

(No Model.)

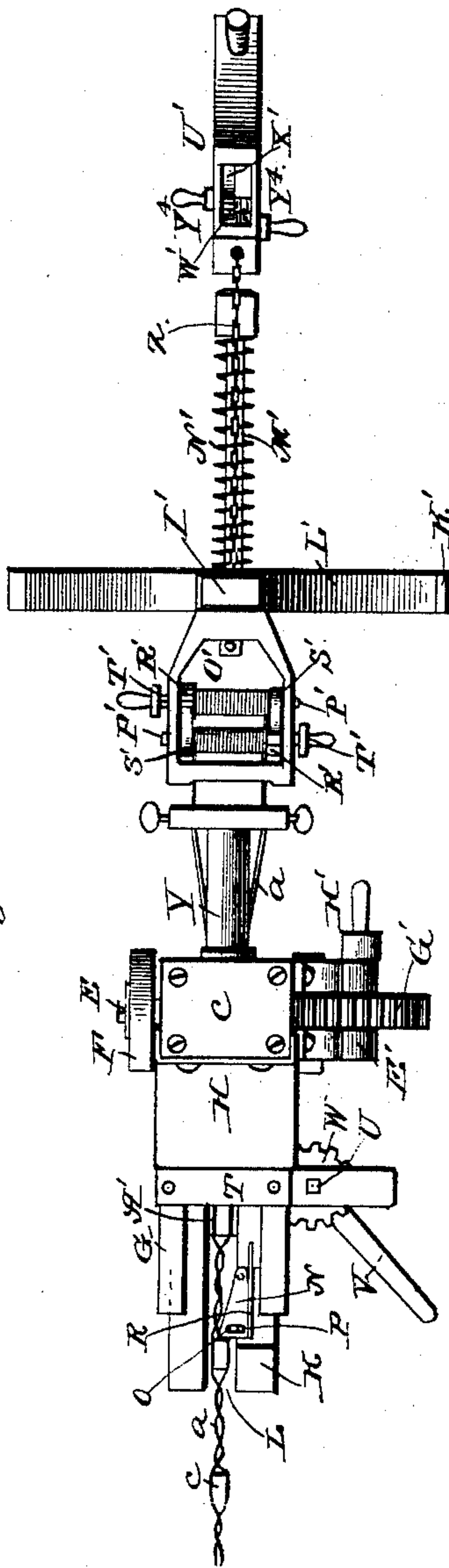
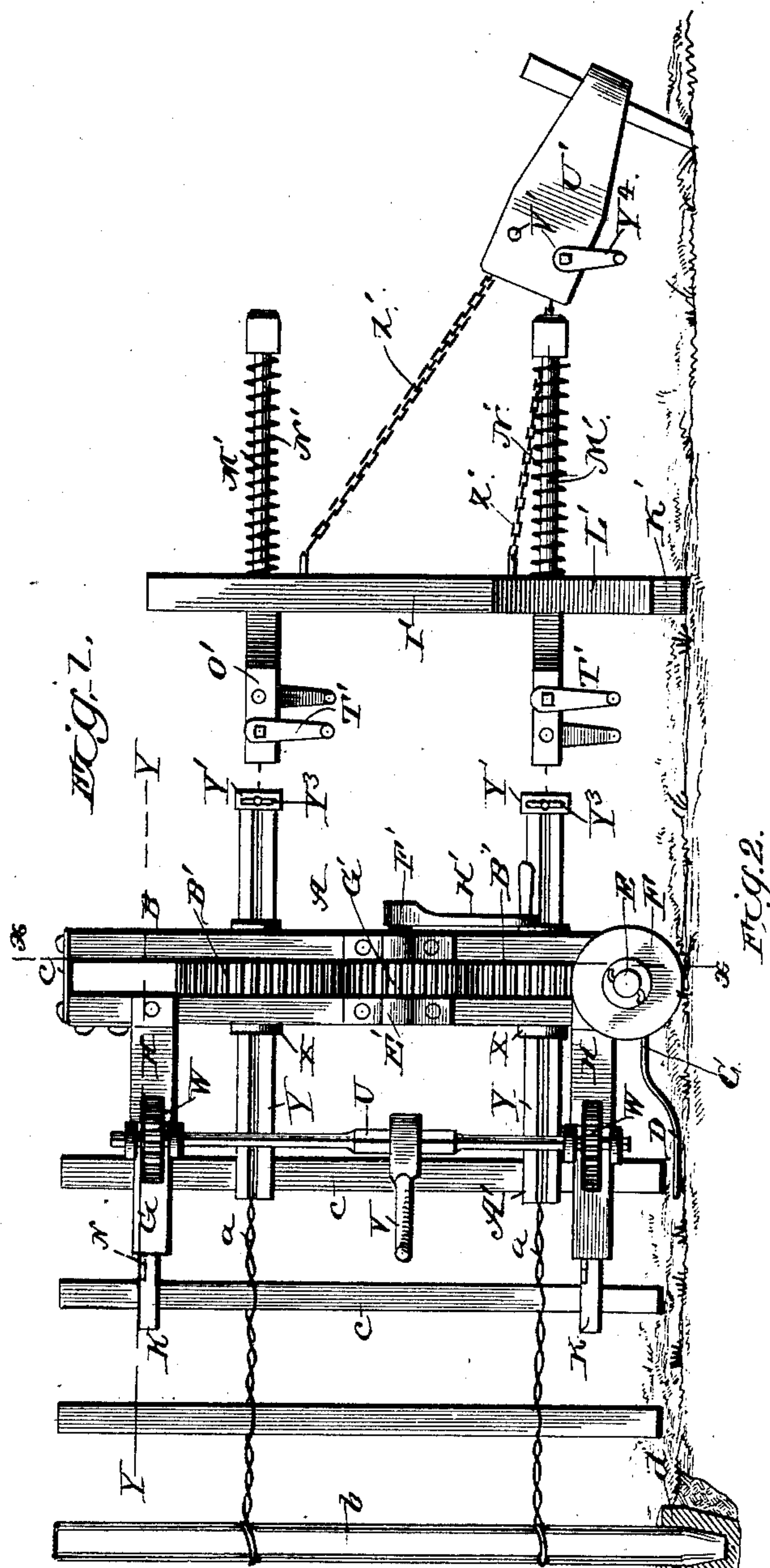
2 Sheets—Sheet 1.

W. E. SCHAFFER.

MACHINE FOR BUILDING FENCES.

No. 371,219.

Patented Oct. 11, 1887.



Witnesses
Joseph A. Ryan
J. W. Garner

Inventor
William E. Schaffer
By his Attorneys
C. A. Howells

(No Model.)

2 Sheets—Sheet 2.

W. E. SCHAFFER.
MACHINE FOR BUILDING FENCES.

No. 371,219.

Patented Oct. 11, 1887.

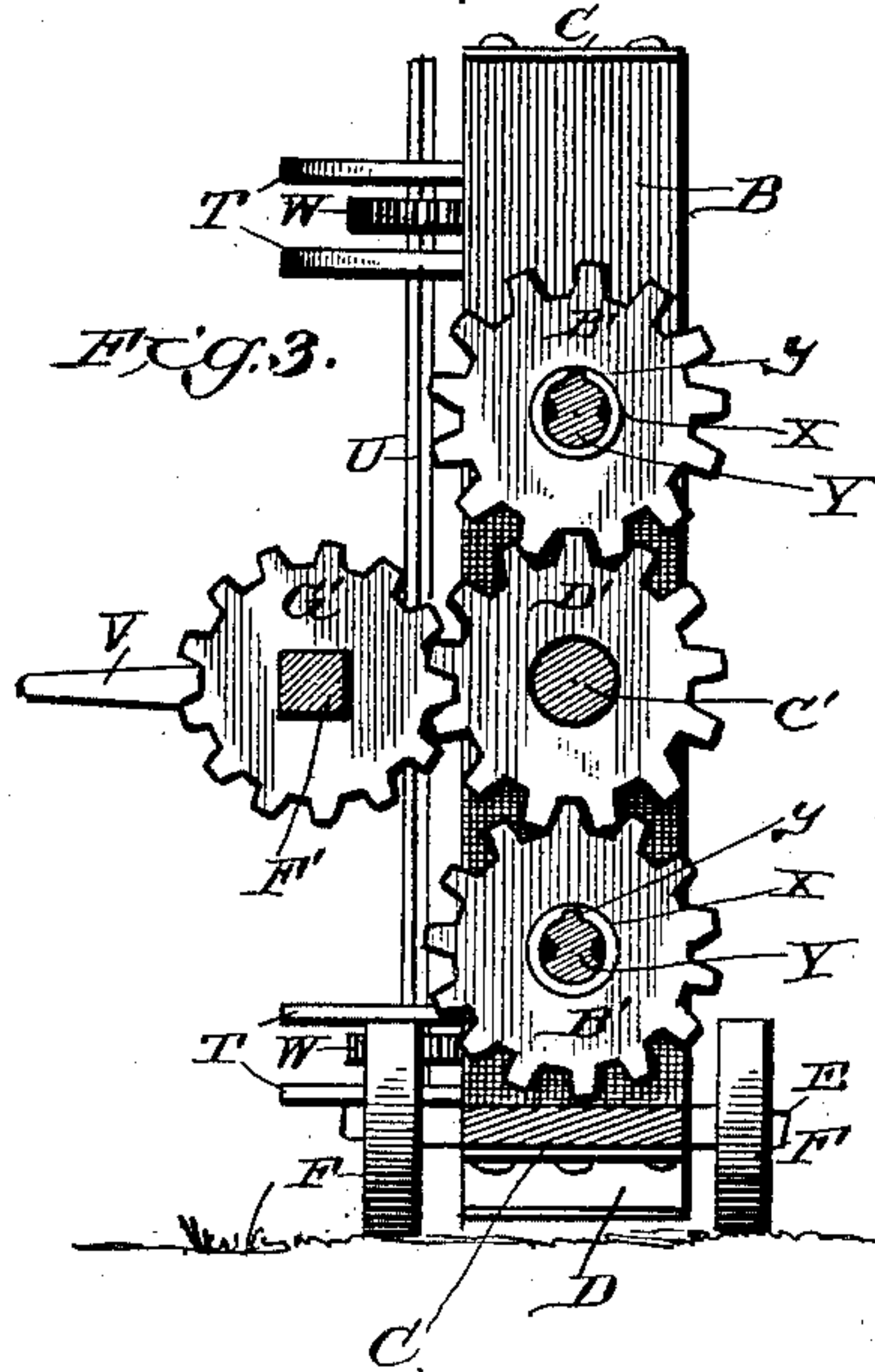


Fig. 3.

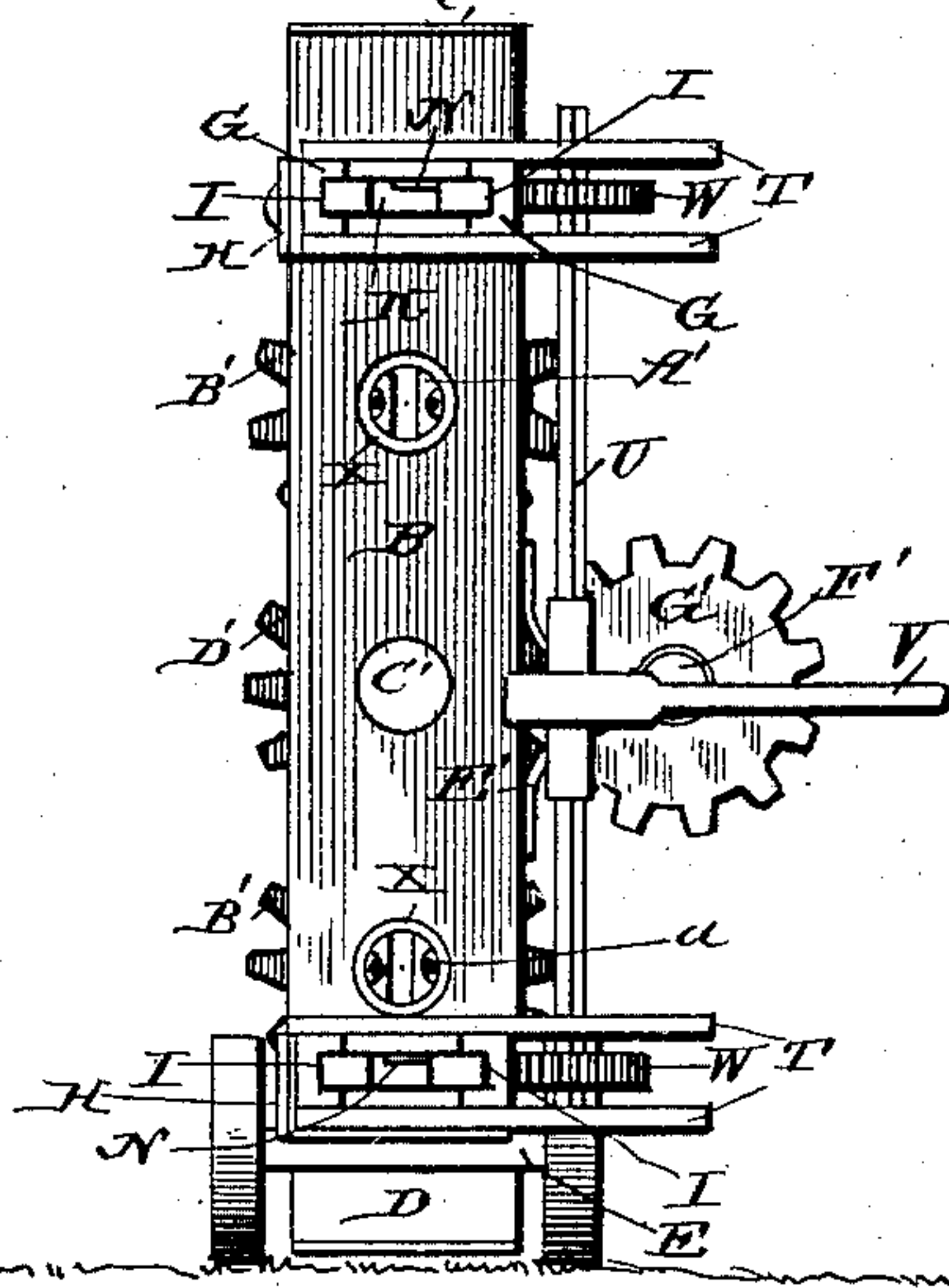


Fig. 4.

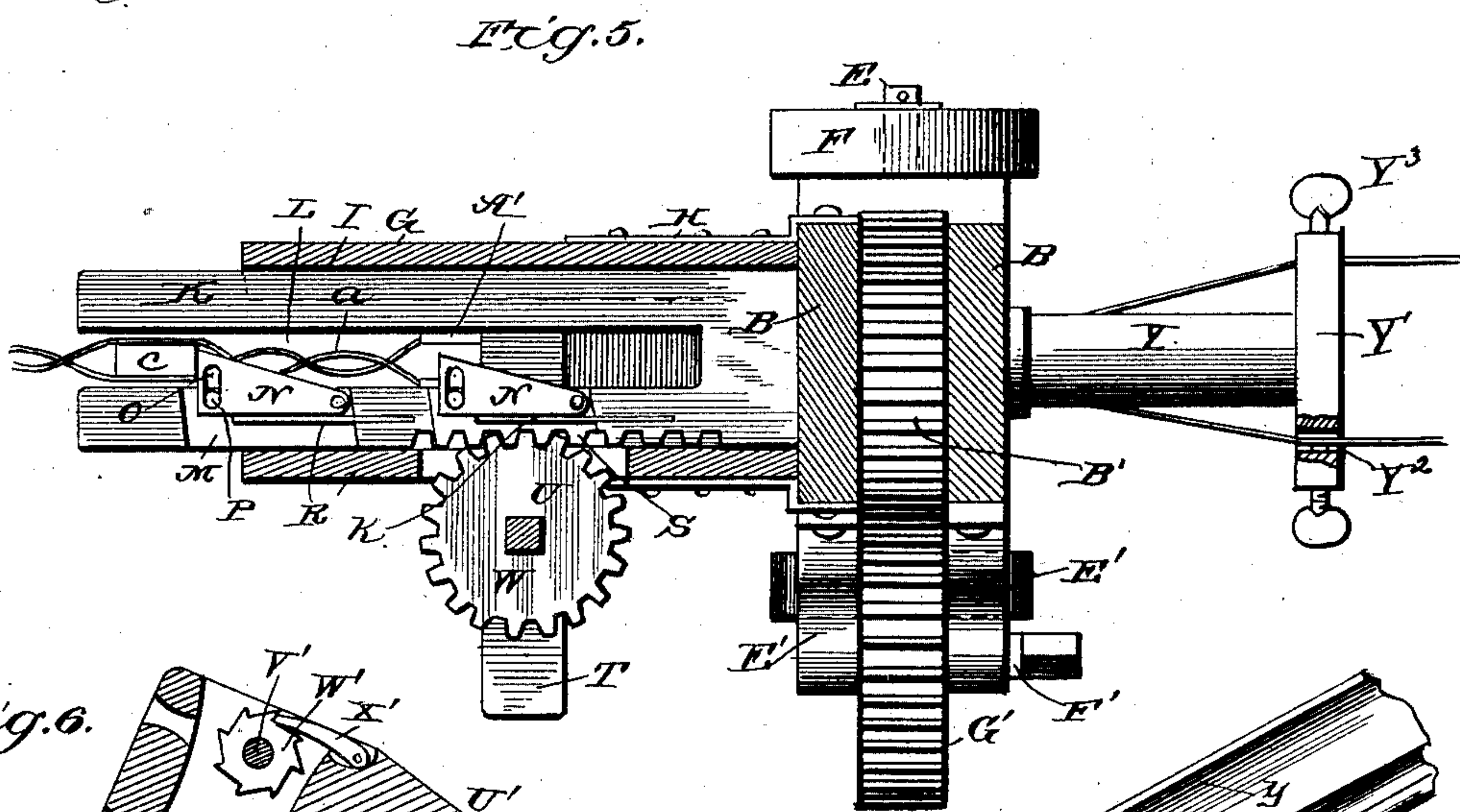


Fig. 5.

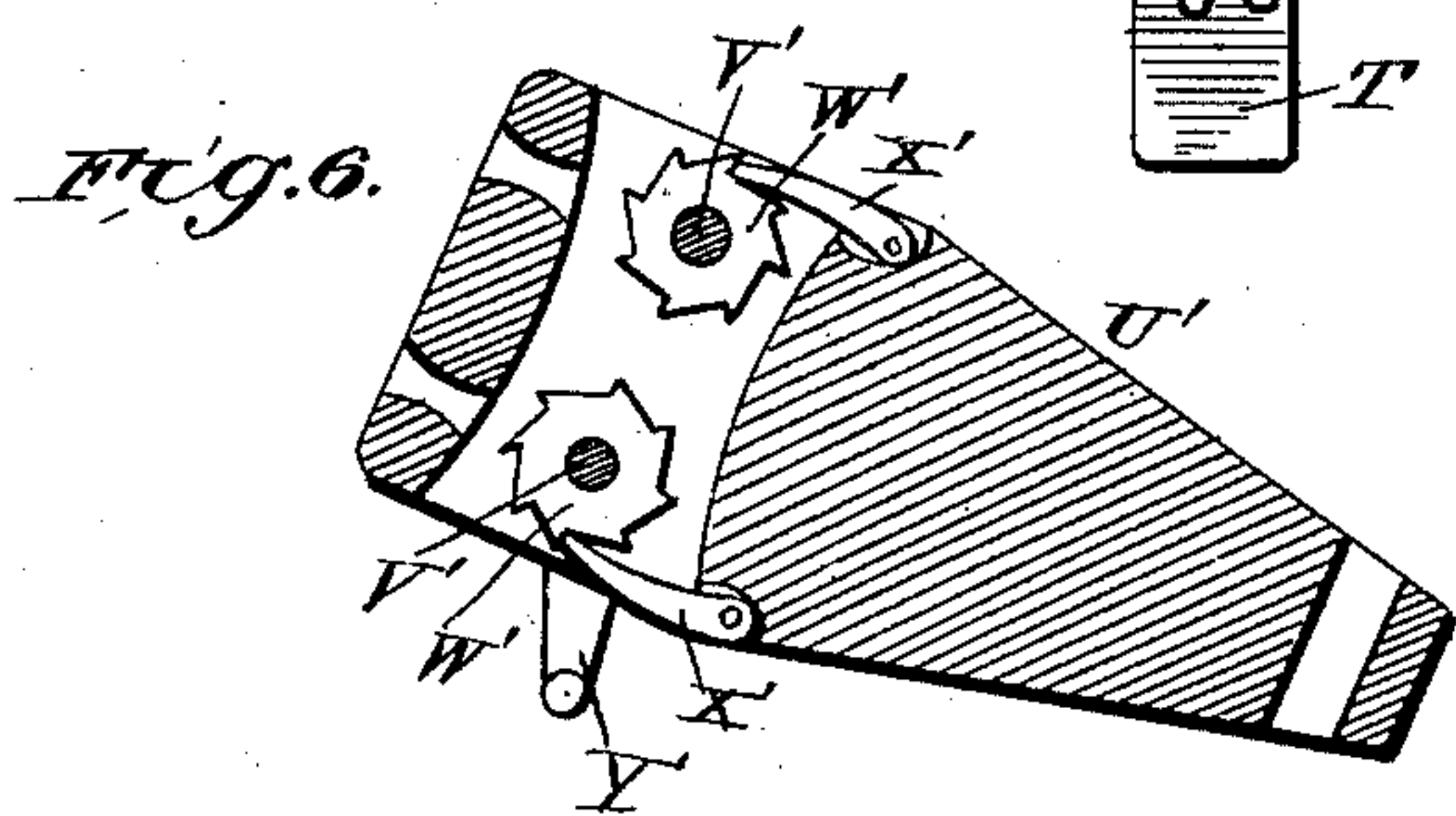


Fig. 6.

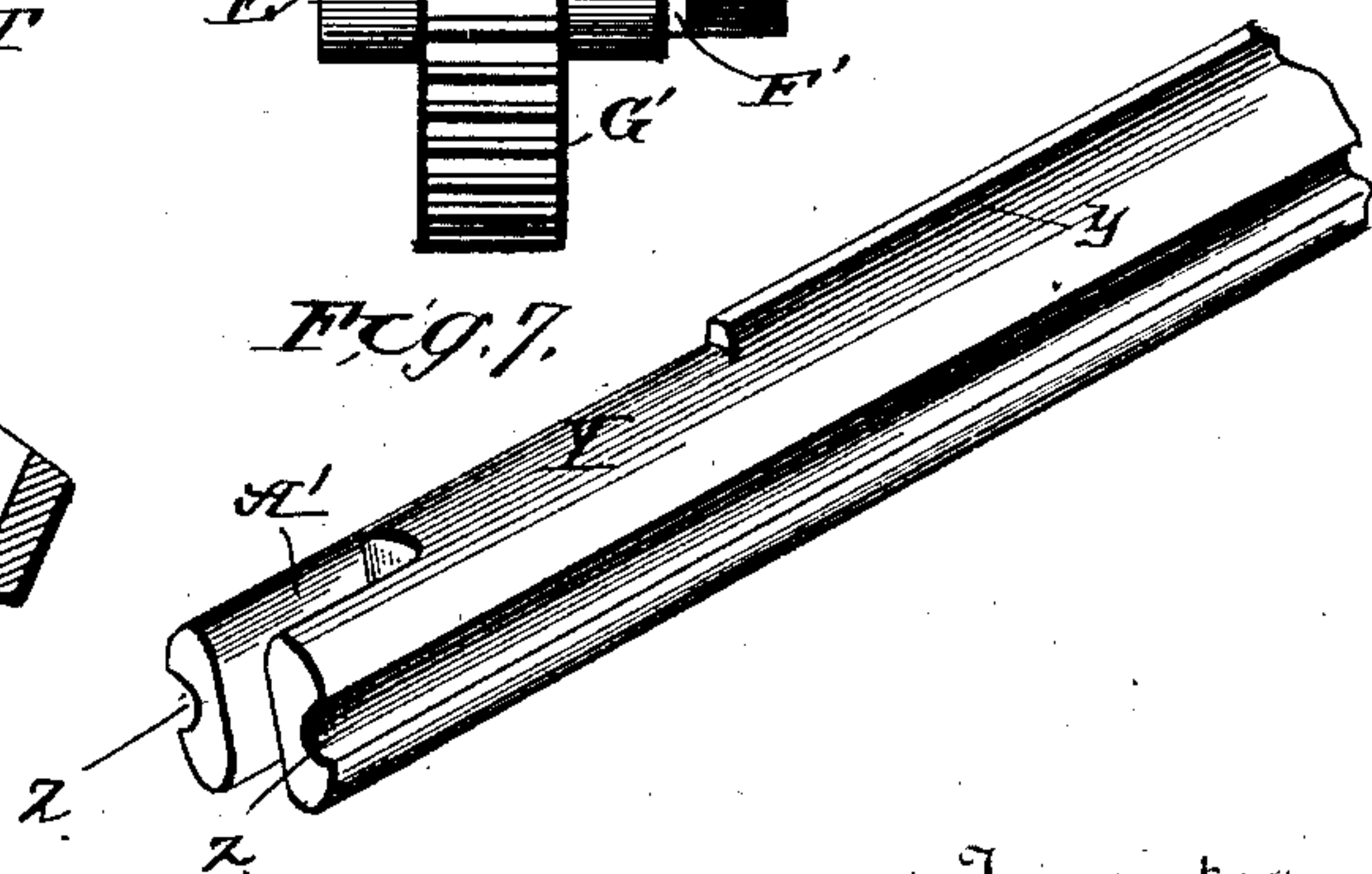


Fig. 7.

Witnesses

Joseph A. Ryan
J. W. Gann

Inventor

William E. Schaffer

By his Attorneys

C. A. Shaw & Co.

UNITED STATES PATENT OFFICE.

WILLIAM E. SCHAFFER, OF CARLISLE, INDIANA.

MACHINE FOR BUILDING FENCES.

SPECIFICATION forming part of Letters Patent No. 371,219, dated October 11, 1887.

Application filed July 15, 1887. Serial No. 244,398. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SCHAFFER, a citizen of the United States, residing at Carlisle, in the county of Sullivan and State of Indiana, have invented a new and useful Improvement in Machines for Building Fences, of which the following is a specification.

My invention relates to an improvement in machines for building fences; and it consists in the peculiar construction and combination of devices, which will be fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a fence-machine embodying my improvements, showing the same in the act of building a wire and-picket fence. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical sectional view taken on the line *xx* of Fig. 1. Fig. 4 is a rear end elevation of the wire-twisting machine. Fig. 5 is a horizontal sectional view of the same, taken on the line *yy* of Fig. 1. Fig. 6 is a detailed view. Fig. 7 is a detached perspective view of one of the twisting-shafts.

A represents the frame of a wire-twisting machine, which comprises a pair of vertical boards, B, having their upper and lower ends connected by means of plates C. The lower plate has one end extended outward and downward to form a supporting-trail, D. An axle, E, is secured at the lower end of the frame, and on the ends of the said axle are journaled a pair of supporting-wheels, F.

G represents two pairs of horizontal arms, which project from the rear side of the frame A, near the upper and lower ends thereof. The inner ends of the said arms are connected to the said frame by means of metallic boxes H, as shown. The said pairs of arms G are provided on their opposing sides with grooves I. K represents a pair of endwise-moving bars, which are guided in the grooves I. The said bars are provided with longitudinal open central slots, L, which extend nearly throughout the lengths of the bars. On the upper side of one of the arms of each of the said bars are made a pair of shallow recesses, M, and in the said recesses are arranged detents N, which have their front ends pivoted on the bars and are provided at their rear free ends with trans-

verse slots O, through which the upwardly-projecting stops P, which rise from the lower sides of the recesses M, extend. A spring, R, is provided for each of the said detents, to bear against the outer side thereof, and thereby move the free ends of the detents laterally and cause the same to project into the slots L. On one side of each bar K are a series of rack-teeth, S.

T represents bracket-arms, which extend transversely over the arms G and project beyond one side of the same, and in the said bracket-arms is journaled a vertical shaft, U, which is provided near its center with an operating-arm, V, rigidly attached thereto. Secured to the said shaft near its upper and lower ends are pinions W, which engage the rack-teeth of the arms K.

From the foregoing description it will be readily understood that by means of the arm V the shaft U may be rotated so as to cause the pinions to revolve in either direction, and thereby move the arms K longitudinally toward or from the frame A.

X represents a pair of cylindrical sleeves, which are journaled in openings in the frame A, at suitable distances from the upper and lower ends thereof, the said sleeves being arranged longitudinally in the said frame, and having their ends projecting slightly beyond the front and rear sides of the frame.

Y represents twisting-shafts, which extend through the said sleeves, and are secured thereto and adapted to rotate therewith by means of splines T', with which the said shafts are provided. In opposite sides of the twisting-shafts are made longitudinal grooves Z, and at the rear ends of the said twisting-shafts are projecting arms A', the spaces between the said arms being somewhat in excess of the width of the thickness of the pickets employed in constructing the fence.

To each of the sleeves X, and arranged between the front and rear sides of the frame A, is secured a spur-wheel, B'. A shaft, C', is journaled in the frame A midway between the sleeves, and to the said shaft is keyed a spur-wheel, D', which engages the opposing sides of the wheels X.

E' represents a pair of brackets, which project from one side of the frame A, and in the

said brackets is journaled a shaft, F', having a spur-wheel, G', rigidly attached thereto, which engages the wheel D'. One end of the said shaft F' is squared, and thereby adapted for an attachment of a detachable operating-crank, H'. The front end of each twisting-shaft Y is provided with a cross-head, Y', and in the ends of the said cross-heads are transverse openings Y², adapted for an insertion of the wires.

Y³ represents compression-screws, which engage openings in the ends of the cross-heads, and are adapted to bear at their inner ends against the wires and thereby regulate the tension thereof.

I' represents a tension-bar, which is secured upon a horizontal base, K', and is braced by means of inclined bars L'. Through the said tension-bar, at suitable distances from its upper and lower ends, are made horizontal openings, through which are passed the rear ends of rods M'. The front ends of these rods are provided with heads, as shown, and on the said rods are arranged coiled extensile springs N', which bear between the front side of the bar I' and the rear sides of the heads. On the rear ends of the bars M' are swiveled yokes O'. In each of the said yokes is journaled a pair of shafts, P', the said shafts having ratchet-wheels R' and pivoted dogs or detents S', to engage the said ratchet-wheels and prevent the shafts from rotating in a reverse direction. The ends of the shafts project beyond opposite sides of the yoke and are squared, and are thereby adapted for the attachment of a removable crank, F''.

U' represents a block, which is adapted to be staked or anchored to the ground at one end of the proposed line of fence, and in the said block are journaled a pair of transverse shafts, V', each of which has a ratchet-wheel, W'. Detents X' are pivoted in the block and are adapted to engage the ratchet-wheels. The ends of the shafts project beyond opposite sides of the block and are squared, and are thereby adapted for the attachment of a detachable crank, Y⁴, by means of which either of the said shafts may be rotated. Chains Z' are attached to the shafts V', pass through openings in the end of the block, and are attached to the bar I' near the upper and lower ends thereof.

The operation of my invention is as follows: Two pairs of wires, a, are attached to a post, b, at one end of the proposed line of fence, and the block U' is anchored to the ground at a suitable distance beyond the other end of the proposed line of fence. The wires are fitted in the grooves in the twisting shafts Y, passed between the same, and the sleeves X are then passed through the openings in the ends of the cross-heads on the twisting-shafts, through openings in the rear sides of the swiveled yokes, and have their front ends connected to and wound upon the shaft P'. The wires are tightened by turning the said shafts, as will be readily understood. The twisting-machine is

moved along the fence-line until the outer ends of the arms K are nearly or quite in contact with the starting-post b. A picket, c, of suitable construction, is then passed downward in the rear portion of the slots L of the arms K, and between the pairs of wires, so that the said wires are arranged upon opposite sides of the picket. It should be observed that when the machine is in its initial position the shaft U is turned so as to move the arms K as far forward toward the frame A as possible. The front edge of the picket bears against the rear free ends of the rearward detents M. The crank H is then attached to the shaft F' and the same is turned, thereby causing rotary motion to be imparted to the twisting-shafts by reason of the gear-wheels connecting the said shafts to the shaft F'. As the said shafts rotate, they twist the wires together in front of the picket, thus screwing the latter firmly in place. A second picket c is then passed downward through the slots L in the arms K and between the twisting-arms A' on the rear ends of the twisting-shafts Y. This causes the rear ends of the forward detents to bear against the front edge of the said second picket. The operator then grasps the arm V and turns the same forward, thereby causing the twisting-machine to be moved forward in line with the fence until the rear ends of the twisting-arms clear the second picket, and the latter is held by the forward detents of the wires. The shaft F' is then rotated to cause the wires to be twisted together in front of the second picket, and thereby secure the same in place. The operator then moves the outward end of the arm V, causing the arms K to be moved forward toward frame A, consequently causing the detents on the said arms to slip forward from the pickets until the rear detents bear against the front edge of the second picket, when a third picket is inserted in slots of arms K, and between the twisting-arms A', and the operation before described is then repeated, and so on until a sufficient number of the pickets have been secured between the wires to form one panel of the fence. Fence-posts are secured to the ground at suitable regular distances apart, as each panel of the fence is completed, and the twisted wires are secured to the said fence-posts by means of staples or keepers of any preferred construction.

I prefer to employ fence-posts in connection with my improved fence-machine, which posts comprise each a base-section, d, secured in the ground and having a recess or opening in its upper side, and an upper section, e, the lower end of which is adapted to be inserted and secured in the said opening. The upper sections of the posts are preferably made of iron, and the lower sections thereof may be made of wood, iron, earthenware, or any other preferred material.

As the wires are twisted between the pickets, the said wires become tightened, as will be readily understood, and thereby cause the rods M' to move rearwardly against the ten-

sion of their springs N', and thus prevent the strain upon the wires becoming so great as to break them. By disengaging the dogs from the ratchet-wheels in the yoke and permitting the shafts of said yokes, on which the wires are coiled, to rotate in a retrograde direction, the wires may be paid out from time to time, as may be necessary.

Having thus described my invention, I claim—

1. In a wire-twisting machine, the combination of the frame A, the guide-arms G, extending horizontally therefrom, the slotted arms K, secured in the said guide-arms and longitudinally movable toward and from the frame, said slotted arms having the detents N, means for moving the said arms, and the twist-ers journaled to the frame A, substantially as described.

2. The combination, in a wire-twisting machine for building fences, of the frame A, having the horizontal guide-arms extending therefrom, the longitudinally-movable arms or rods K, guided in said guide-arms and provided with the slots L and detents N, the said arms or bars K being further provided with the rack-teeth, and the shaft U, having the pinions engaging the rack-teeth and provided with the operating-lever V, substantially as described.

3. In a wire-twisting machine for building fences, the combination of the frame A, the guide-arms G, projecting therefrom, the longitudinally-movable bars or arms K, secured between the guide-arms and having slots, and the spring actuating-detents N, means for moving the said arms, and the twisting-shafts journaled in the frame A and having the twisting-arms A' at their rear ends, substantially as described.

4. The combination, in a wire-twisting machine for building fences, of the frame A, the

sleeves journaled therein, and the twisting-shafts secured to the said sleeves, the shafts being further provided at their rear ends with the twisting-arms A', substantially as described.

5. The combination, in a wire-twisting machine for building fences, of the frame A, the guide-arms G, the longitudinally-movable bars or arms K, secured in the said guide-arms and having the slots L and the detents N, means for moving the arms K, the sleeves X, journaled in the frame A and adapted to rotate, and twisting-shafts Y, extending through the said sleeves and feathered or splined therein, said shafts having the grooves Z on opposite sides and provided at their rear ends with the arms A', substantially as described.

6. In a tension device for fence-building machines, the combination of the bar I', the longitudinally-movable rods M', extending through the same and provided with the springs N' to move the bars in one direction, and the yokes swiveled to the rear ends of the bars M', and having shafts to which the wires are attached, substantially as described.

7. The combination, in tension devices for fence-building machines, of the vertical bar I', the longitudinally-movable bars M', extended through the same and provided with the springs N', the yokes swiveled to the rear ends of the said bars, and the shafts journaled in the said yokes and provided with the ratchet-wheels, and the detents or dogs to engage the said ratchet-wheels, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM E. SCHAFFER.

Witnesses:

WILLIAM RITTERSKAMP,
J. B. MORFORD.