

(No Model.)

3 Sheets—Sheet 1.

D. E. BARTON.  
CULTIVATOR ATTACHMENT.

No. 451,256.

Patented Apr. 28, 1891.

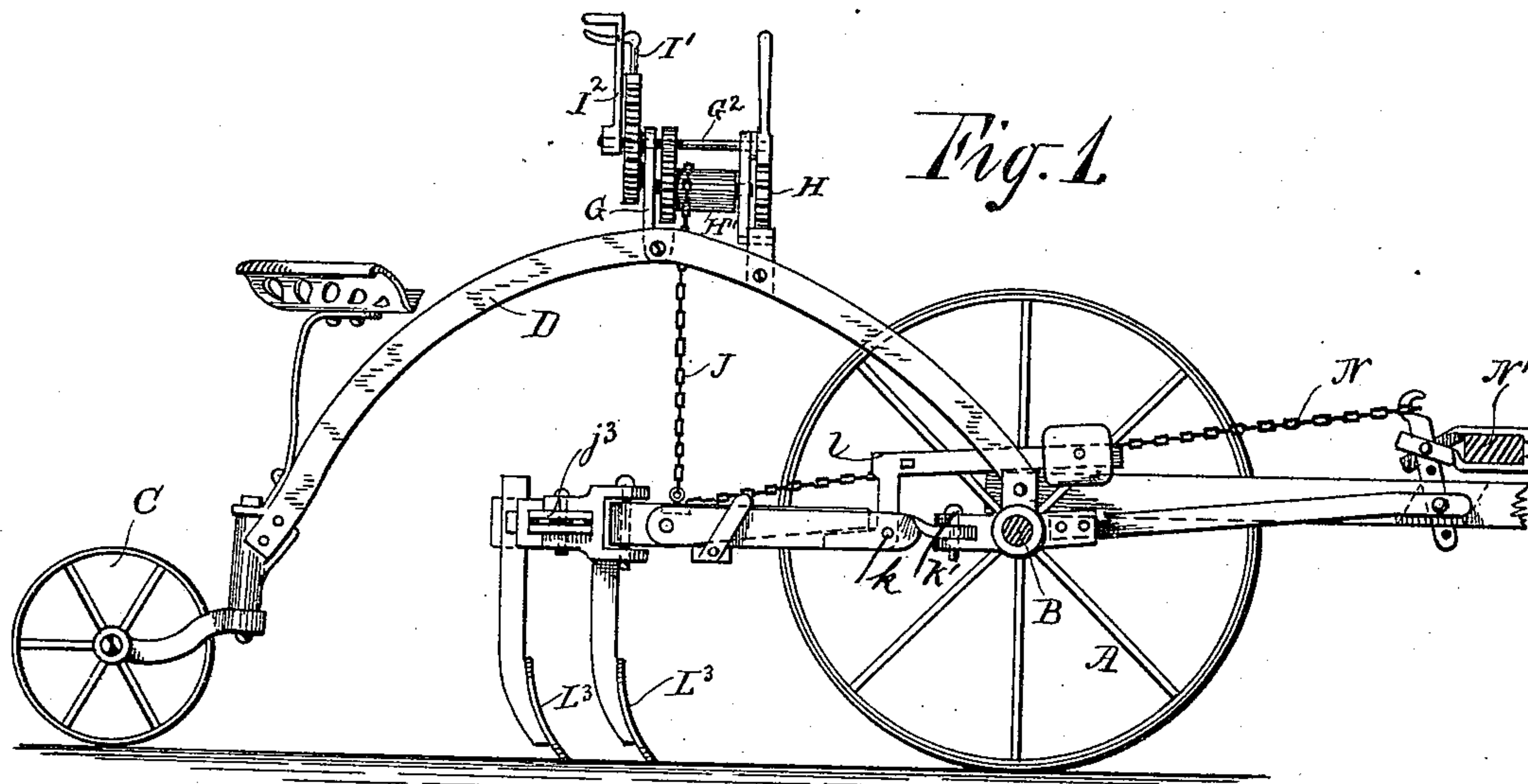


Fig. 1.

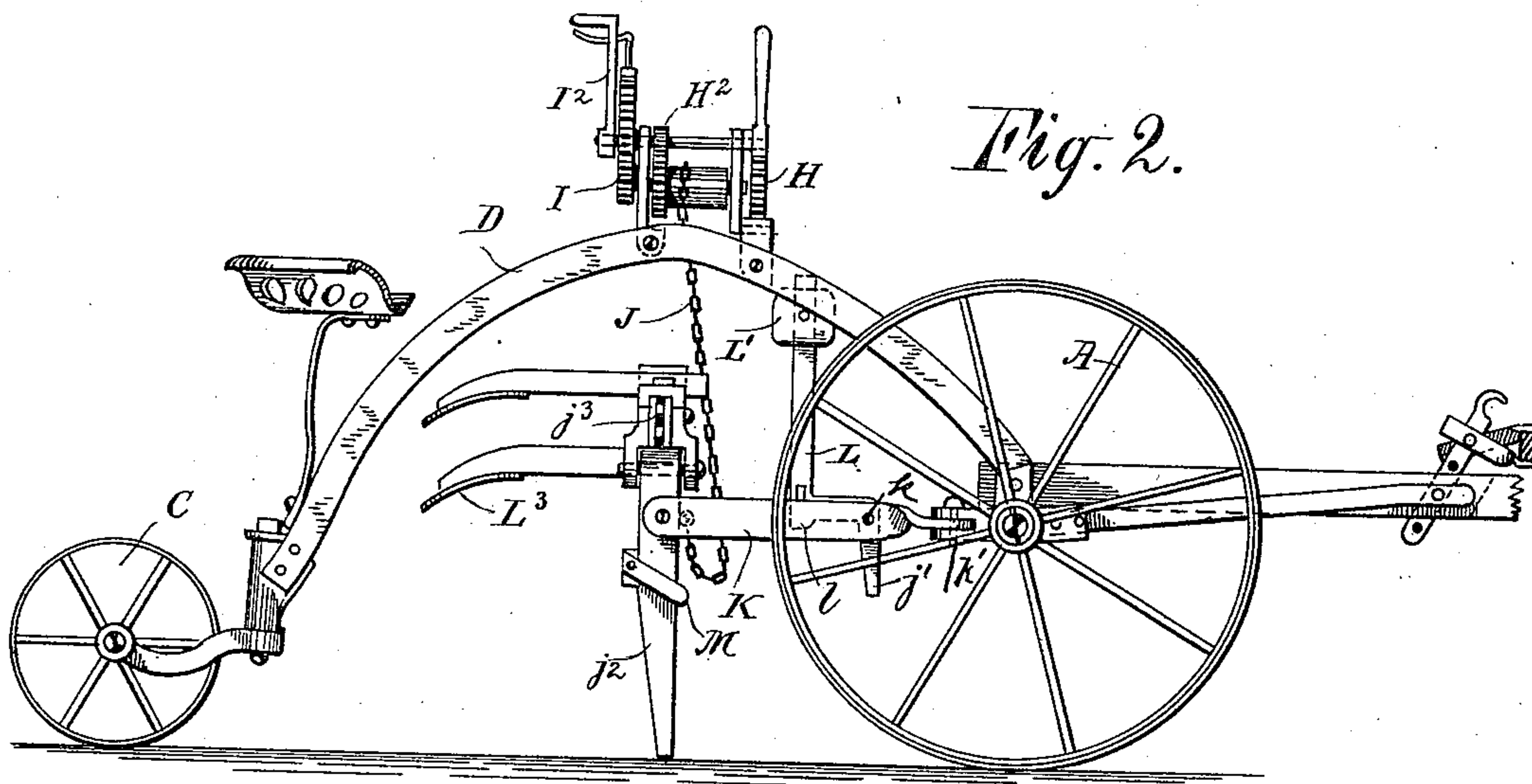


Fig. 2.

Witnesses.

*H. Monteverde*

*Frank D. Lewis*

Inventor.

*Selbert E. Barton*

*By Boonsticker*

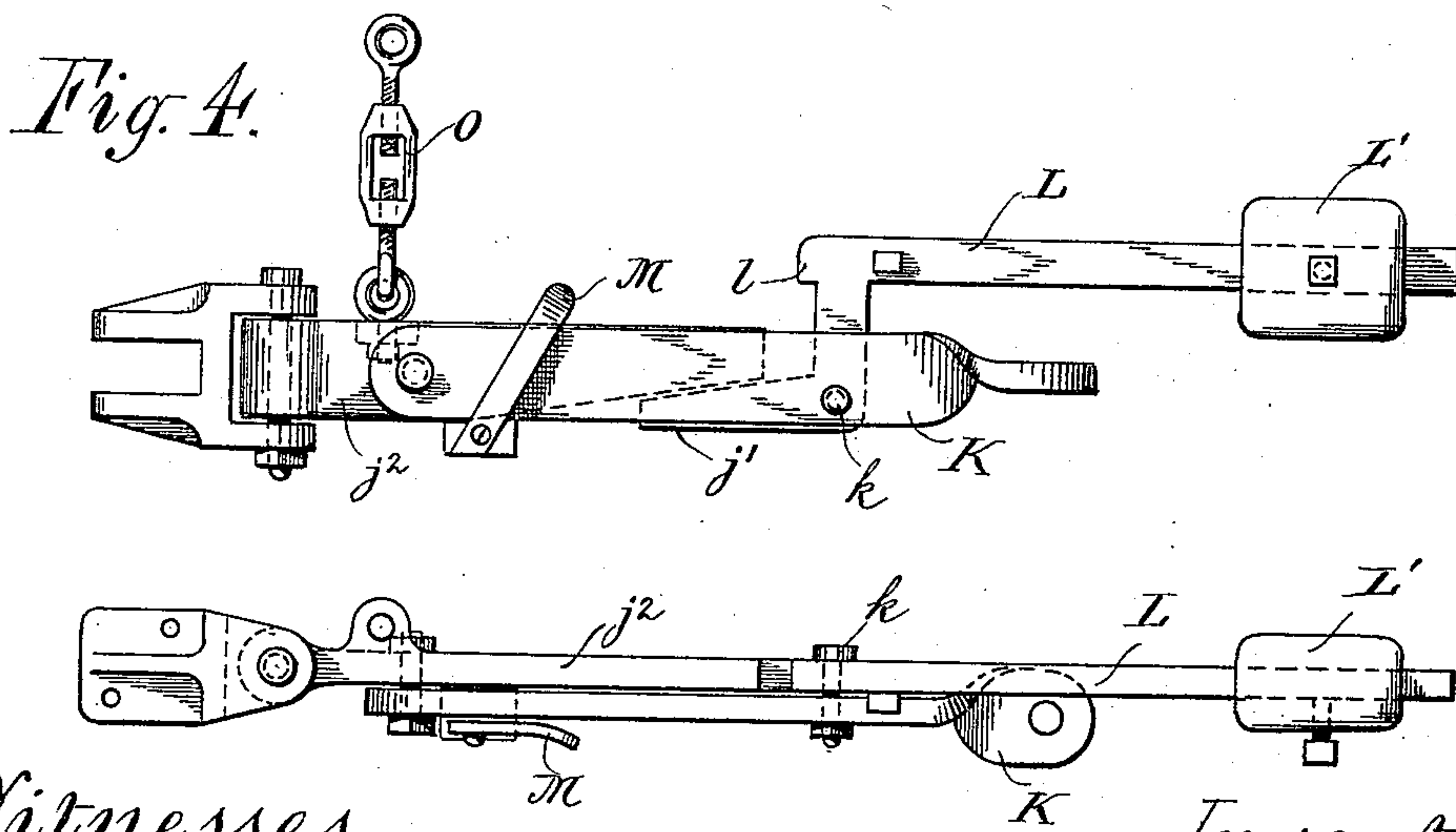
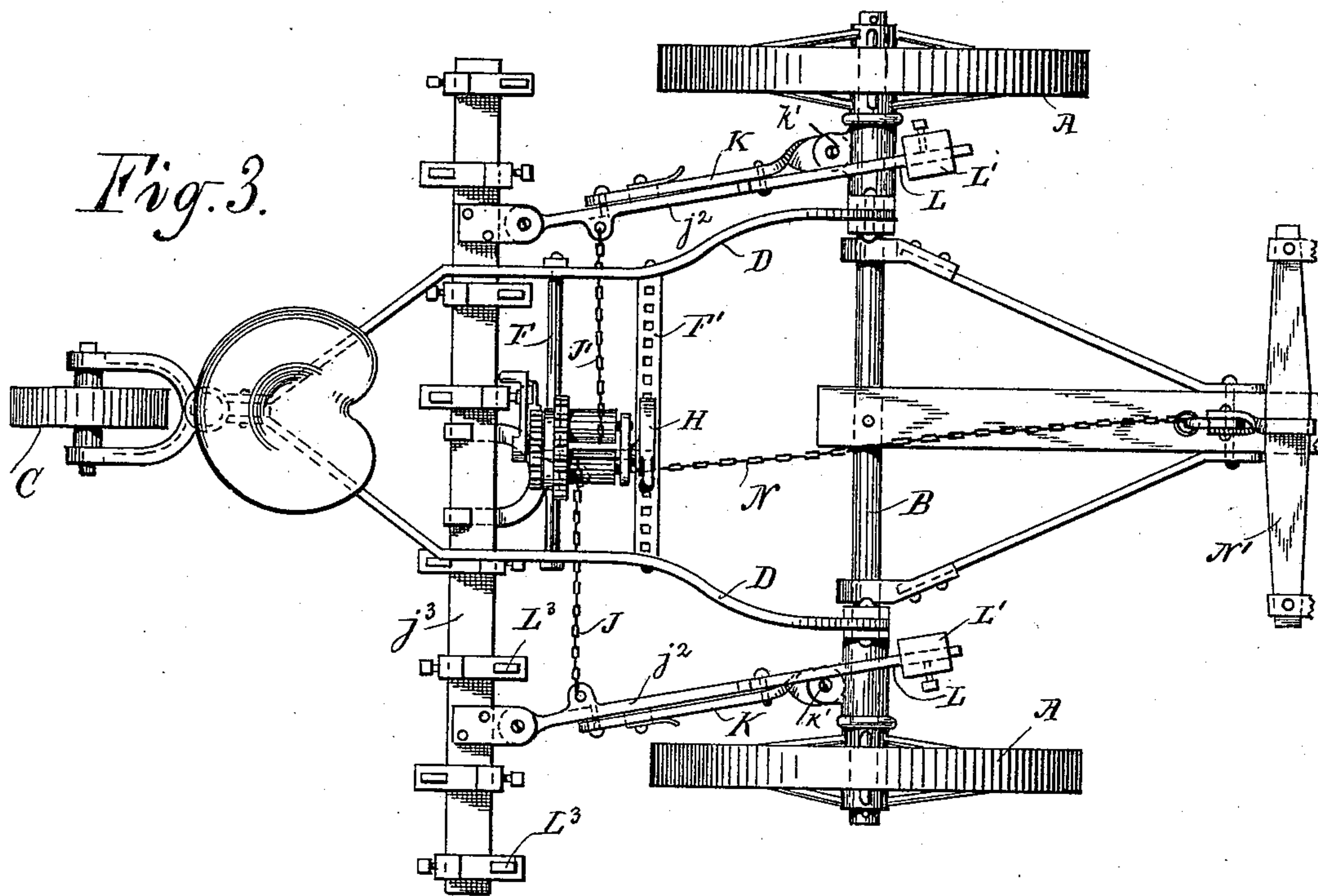
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Witnesses.

*Stellanter de.*

*Frank D. Lewis.*

*Fig. 5.*

*Inventor.*

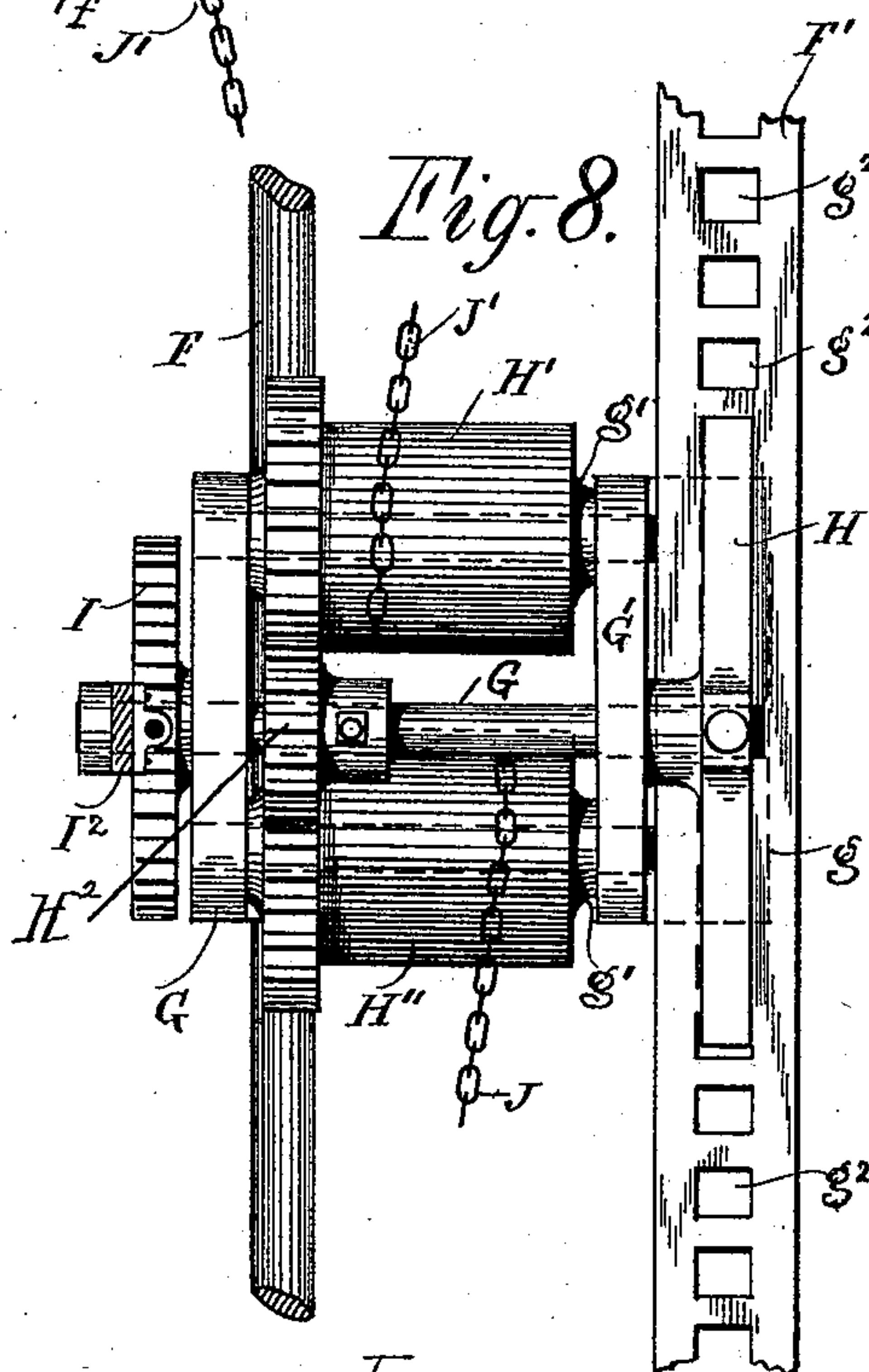
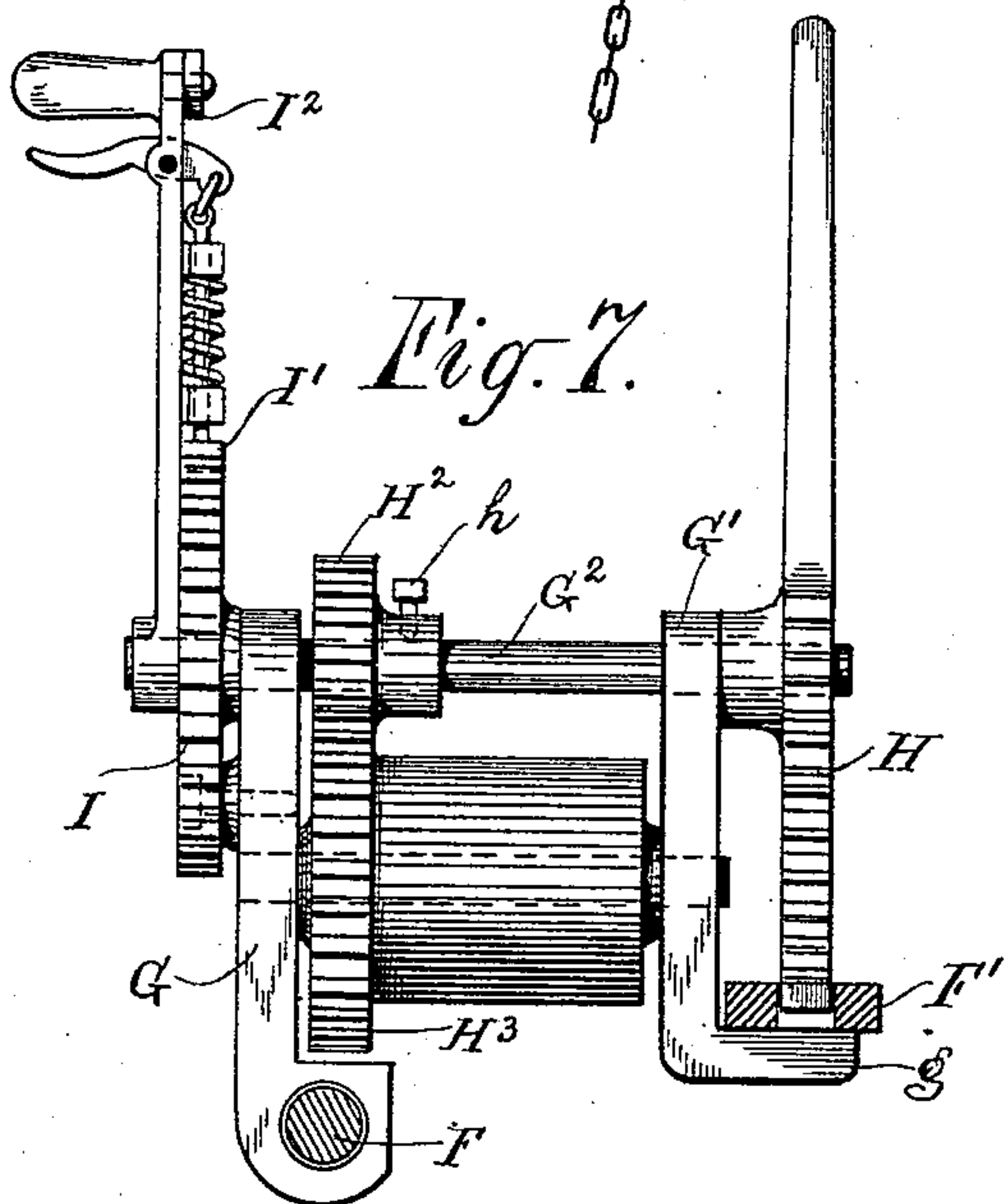
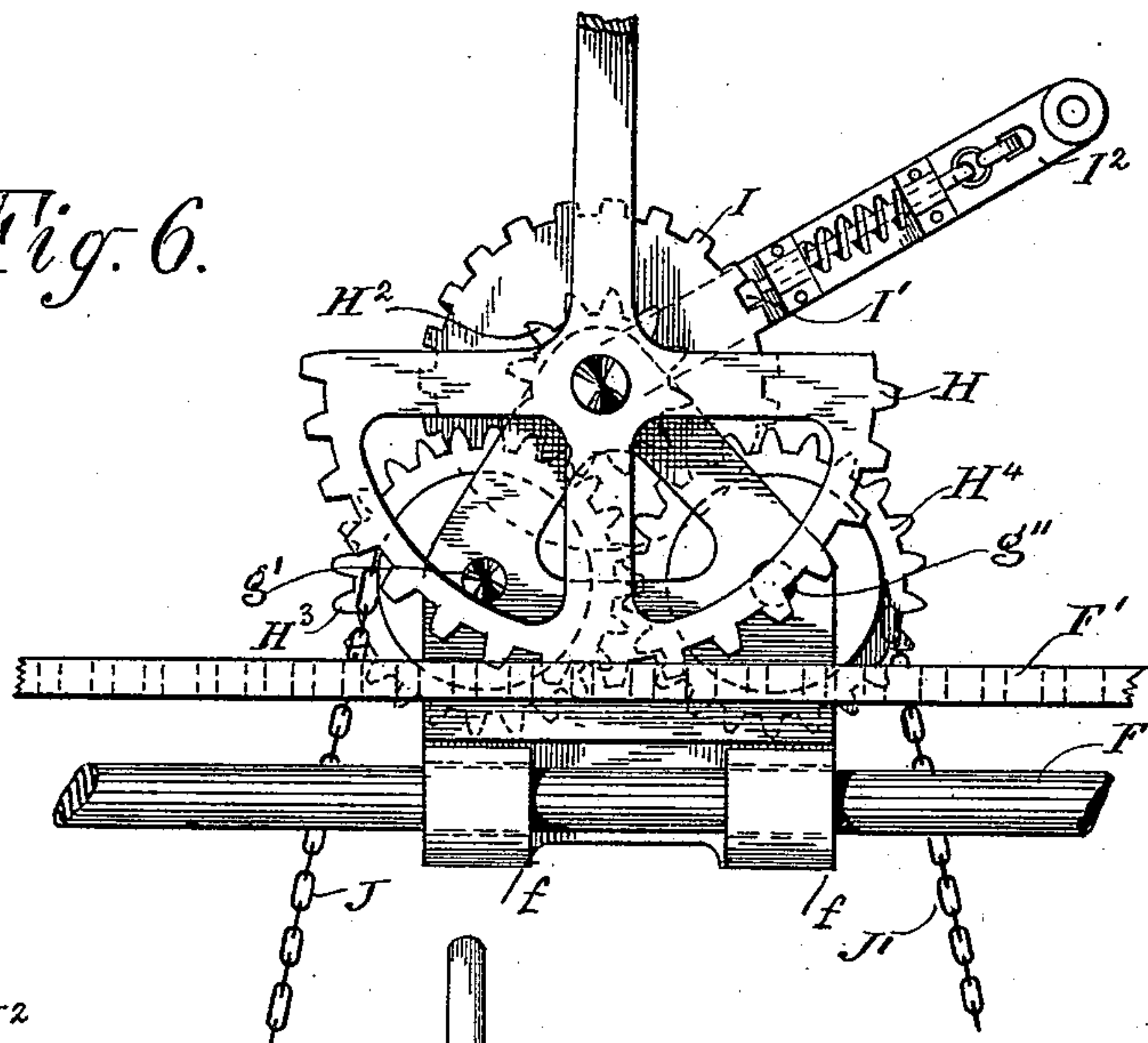
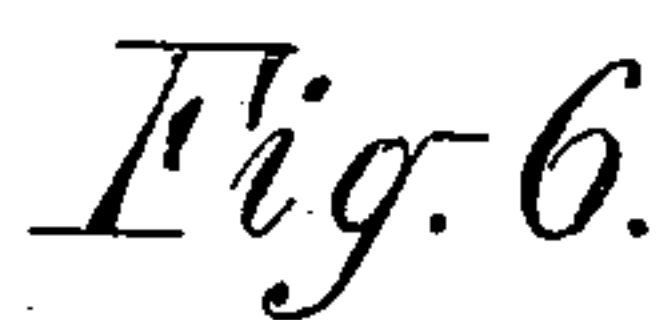
*Seebach & Barton*

*By Boardman*

3 Sheets—Sheet 3.

No. 451,256.

Patented Apr. 28, 1891.



*Witnesses.*

St. Monteverde,

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Inventor:

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By Boonedacker



# UNITED STATES PATENT OFFICE.

DELBERT E. BARTON, OF SAN FRANCISCO, CALIFORNIA.

## CULTIVATOR ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 451,256, dated April 28, 1891.

Application filed October 1, 1890. Serial No. 366,710. (No model.)

*To all whom it may concern:*

Be it known that I, DELBERT E. BARTON, a citizen of the United States, residing at the city and in the county of San Francisco, and State of California, have invented certain new and useful Improvements in Cultivators; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention has relation to certain new and useful improvements in cultivators, harrows, plows, or the like, which consists of the arrangement of parts and details of construction, as will be hereinafter more fully set forth in the drawings, described, and pointed out in the specification.

The main feature of my invention consists in providing suitable mechanism whereby the entire beam and teeth thereof may be shifted laterally to the rear of draft without creating or necessitating a delay or stoppage in the forward movement of the machine.

My invention further consists in providing for the automatic lifting of the teeth and beam when contacting with obstacles in movement, thereby obviating liability of damage ensuing by breakage or otherwise.

My invention further consists in providing a cultivator which shall be simpler of construction, more effective in its operation, and less expensive than any device of a similar nature heretofore known to me.

Referring to the drawings forming a part of this application, wherein similar letters of reference are used to denote corresponding parts throughout the entire specification and several views, Figure 1 is a longitudinal sectional view in elevation; Fig. 2, a similar view showing the teeth thrown upward; Fig. 3, a top plan view; Fig. 4, a detail view of the trip mechanism; Fig. 5, a top plan of Fig. 4; Fig. 6, a front view in elevation of the shifting mechanism; Fig. 7, an end view of Fig. 6, and Fig. 8 a top plan of Fig. 7.

The letter A indicates the ordinary drive-wheels of the cultivator, which are mounted upon the axle B, and C the guide or rear roller

thereof. The forward axle and guide-roller are connected by means of the curved braces D. From the rear of said braces projects the seat. The braces D are connected by means of the rod F and rack-bar F', upon which operates the raising and shifting mechanism, hereinafter described.

The rod F is secured by means of ears *f* to the upwardly-extending bracket G, which is connected to bracket G' by means of rotating rod G<sup>2</sup>. The bracket G' is held in position by means of outwardly-extending flange *g*, which fits beneath the rack-bar F' and segmental rack H, which is movably secured to axle or shaft G<sup>2</sup>, and the teeth of which mesh with openings *g*<sup>2</sup>, formed in rack-bar F'. The brackets G and G' are further connected by means of shafts or axles *g*', upon which work the chain-drums H' H'', which are operated or rotated through the medium of gear H<sup>2</sup>, which intermeshes with gear H<sup>3</sup>, which meshes with gear H<sup>4</sup>, which is located upon shafts *g*', said brackets and their connections forming a movable frame, as hereinafter more fully shown. If so desired, the drums H' H'' may be provided with geared periphery and gears H<sup>3</sup> and H<sup>4</sup> be dispensed with.

The gear H<sup>2</sup> is keyed to shaft or axle G<sup>2</sup> by means of bolts *h*, so as to revolve in unison therewith. Upon the outer end of said shaft I locate loosely the rack-wheel I, which is rigidly secured to the bracket G. Within the teeth of said rack-wheel is adapted to engage the end of the spring-catch I', which is connected with operating-handle I<sup>2</sup>, rigidly secured to shaft G<sup>2</sup>.

Fastened to and depending from drums H' H'' are chains J J', which at their lower end are secured to tilting rods *j*<sup>2</sup>, fastened to the cultivator-beam *j*<sup>3</sup> and axle B through the medium of connecting braces or rods K, to which they are pivotally secured, as shown in Figs. 1 and 2.

The chains J J' are secured to the tilting rod *j*<sup>2</sup> by means of swiveled link O. (Shown in Fig. 4.) The inner ends of said tilting rods rest upon the rearwardly-extending shoulders *j*' of tripping-rods L, which I pivotally secure to connecting-rods K by means of bolts or



pins  $k$ . Upon said tripping-rod I locate the weight  $L'$ , which is sufficient to overcome the downward pressure of tilting rods  $j^2$  while the teeth of the cultivator are passing through the ground. The normal position of weighted tripping-rods is clearly shown in Fig. 1. However, should the teeth of the cultivator during the movement of cultivation contact with large boulders, stumps, or the like the forward movement of the cultivator will exert a downward pressure upon the rods  $j^2$ , which, bearing against the rearwardly-extending shoulders  $j'$ , will cause the upward movement of tilting rods  $L$  until rods  $j^2$  are removed from contact with shoulders  $j'$ , which allows the teeth to give to the strain exerted thereon and move upward, while rods  $j^2$  move downward until contact is made with the ground, when said teeth will have been lifted sufficiently high to overcome the obstruction. In order to release the teeth from their up-lifted position it is necessary that the chains  $J J'$  be wound upon the drums  $H' H''$  through the medium of operating-handle  $I^2$ , the winding of which will cause the uplifting of tilting rods  $j^2$  and allow the teeth  $L^3$  to fall. With the dropping of said teeth the rod  $j^2$  moves upward and contacts with shoulders  $l$  of tripping-rods  $L$ , throwing the same forward into normal position.

In Fig. 2 I have shown the relative position of the parts when the teeth are thrown upward. The letter  $M$  indicates the guide for rod  $j^2$  in order to hold same in position to connecting-rods  $K$ , as shown. Connecting-rod  $K$  is pivotally secured to axle  $B$  by pins  $k'$ .

By providing the double drums I equalize the hanging of the beam, and thus prevent the dropping of either end, which will follow if both chains be wound upon the same drum.

The raising and shifting of the cultivator beam and teeth is accomplished as follows: In order to raise or lift the beam so as to raise the teeth above the ground, it is only necessary that the driver or operator turn or rotate the crank-handle  $I^2$ , at the same time raising spring-actuated catch  $I'$  until free of rack-bar  $I$ . Upon the turning of handle  $I^2$  the shaft  $G^2$  is caused to revolve, carrying therewith gear  $H^2$ , rigidly secured thereto, which intermeshes with gear  $H^3$ , causing rotation thereof and of gear  $H^4$ . The rotation of said gears is transmitted to drums  $H' H^2$ , which necessarily causes the winding of chains  $J J'$  thereon, and inasmuch as the same are fastened to the tilting rods  $j^2$  (secured to the cultivator-beam) the entire frame of the beam is raised. By raising the spring-catch  $I'$  the beam may be secured at any height. The entire frame and teeth may be moved laterally any required distance by a movement of segmental rack  $H$ , the teeth of which mesh with the rack-bar  $F'$ . With the movement of the segmental rack the entire bar-frame and suspended cultivator-beam are shifted laterally any desired distance. In order to facilitate

the shifting of the beam, I provide the draft-chain  $N$ , which I connect centrally thereto and to the whiffletree  $N'$  of the cultivator. As the beam is moved from the rear or center to either side the pulling strain exerted on chain  $N$  will tend greatly to shift the entire beam.

I am aware that minor changes may be made in the arrangement of parts and details of construction herein shown and described without creating or necessitating a departure from the nature and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure protection in by Letters Patent of the United States, is—

1. In a cultivator, the combination of upwardly-extending brackets, an upper rotatable rod connecting said brackets, carrying a rigidly-mounted gear, a rack-bar mounted loosely upon the end of the rotatable rod, a crank also upon the end thereof carrying a spring-actuated dog or pawl for engaging the rack-bar, lower shafts or rods having drums mounted thereon, a hinged plow-beam, and chains connecting the same with the drums, substantially as set forth.

2. In a cultivator, the combination of a plow-beam, tilting rods secured thereto, connecting-rods having their forward ends connected to the axle and their rear ends pivotally connected to the tilting rods, and tripping-rods provided with weighted forward ends, having their opposite ends provided with rearwardly-extending shoulders, substantially as set forth.

3. In a cultivator, the combination of a plow-beam, tilting rods secured thereto and provided with guides, connecting-rods having their forward ends connected to the axle and their rear ends pivotally connected to the tilting rods, and tripping-rods provided with weighted forward ends and having their opposite ends provided with rearwardly-extending shoulders, the latter provided with lugs or stops with which the tilting rods contact when said rods are brought back to their normal position, substantially as set forth.

4. In a cultivator, the combination of curved braces, a rod connecting said braces, a rear upwardly-extending bracket provided at its lower ends with apertured lugs through which the transverse rod passes, a transverse rack-bar connecting the two braces, a forward bracket connected to the rear one by means of a rod or shaft, said bracket provided with a flange extending beneath the rack-bar, a segmental rack loosely mounted upon the rod or shaft which connects the two brackets and meshing with the rack-bar, a plow-beam having a lateral pivotal connection with the axle of the machine, and chains connecting the laterally-moving brackets with said beam, substantially as set forth.

5. In a cultivator, the combination of the beam thereof, the herein-described mechan-

ism for raising and shifting the same later-  
ally, and the chain N, having one end con-  
nected to the beam and the other end to the  
evener, adapted to assist the lateral move-  
5 ment of the beam, by reason of the strain  
thereon, through said lateral movement of  
the beam, substantially as set forth.

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

DELBERT E. BARTON.

Witnesses:

N. A. ACKER,  
P. A. WAGNER.