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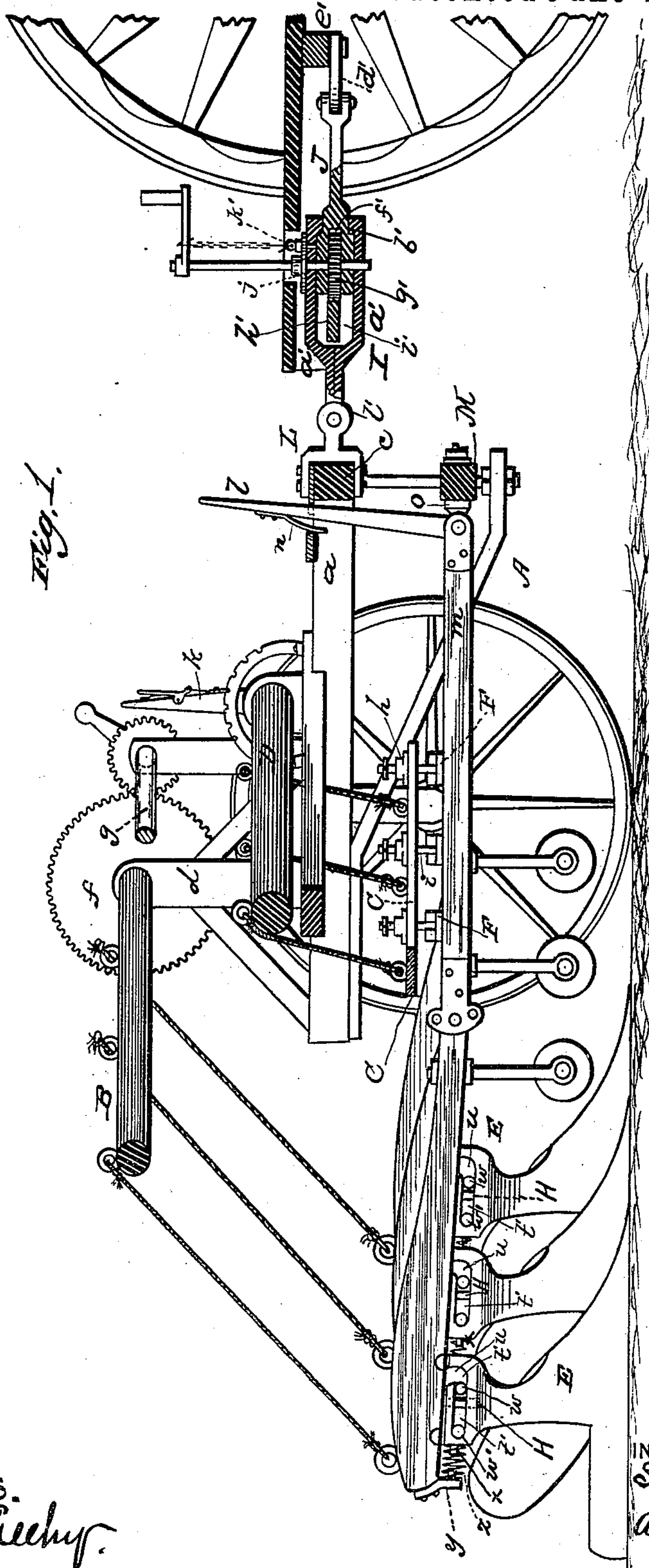
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S. L. WILSON.

GANG PLOW.

No. 300,671.

Patented June 17, 1884.



WITNESSES
E. H. Bates.
James J. Peck.

INVENTOR
Selden L. Wilson
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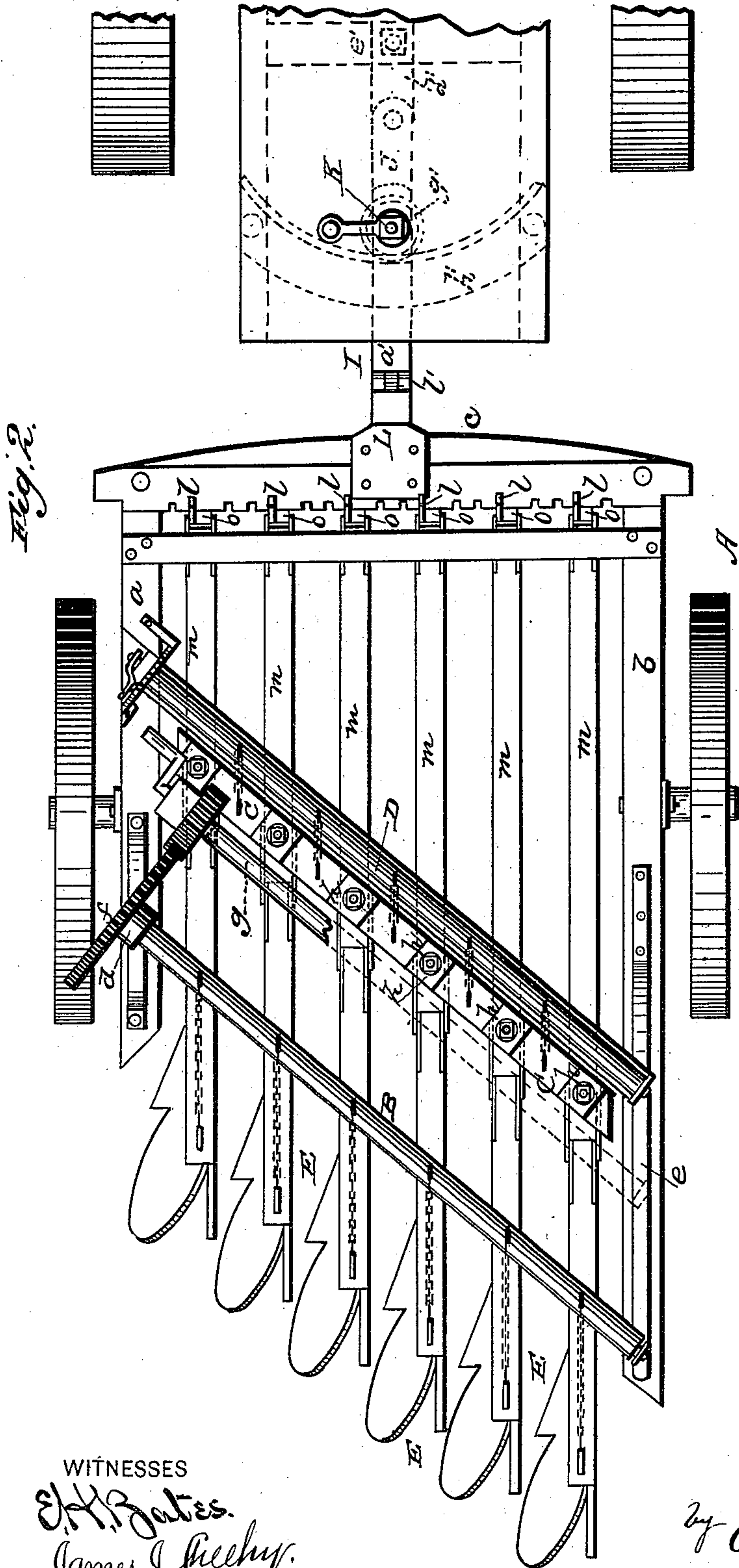
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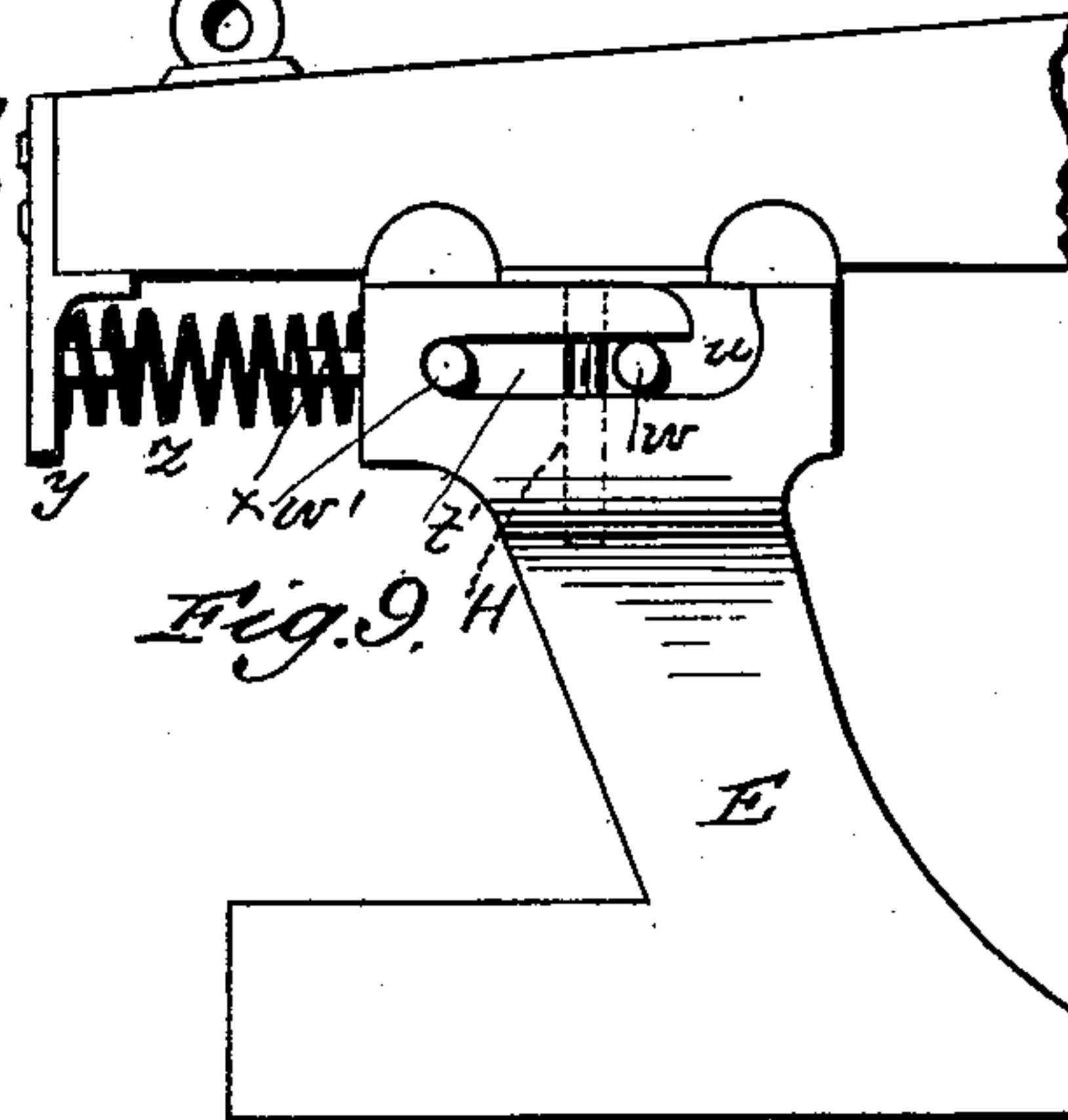
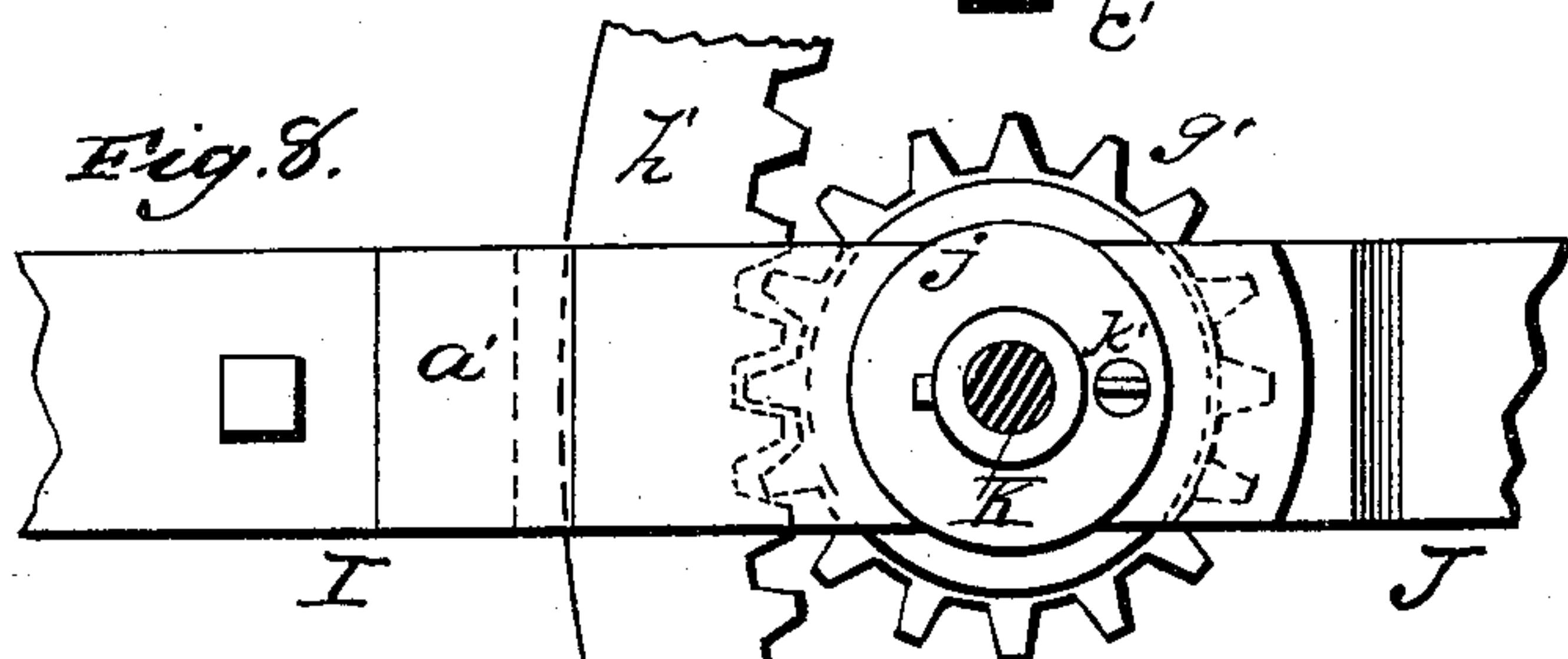
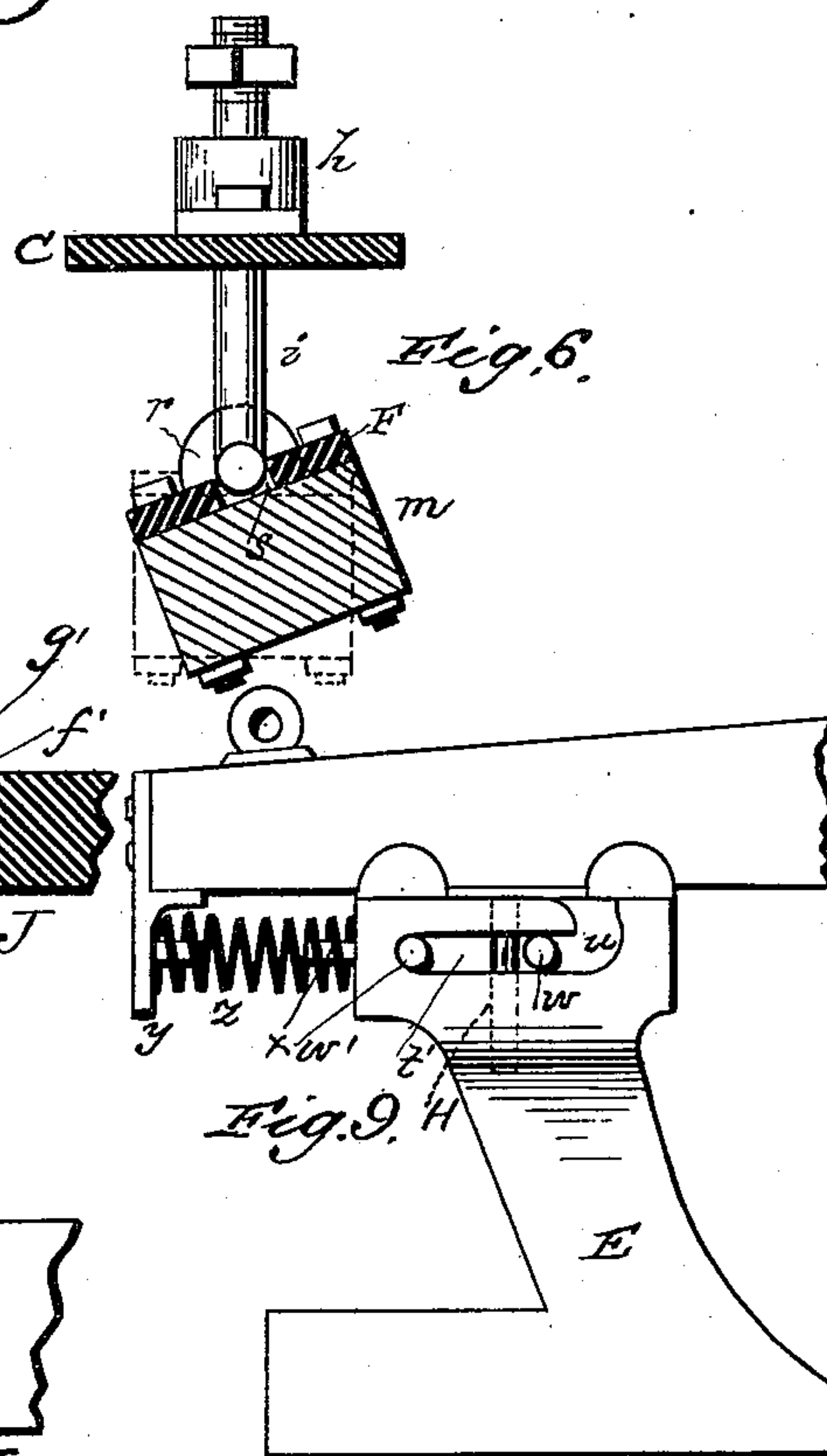
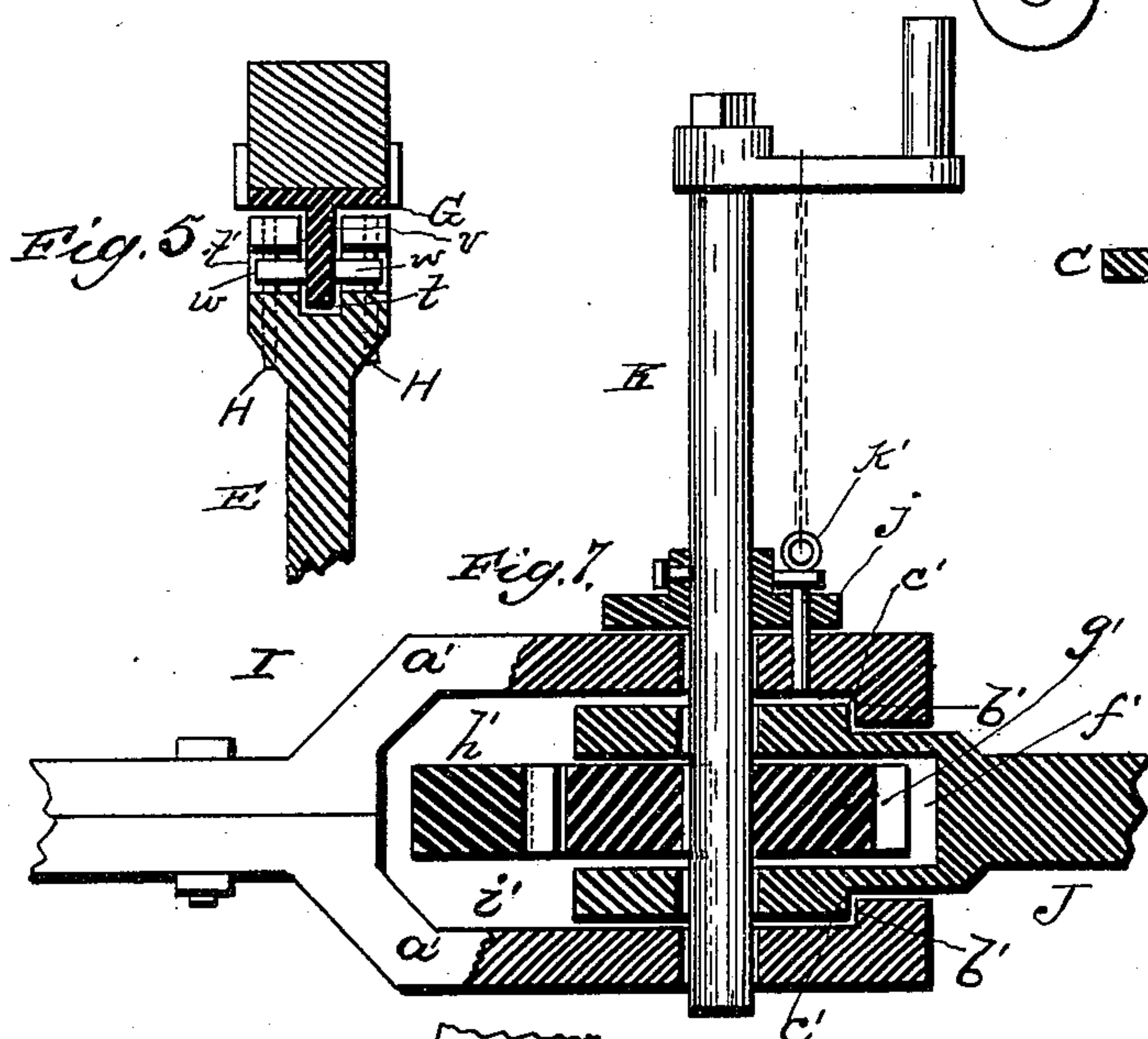
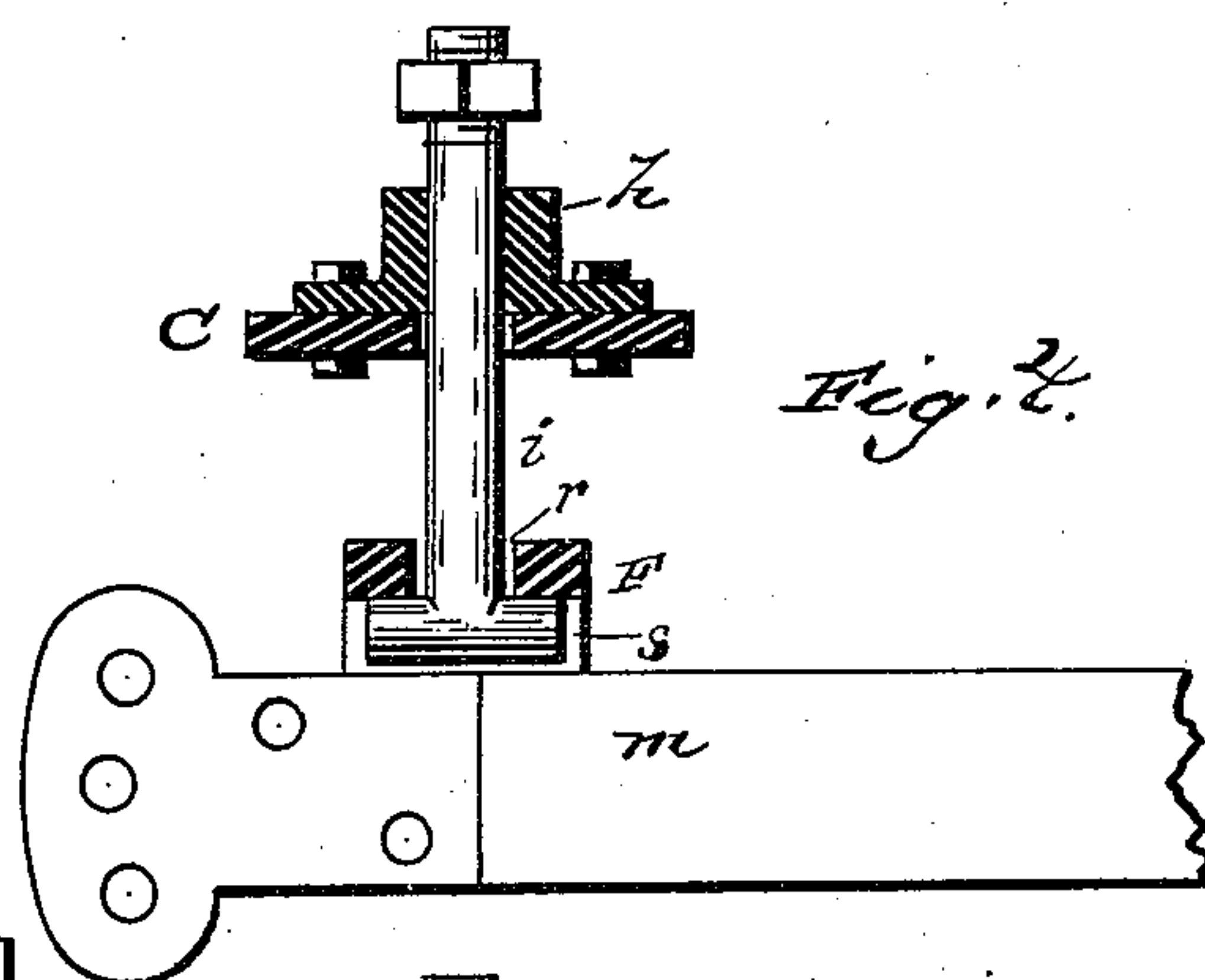
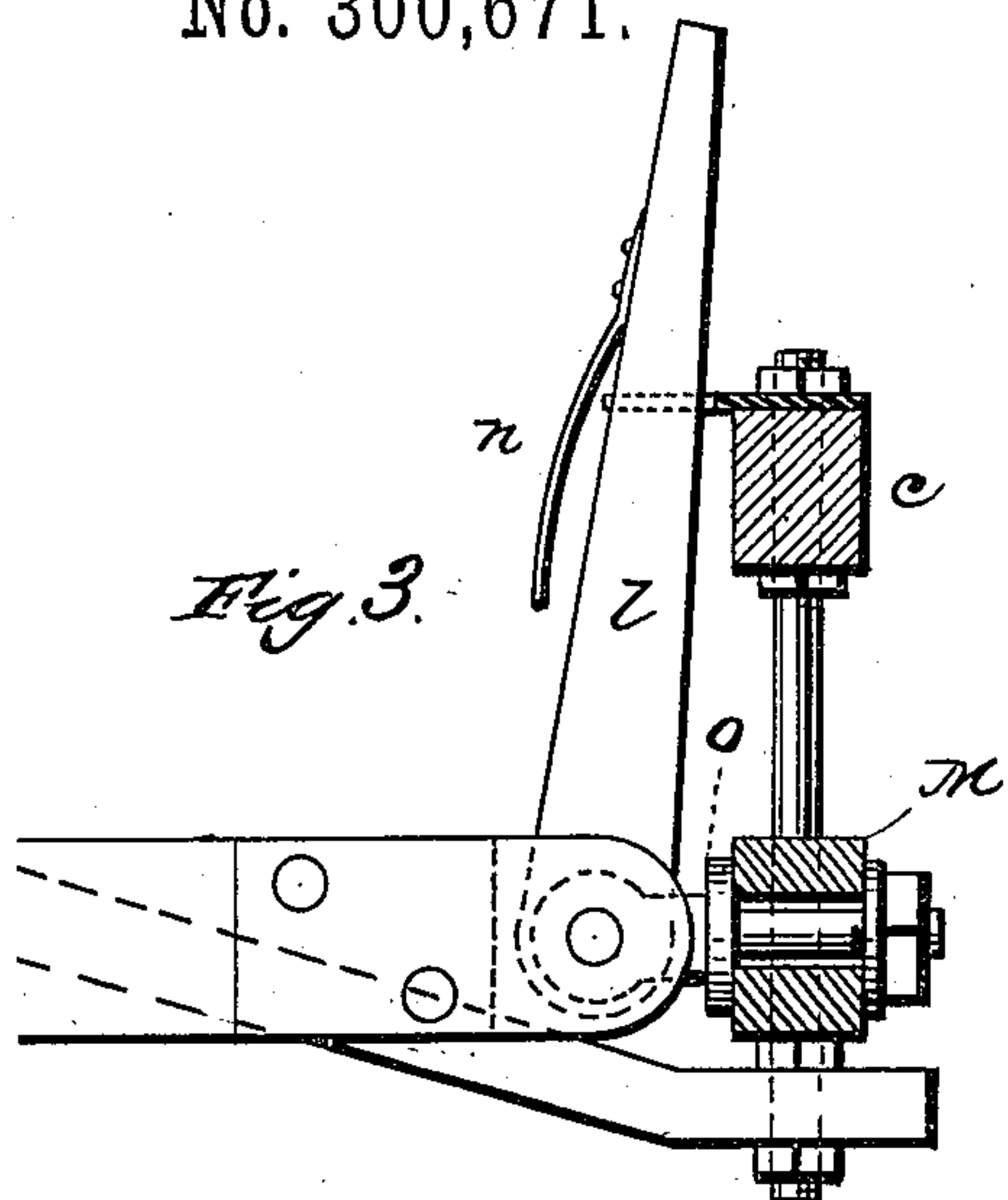
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UNITED STATES PATENT OFFICE.

SELDEN L. WILSON, OF WAYNESBOROUGH, PENNSYLVANIA.

GANG-PLOW.

SPECIFICATION forming part of Letters Patent No. 300,671, dated June 17, 1884.

Application filed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, SELDEN L. WILSON, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Gang-Plows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a vertical sectional view of my device. Fig. 2 is a plan view; and Figs. 3, 4, 5, 6, 7, 8, and 9 are detail views.

This invention has relation to improvements in gang-plows to be hauled by traction-engines or other suitable mechanical moving motors, and also in means for connecting the same to an engine in such a manner that each plow may be independently adjusted to the unevenness of the earth over which it travels, and
20 always plow a furrow of the same depth, with means whereby each plow may be canted to the right or left, to adapt itself to the desires of the operator in opening up a furrow, and the engine allowed to turn in any desired di-
25 rection without breaking or injuring any of the parts of the plow.

To this end my invention consists in the construction and novel arrangement, in connection with the plow-frame, of a diagonally-arranged
35 bar having vertical perforations provided with castings to receive vertical rods, which are connected at their lower ends to the plow-beams in such a manner as to allow a rocking movement of the beams and plows, and in connection therewith of a rock-shaft journaled at op-
40 posite end in beams or brackets rising from the side rails of the frame, having cord-connections with the said diagonal bar, whereby the whole gang may have their forward ends
45 simultaneously raised from the earth when desired.

It also consists, in combination with the said plows and their beams, of forwardly-extending hinged beams having their extreme forward
50 ends swiveled to a transverse bar beneath the draft-bar, which is adjustably secured beneath the draft-bar by means of vertical bolts pass-

ing through perforations at its opposite ends, which connect at their upper and lower ends, respectively, to the said draft-bar and forwardly-inclined side bars, and hand-levers for
55 canting or setting the plows.

It also consists, in combination with the said plows and means for vertically and laterally adjusting them, of means for connecting the
60 plow-frame to an engine.

It also consists, in combination with the said frame and its connecting devices with the engine, of mechanism whereby the plows and their supporting-frame may turn corners or
65 move out of a straight line without cramping or crowding the plows or injuring the frame of the machine in any manner whatever.

It also consists, in combination with the plow-beams having their rear under sides provided with castings having keel-flanges and two pairs of opposite laterally-extending studs, of the plows having their standards bifurcated at their upper ends, the wings of the bifurcations having longitudinal slots which open at
70 their forward ends into vertical slots, a stud arranged vertically within the bifurcation of the standard to form stops for the studs of the said castings, and a spring interposed between the rear upper end of the standards and a
75 downward vertically-extending arm secured to the said beams, whereby the plows on striking an obstruction will be allowed to hinge or swing freely with relation to their beams; and it also consists in several details of construction,
80 as will be hereinafter more fully set forth, and particularly pointed out in the claims appended.

Referring by letter to the accompanying drawings, A designates the plow-frame, which
85 consists of the side beams, *a b*, and the forward transverse beam, *c*. The side beams are of unequal length. They are connected at their forward ends at right angles by means of the bar *c*, so that the gang of plows
90 will be brought in such a diagonal position that each plow will have ample room to turn its furrow at the rear of its antecedent. Rising from the short side beam of the frame is a post, *d*, and from the long one rearwardly
100 is an arm, *e*, in the upper ends of which are journaled the opposite ends of a drum, B, from which extend cords which connect at their lower ends to the plow-beams. One end of

this drum extends slightly beyond its bearing, and is provided with a suitable-sized cog-wheel, *f*, which is designed to engage with a pinion arranged upon a similar shaft or drum, *g*, which is also supported upon the respective side bars of the frame, and lies in a plane parallel to that of the said shaft or drum *B*, for raising and lowering the plows. The cog and pinion may, however, be dispensed with, the shaft *g* provided with a crank-arm, and the respective shafts connected by a rope or ropes to wind in opposite directions, when the plows may be operated in a substantially similar manner.

C indicates a diagonal bar, which is arranged above the plow-beams at the rear of their hinged bars by means of the vertical bolts *i*, passing through perforations therein, on which bolts the said bar is allowed a vertical play. This bar is designed to hold the plows at certain distances apart in the gang to regulate the width of the furrows. It is provided on its upper face at suitable intervals along its length with castings *h*, which are vertically extended and perforated to receive bolts or rods *i*, which are connected with the plow-beams to prevent any lateral movement above the said bar, the bar being connected by ropes to a rock-shaft, *D*, journaled in bearings upon the side rails of the frame above the said diagonal bar. One end of the said rock-shaft is provided with a spring-lever, *k*, which is used to turn the said shaft in raising the plows, and the frame is provided with a segmental rack, by which the said lever may be engaged for locking the rock-shaft when the plows are raised. The forward transverse bar, *c*, of the frame is provided with a rearwardly-extending rack-bar, which is designed to receive the hand-levers *l*, which connect at their lower ends to the swivels *o*, secured to the transverse vertically-adjustable bar *M*, and at the forward ends of the hinge-beams *m*, which are provided at their rear edges near their handle portions with flat springs *n*, which keep their forward edges in engagement with the teeth of the rack-bar.

F indicates castings, which are secured upon the upper faces of the hinge-beams directly beneath the diagonal bar *C*, in which is loosely connected the *T* end of the bolts *i*. These castings are provided with a longitudinal slot, *r*, for the passage of the longitudinal vertical stem of the said bolt, and an under recess, *s*, to receive the cross-bar of the bolt. By this construction it will be perceived that should the operator desire to cant a plow, or any number of them, he may do so by simply grasping the hand-levers *l*, and after drawing them toward him to clear the teeth of the rack-bar upon the forward bar of the frame and moving them to the right or left, according to his desire, the springs will, upon the release of his grasp, throw them back in the teeth of the rack and there securely hold them.

E indicates the plows, which may be of any approved construction, having their standards

provided at their upper ends with a recess or bifurcation, *t*, the side walls of which are provided with elongated slots *t'*, which communicate at their forward ends with a vertical slot, *u*.

G indicates castings, which are constructed as shown, and secured to the outer under side of the plow-beams by means of screws or other suitable fastening devices. These castings are provided with a keel-flange, *v*, having two lateral studs, *w w'*, extending from opposite sides of the said flange, and are designed to enter the slots in the bifurcated walls of the standards, as shown, to serve as bearings for the plows.

H indicates a pin, which is inserted vertically through the upper end of the plow-standards between each pair of studs *w w'*, by means of which the plow, when met by an obstruction, will be allowed to draw rearward a sufficient distance to bring the vertical slots *u* to the forward pins of the keel-flanges, when the point will swing freely until the obstruction has been passed. The rear pins, *w'*, will be prevented from leaving the slots by means of the said vertical stop-pins.

At the rear upper end of the plow-standards is a short rearwardly-extending horizontal stud, *x*, and at the extreme rearward ends of the plow-beam is a short downwardly-extending arm, *y*, having a similar stud to receive the respective ends of a cushion-spring, *z*, which serves to throw the plows back in their normal position after the obstruction has been passed.

I indicates the coupling device for coupling the plow-frame to a traction-engine, which consists of the sectional castings *a' a'*, which are recessed on their inner faces, and provided with curved shoulders *b'* at their forward ends, which are designed to engage similar shoulders, *c'*, on the outer faces of a connecting-link, *J*, which is pivoted at its forward end to an arm, *d'*, extending from the draw-bar of the engine, as shown at *e'*.

The link *J* is bifurcated at its rear end, as shown at *f'*, to receive the pinion *g'*, which engages a segmental rack-bar, *h'*, which lies in the recess *i'* of the double casting *a'*, and is secured at its opposite ends to the platform of an engine.

K indicates the pinion-shaft, which is provided at its upper end with a crank-arm for operating the same, and keyed to the said shaft above the castings is a collar, *j*, which may be made fast to the said castings by means of a vertical pin, *k'*.

L indicates a casting, which is bolted at its rear end to the draft-beam of the plow-frame, having a forwardly-extending arm carrying an eye, *l'*, to which is hinged the rear end of the casting *a'*. By this construction it will be perceived that the entire draft of the machine is at all times brought upon the inner shoulders, *b' b'*, of the castings *a'* and the shoulders *c' c'* of the bifurcated link *J*, thereby relieving the pinion and segmental rack-bar from

any frictional engagement which may be caused by draft. Thus it will be seen that a rigid connection is obtained between the plow-frame and engine when the pin *k'* is dropped into its seat, as shown in Fig. 7. It will also be seen that by the employment of the pinion and segmental rack-bar the operator may have full control of the plows independent of the engine, as he can change the position of the plows relative thereto by simply turning the crank-arm of the pinion.

The plow-beams are provided with the usual caster-wheels, to regulate the depth of the furrows.

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

1. The combination, with the plow-frame, constructed substantially as described, having its forward transverse bar, *c*, provided with a rack-bar, of the vertically-adjustable transverse bar *M*, the hinged bars *m*, swiveled at their forward ends to the said adjustable bar, the spring-levers, and plows, all adapted to operate substantially as and for the purposes specified.

2. The combination, with the frame *A*, of the vertically-adjustable transverse bar *M*, the hinge-bars *m*, swiveled at their forward ends to the said adjustable bar, the hinge-bars having the castings *F*, the diagonal bar *C*, having the vertically-perforated castings *h*, the T-bolt *i*, the plows, and spring-levers *l*, substantially as specified.

3. The combination, with the plow-beams provided with the castings *G*, having the keel-flanges *v* and laterally-extending studs *w w'*, of the plows having their standards bifur-

cated at their upper ends, and provided with the elongated open slots *t'*, the vertical stop-pin *H*, the downwardly-extending arm *y*, and the spring interposed between the said arm and the plow-standard, substantially as specified.

4. The means herein described for adjusting and connecting the plow-frame to a moving motive power consisting of the castings *a' a'*, having the shoulders *b' b'*, the bifurcated link *J*, having shoulders *c' c'*, the segmental rack-bar *h'*, pinion *g'*, its shaft and crank-arm, the perforated collar *j*, secured to the said shaft by a set-screw or key, and the pin *k'*, for connecting the collar to the casting *a'*, whereby the coupling of the plow-frame with the engine is made rigid laterally, substantially as and for the purposes specified.

5. The combination, with the frame, of the hinge-beams *M*, having castings *F*, and the plow-beams, the rock-shaft *D*, the diagonal bar *C*, carrying castings *h*, cords for connecting the diagonal bar to the rock-shaft, with means, substantially as shown and described, for operating the same.

6. The combination, with a traction-engine, of a plow-frame and mechanism for moving the plow-frame laterally with relation to the engine, the said mechanism being connected to the plow-frame by a vertical hinge-joint, and to the engine by a lateral hinge-joint, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SELDEN L. WILSON.

Witnesses:

JAMES J. SHEEHY,
M. P. CALLAN.