

(No Model.)

2 Sheets—Sheet 1.

W. S. PATES.

SULKY PLOW.

No. 322,633.

Patented July 21, 1885.

Fig. 1.

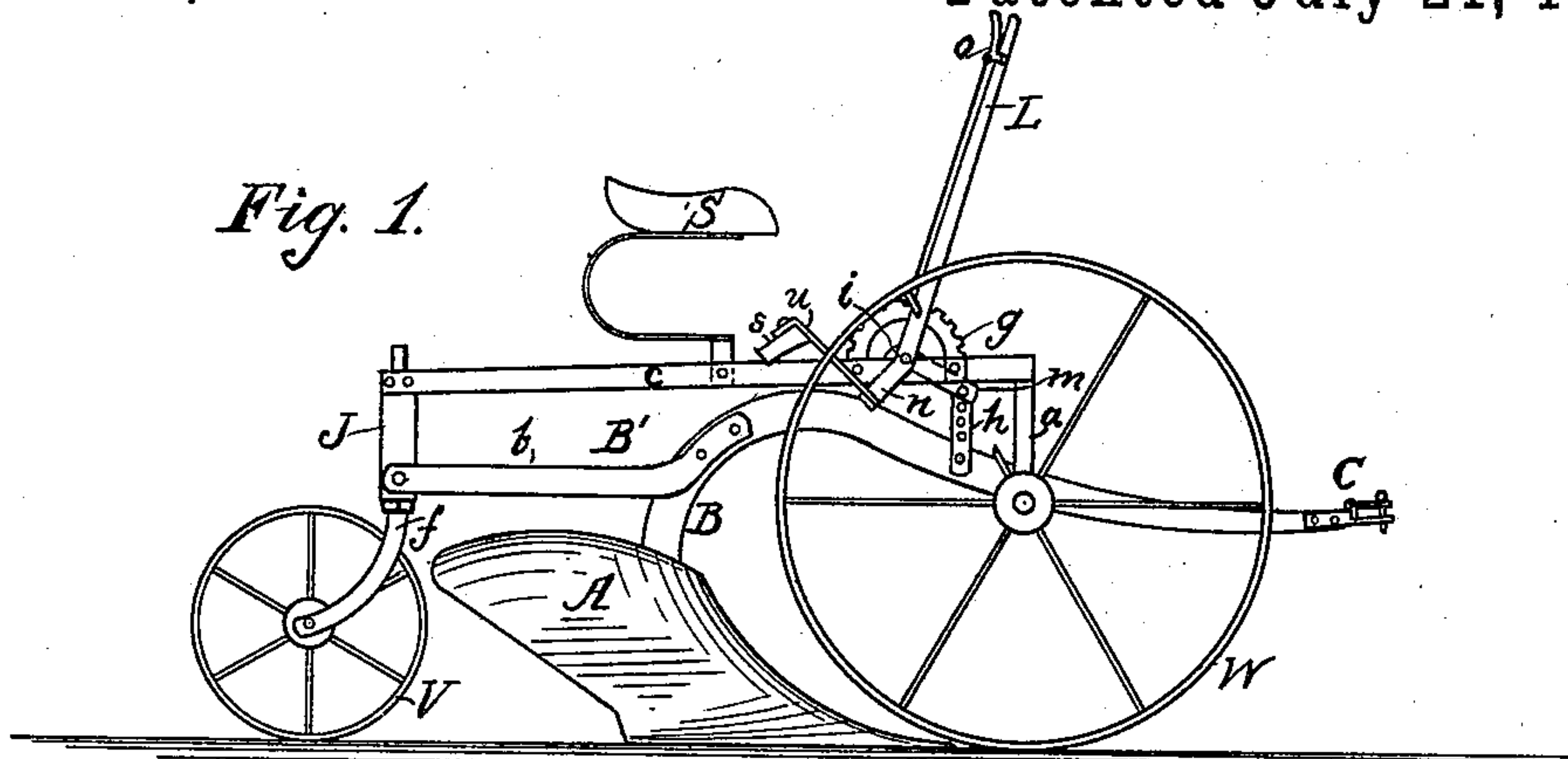


Fig. 2.

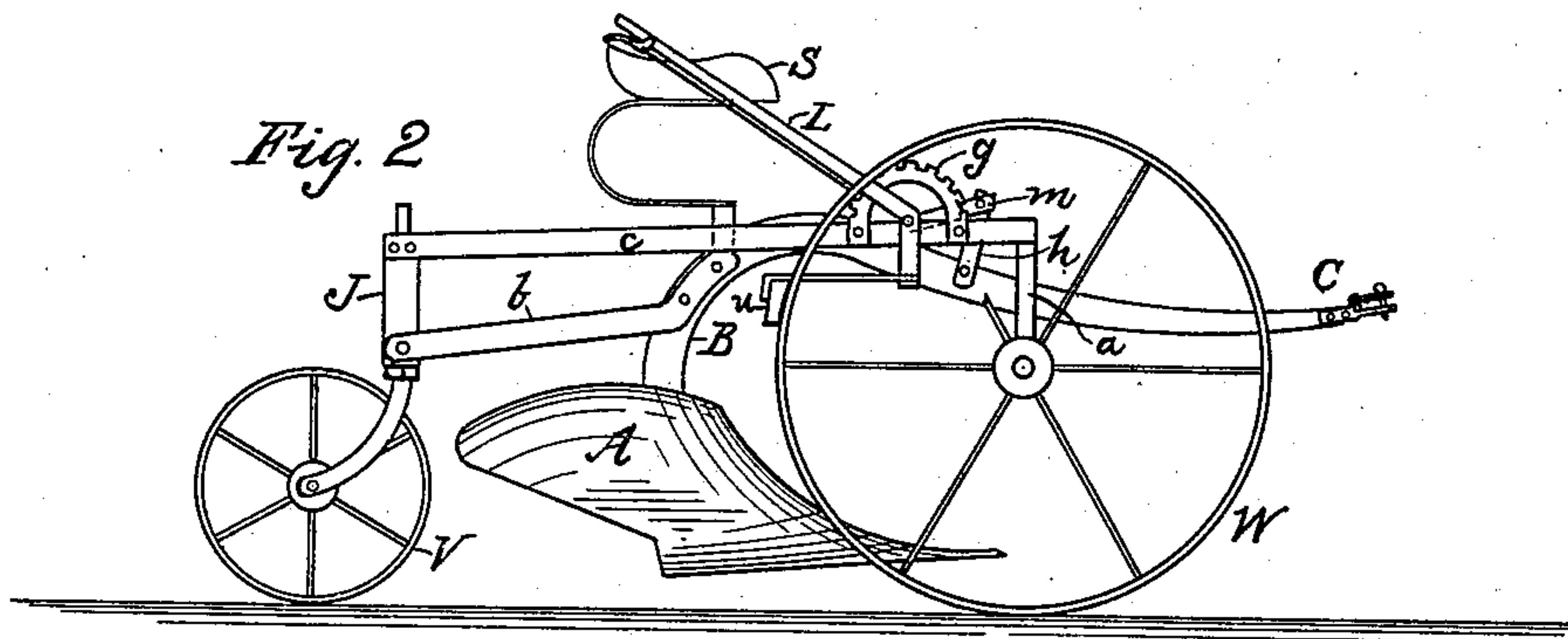


Fig. 3.

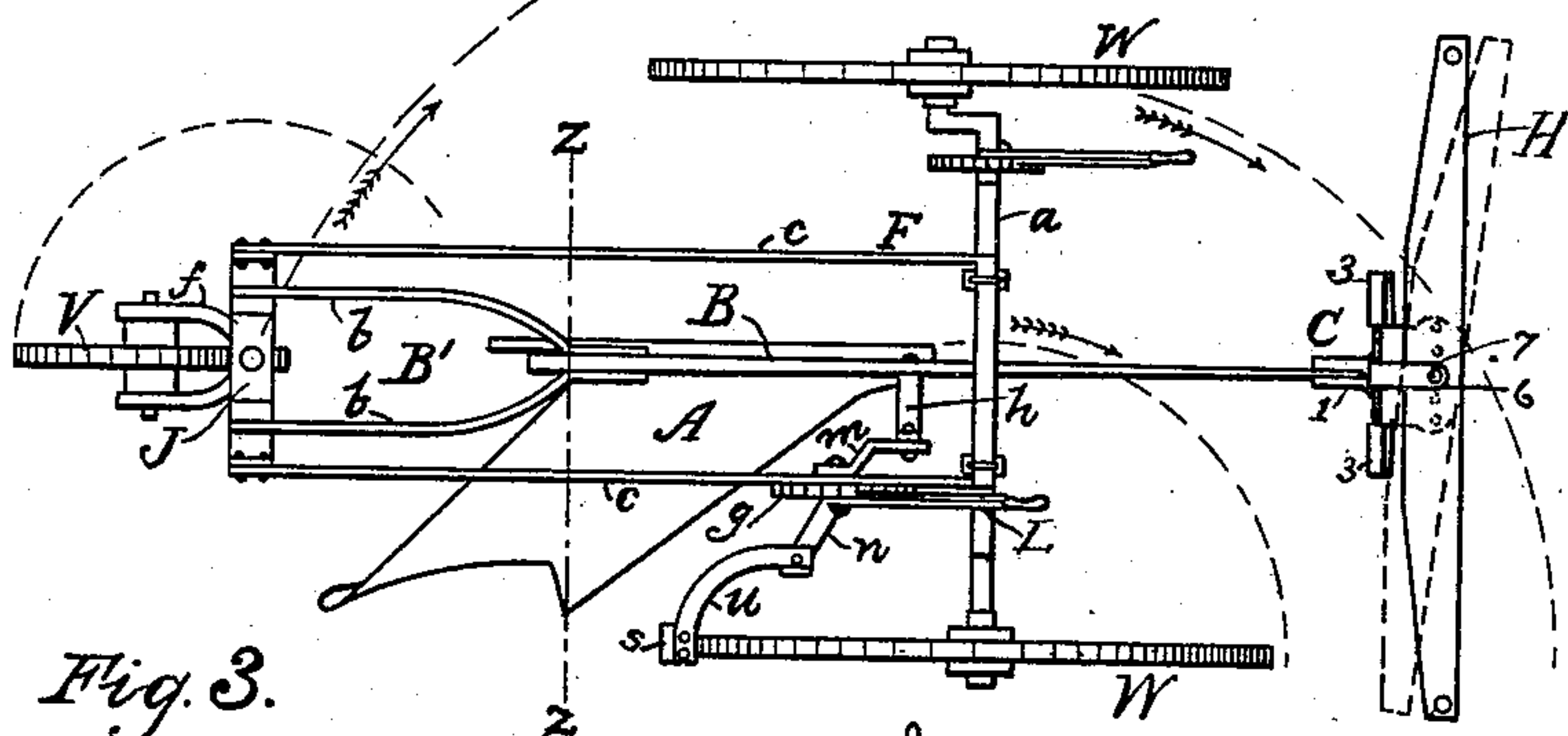
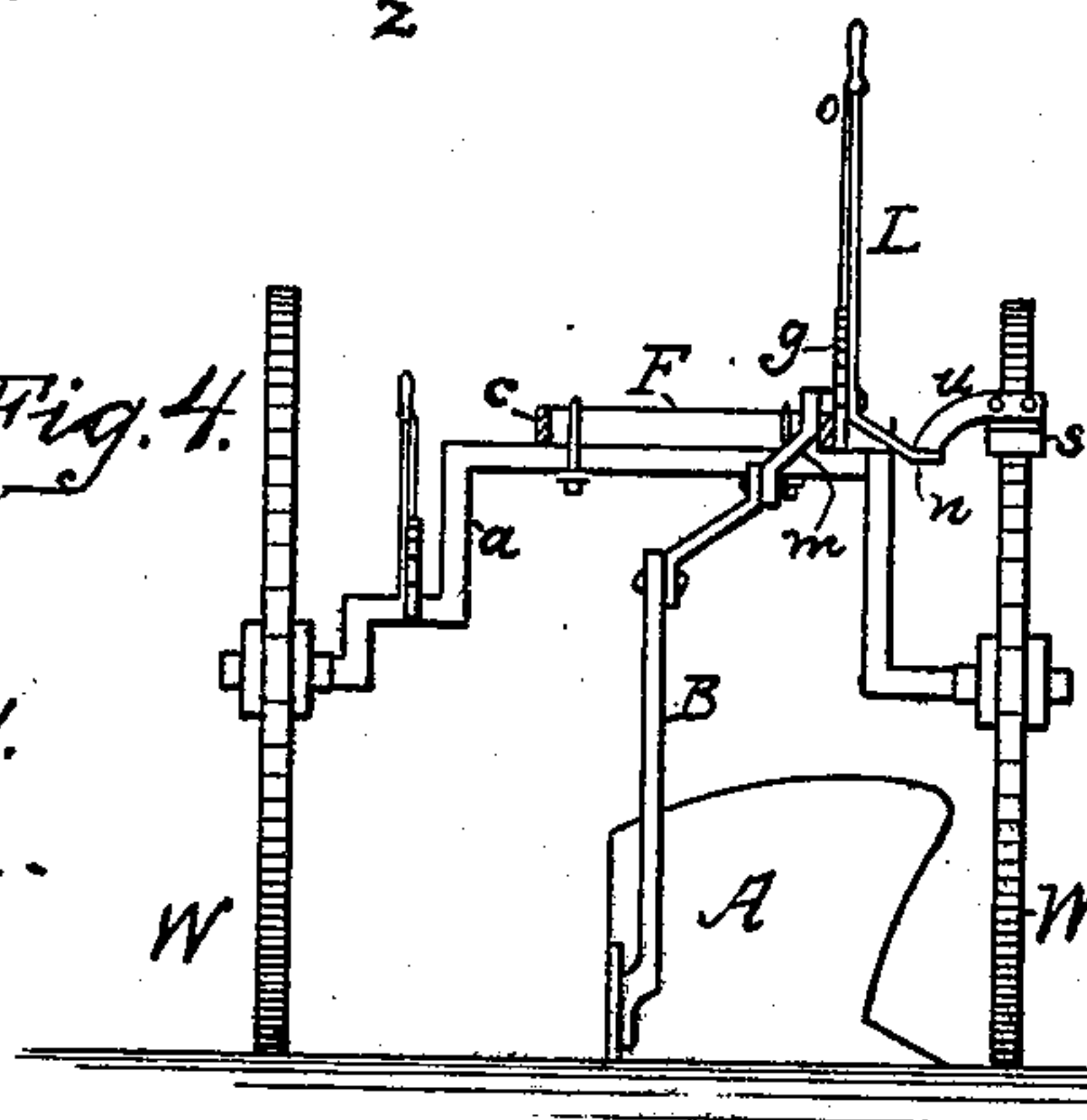


Fig. 4.



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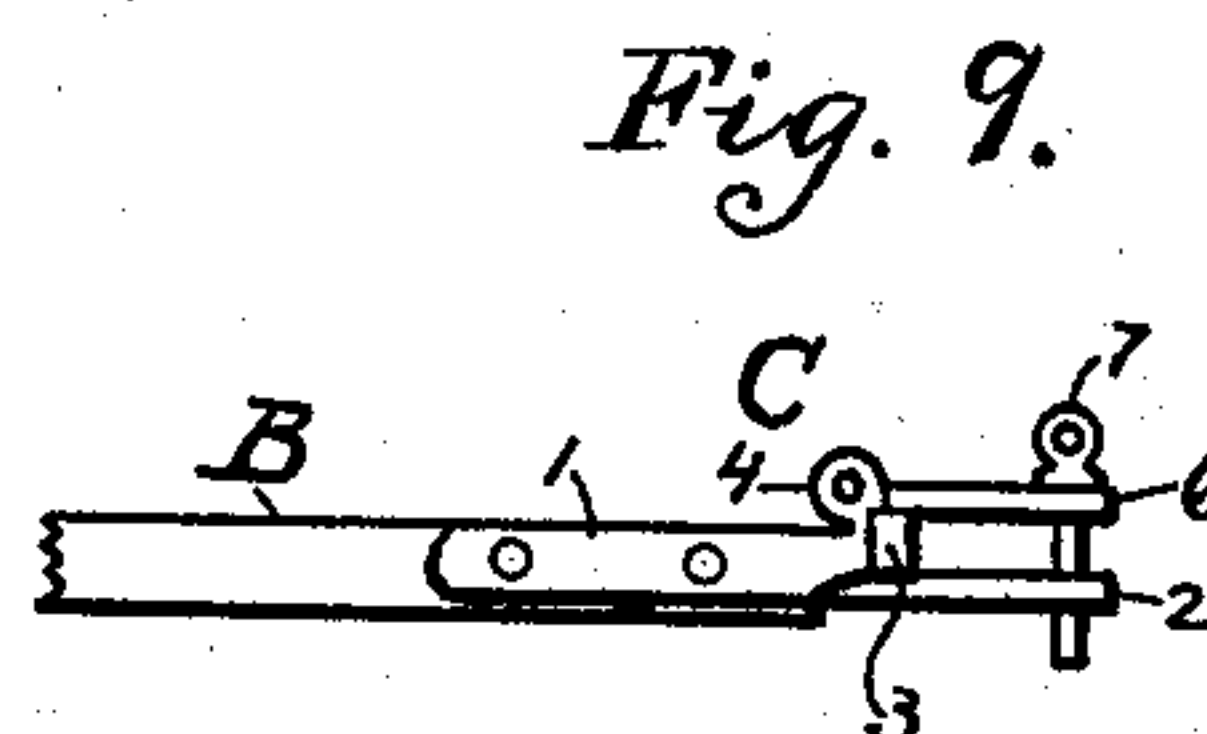
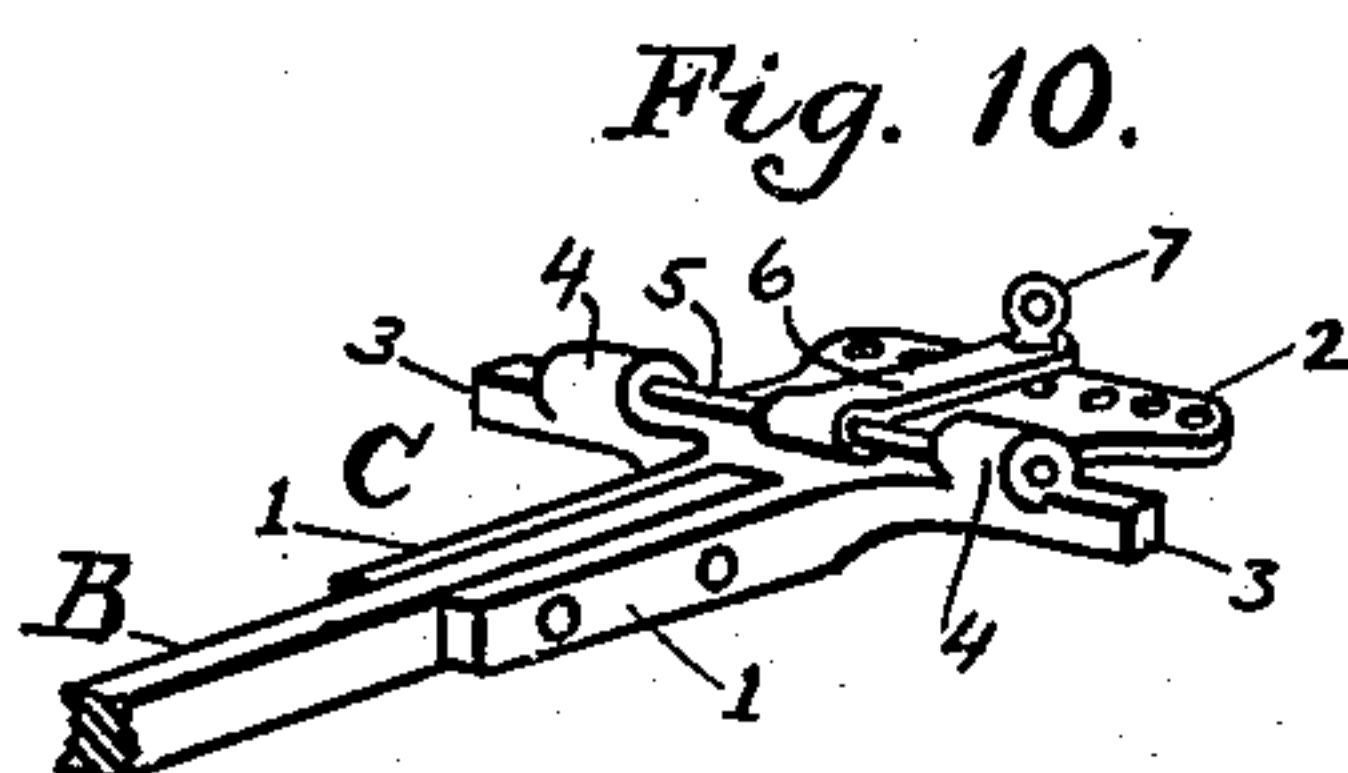
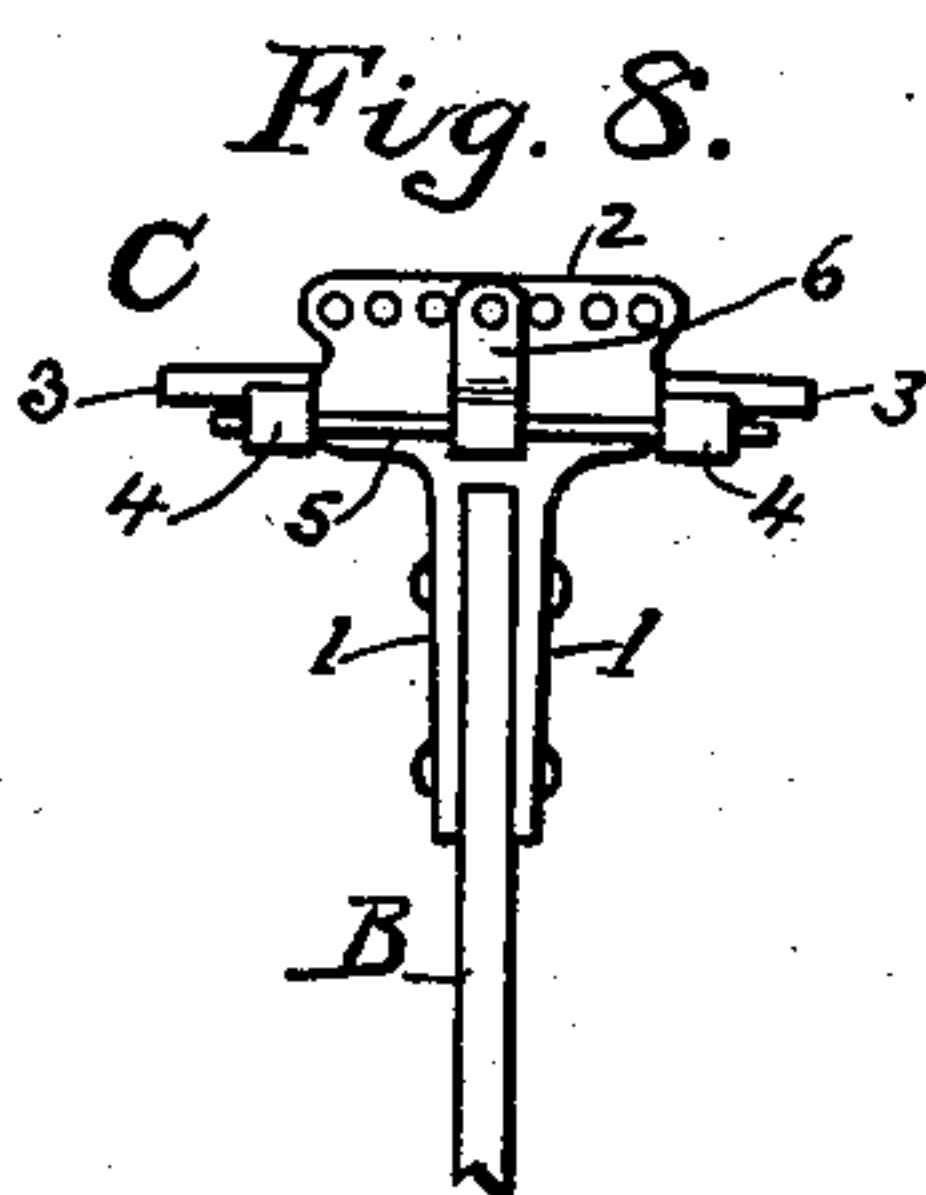
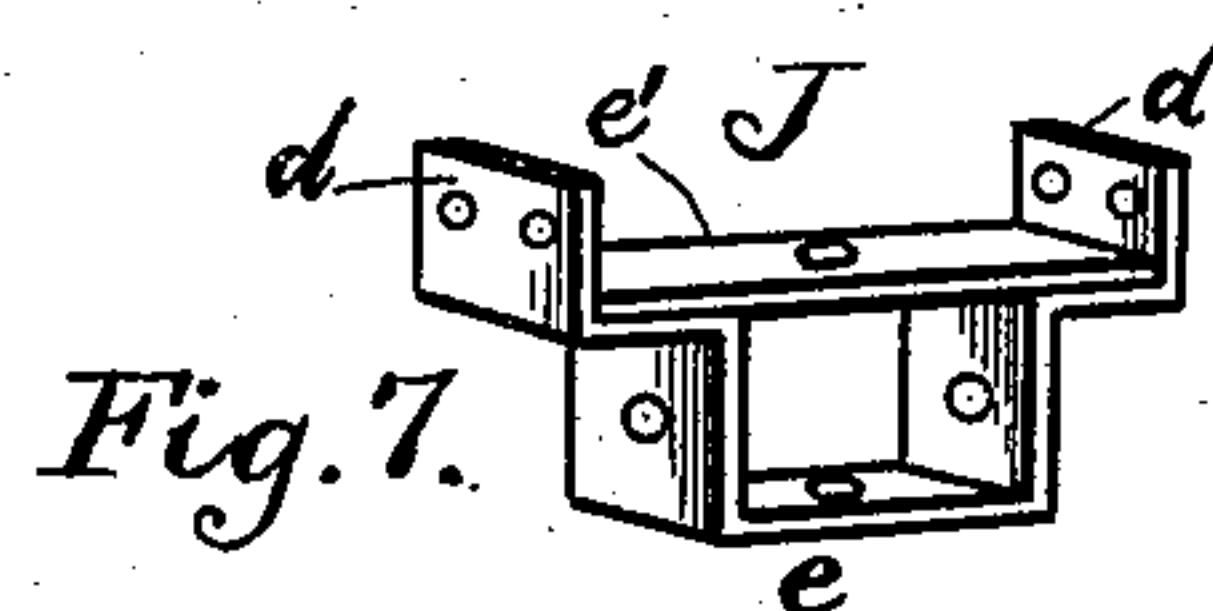
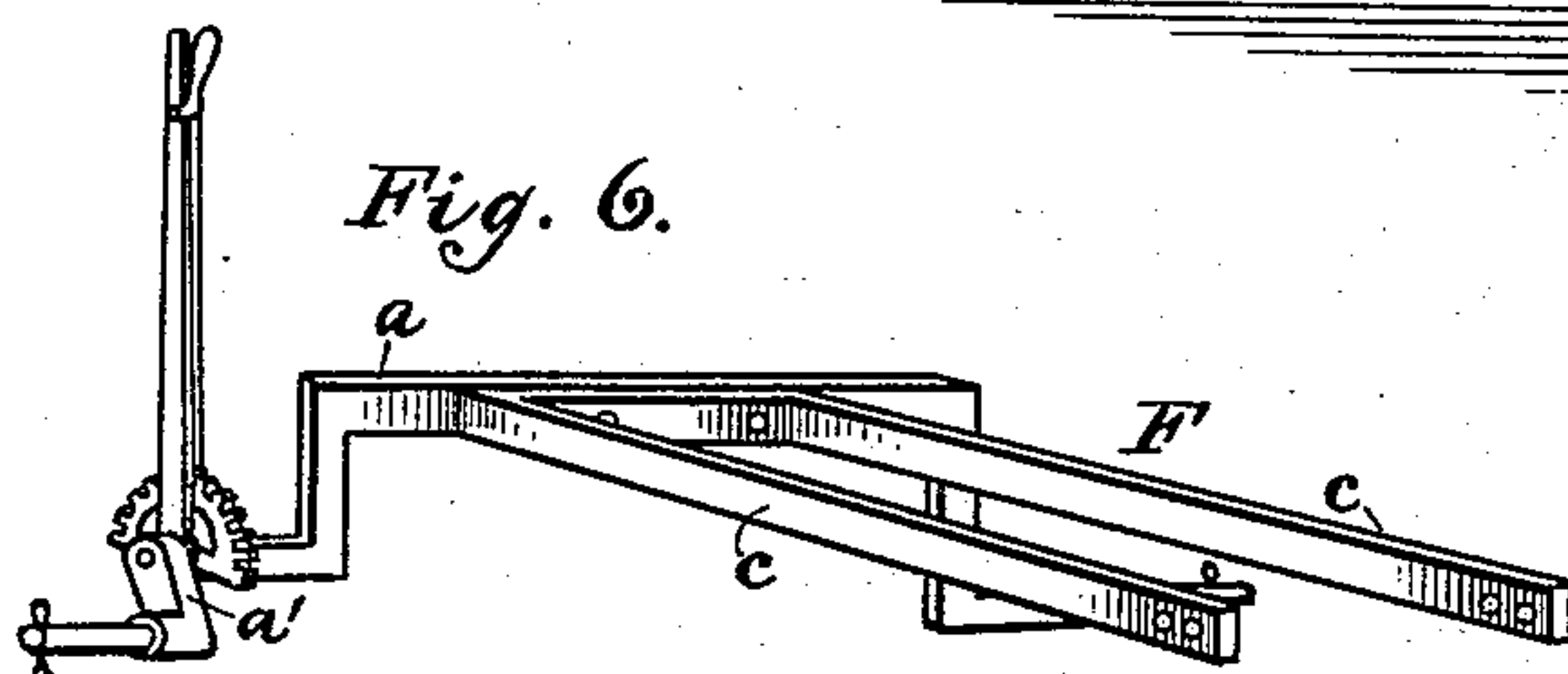
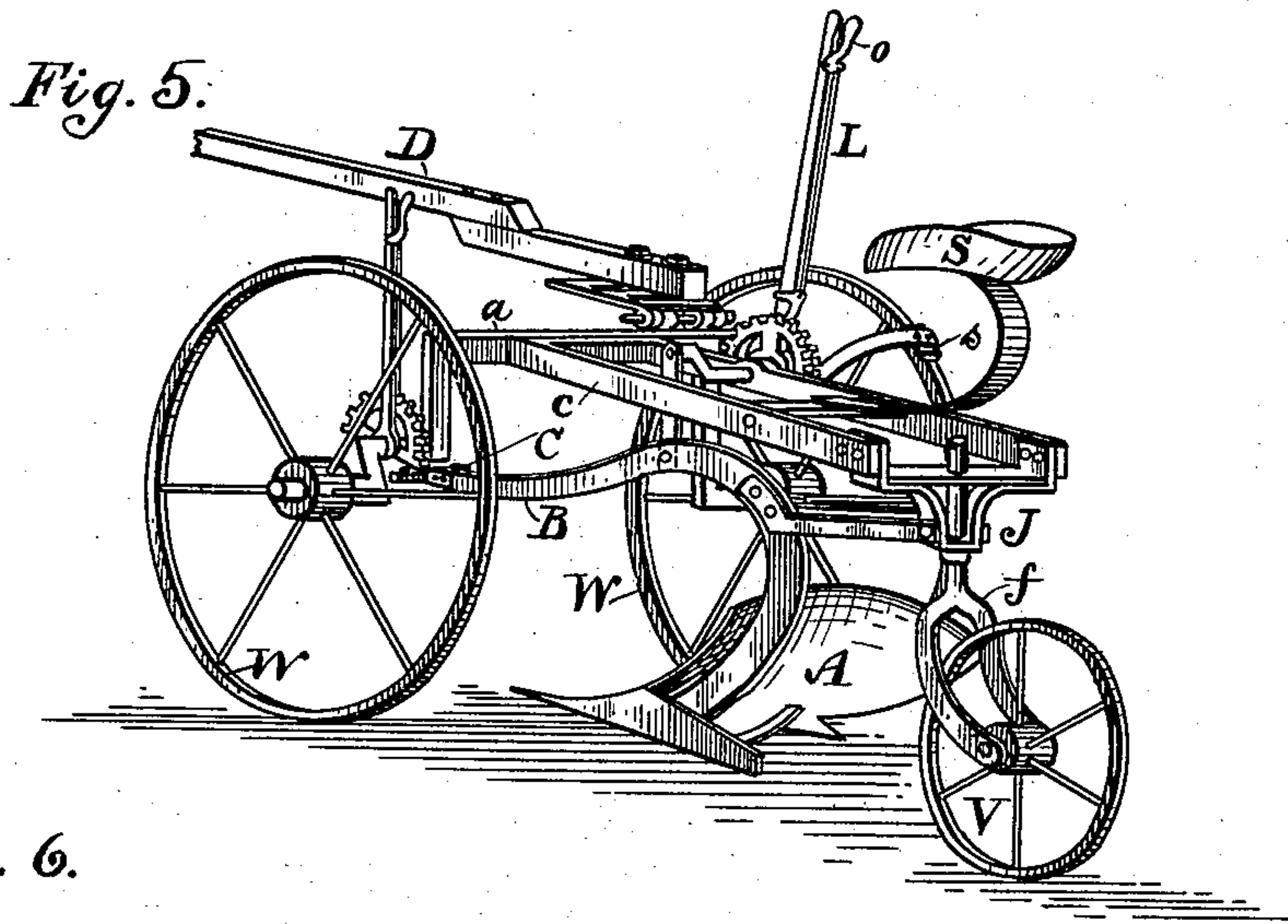
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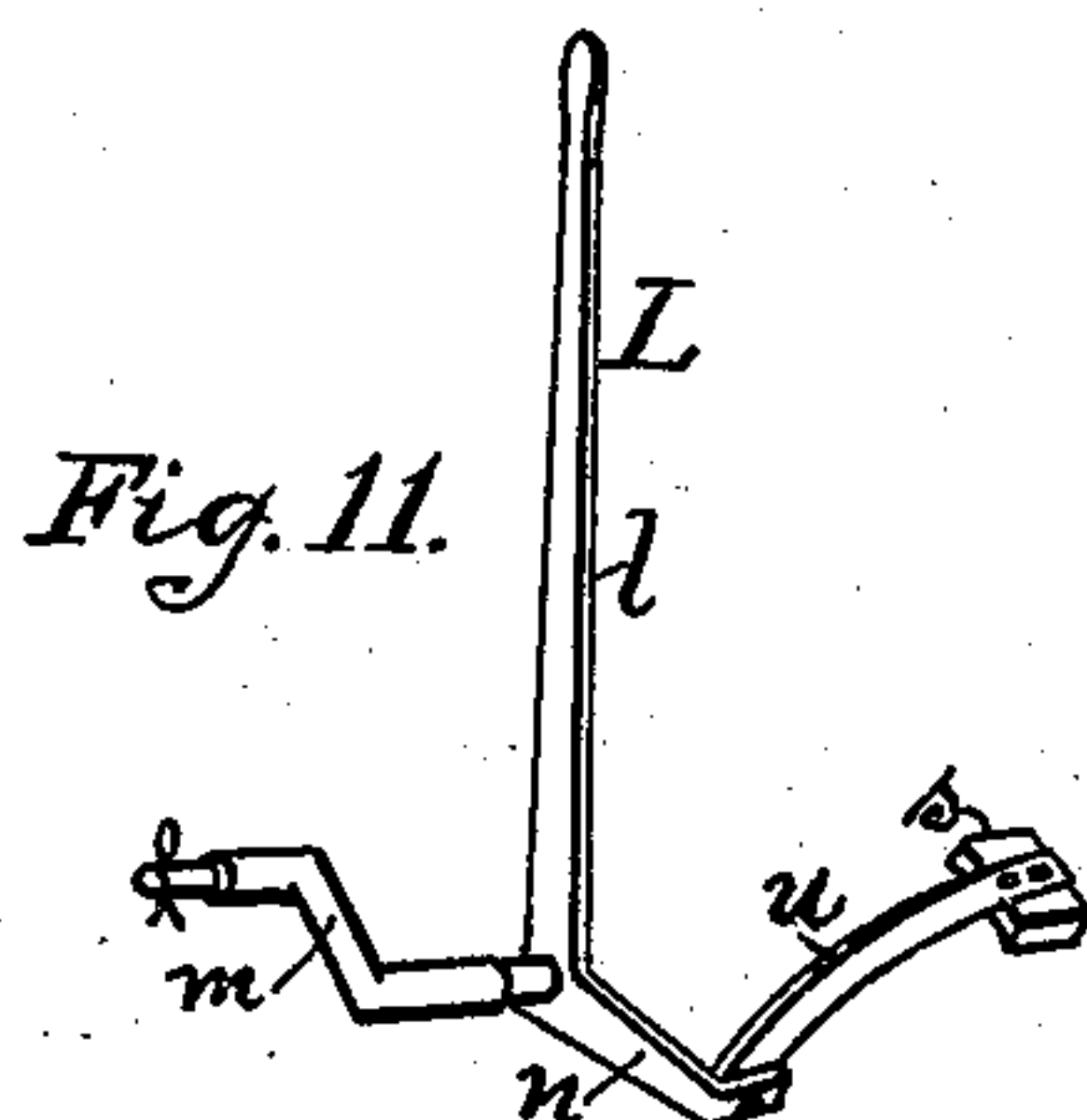
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UNITED STATES PATENT OFFICE.

WILLIAM S. PATES, OF ALTON, ILLINOIS, ASSIGNOR TO THE HAPGOOD
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SULKY-PLOW.

SPECIFICATION forming part of Letters Patent No. 322,633, dated July 21, 1885.

Application filed March 19, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PATES, a citizen of the United States, residing at Alton, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Sulky-Plows, of which the following is a specification.

My invention relates to a tongueless sulky-plow of the three-wheel class; and it consists in certain constructions, improvements, and combinations, which will first be set forth and described in the specification and afterward pointed out in the claims.

Referring to the drawings, like letters refer to like parts in all the figures, in which Figure 1 is a side elevation view of my improved sulky-plow, showing the position of parts as when the plow is down in a working position. Fig. 2 is the same view, showing the position of parts as when the plow is elevated above the ground. Fig. 3 is a plan or top view, with dotted lines showing the movement of the plow when turning about. Fig. 4 is a rear elevation view taken on dotted line *z z* in Fig. 3, to bring into view the operating-lever, showing how it is connected with the plow and wheel. Fig. 5 is a perspective view, in which is shown how a tongue may be used, if desired. Fig. 6 is a perspective view of the frame, showing the construction and combination of its parts. Fig. 7 is a perspective view, enlarged, of the saddle or block J, for connecting the rear wheel and plow with the frame. Fig. 8 is a plan view, enlarged, of the clevis for connecting the double-tree to the beam. Fig. 9 is a side view of same, and Fig. 10 is a perspective view of same, showing the construction of the clevis. Fig. 11 is a perspective view of the operating-lever L, showing how it is constructed with two short arms, one arm for connecting with the plow, the other arm for connecting and carrying a brake-shoe to bear upon the wheel.

The plow may be the ordinary plow, A, provided with the beam B, having the yoke B', consisting of the two rearwardly-projecting arms *b b*, to connect with the frame, as shown.

The frame F consists of the arched axle *a*, provided with the crank-arm *a'*, and the two

rearwardly-projecting bars *c c*, rigidly attached to the said axle, as shown in Fig. 6.

The sulky consists of the frame, with the seat S, the two wheels W, connected to said axle *a*, and the caster-wheel V, connected to the rear ends of the said bars *c c*, as shown, and the said sulky and frame being tongueless, as shown in Figs. 1, 2, and 3.

I denominate, name, and call my improved sulky-plow "Tongueless-Sulky Plow," though it is obvious that a tongue, D, may be connected and used while using my improvements, as I have shown in Fig. 5.

J represents the saddle or block for connecting the rear wheel and plow to the frame. Said block consists of a U-shaped bar, *e*, bent and formed as shown, having the ears *d d*, by which said block is rigidly attached to the rear ends of the bars *c c*, and the bar *e'*, rigidly attached across the open end of the U-shaped bar *e*, as shown in Fig. 7.

The caster-wheel V is loosely journaled between the arms of the yoke *f*, the top end of said yoke being rounded and loosely seated in the said block J, as shown, and in such a manner permitting said wheel to vibrate as a caster-wheel, as will be understood by the dotted lines in Fig. 3.

The rear ends of the arms *b b* of the yoke B' are loosely or pivotally connected to the sides of the said block J, below the bars *c c*, as shown, said arms *b b* serving to hold the plow upright, while the pivotal connection permits the forward end of the plow to vibrate up and down while being held rigidly upright, as will be understood by the drawings.

L represents the operating-lever, consisting of the ordinary long arm, *l*, and two short arms, *m* and *n*, as shown in Fig. 11, the said long arm *l* being provided with the usual thumb-latch, *o*, and notched segment *g*, for adjusting the plow, as well known and shown. The short arm *m* for connecting with the plow-beam projects inwardly, and may be a crank, as shown, having one end rigidly attached to the said long arm *l*, and the other end connected by the link *h* to the plow-beam, as shown in Figs. 5 and 11. The said short arm

n may be an extension or branch projecting outwardly, and having the spring-bar *u* with the brake-shoe *s* thereto attached, as shown, which, in operation, as the lever *L* is moved from the position shown in Fig. 1 to that shown in Fig. 2, elevating the plow by means of the link *h*, connecting the short arm *m* with the plow-beam, as will be understood by the drawings. In the same movement the short arm *n* brings the brake-shoe down upon the rim of the wheel, stopping the wheel from rotating at about the time or after the plow is elevated above the ground. The lever *L* is then locked to the segment *g*, with the brake-shoe seated upon the rim of the wheel, in the position in Fig. 2, and the said spring *u* has more or less spring-tension in keeping the bearing of the brake-shoe upon the wheel. The object of the brake upon the wheel is, first, to stop the machine from advancing without draft when being transported, as in going down hill, to keep the machine from advancing upon the horses, the machine being tongueless, with no other means of hold-back; second, the stopped wheel acts as a pivot for better turning the machine about at corners in plowing, as will be understood by the dotted lines and arrows shown in Fig. 3, and a reverse movement of the said lever lifts the brake-shoe from the wheel at the same time that the plow is dropped to the ground, as will be understood by the drawings.

C represents my improved clevis, specially designed for use upon sulky-plows. The said clevis *C* consists in a platform-like draw-plate, 2, for supporting the double-trees, said draw-plate provided with a series of perforations along its front end, two rearwardly-projecting arms, 1 1, for attachment to the plow-beam *B*, the two upwardly-projecting stops 3 3, for limiting the movement or play of the double-tree *H*, and the perforated ears 4 4, for supporting the rod or bolt 5, with the hammer-strap 6, as shown. The said clevis is rigidly attached to the beam *B* with bolts or rivets, as shown; and the said double-tree *H* is secured pivotal in its position upon the said draw-plate by the draw-pin 7 inserted through perforations in the hammer-strap, double-tree, and draw-plate, as shown; and the draft may be adjusted for the plow to take more or less land by moving the double-tree and draw-pin 7 to other holes in the draw-plate, the hammer-strap sliding upon the rod 5 into any position desired, as will be understood by the drawings.

An important feature of my improved clevis is the stops 3 for limiting the play of the double-tree, as shown by the dotted lines in Fig. 3, by which, when turning corners with the machine, the double-tree is estopped by the stop 3, thereby relieving or slackening the draft upon that side while the draft is full upon the outer or other side, and operating upon the double-tree as a power upon a lever to turn the plow about, as will be understood by the drawings and Fig. 3.

It will be observed that my improved clevis *C* so holds the double-tree and whiffletrees that they cannot fall about the horses' feet when the draft is stopped, and also so holds the double-tree that it cannot fall behind at either end so that the wheel may rub upon it.

Having thus set forth my invention, I claim—

1. In a sulky-plow, the combination of the tongueless sulky consisting of the frame provided with the arched axle having two rearwardly-projecting bars rigidly attached thereto, the said arched axle with its supporting-wheels in advance of the plow, a caster-wheel directly in rear of the plow and connected to the rear end of the said bars, the plow pivotally connected to said frame in rear of the plow, and an operating-lever having an arm connected to the plow, all substantially as and for the purpose set forth.

2. In a sulky-plow, the tongueless sulky consisting of the frame *F*, provided with the rearwardly-projecting bars *c c*, rigidly attached to the axle, the wheels *W W* and axle *a* in advance of the plow, the caster-wheel *V*, directly in rear of the plow, in combination with a plow pivotally connected to the frame in rear of the plow, all substantially as and for the purpose set forth.

3. The combination of the frame *F* and caster-wheel *V* with the block *J*, consisting of the U-shaped bar *e*, with the bar *e'* rigidly attached thereto, and provided with the ears *d d*, substantially as and for the purpose set forth.

4. The frame *F*, provided with rearwardly-projecting bars, the plow provided with a beam having rearwardly-projecting arms, and the caster-wheel provided with a yoke, in combination with the block *J*, rigidly attached to the said bars, the said arms pivotally attached to the said block, and the yoke of the caster-wheel loosely seated in the said block, all substantially as and for the purpose set forth.

5. The lever *L*, provided with a long arm and two short arms, one of said short arms, *m*, connected to the plow by a link and adapted to elevate the plow in a movement of said long arm, the other said short arm, *n*, provided with a brake-shoe adapted to bear and brake upon the wheel at about the time the plow is elevated above the ground, substantially as and for the purpose set forth.

6. The sulky-plow clevis *C*, consisting of the platform-like draw-plate 2, provided with the rearwardly-projecting arms 1 1, the upwardly-projecting stops 3 3, and the perforated ears 4 4, with the rod 5, hammer-strap 6, and draw-pin 7, all substantially as and for the purpose set forth.

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