

(No Model.)

W. H. GENUNG.

DRILL.

No. 413,394.

Patented Oct. 22, 1889.

Fig: 1.

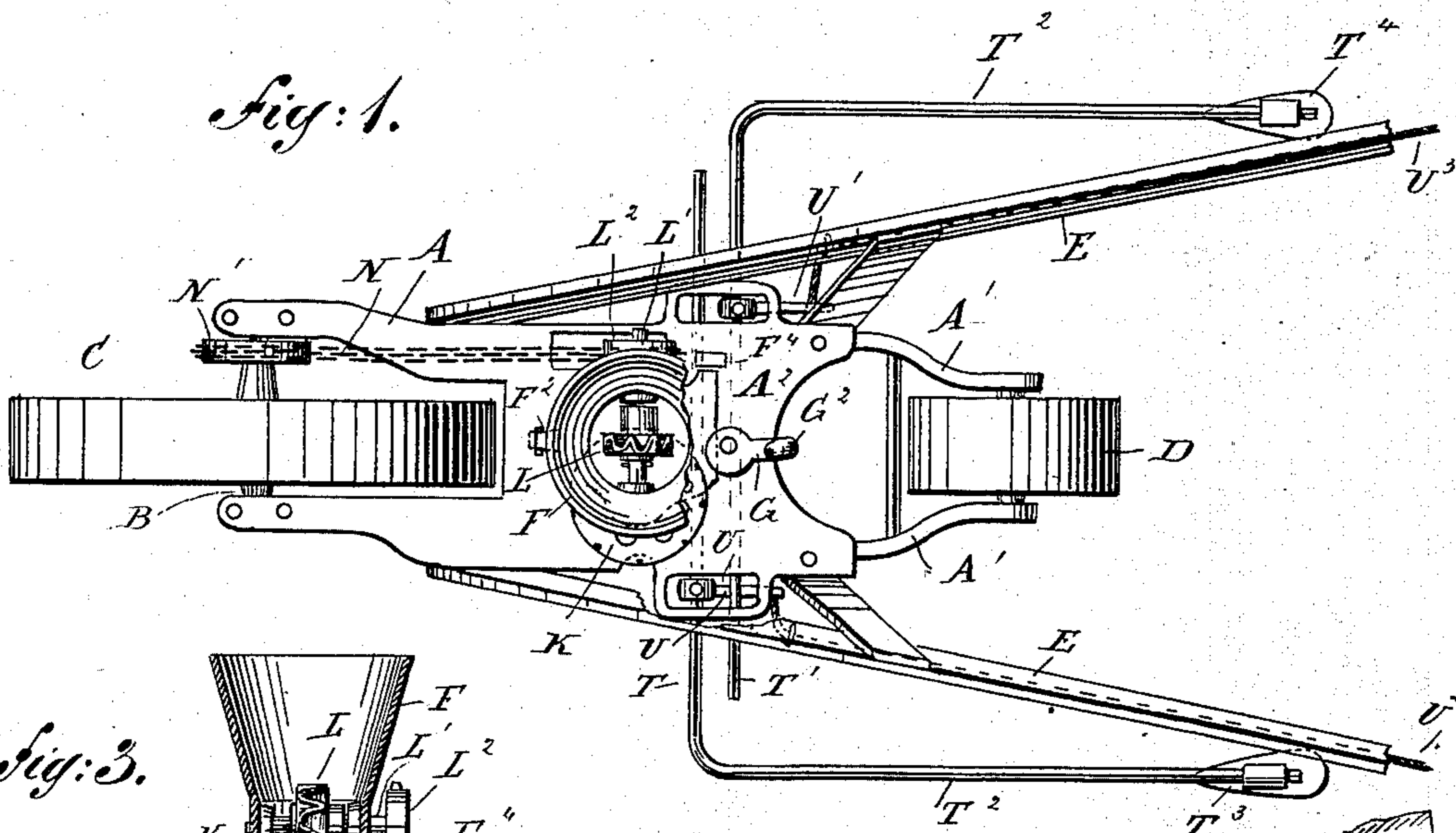


Fig: 3.

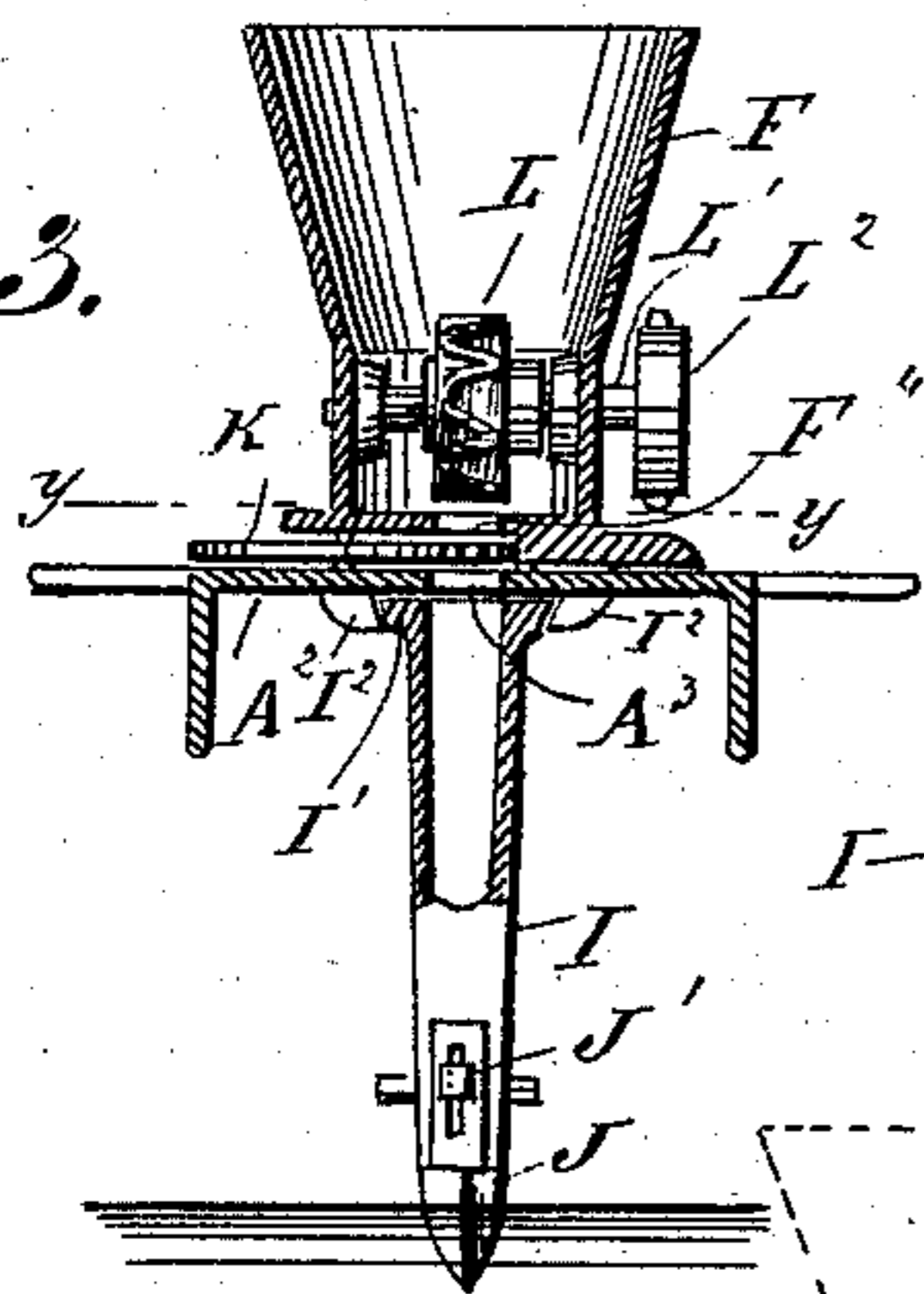


Fig: 5.

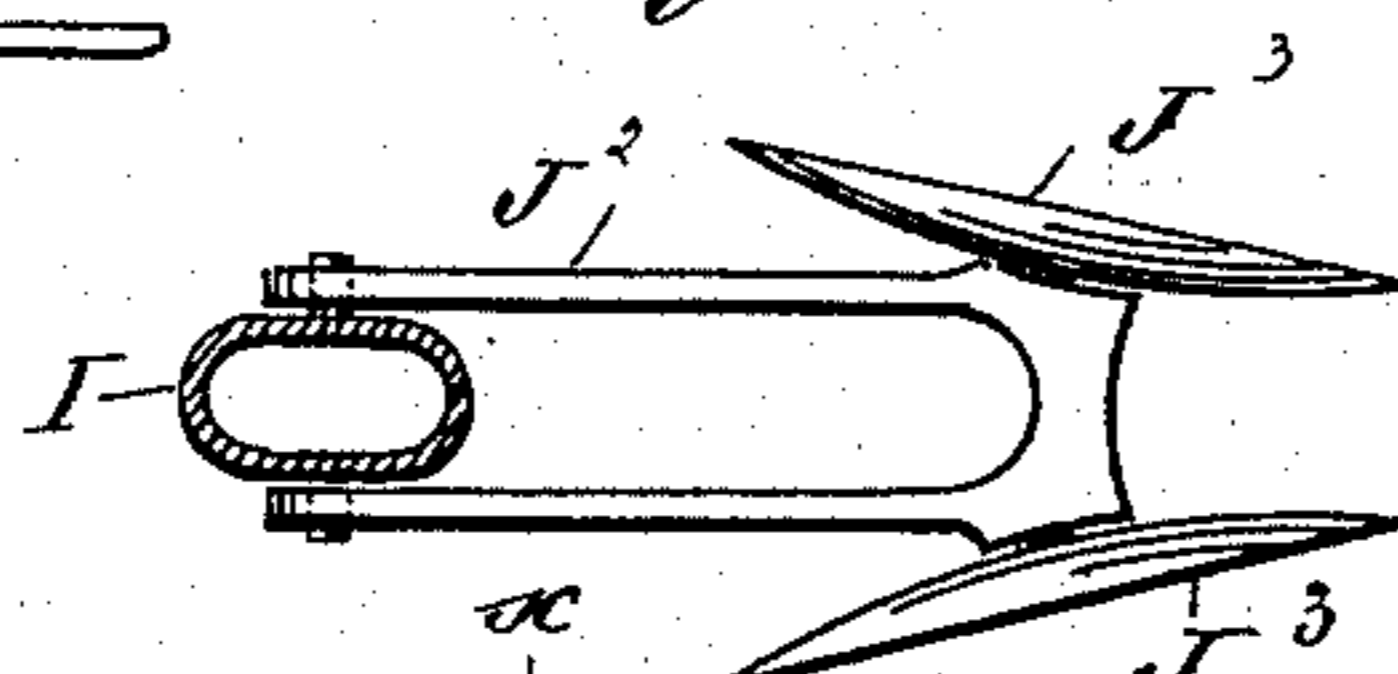


Fig: 2.

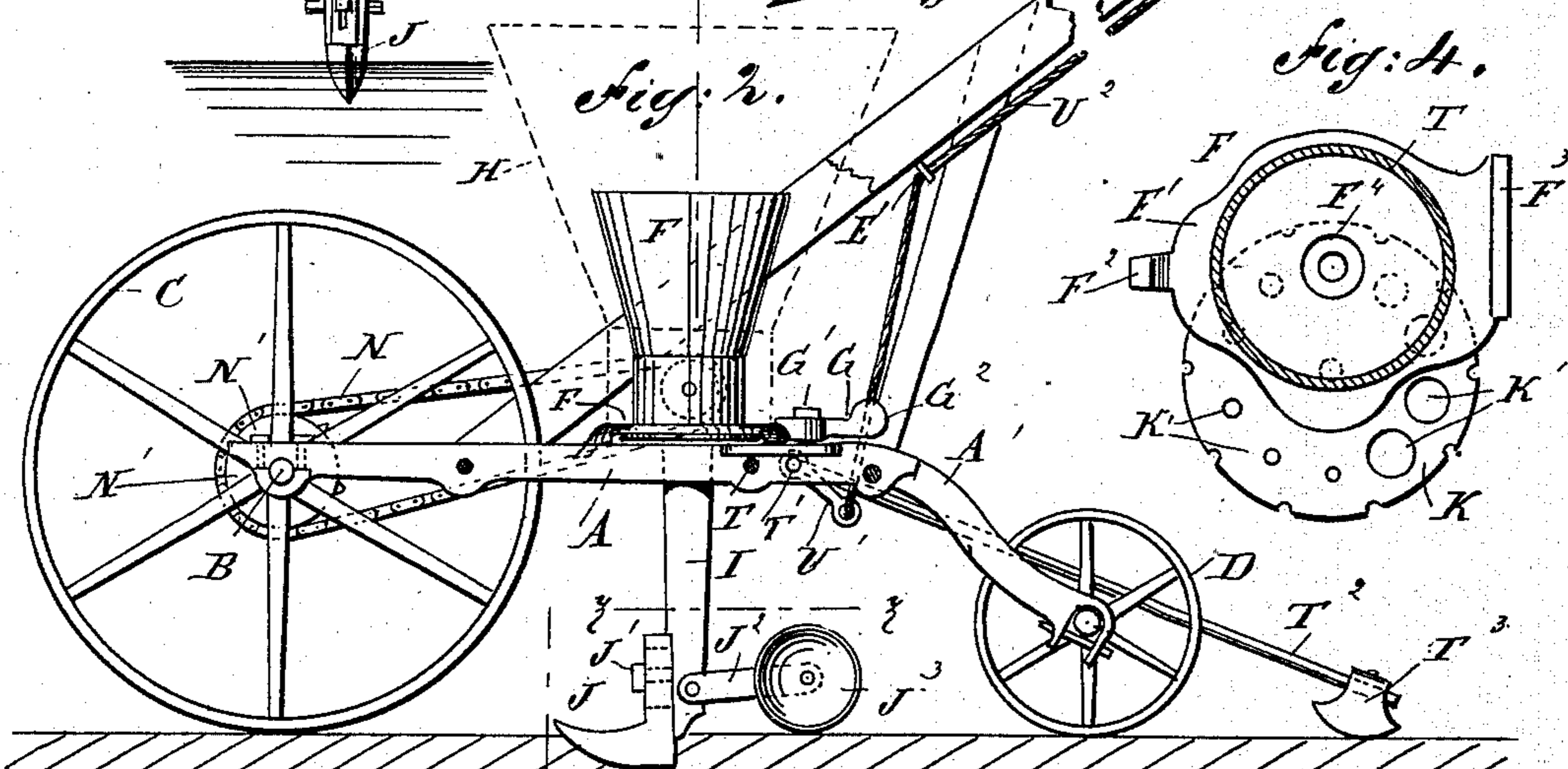
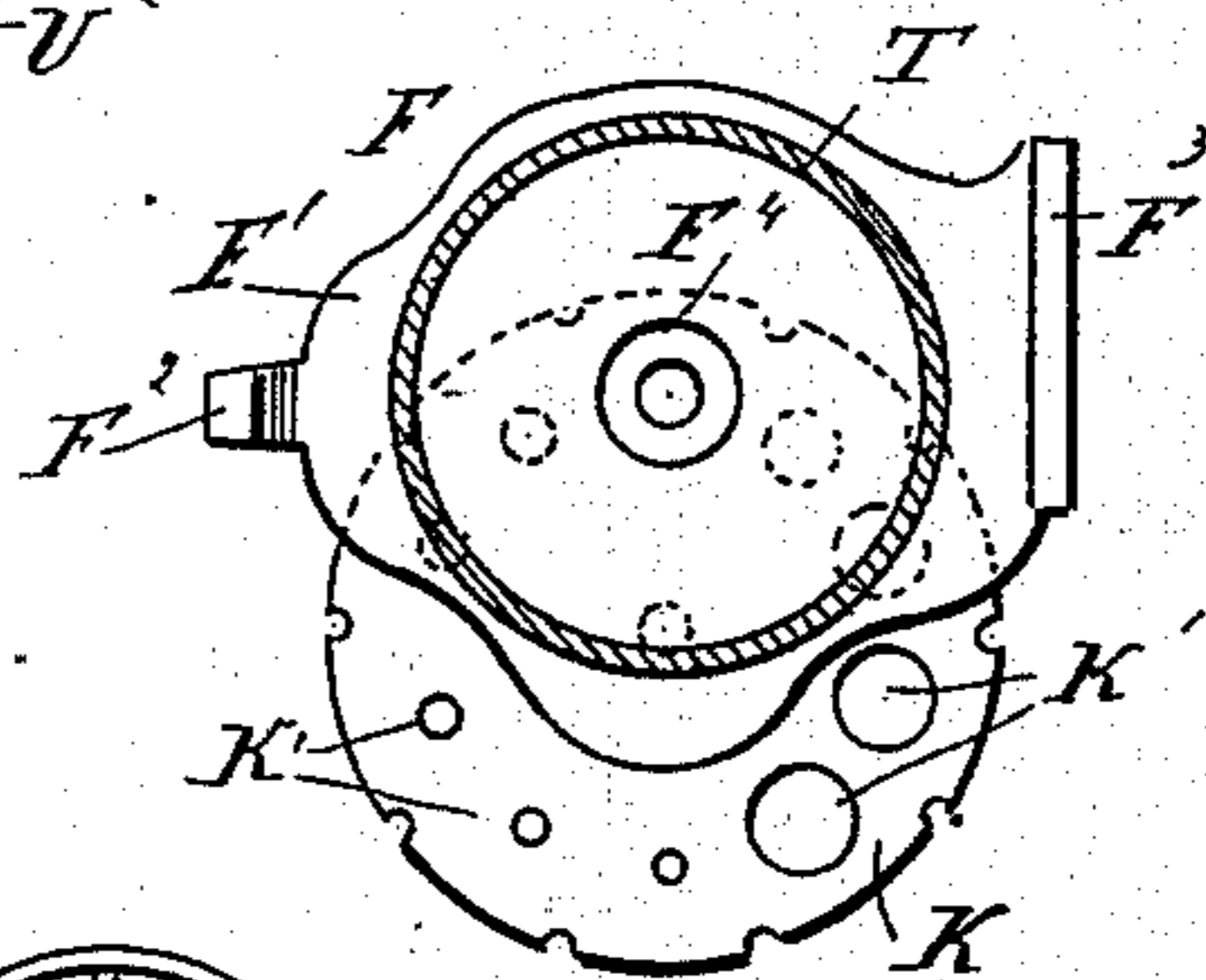


Fig: 4.



WITNESSES:

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DRILL.

SPECIFICATION forming part of Letters Patent No. 413,394, dated October 22, 1889.

Application filed June 11, 1889. Serial No. 313,839. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GENUNG, of Madison, in the county of Lake and State of Ohio, have invented a new and Improved Drill, of which the following is a full, clear, and exact description.

The invention relates to agricultural machines; and its object is to provide a new and improved drill which is simple and durable in construction, very effective in operation, and specially adapted for distributing fertilizer and for sowing all kinds of garden-seeds in rows.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a plan view of the improvement. Fig. 2 is a side elevation of the same with parts in section. Fig. 3 is a transverse section of the same on the line xx of Fig. 2. Fig. 4 is an enlarged plan view of the seed-hopper and adjacent parts on the line yy of Fig. 3, and Fig. 5 is an enlarged sectional plan view of the seed-spout and covering-plates on the line zz of Fig. 2.

The improved drill is provided with a frame A, of suitable construction, in the front forked end of which is mounted to turn in suitable bearings a shaft B, carrying the main driving-wheel C. From the rear end of the frame A project downward and rearward the brackets A', in the lower ends of which is journaled a small wheel D, which, with the front wheel C, supports the frame A above the ground. From the sides of the main frame A extend upward the handles E, formed in the usual manner.

The frame A is provided with a top plate A², in the rear end of which and in the middle is adapted to be held a seed-hopper F, provided on its bottom with a flange F', resting on the top plate A². The flange F' is provided at the front with a downwardly-extending lug F², passing through a corresponding aperture in the top plate A². The rear part of the flange F' is provided with the straight side F³, resting at its edge against the lug F⁴,

secured on the top plate A². Against the straight side F³ operates an eccentric cam G, pivoted at G' to the top plate A² and provided with a handle G², for moving the curved edge of the said eccentric-cam in and out of contact with the straight side F³ of the flange F', in order to lock the hopper F on the top plate A² or unlock it from the same.

In using the drill for distributing fertilizer, I employ a hopper H similar in construction to the hopper F, but somewhat larger, as shown in dotted lines in Fig. 2. The hoppers F and H are thus interchangeable on the frame A, and can be readily locked in place by the eccentric cam G, as above described.

In the bottom of the hopper F is formed an aperture F⁴, adapted to register with an aperture A³ in the top plate A², and through which the seed can pass into the discharge-spout I, extending downward vertically, and provided near its upper end at the sides with dovetails I', fitting into corresponding dovetailed grooves formed by lugs I² on the under side of the top plate A². (See Fig. 3.) The spout I can be quickly detached from the top plate A² by moving it forward so as to disengage the dovetailed lugs I².

On the lower end of the spout I and in front of the same is held a vertically-adjustable V-shaped runner or plow J, adapted to form the furrow for the seed or fertilizer. The V-shaped runner J is secured to the spout I by a bolt J' passing through a slot in the upwardly-extending arm of the said runner J, so that the latter can be adjusted vertically on the spout I. On the latter is pivoted the rearwardly-extending forked arm J², on the sides of which are held to turn the covering-disks J³, adapted to close the furrow made by the runner J after the seed or fertilizer has passed into the same from the spout I. The disks J³ are held vertically, but are inclined toward each other, as is shown in Fig. 5.

The amount of seed or fertilizer passing from the hopper F or H to the spout I is regulated by a disk K, pivoted in its center to the top plate A², and extending under part of the bottom of the hopper F. The disk K is provided with apertures K', arranged in a circle and of varying diameter, as is plainly shown in Fig. 4. The apertures K' are

adapted to register with the aperture A^3 in the top plate A^2 and with the aperture F^4 in the bottom of the hopper F . Thus when the operator turns said disk K any one of the apertures K' can be brought to register with the apertures A^3 and F^4 , and the amount of seed passing down the spout I is governed by the size of the aperture K' . Above the aperture F^4 is held in the hopper F a feed-wheel L , secured on a shaft L' , extending transversely, and mounted to turn in suitable bearings in the hopper F . The periphery of this feed-wheel L is serpentine in shape, so that when the wheel is revolved the seed in the bottom of the hopper F is agitated and moved diagonally across the aperture A^3 . On the outer end of the shaft L' is secured a sprocket-wheel L^2 , over which passes a sprocket-chain N , also passing over a sprocket-wheel N' , secured on the front driving-shaft B .

In suitable bearings on the under side of the top plate A^2 and near its rear are mounted to turn the transversely-extending rods T and T' , which are provided at opposite ends with bars T^2 , each extending rearward and downward, and carrying at its outer end a V-shaped marker T^3 or T^4 , serving to mark the next following row on either side of the machine.

Either one of the markers T^3 or T^4 , or both, can be held out of contact with the ground by the following means: An arm U or U' is secured to the rod T or T' , respectively, and each arm U or U' is connected with a rope U^2 or U^3 , extending upward and passing through eyes E' , secured on the under sides of the handles E . The upper ends of the ropes U^2 and U^3 are secured at E^2 to the ends of the curved parts of the handles, so that the upper part of each rope extends diagonally from the last eye E' to the end of the said curved part of the handle, as shown in Fig. 2. The operator, having hold of the curved parts of the handles E , can conveniently press one or both of the ropes U^2 and U^3 upward, as shown in Fig. 2, so as to raise the respective marker T^3 or T^4 .

The operation is as follows: The operator generally uses the fertilizer-hopper H first. He fills it with fertilizer, travels over the ground with the machine so as to form a row, and then removes the hopper H and places the seed-hopper F on the machine. He fills said hopper F with the seed to be dropped in the row containing the fertilizer previously placed on the ground, as described. When either hopper F or H is filled and the operator takes hold of the handles E and pushes the machine forward, the wheel C rotates and imparts a rotary motion to the sprocket-

wheel N' , causing the sprocket-chain N to travel, thereby rotating the feed-wheel L in the hopper. The fertilizer or seed in the hopper is thus agitated by the feed-wheel and passes through the registering apertures F^4 , K' , and A^3 into the feed-spout I , from which latter the seed or fertilizer drops to the ground and into the furrow made by the runner J . The small wheel D , extending in line with the wheel C and the runner J , rolls the ground lightly. Either one of the markers T^3 or T^4 can be held in contact with the ground, so as to mark the next following row, as previously described. It will thus be seen that a very simple and effective machine is provided for sowing seeds in rows in a garden or field, which machine can also be used for dropping fertilizer, as above described.

The markers, on account of extending to the sides of the machine, form a support for the latter, and prevent it from tipping over.

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

1. The combination, with the main frame, of the marker-rods T and T' , mounted to turn in the said frame, the arms T^2 , projecting rearward from the said rods T and T' , the V-shaped markers held on the said arms, the arms U and U' , secured in the said rods, and the ropes U^2 and U^3 , fastened to the said rod-arms and extending along the handles of the said frame, substantially as shown and described.

2. The combination, with the spout I , of the V-shaped runner J , held vertically adjustable on the front of the said spout, and the covering plow or disks J^3 , held on an arm pivoted on the said spout and extending rearward, substantially as shown and described.

3. The combination, with the main frame A , provided with the top plate A^2 , of the hopper F , provided with a flange having a lug passing into an aperture on the said top plate, and an eccentric cam pivoted on the said top plate and adapted to lock the said hopper in place, substantially as shown and described.

4. The combination, with the main frame A , provided with the top plate A^2 , of the hopper F , provided with a flange having a lug fitting into an aperture in the said top plate, an eccentric cam pivoted on the said top plate and adapted to engage an edge on the said flange to lock the said hopper in place, and a handle held on the said cam, substantially as shown and described.

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Witnesses:

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