

No. 686,000.

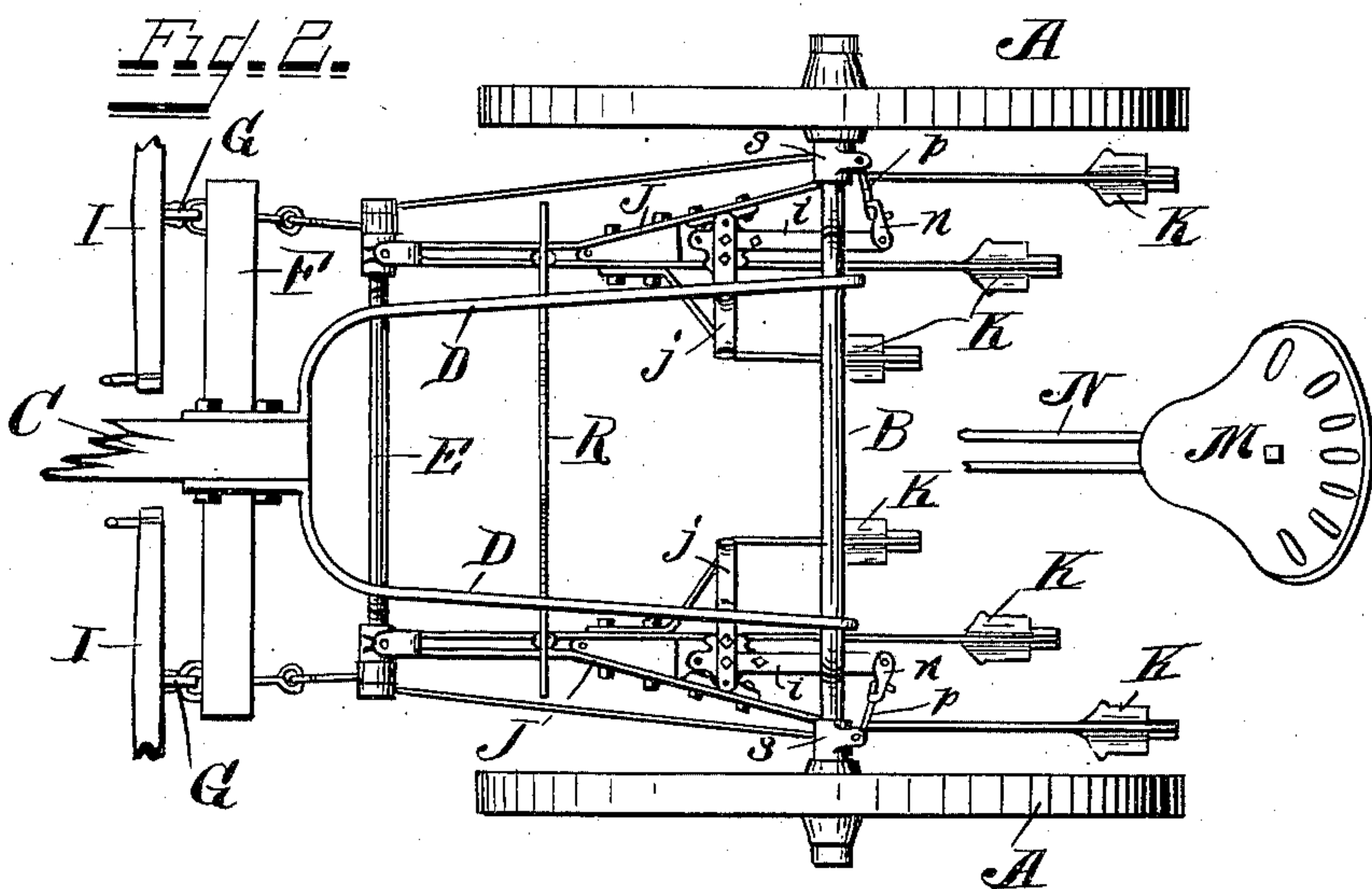
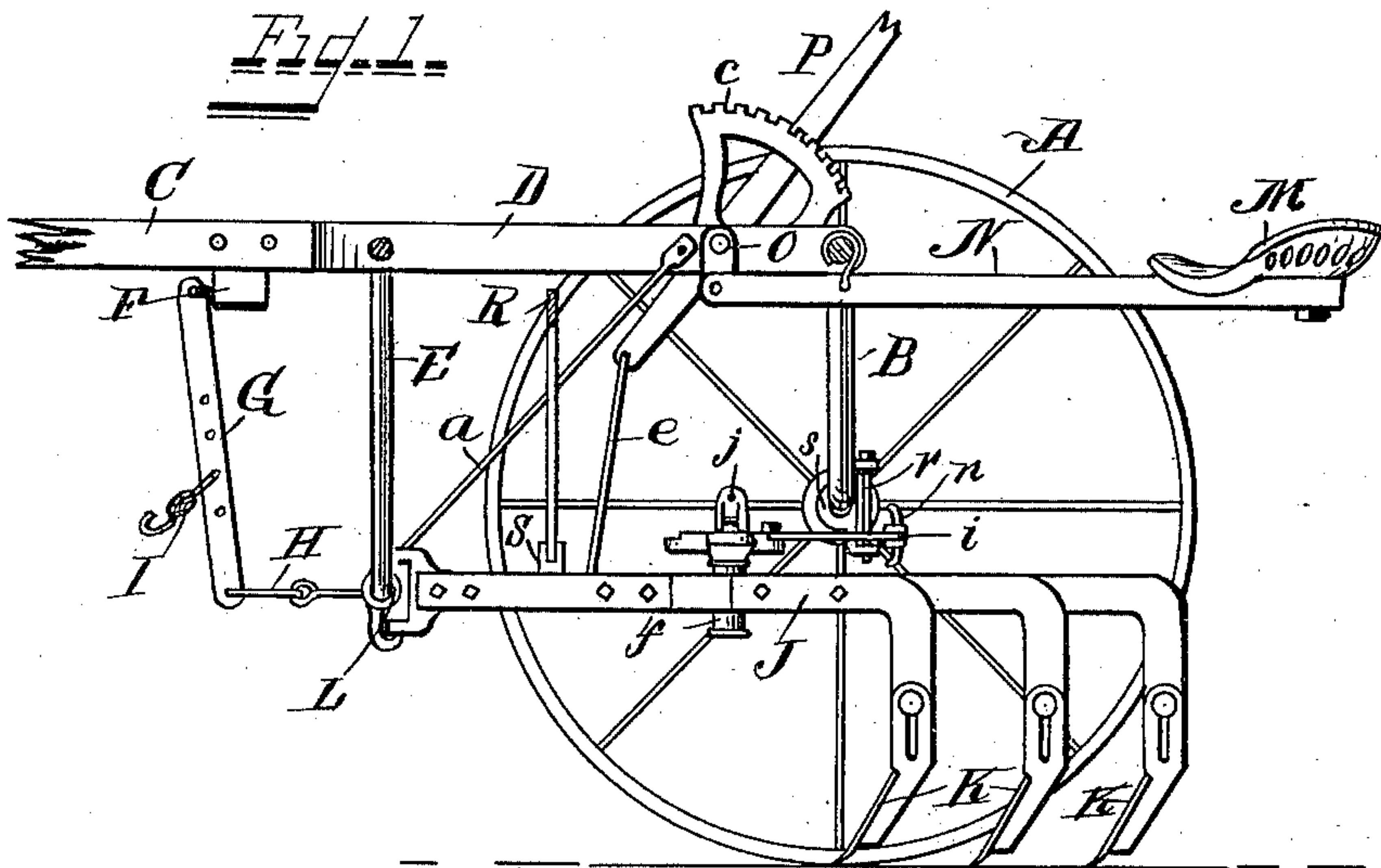
Patented Nov. 5, 1901.

C. W. MICHAEL.
CULTIVATOR.

(Application filed July 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
Wm. J. Peck.
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Clement W. Michael
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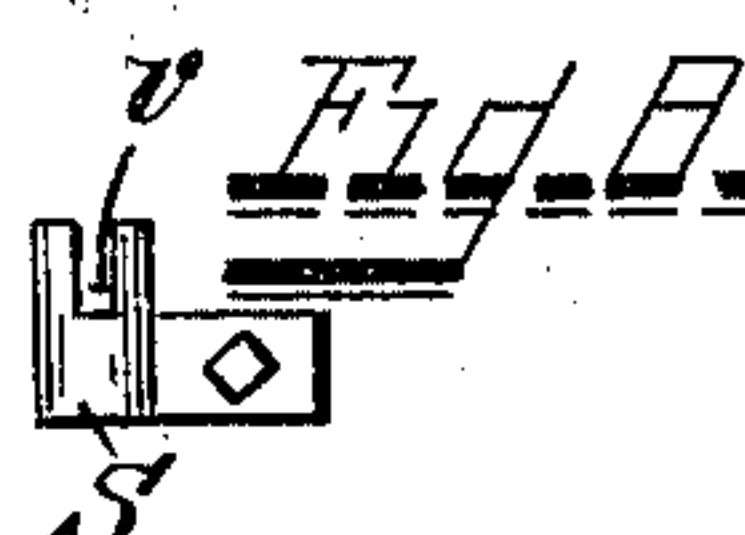
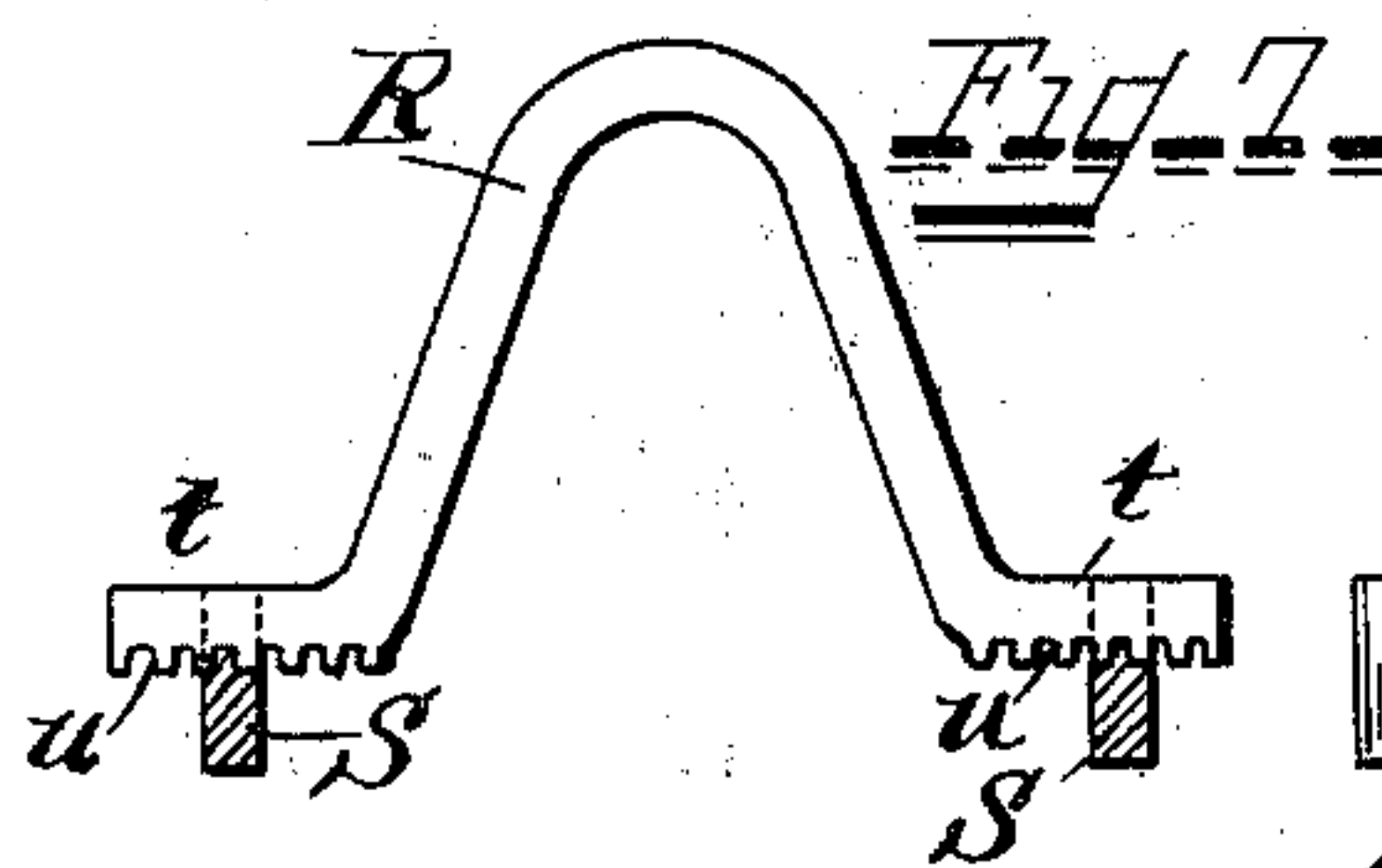
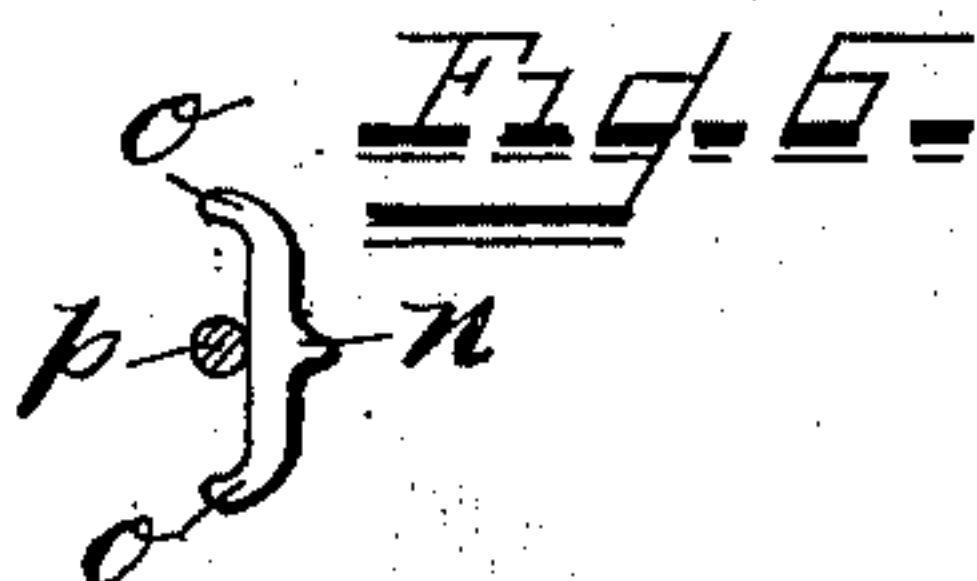
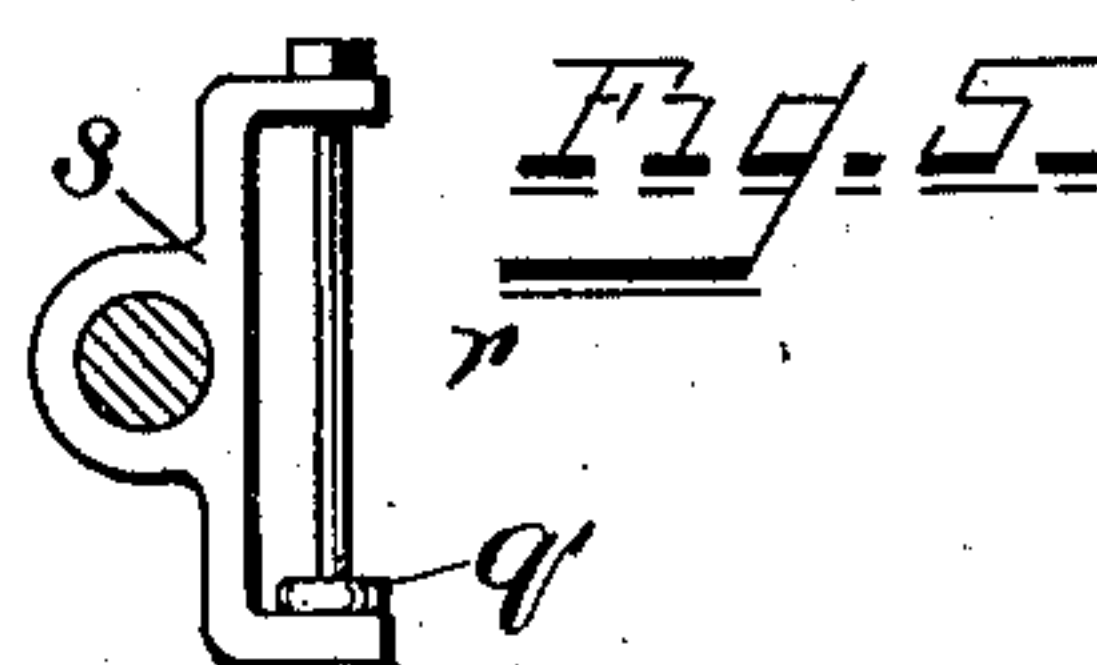
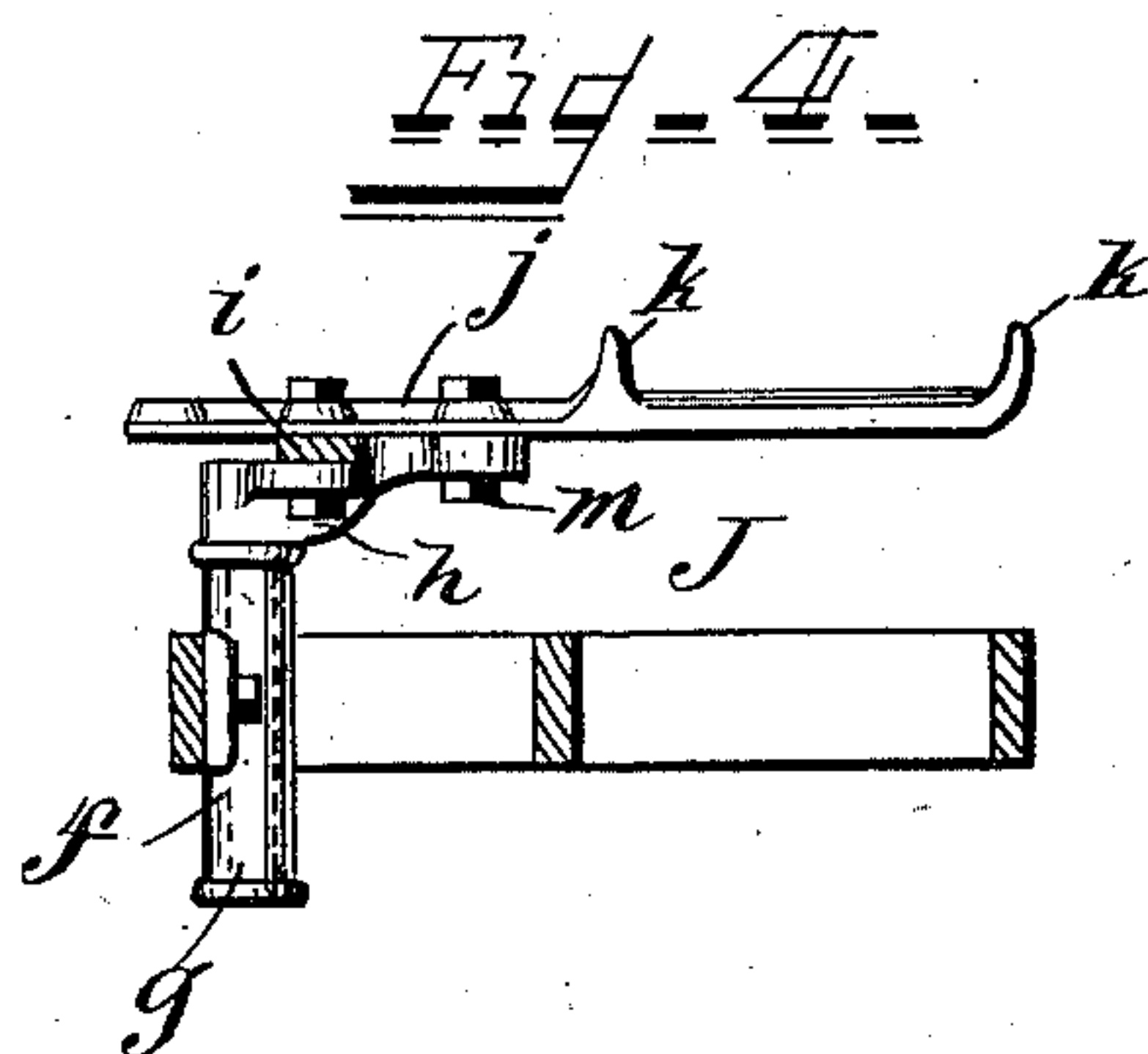
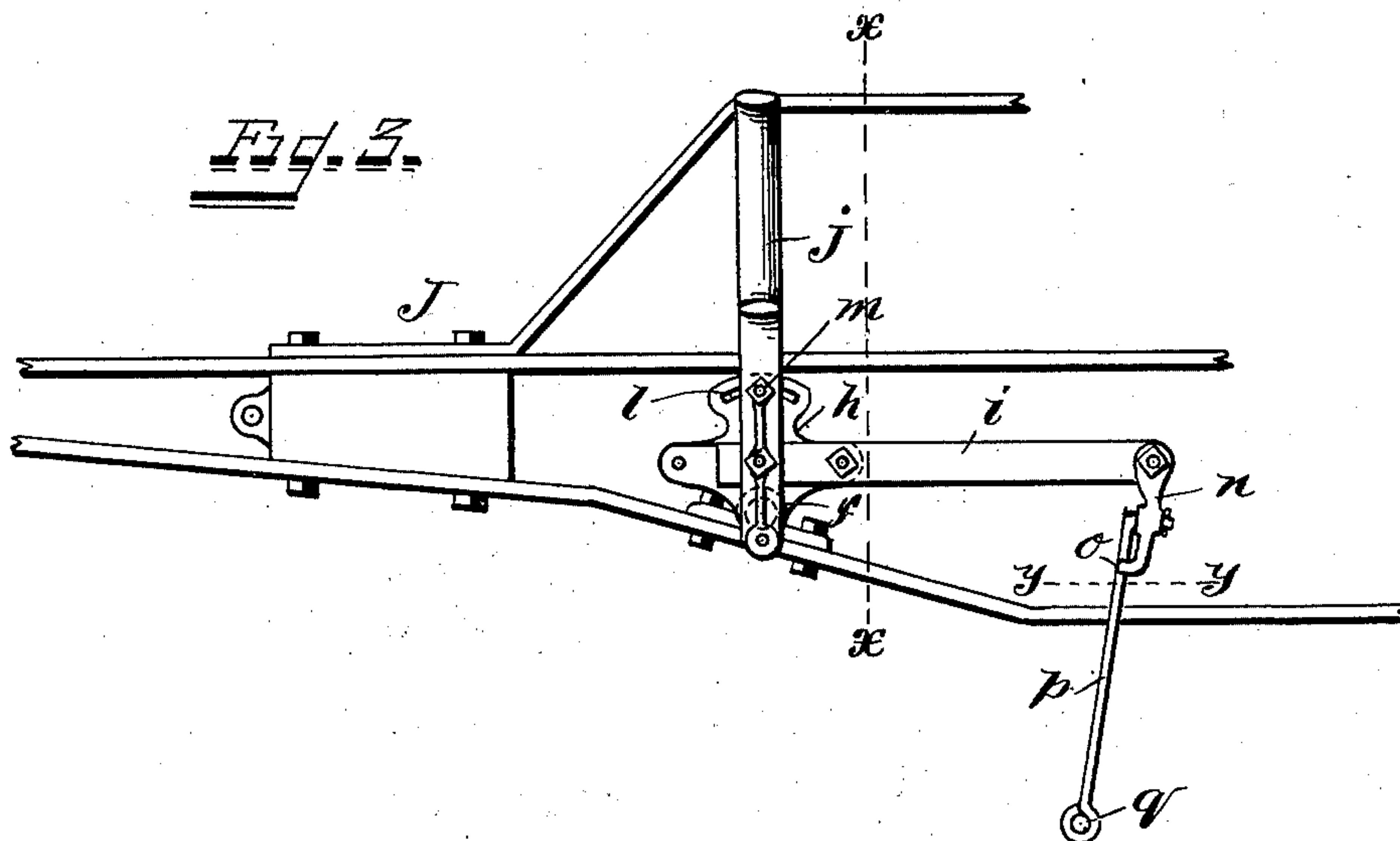
C. W. MICHAEL.

CULTIVATOR.

(Application filed July 30, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

CLEMENT W. MICHAEL, OF DAYTON, OHIO, ASSIGNOR TO THE STODDARD MANUFACTURING COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 686,000, dated November 5, 1901.

Application filed July 30, 1900. Serial No. 25,282. (No model.)

To all whom it may concern:

Be it known that I, CLEMENT W. MICHAEL, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cultivators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to straddle-row cultivators; and it has for its object the provision of means whereby the driver from his seat on the machine can swing either or both of the cultivator-gangs to follow irregularities in the row, and thus be enabled to cultivate close up to the growing crop no matter how irregularly planted out of a straight line.

It also has for its object the provision of simplified means for accomplishing the above results.

The novelty of my invention will be hereinafter set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1, Sheet 1, is a side elevation of a cultivator embodying my invention with the rear wheel removed. Fig. 2, Sheet 1, is a plan view of the cultivator with part of the seat-beams and the lifting-levers for the gangs removed. Fig. 3, Sheet 2, is an enlarged broken plan view of one of the gangs and its shifting-lever mechanism. Fig. 4, Sheet 2, is a sectional end elevation on the dotted line *xx* of Fig. 3 looking to the left. Fig. 5, Sheet 2, is an enlarged section detail side elevation of one of the link-retaining clips. Fig. 6, Sheet 2, is a sectional end elevation on the dotted line *yy* looking upward. Fig. 7, Sheet 2, is a front elevation of the spacing-bar and its holders. Fig. 8, Sheet 2, is a side elevation of one of the holders for the spacing-bar.

The same letters of reference are used to indicate identical parts in all the figures.

A A represent the supporting or carrying wheels journaled on stubs of a straddle-row axle B.

C is the pole or tongue, from which extend rearwardly the properly-braced hounds D, whose rear ends are secured to the top of the arch of the axle B in the usual or any suit-

able manner. From the forward part of the hounds depend two arms E, whose lower ends are braced by rearwardly and upwardly extending rods *a b*, whose upper ends are secured to the hounds at the rear thereof, as seen in Fig. 1.

F is the doubletree, and G perforated links connecting its outer ends with the forward ends of the links H, extending to the lower ends of the arms E. The singletrees I are adjustably secured to the links G to obtain proper draft, as seen in Fig. 1.

J represents the usual three-part or multiple drag-bars, carrying the hoes or shovels K at their lower ends and connected at their forward ends by swivel-joints L to the lower ends of the arms E.

M is the driver's seat, supported on metal bars N, whose forward divergent ends are secured to hanger-arms O, pendent from the hounds D, and to the arch of the axle.

P represents the usual hand-lock levers, pivoted to the hounds and engaging the segment-racks *c*. Links *e* connect the lower ends of the levers P with the gang-bars J.

The cultivator thus far described is of a well-known type, and I will now proceed to describe my improvements which are to be added thereto or to any other form of straddle-row cultivator where adaptable.

Secured to the outer bar of each of the gangs is a vertical socket *f*, Figs. 3 and 4, in which is pivoted a spindle *g*, dotted lines, Fig. 4, carrying at its top an inwardly-extending horizontal plate *h*, upon which are adjustably bolted a rearwardly-extending arm *i* and an inwardly-extending stirrup-piece *j*, with upward extensions *k* to form a stirrup for the driver's foot. The arm *i* is backwardly and forwardly adjustable on the plate *h*, and the stirrup-piece *j* is also laterally adjustable on said plate and in addition can be adjusted angularly thereto by a slot *l* in said plate and a clamping-bolt *m*, passing through the stirrup-arm and slot *l*. To the rear end of the arm *i* of each gang is pivoted a horizontal piece *n*, whose outer end is forked, as seen at *o*, Figs. 3 and 5, and lying within this fork is a link *p*, whose inner end is horizontally pivoted to an aperture in the piece *n* and whose outer end, having an eye *q* thereon, engages

by means of a vertical spindle *r* a clip *s*, fast on the stub-spindles of the axle B.

From the foregoing description it will be readily seen that the driver by placing his feet upon the stirrup-pieces *j* can swing the plate *h* forward or backward on its fulcrum *g*, thereby vibrating inward or outward the gangs J to follow the sinuosities of the rows, for the eye *q* of the link *p* being fixed to the frame through the medium of the spindle *r* and clip *s* the gangs J will be shifted laterally by the vibration of the stirrup-piece *j*. The leverage movement is entirely a horizontal one, and the arms of the levers, forming a bell-crank, are carried by and fulcrumed on the gang-bars. The pivoting of the links *p* to the pieces *n* and their sliding connection at their outer ends with the spindles *r* permit sufficient play to allow the lifting of the gangs from contact with the ground by the action of the hand-levers P in transporting the cultivator from place to place and at the same time give sufficient play to permit the proper depth of penetration to the cultivator teeth or shovels when the machine is at work.

As thus far described each gang has its own independent movement inwardly or outwardly; but to connect them together for simultaneous movement I employ a spacing-bar R, Figs. 1, 2, and 7, which is in the form of an arch with flattened lower and outwardly-extending portions *t*, whose under sides are provided with rack-teeth or serrations *u* to engage ribs *v* in vertically-slotted pieces S, secured to the gang-bars, the vertical slots in said pieces serving to hold the spacing-bar R upright. By lifting the bar R the gangs can be adjusted toward or from each other and then be locked together by reengaging the

teeth of the bar R with the ribs *v* of the retaining-pieces S, as will be readily understood. With the spacing-bar in place the driver can swing both gangs simultaneously with either foot or with both feet, if desired.

The above-described mechanism for shifting the gangs is very simple in construction and efficient in action, and by the horizontal movement of the lever mechanism the gangs can be guided without practically altering the depth of penetration of the cultivator teeth or shovels, which is a very important feature.

Having thus fully described my invention, I claim—

1. In a sulky straddle-row cultivator, the combination with each gang, of the plate *h* vertically pivoted to the gang, the stirrup-piece *j*, adjustable in and out upon and at angles to said plate, the rearwardly-extending arm *i* adjustable forward and back upon said plate, the piece *n* pivoted to the rear end of said arm and having the fork *o*, the link *p* pivoted to the piece *n* and having at its outward end an eye *q* engaging a vertical spindle *r* carried by a clip *s* fast upon the main frame, substantially as described.

2. In a sulky straddle-row cultivator, the combination with the cultivator-gangs, of a spacing-bar R in arch form and with lower lateral extensions having teeth on their under sides, and slotted pieces S secured to the gangs and having ribs *v* in said slots for uniting the spacing-bar to the gangs, substantially as described.

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Witnesses:

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