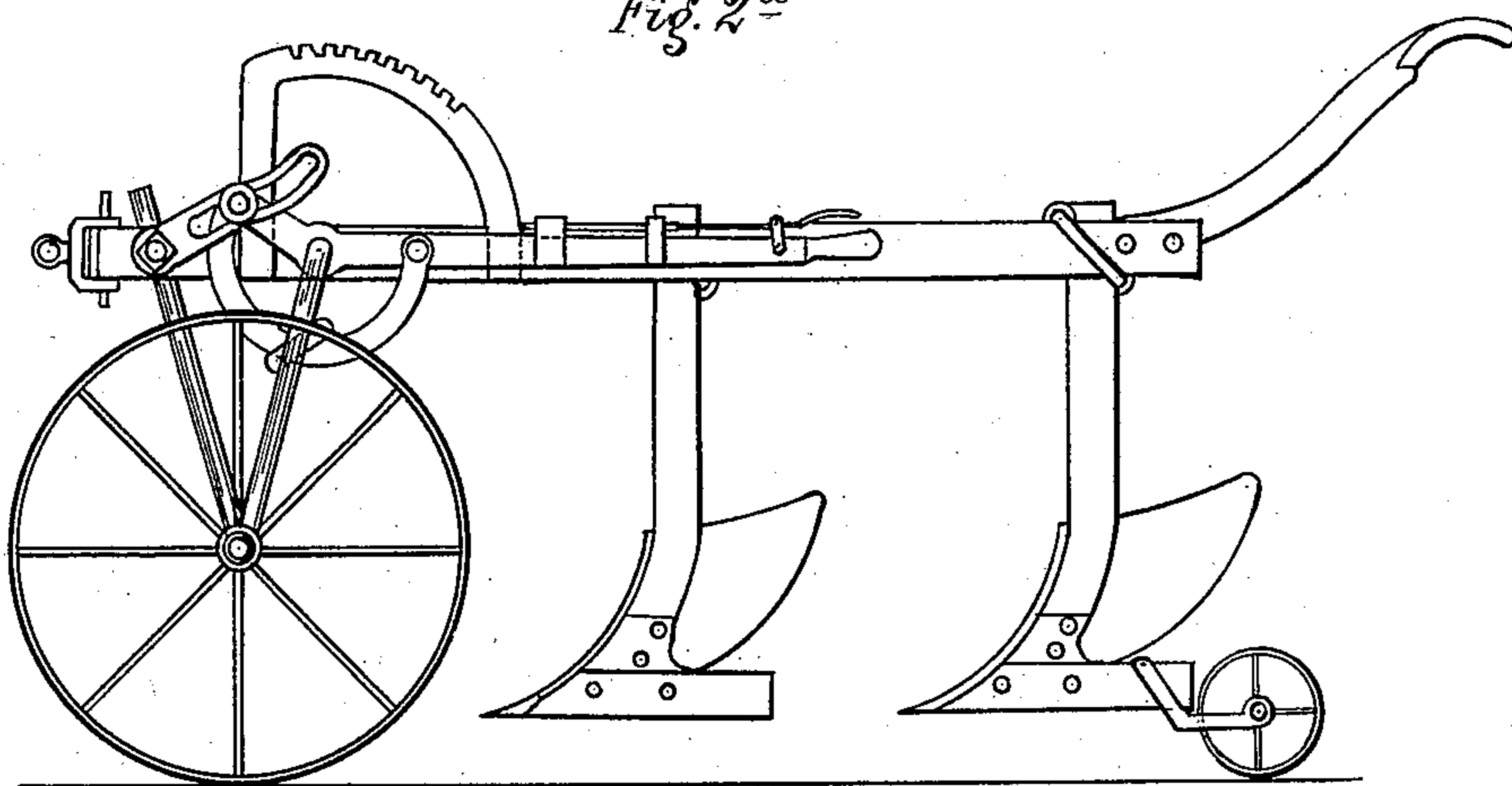
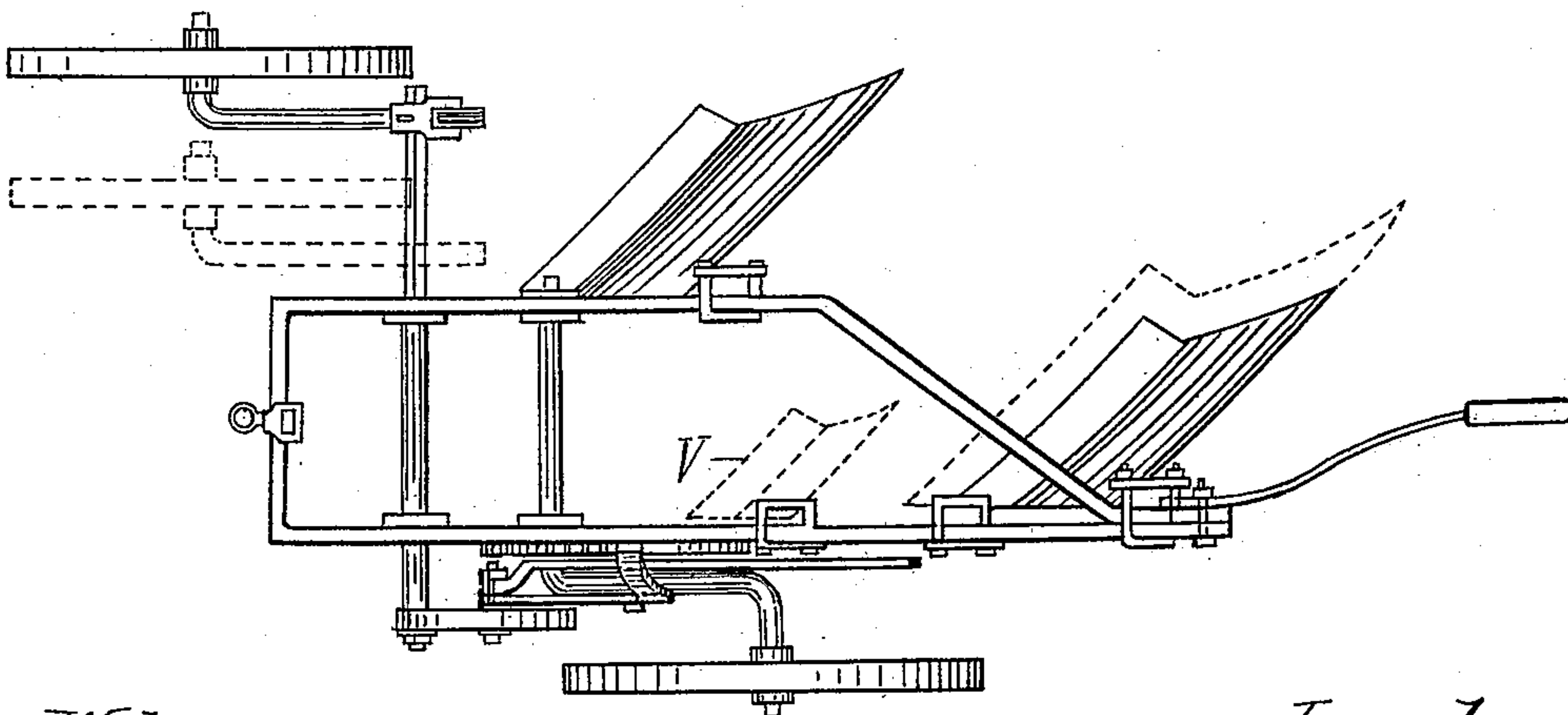


Fig. 4^a



Witnesses:

E. R. Brown
E. L. Richards

Inventor:

August Jacob Ventzki,

By

Richardson

Attorneys.

UNITED STATES PATENT OFFICE.

AUGUST JACOB VENTZKI, OF GRAUDENZ, PRUSSIA, GERMANY.

ADJUSTING DEVICE FOR WHEEL-PLOWS.

SPECIFICATION forming part of Letters Patent No. 400,977, dated April 9, 1889.

Application filed December 6, 1888. Serial No. 292,801. (No model.)

To all whom it may concern:

Be it known that I, AUGUST JACOB VENTZKI, a subject of the King of Prussia, German Emperor, and a resident of the city of Graudenz, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Adjusting Devices for Wheel-Plows; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of the present invention is to construct a wheel-plow whereby the furrow-wheel and the land-wheel may be moved by means of a single hand-lever in such a way that the furrow-wheel will always be at a level with the bottom of the plow, while the land-wheel, for the purpose of regulating the depth of the furrow, can be either raised or lowered independently of the furrow-wheel, which remains in its original working position.

In the accompanying drawings, Figure 1 represents a side view of the plow in working position. Fig. 2 shows the same plow in position for transportation. Fig. 3 represents a roller to be used for the transportation of the plow. Fig. 4 is a top view of the plow.

The axle *a* is secured in such a manner on the frame *A* that it can be freely turned. The crank *b* for the furrow-wheel *F* is fastened by means of the staple *k'*, so that this crank may be moved both in a horizontal and a vertical direction. The object of the horizontal adjustment of the furrow-wheel *F* is to provide for placing this wheel always in the last furrow—as, for instance, if it should be necessary to transform a plow with three shares into one with two shares, as shown by the dotted position in Fig. 4. The adjustment of the crank *b* in a vertical direction makes it possible to bring the furrow-wheel to a level with the bottom of the plow when the shares shall have been worn off.

Another and very important object of the vertical adjustability of the furrow-wheel is to make it feasible to raise the crank *b* with the furrow-wheel *F* when commencing to plow, so as to give at once the desired depth to the first furrow. At the other end of the axle *a*, Fig. 4, the slotted curved lever *S* is attached. A stud, *p*, projecting from the elbow-lever *W*,

(the other end of which carries the axle *b'* of the land-wheel *L*,) works freely in the slot of the lever *S*. The movement of the elbow-lever *W*, and consequently the throwing into working position of the two wheels *F* and *L*, is effected by the hand-lever *H*, connected with the elbow-lever *W*, and the catch *c* of the lever catching in the teeth of the segment *B* after slipping over the smooth part of it. During the movement of the hand-lever *H* from its lowest position necessary for the transportation of the plow, Fig. 2, until its catch reaches the toothed portion of the segment *B*, the stud *p* will turn the lever *S* from the position shown in Fig. 2 to the position represented in Fig. 1. This causes the furrow-wheel *F*, which until then was in line with the land-wheel *L*, to be swung forward, and said furrow-wheel, if the crank *b* is correctly adjusted, will then be on a level with the bottom of the plow, Fig. 1. This done, the land-wheel *L* is adjusted according to the desired depth of furrow, which is effected by moving the hand-lever *H* farther forward on the teeth of the segment *B*. In the meantime the position of the furrow-wheel will remain unchanged, because the stud *p* is moved from the straight portion of the slotted lever *S* into the curved portion at the same moment that the catch of the hand-lever catches in the first tooth of the segment *B*, (position shown in Fig. 1,) and said curve being concentric to the segment *B* it is evident that with a continued movement the stud *p* must leave the slotted lever *S* unaffected. This lever and consequently the furrow-wheel remain unchanged in the position given them by turning the hand-lever *H* to the point where the teeth commence, this position being with respect to the furrow-wheel on a level with the bottom of the plow. During this movement, however, the land-wheel has not remained in its original position, but has been moved backward from the position shown in Fig. 2 to the one shown in Fig. 1. By further moving the hand-lever *H*—for instance, to the position shown by the dotted lines in Fig. 1—the land-wheel *L* is raised and will occupy the position represented by the dotted lines. This peculiar arrangement makes it possible that the furrow-wheel is always placed on a level with the bottom of the plow

without regard to the height to which the land-wheel may be raised for the purpose of fixing the depth of the furrow. This constitutes a great improvement as compared with the plows which require for each change of the depth of the furrow an alteration of the mutual position of the land and furrow wheels, either by the extension or shortening of a crank or by turning the crank, &c. This is a very important fact when, for instance, fields of a different nature of ground are plowed, it being possible to lower or to raise the plow when working without causing the same to run awry. As a consequence of the backward movement of the land-wheel, this plow possesses the advantage presented by the well-known plow with three wheels—namely, the disburdening of the body of the plow by the land-wheel without possessing the disadvantage of those plows—which consists in the fact that during the work one wheel runs over the loose field or is suspended in the air, and consequently causes a one-sided burdening of the plow.

For the purpose of transportation, the roller T, Fig. 3, is attached to the slide G.

The lowering and raising apparatus for wheel-plows described above may of course be changed in its non-essential parts—such as the parts connecting the lowering and raising mechanism with the land-wheel—without materially affecting the invention. Such an alteration is shown in Figs. 1^a, 1^b, 2^a, and 4^a of the drawings. Figs. 1^a and 1^b show a side view of the plow in working position. Fig. 2^a shows the plow with two shares in the position for transportation with annexed roller. Fig. 4^a represents a top view with the colter in position.

The parts already described in their construction and operation are also applied in those figures, and are designated by the same letters as in Figs. 1 to 4. For the elbow-lever W the following arrangement has, however, been substituted: The hand-lever H is double-armed, carrying on its short arm a stud, *p*, and resting with this stud in the slotted lever S, and carrying, besides, the segment *q*, the

center of which is at the same time the fulcrum for the hand-lever H. At the same time this fulcrum is the pivot of the crank-shaft *r* of the land-wheel L, and this shaft *r* is connected with the segment *q* by a side block, *g*. The only object of the segment *q* is to create a more favorable transmission of the working-point of the lifting power to the axle of the land-wheel than that represented in Fig. 1, and thereby to decrease the cost of manufacture of the plows.

The raising of the lever H from its first catch involves a raising movement of the land-wheel L more or less, according to the selected catch, the furrow-wheel F remaining meanwhile in its place. If, on the contrary, the hand-lever H is lowered, Fig. 2^a, the land-wheel is also lowered, approaching therewith the furrow-wheel. The latter is in the meantime also lowered (the stud *p* of the hand-lever reaching the straight part of the forked lever S) and moved backward, so that the position for transportation will be obtained.

If it is desired to use a colter, V, the same might be adjusted to the frame, as shown in Fig. 4^a.

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

In a wheel-plow, a lowering and raising apparatus for furrow-wheel and land-wheel, characterized by the arrangement of a slotted lever, S, curved at one end concentric to the segment B of the hand-lever H, but straight or curved not concentric to the segment B at the other end, the fixed axle *a* of said slotted lever being also the pivot for the furrow-wheel F, while the pivot of land-wheel L is at the same time the fulcrum of the hand-lever H, substantially as herein shown and described.

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

AUGUST JACOB VENTZKI.

Witnesses:

CARL FINZER,
HERMANN DOLBER.