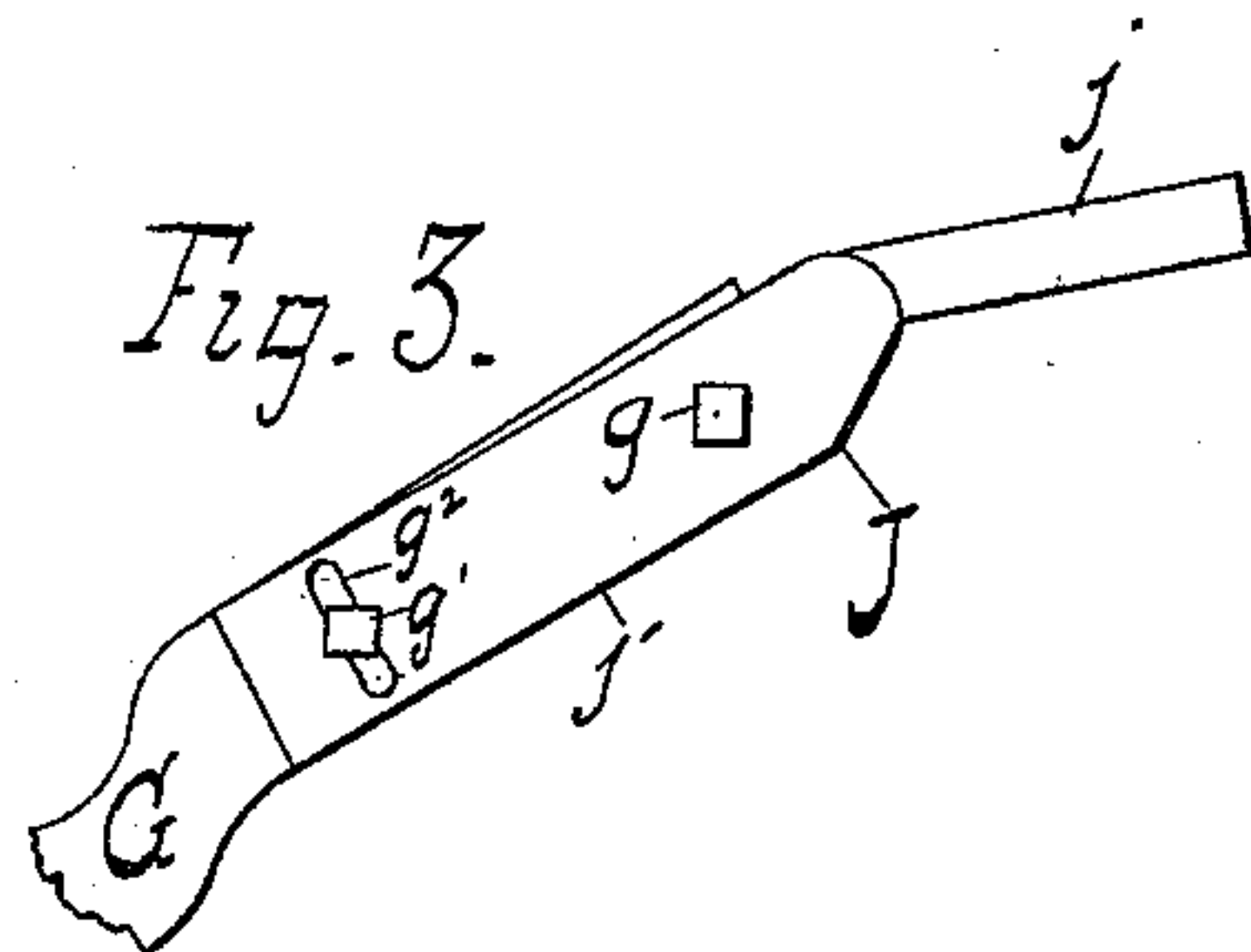
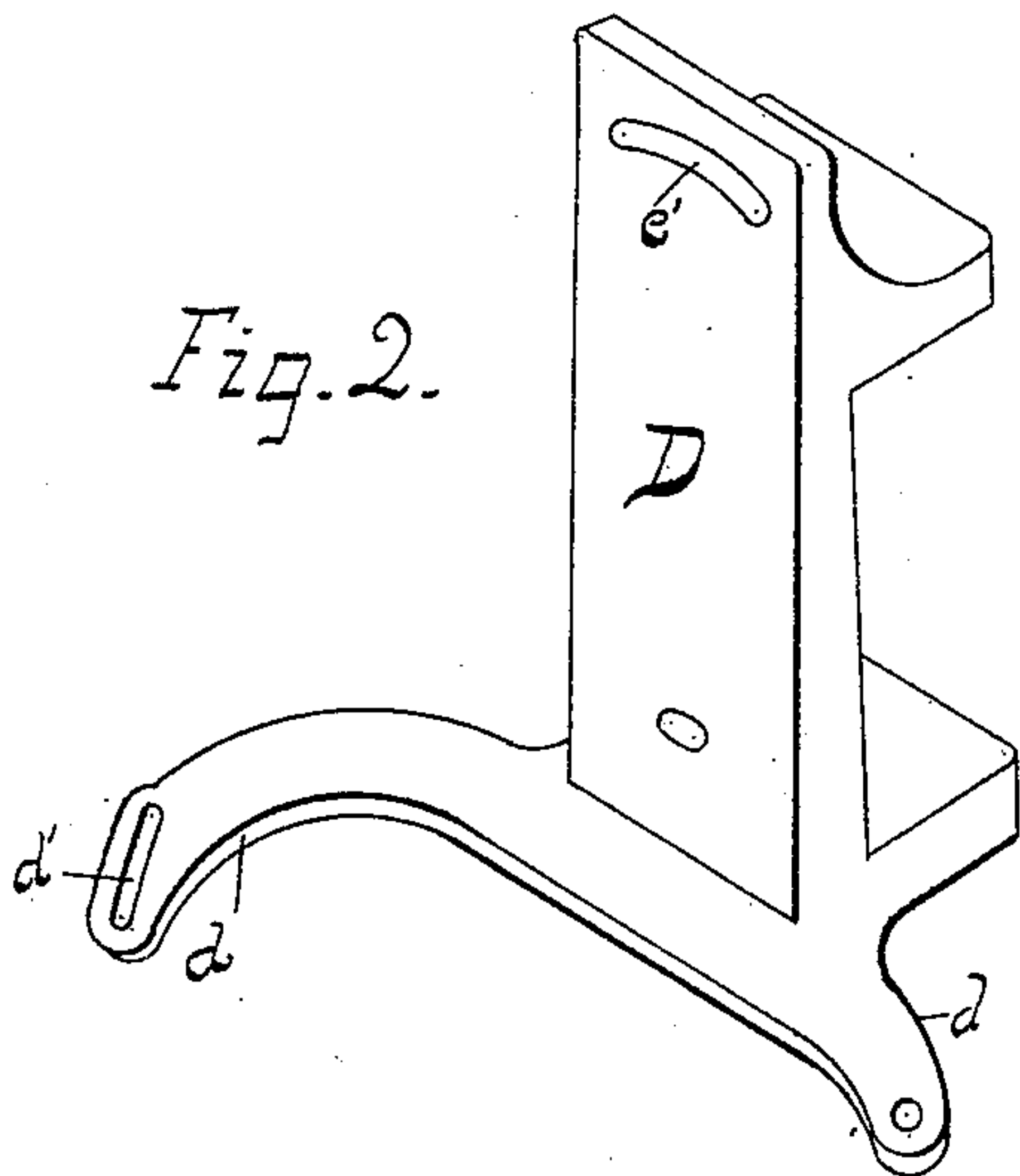
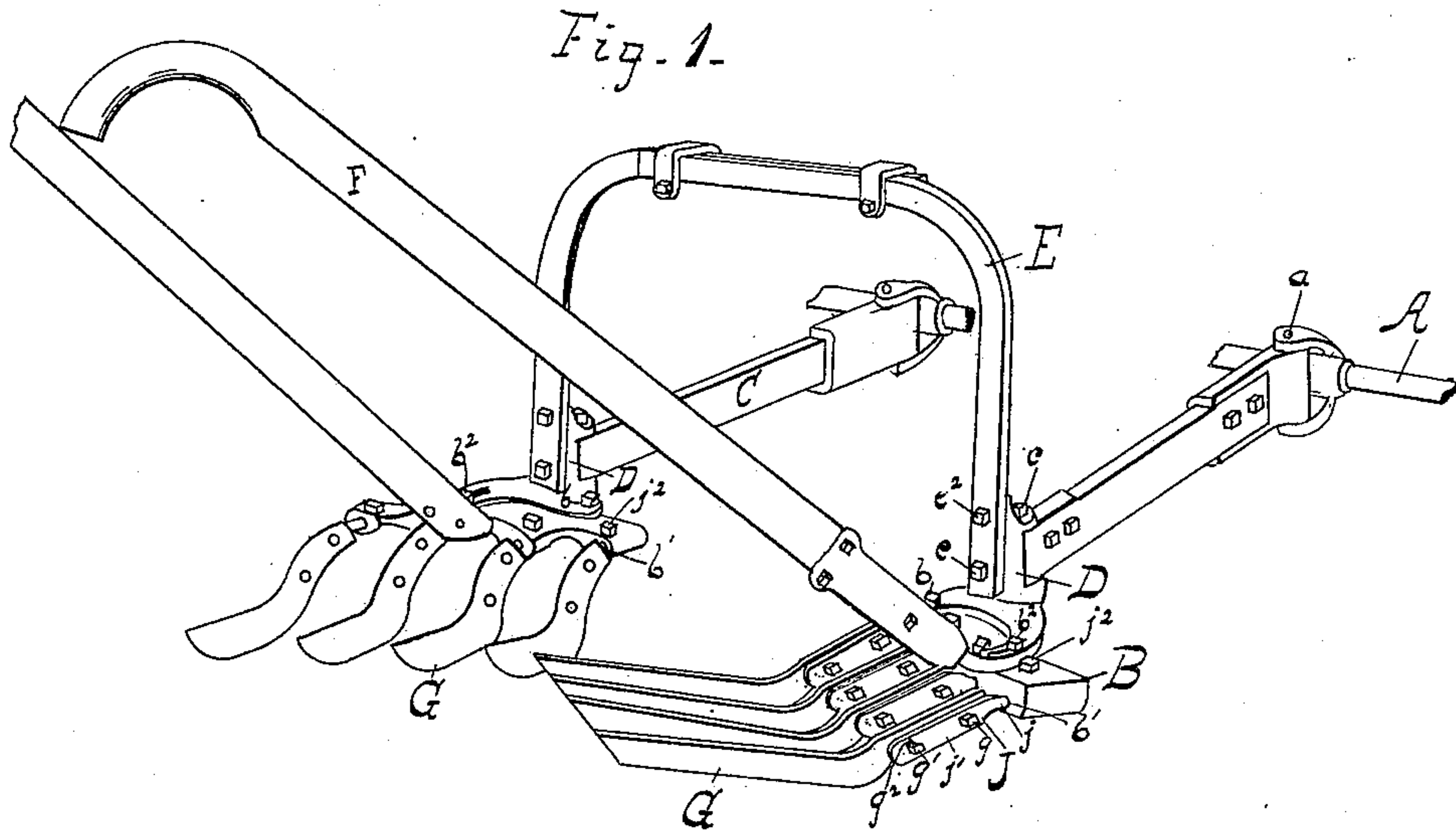


(No Model.)

D. W. BASH.
CULTIVATOR.

No. 406,418.

Patented July 9, 1889.



Witnesses.
Harry Bitner
Charles H. Ripley

Inventor,
David W. Bash,

By Attorneys,
Hill & Dixon.

UNITED STATES PATENT OFFICE.

DAVID W. BASH, OF SANDWICH, ILLINOIS, ASSIGNOR TO THE SANDWICH ENTERPRISE COMPANY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 406,418, dated July 9, 1889.

Application filed April 11, 1887. Serial No. 234,466. (No model.)

To all whom it may concern:

Be it known that I, DAVID W. BASH, of Sandwich, in the county of De Kalb and State of Illinois, 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.

My present invention relates to an improvement in the cultivator patented to me by Letters Patent No. 327,754, granted October 6, 1885. Its objects are to provide means whereby the gangs of blades may be adjusted as a whole to better adapt them to pulverize and mellow slanting ground near the growing plants; and also to pulverize the ground and move it to a greater or less extent to or from the plants; also to provide means for attaching the blades to the head, whereby the blades are capable of being adjusted vertically and in the arc of a circle; and also to provide such means for connecting the beams to the cultivator-frame that the machine may be operated on crooked rows without altering the position of the blades relative to the line of the draft.

To this end it consists in the construction and combination of parts herein described, and pointed out definitely in the claims.

In the drawings, Figure 1 is a perspective view of my improved cultivator. Fig. 2 is a detail of the standard which connects the heads to the arch. Fig. 3 is a detail of one of the blades and the arm which connects it with the head.

As illustrated in the drawings, A represents the cultivator-frame, which may be of any suitable construction, and it is provided with means whereby the cultivator-beams may be pivotally connected therewith by a vertical pivot-bolt a or otherwise, so that said beams are permitted to swing sidewise. The blades G are curved from shank to point in the manner common in this class of cultivators, and as shown in my former patent. The heads B are provided with round sockets b' , into which the rounded ends j of the arms J fit and are adapted to revolve. The blades are secured to the flat rear ends j' of said arms J by a bolt g . The blades are therefore capable of an adjustment in the arc of a cir-

cle by permitting said arms J to turn in the sockets b' , and retaining them in the proper position by a set-screw j^2 , which screws into the head B and against the rounded end j of said arm J . The blades are adjusted vertically by means of a set-bolt g' , which passes through a slot g^2 , preferably in the flattened rear end of the arm J , and is secured to the shank of the blade G . The blade turns on the bolt g as a pivot, and is held in any desired position by tightening the nut on the bolt g' .

$D D$ represent standards having arms $d d$, projecting substantially at right angles thereto to form a T-shaped head. One of the arms d is pivotally attached to said head by the bolt b , and the head is adapted to oscillate substantially horizontally in the arc of a circle upon said bolt, and means are provided for holding said head at any point to which it is permitted to oscillate. The means provided are a slot d' in either the head or arm and a bolt b^2 passing through said slot and secured to the other of said parts, upon which a nut may be screwed to hold the parts in the relative position desired. The upright standards D are adjustably secured to the ends of the arch E each by a pivot-bolt e , upon which the standard is permitted to oscillate, and thereby vary the relative vertical height of the ends of the heads $B B$. Means are provided for holding the standard at any point in its oscillation, the means shown being the slot e' and set-bolt e^2 . By these means the heads which bear the blades are given two adjustments. That which results from the connection of the standard D with the arch E may be called a pivotal adjustment in a vertical direction, since it varies the relative vertical heights of the ends of the heads B , and adapts the machine to mellow the ground and cut the weeds upon the opposite slanting sides of a row of plants, all of the blades being adapted to enter the ground substantially the same distance. The other adjustment, which results from the connection of the arms d of the standard D with the head, may be termed a pivotal adjustment in a horizontal direction, because the head moves in a substantially horizontal plane, and as upon a pivot. This adjustment changes at once the angle

at which all the blades lie to the line of the draft. If that angle is increased with the form of blades shown, their power to disturb and mellow the earth and move it toward the rows is increased.

I do not mean, when I say that the two adjustments above described are pivotal, that the parts must necessarily swing upon the bolts shown to act as pivots or upon any fixed pivot-point. Both bolts may pass through slots, so that the parts are movable at both points of connection, in which case they would move about an imaginary pivot between said points.

The cultivator-beams C are connected to the frame A at their forward ends by substantially vertical pivot-bolts *a*, and at their rear end to the standards by a pivot-bolt *c*. F F represent the handles attached to the heads, and by which said heads may be moved from side to side when operating upon a crooked row. When they are so moved to one or the other side, the pivotal connection between the heads and drag-bars and the arch, which rigidly connects said heads, compels the heads and blades to remain in the same relative position to the line of the draft as before such movement.

If the device were organized so that the connection between the heads and beams were rigid, a movement of the heads would cause the knives of one gang to approach a position in line with the draft, while the knives of the other gang would be placed more nearly at right angles thereto.

The above-described device may be attached to any wheeled or walking cultivator with nothing more than slight non-essential changes, and the different parts of the invention, as claimed, may be used conjointly, as shown, or independently with other devices.

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

1. In a cultivator, the combination of the heads provided with rounded sockets, arms having one end flattened and the other end

rounded and adapted to fit in said sockets, and set-screws for retaining them therein, with blades adjustably secured to the flattened end of said arms, substantially as and for the purpose specified.

2. In a cultivator, the combination of the heads provided with rounded sockets, arms having one end flattened and the other end rounded and adapted to fit in said sockets, and set-screws for retaining them therein, with blades pivoted to the flattened end of said arm, and a slot, bolt, and nut for securing said blade in any desired position, substantially as and for the purpose specified.

3. In a cultivator, the combination of suitable heads, and standards secured thereto, with an arch having its ends pivotally connected with said standards, and means for rigidly securing the standards and arch together, substantially as and for the purpose specified.

4. In a cultivator, the combination of suitable heads, each having blades secured thereto, and an arch extending between said heads, with standards, and adjustable connections between said standards and both the arch and the heads, substantially as and for the purpose specified.

5. In a cultivator, the combination of suitable heads and standards secured thereto, an arch having its ends pivotally connected with said standards, and means for rigidly securing the standards and arch together, with the frame and beams pivotally connected to both the frame and the heads, as and for the purpose set forth.

6. In a cultivator, the combination of suitable heads, each having blades secured thereto, an arch extending between said heads, and standards adjustably connected to both the arch and the head, with the frame and beams pivotally connected to both the frame and the heads, substantially as and for the purposes hereinbefore set forth.

DAVID W. BASH.

Witnesses:

ISRAEL L. ROGERS,
W. H. ROBERTSON.