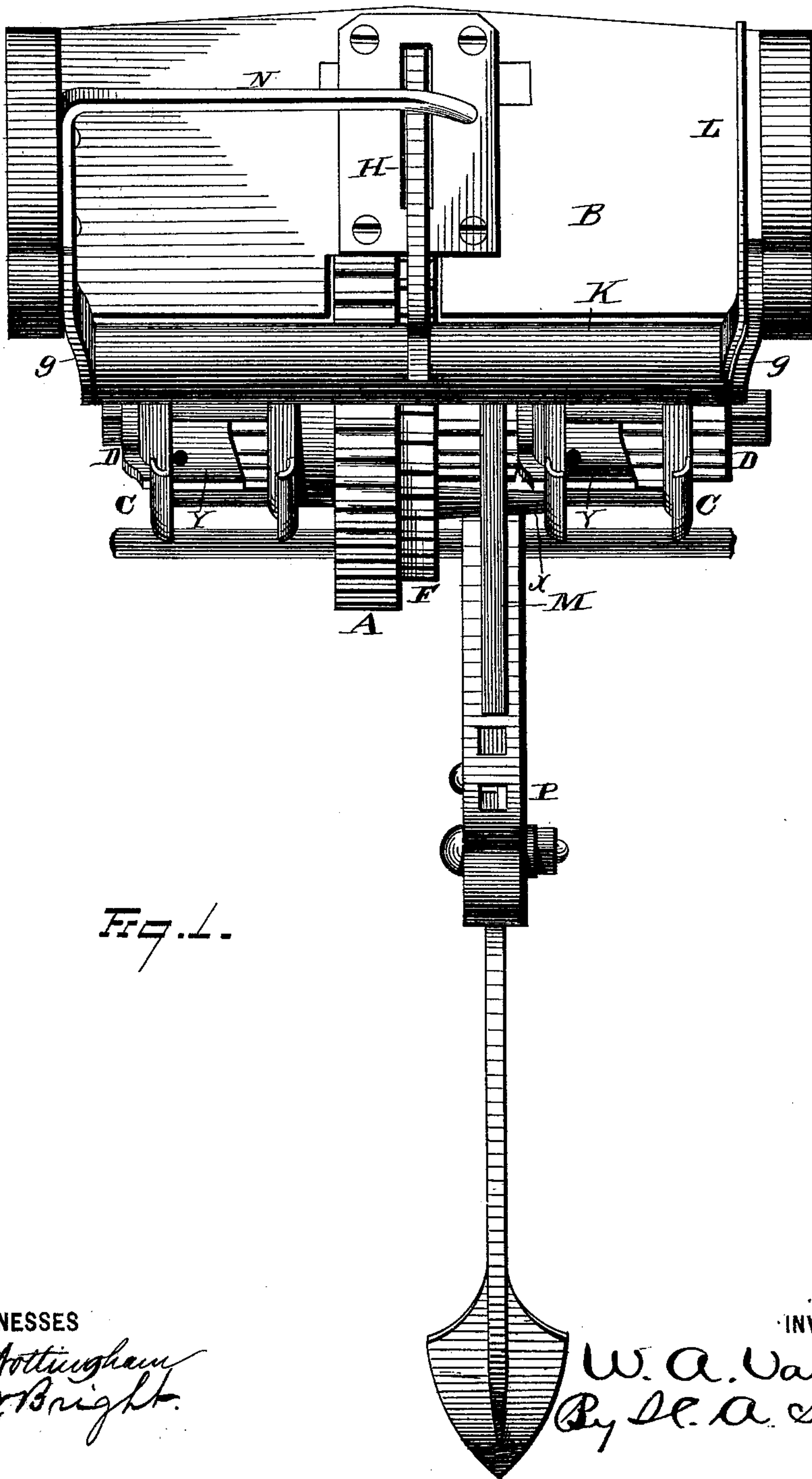


W. A. VAN BRUNT.  
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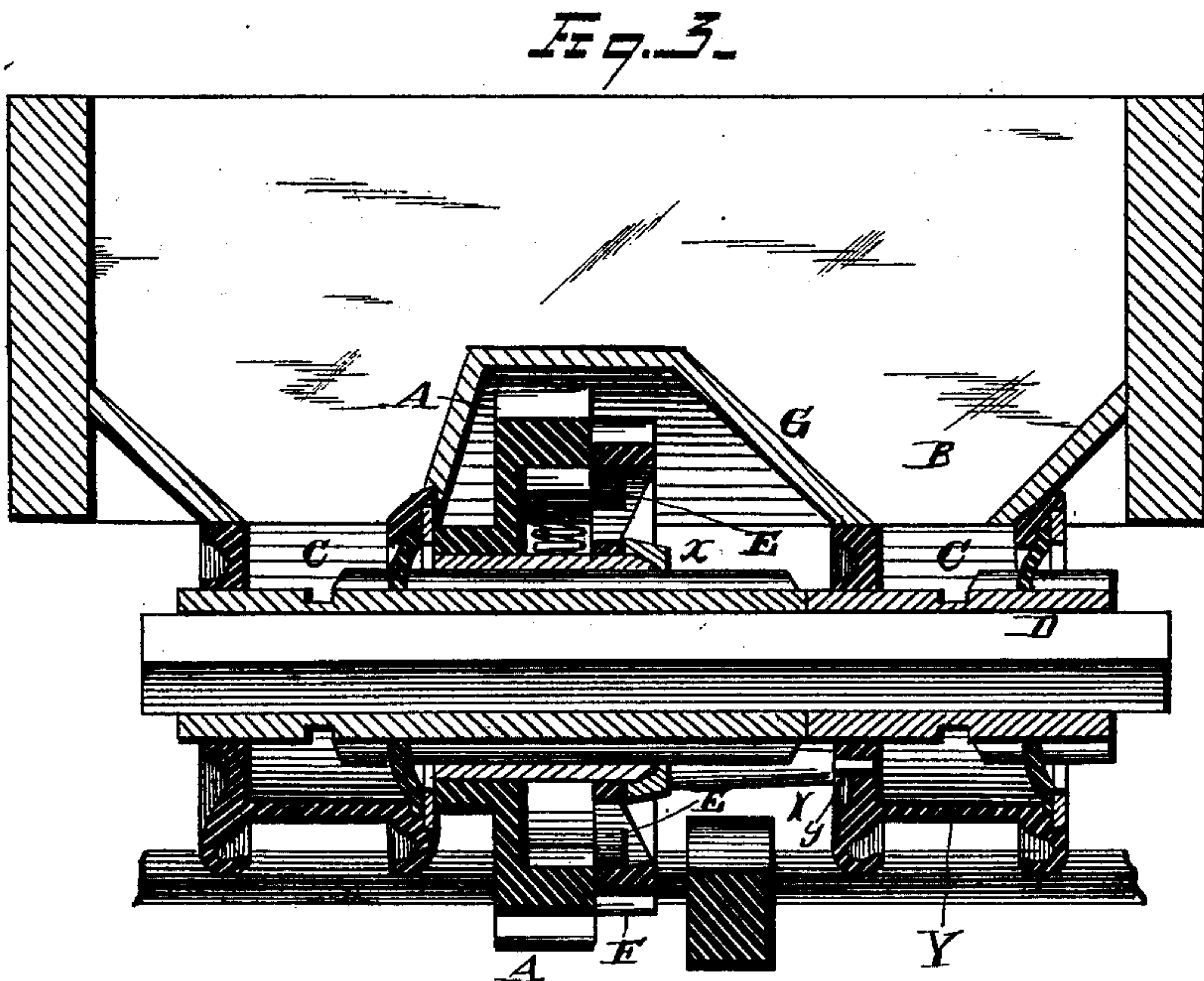
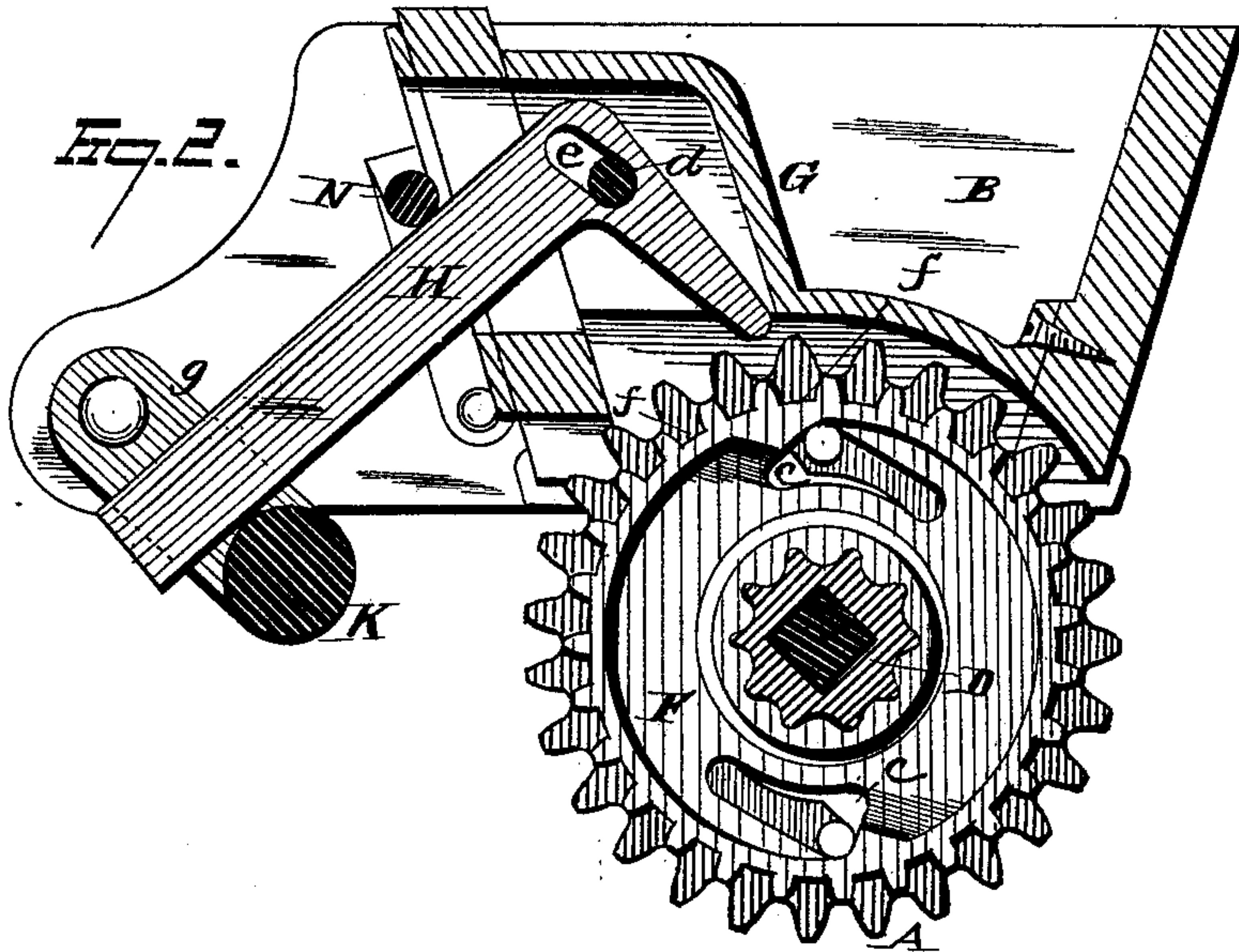
Patented Sept. 30, 1879.



WITNESSES  
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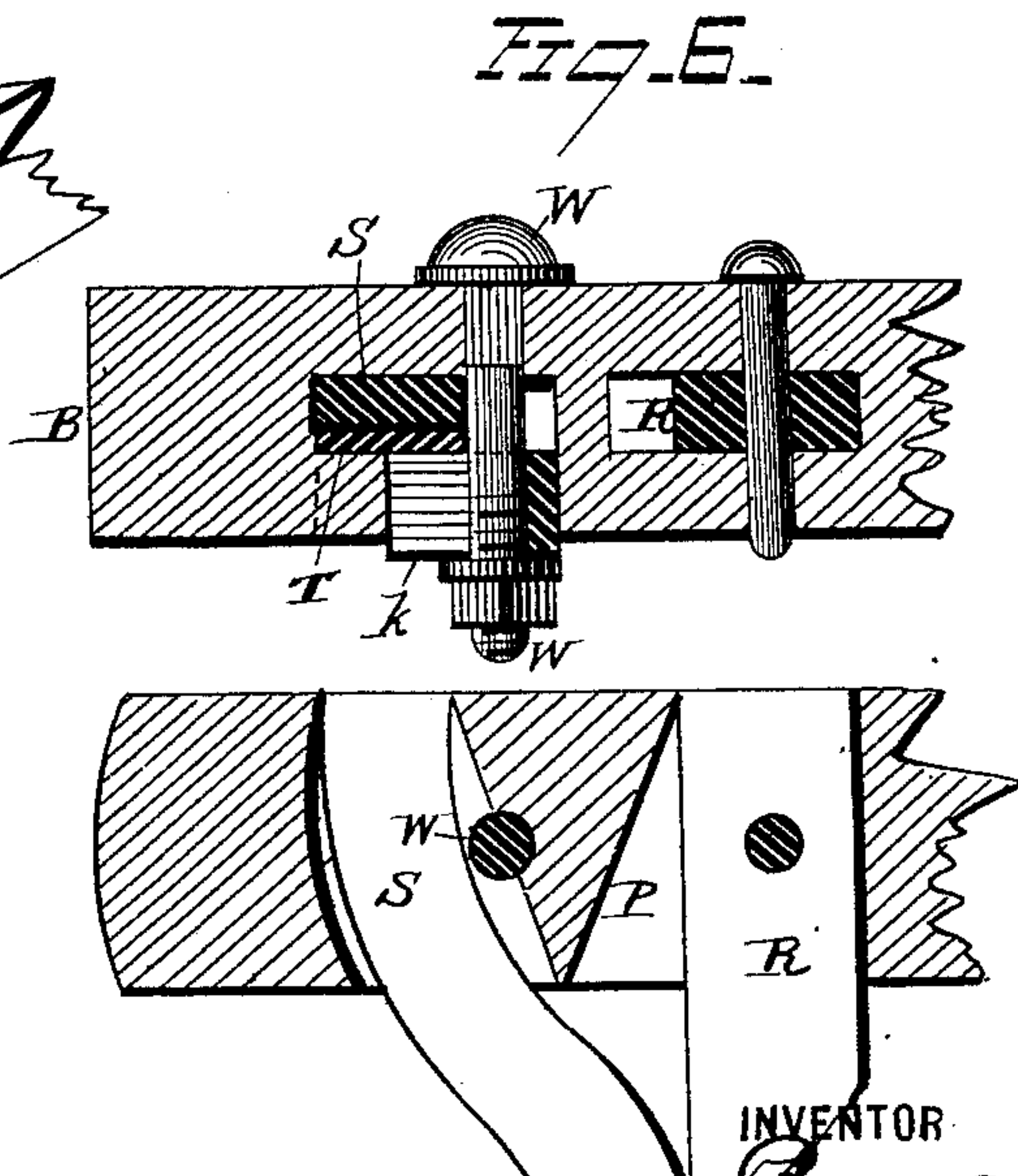
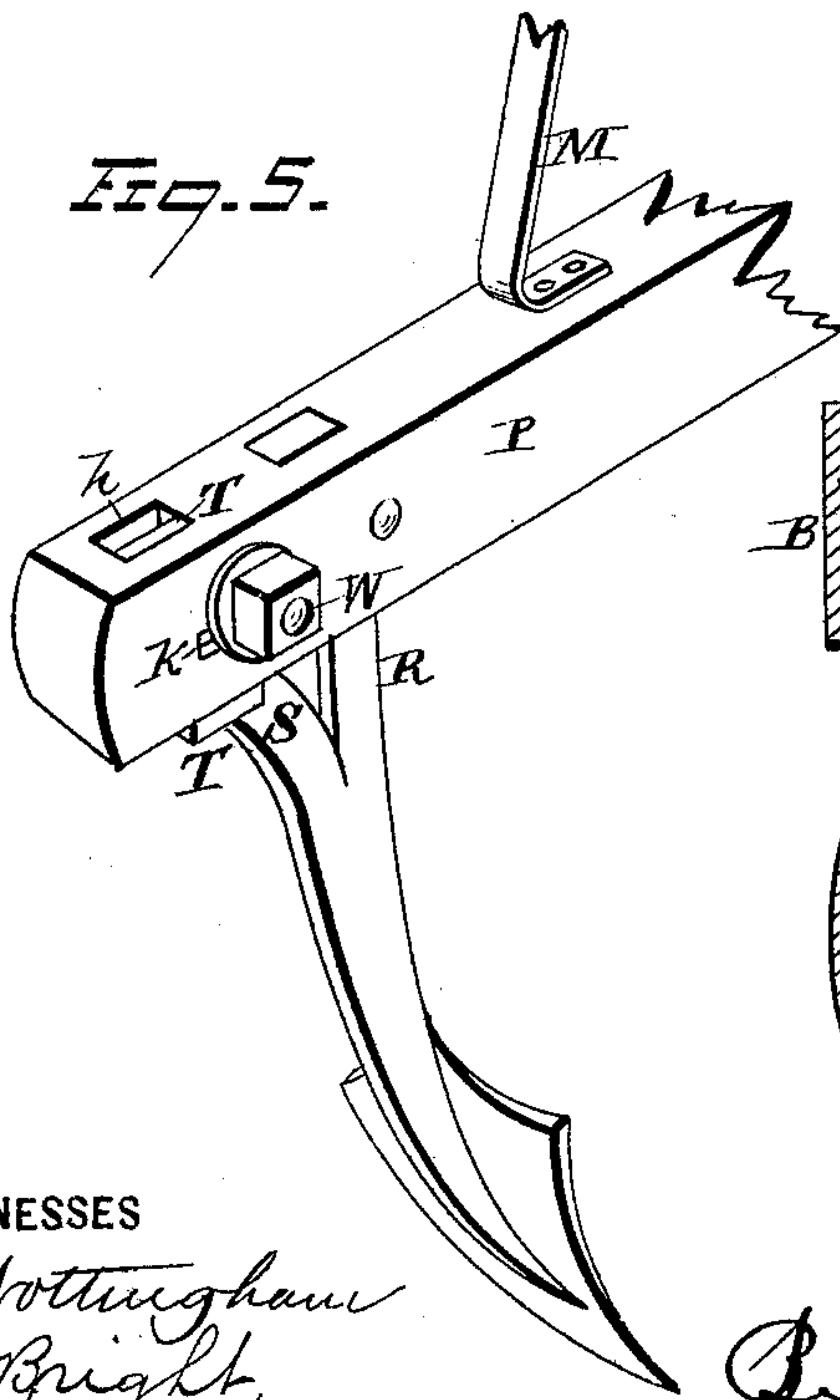
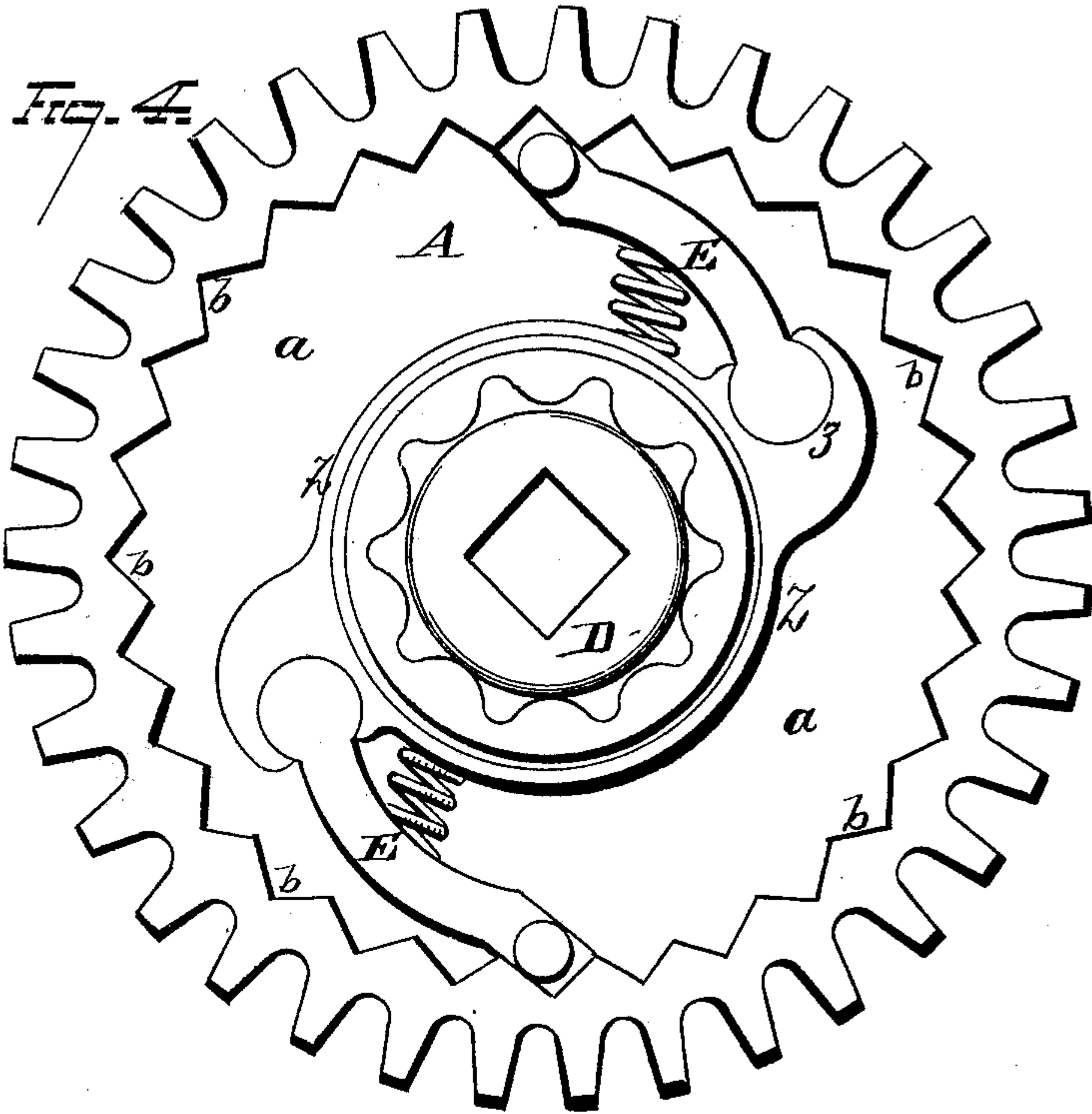
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# UNITED STATES PATENT OFFICE.

WILLARD A. VAN BRUNT, OF HORICON, WISCONSIN, ASSIGNOR TO VAN BRUNT & DAVIS COMPANY, OF SAME PLACE.

## IMPROVEMENT IN SEEDERS AND PLANTERS.

Specification forming part of Letters Patent No. **220,100**, dated September 30, 1879; application filed June 13, 1879.

*To all whom it may concern:*

Be it known that I, WILLARD A. VAN BRUNT, of Horicon, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Seeders and Planters; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to seeders and planters of the particular class known as "force-feeding machines," and is designed to form a construction which will accomplish the various objects which follow: first, to locate the gear mechanism beneath the seed-box, out of the way of falling dirt from the ground-wheels and between the seed-cylinders, allowing the proper feed adjustment of the latter, and also permitting them to be placed sufficiently near together to be used in a grain-drill, where the seed is planted in rows and each cylinder furnishes the seed for a row, the rows sown by some machines being necessarily very near together; second, to provide mechanism, substantially as hereinafter described, for throwing the machine in and out of gear—that is to say, to stop the cylinder-rod from turning and carrying out seed while the rest of the machine is in motion; third, to provide mechanism, substantially as hereinafter described, whereby the seeding-machine may be backed up and not revolve the cylinder-rod or cylinders, and, when started ahead, commence sowing immediately; fourth, to provide improved mechanism whereby the cylinders may be thrown out of operation simultaneously with raising the cultivator-teeth from the ground; fifth, to provide a safety cultivator-tooth adapted by improved means to slip back and prevent breakage when the same comes in contact with a stone or other rigid obstruction, said tooth also being adjustable, so as to work at a greater or less slant, corresponding with different qualities of soil.

Referring to the drawings, in which is represented a construction illustrating the invention, Figure 1 is a rear elevation. Fig. 2 is a

transverse vertical section. Fig. 3 is a longitudinal vertical section. Fig. 4 represents, in detail views, the gear-wheel, cylinder-rod with its pivoted arms, and the cam-slotted wheel. Fig. 5 is a detail view, showing the cultivator-tooth with a longitudinal portion of the drag-bar. Fig. 6 represents sectional views of the same.

The gear-wheel A is located beneath the seed-box B, and between the seed-cylinders C, so that the entire gear mechanism is out of the reach of dirt which falls from the ground-wheels in the travel of the machine. This wheel A is formed with an interior annular space, *a*, and also with internal bevel-teeth, *b*. Arms E, in any desired number, are, respectively, pivoted to a sleeve fitted over the cylinder-rod, in such manner as to permit the latter to have its longitudinal reciprocating movement, and yet prevent said arms from being carried around the rod. They are outwardly spring-pressed by any suitable elastic device, so that their free ends automatically engage with said internal bevel-teeth, and cause the cylinder-rod to be rotated in same direction with said gear-wheel, as the latter is rotated in grain-feeding movement. The incline of the bevel-teeth is, however, such as to permit the gear-wheel to be rotated in a backward movement, and not engage with said pivotal arms, so that the backward movement of the machine will not operate the feeding mechanism. A wheel, F, is also loosely journaled on the cylinder rod or devices secured to the latter, and is formed with cam-slots *c*, in number and location corresponding to said pivotal arms. As this cam-slotted wheel is rotated so as to press said arms inwardly by the bearing of the walls of the slots against the same, the gear-wheel is freed from all engagement with said pivotal arms, and the cylinder-rod has no locking connection therewith. Hence the seed-cylinders are thrown out of operation, as desired, and when the machine is backed they are also thrown out of operation in such manner as to be at once thrown into operation when the machine again travels forward.

The casing G is located within the seed-box and covers the gear mechanism. A bolt, *d*, passing transversely through the same, con-



stitutes a fulcrum for the angular lever H, made with a transverse slot, *c*, in which latter said fulcrum works. The lower arm of this lever engages with the external toothed periphery, *f*, of the cam-slotted wheel. Its power-arm projects through the side of the seed-box, so that the lower edge of the same may have bearing against the upper side of the horizontal shaft K, as the latter is bodily raised. The feed-cylinders are therefore thrown out of operation at the same time that the cultivator-teeth are raised from working position. This shaft is provided with transverse arms *g*, which journal it to the seed-box eccentrically with its own longitudinal axis. A bell-crank, L, has its short arm rigidly secured to one of the shaft-arms, parallel therewith, and operates said shaft.

Suitable connections M cause the drag-bars to be raised, as desired, and a spring-bar, N, bears against the upper edge of the angular lever H, to automatically cause the drag-bars to be lowered and the feed-cylinders to be thrown into operation simultaneously as soon as said horizontal shaft is turned downward on its eccentric bearings.

The drag-bars P are severally provided with adjustable safety-teeth of the following construction: The shank R of each tooth is pivoted within a suitable opening in the drag-bar, and is provided with a rear vertically curved brace, S, which has sliding movement in a vertical opening, *h*, of the drag-bar. A presser-plate, T, is placed in said opening, parallel with and having inner face bearing against said brace. A bar or other suitable device, *k*, is fitted transversely in the drag-bar, and having end-bearing against the outer face of said presser-plate. A bolt, W, passing transversely through the drag-bar, is provided with a washer, which bears against the projecting end of bar *k*. By tightening the nut on the bolt said bar is forced inward, and the presser-plate is held in close contact against the brace. This causes said brace to be wedged in between said presser-plate and the opposite wall of the opening in the drag-bar, so as to be secured in fixed position, as desired. By adjusting the nut on the bolt any suitable pressure may be exerted on said brace, so as to cause the cultivator-tooth to be maintained in working position and yield to any rigid obstruction; also, any degree of slant can be given the tooth, as may be required by the varying quality of different land being worked.

The cylinder-box Y has its inner-side casing provided with transverse holes *y*, in which latter fit the free ends of the horizontal rods or bars *x*, formed rigid with the ring X. Said ring is made independent of the cam-slotted wheel, and has inner face bearing against the same.

The sleeve Z has its inner surface ribbed the counterpart of the cylinder-rod, so as to permit the latter to have free reciprocating movement in a longitudinal direction, and yet prevent the sleeve from rotating thereon. Upon

this sleeve the independent gear-wheel has free axial bearing. The arms with which the internal gear engages have their pivotal extremities journaled in sockets *z*, which are formed on said sleeve, and are located in the annular space formed between the internal gear and the sleeve.

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

1. The combination, with a gear-wheel and a cylinder-rod, of a sleeve which journals said wheel on the rod and permits the latter to have independent longitudinal movement, together with mechanism which connects and disconnects said wheel and rod in rotary movement, substantially as set forth.

2. The combination, with a gear-wheel and mechanism which connects and disconnects it in rotary movement with the cylinder-rod, of a sleeve which supports both said wheel and mechanism on the rod without interfering with the independent longitudinal movement of the latter, substantially as set forth.

3. The combination, with a sleeve which fits on the cylinder-rod and permits the latter to have independent longitudinal movement, of a gear-wheel and a cam-slotted disk, both of which are journaled on said sleeve, together with one or more arms pivoted to the sleeve, and adapted by the rotation of said disk to be thrown in or out of engagement with said wheel, substantially as set forth.

4. The combination, with a sleeve fitted on the cylinder-rod, and permitting the latter to have independent longitudinal movement, of one or more arms pivoted to said sleeve, a cam-slotted disk, and a gear-wheel, both of which are journaled on the sleeve, together with a lever which rotates said disk, and thereby throws said arms in or out of engagement with said gear-wheel, substantially as set forth.

5. In a seeder and planter, the combination, with a sleeve fitted over the cylinder-rod and pivoted arms (one or more) connected therewith, of an independent gear-wheel having axial bearing on the sleeve, and provided with an internal gear, with which said arms engage, substantially as set forth.

6. In a seeder and planter, the combination, with a sleeve whose inner surface is ribbed the counterpart of the cylinder-rod, and pivotal arms (one or more) connected therewith, of an independent gear-wheel whose hub is fitted about said sleeve, said wheel having an internal gear, with which said pivotal arms engage, substantially as set forth.

7. In a seeder and planter, the combination, with a sleeve which is secured against rotation on the cylinder-rod, and yet permits the latter to have free longitudinal movement, of an independent gear-wheel having free axial bearing thereon, and provided with an internal gear, with which pivotal arms (one or more) engage, said arms having their pivotal extremities journaled in sockets formed on



said sleeve, and located between the latter and said internal gear, substantially as set forth.

8. In a seeder and planter, the combination, with the angular lever and the described mechanism actuated thereby to throw the cylinders out of operation, of the casing located in the seed-box to cover said mechanism, and in which the lever is fulcrumed, substantially as set forth.

9. In a seeder and planter, the combination, with a cylinder-rod, a gear-wheel loosely journaled thereon, and arms secured to the same rod, which automatically engage with said gear-wheel, of a cam-slotted wheel loosely journaled on the cylinder-rod, and a bell-crank lever which operates the same, together with a ring which has inner face bearing against the

cam-slotted wheel, and is provided with lateral bars or rods, which engage with the corresponding cylinder-box, substantially as set forth.

10. The combination, with the rear curved brace S and the vertical plate T, having lateral pressure against the same, of the horizontal key *k*, which has end-bearing against said plate, and the transverse bolt W, which clamps said parts together, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of May, 1879.

WILLARD A. VAN BRUNT.

Witnesses:

C. L. BUTTERFIELD,

D. D. FRENCH.