

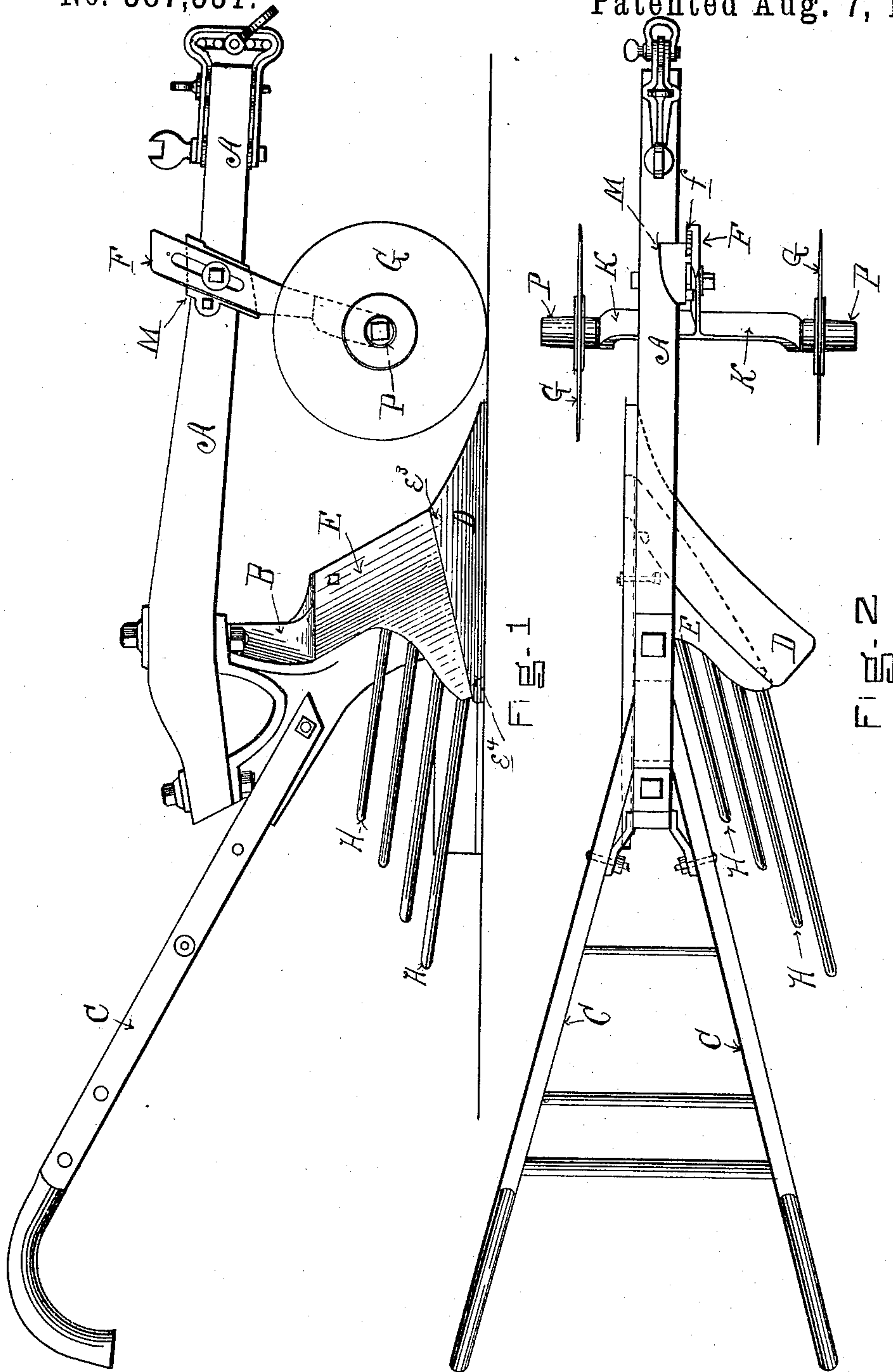
(No Model.)

3 Sheets—Sheet 1.

S. L. ALLEN.
POTATO DIGGER.

No. 387,331.

Patented Aug. 7, 1888.



WITNESSES

Chas. Fitch
W. H. Moreton

INVENTOR

Samuel L. Allen
By *Lin* Attorney
J. P. D. Owens

(No Model.)

3 Sheets—Sheet 2.

S. L. ALLEN.

POTATO DIGGER.

No. 387,331.

Patented Aug. 7, 1888.

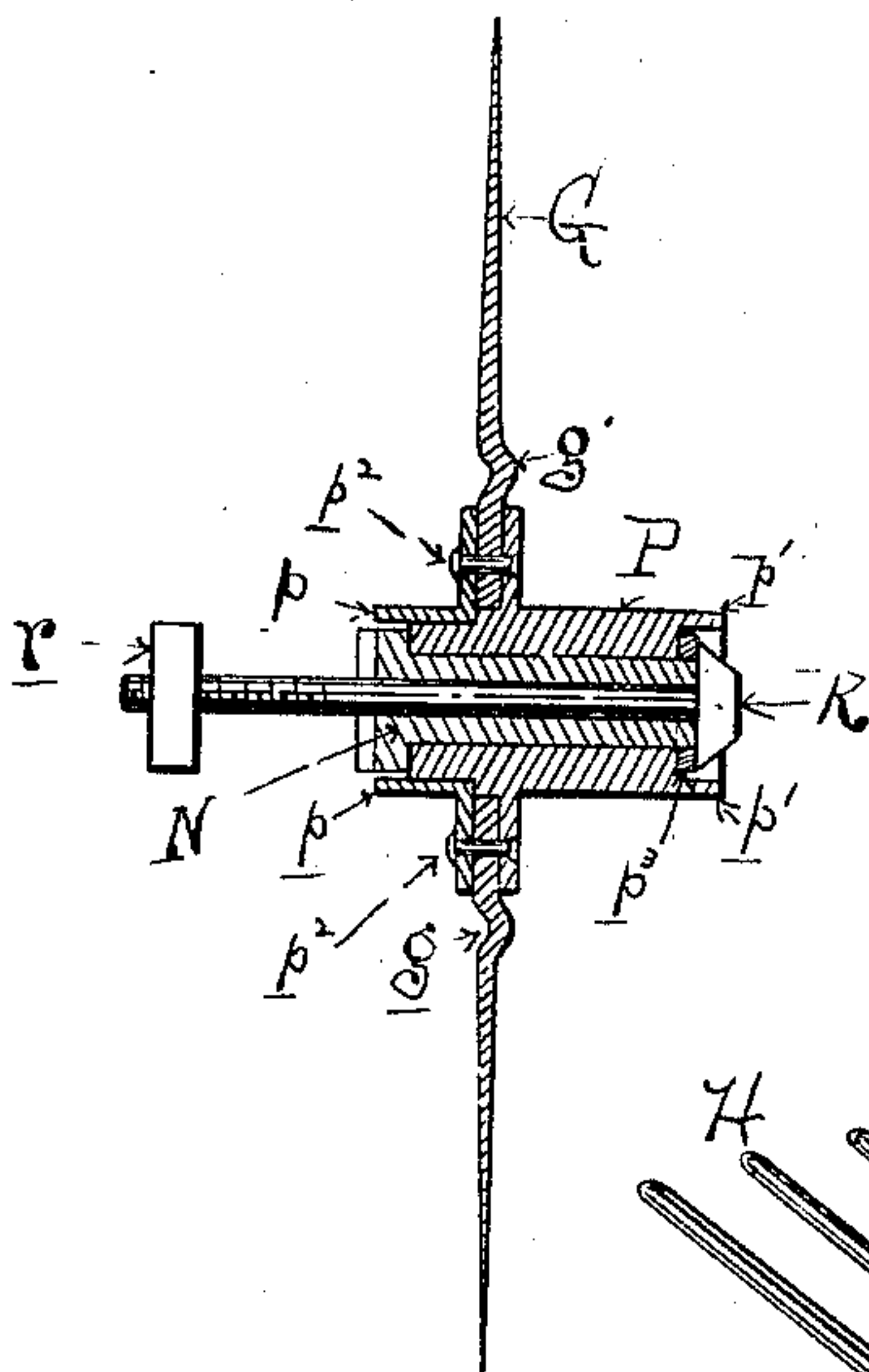


FIG-3

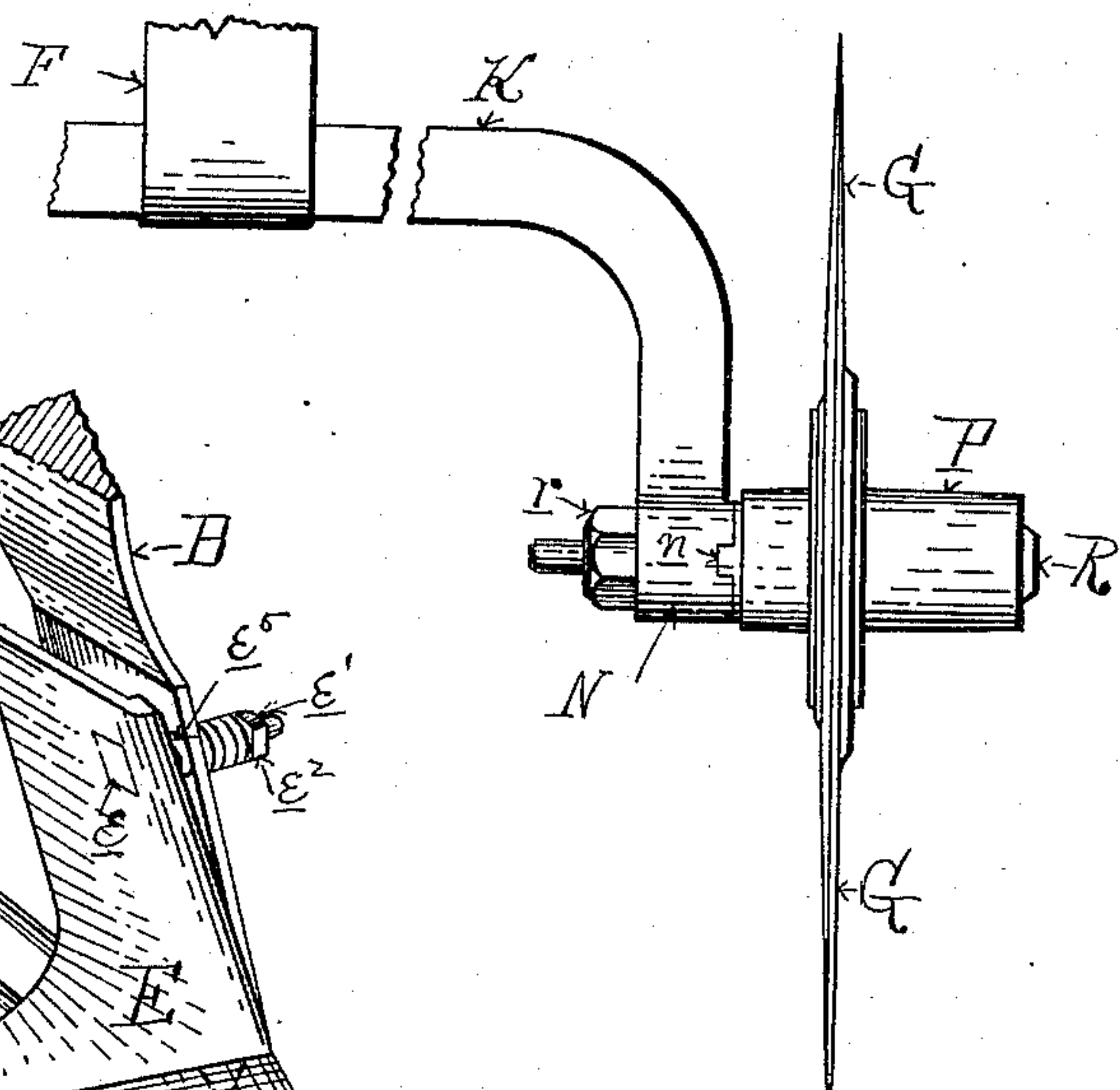


FIG-4

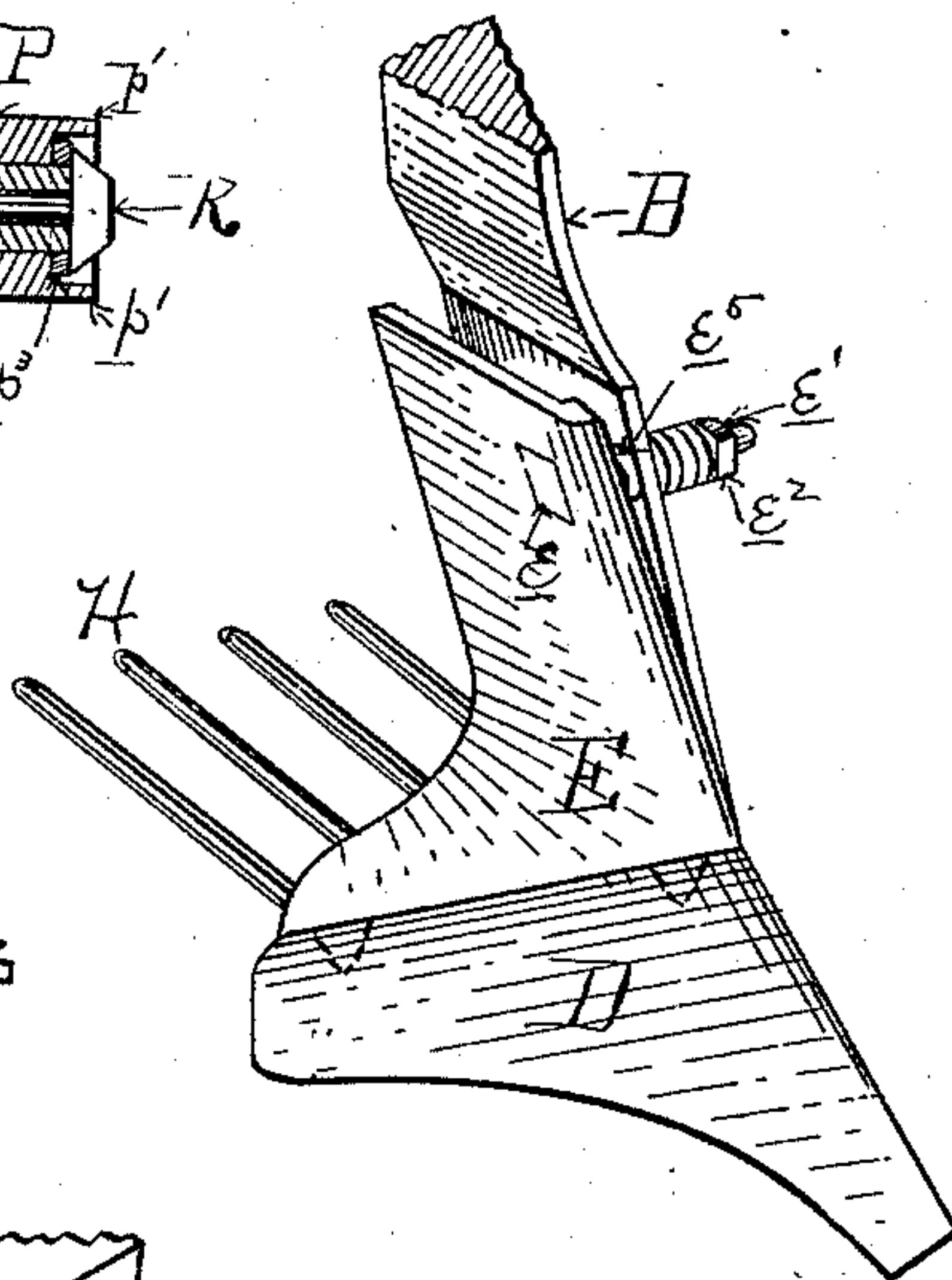


FIG-7

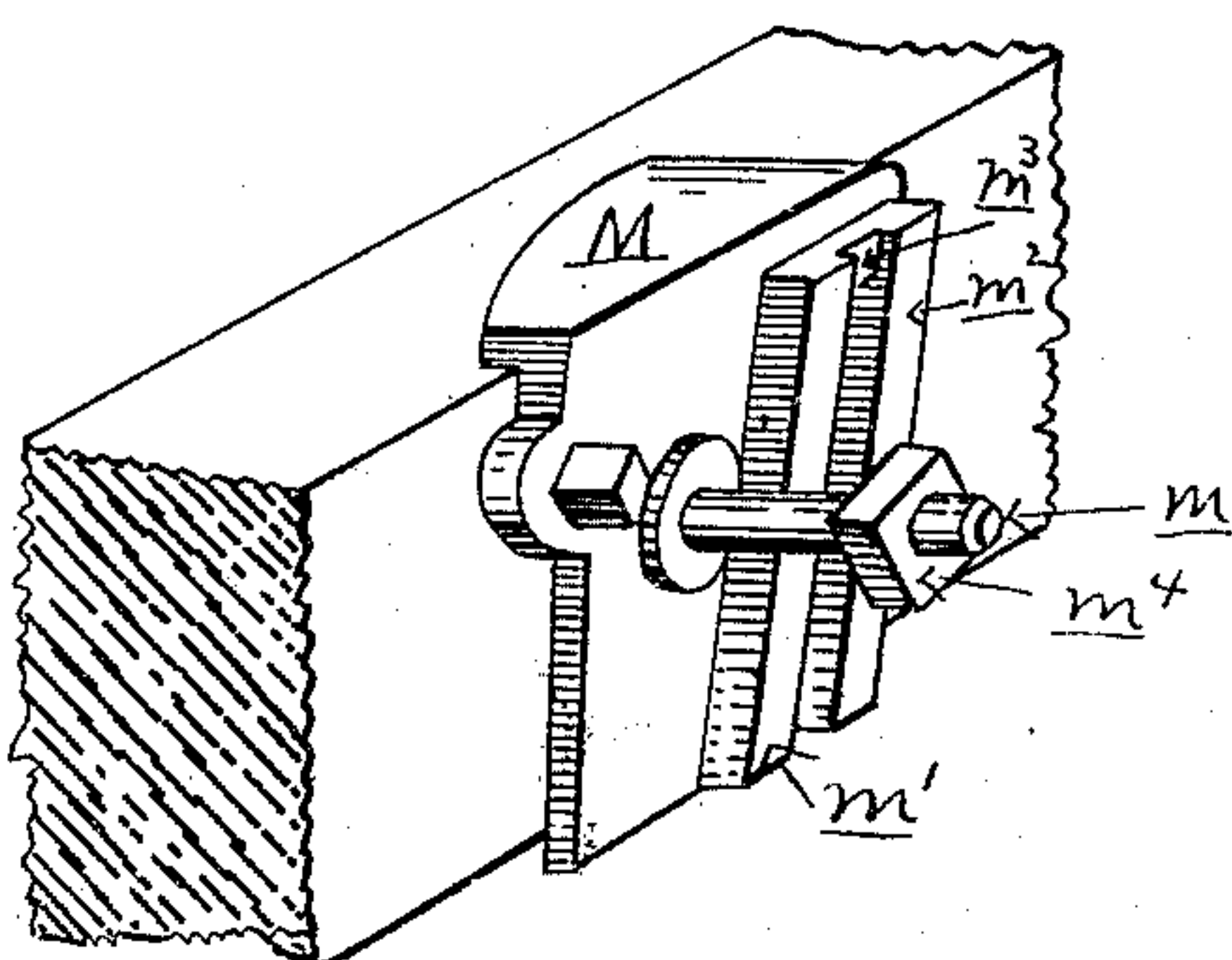


FIG-5

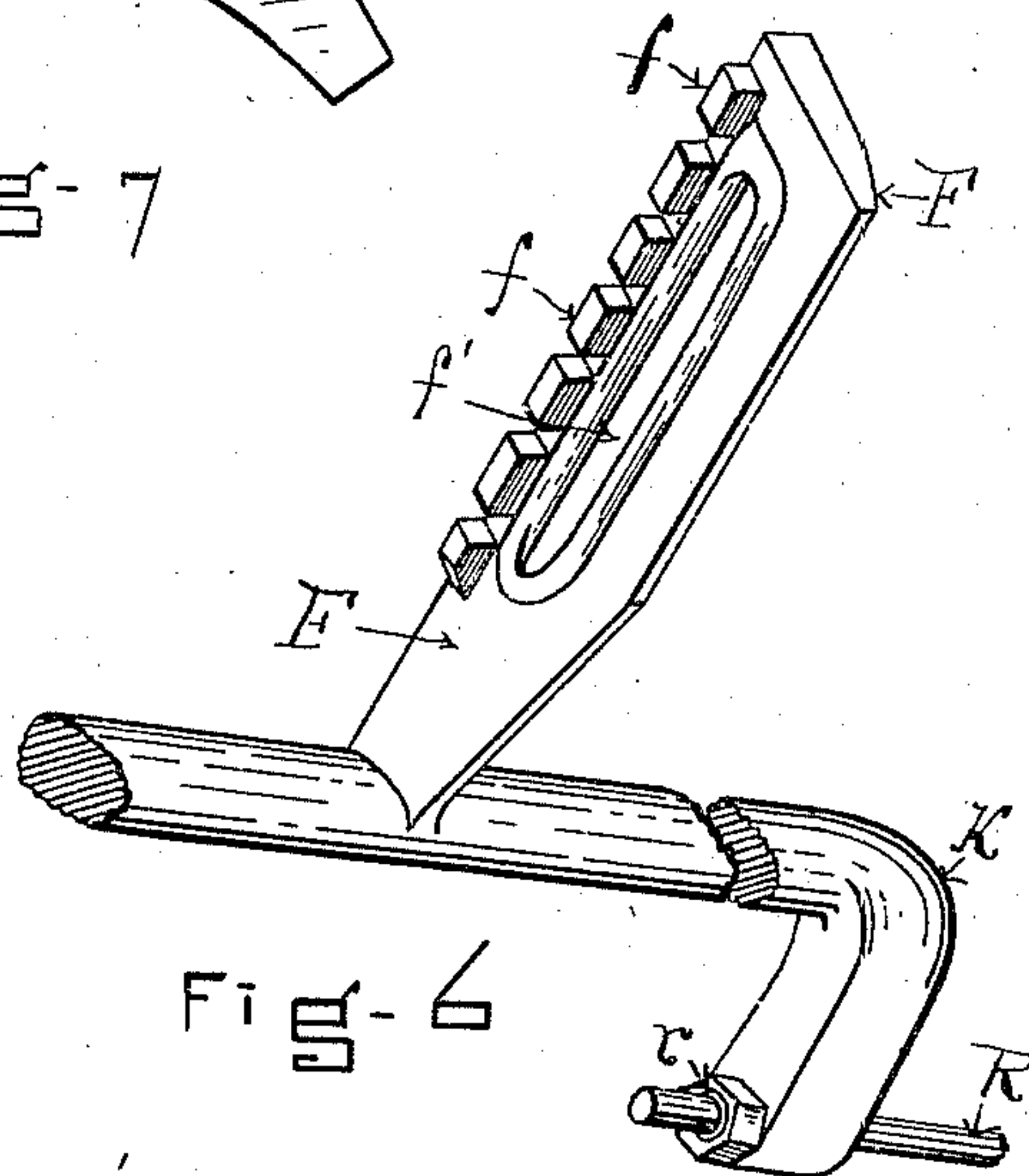


FIG-6

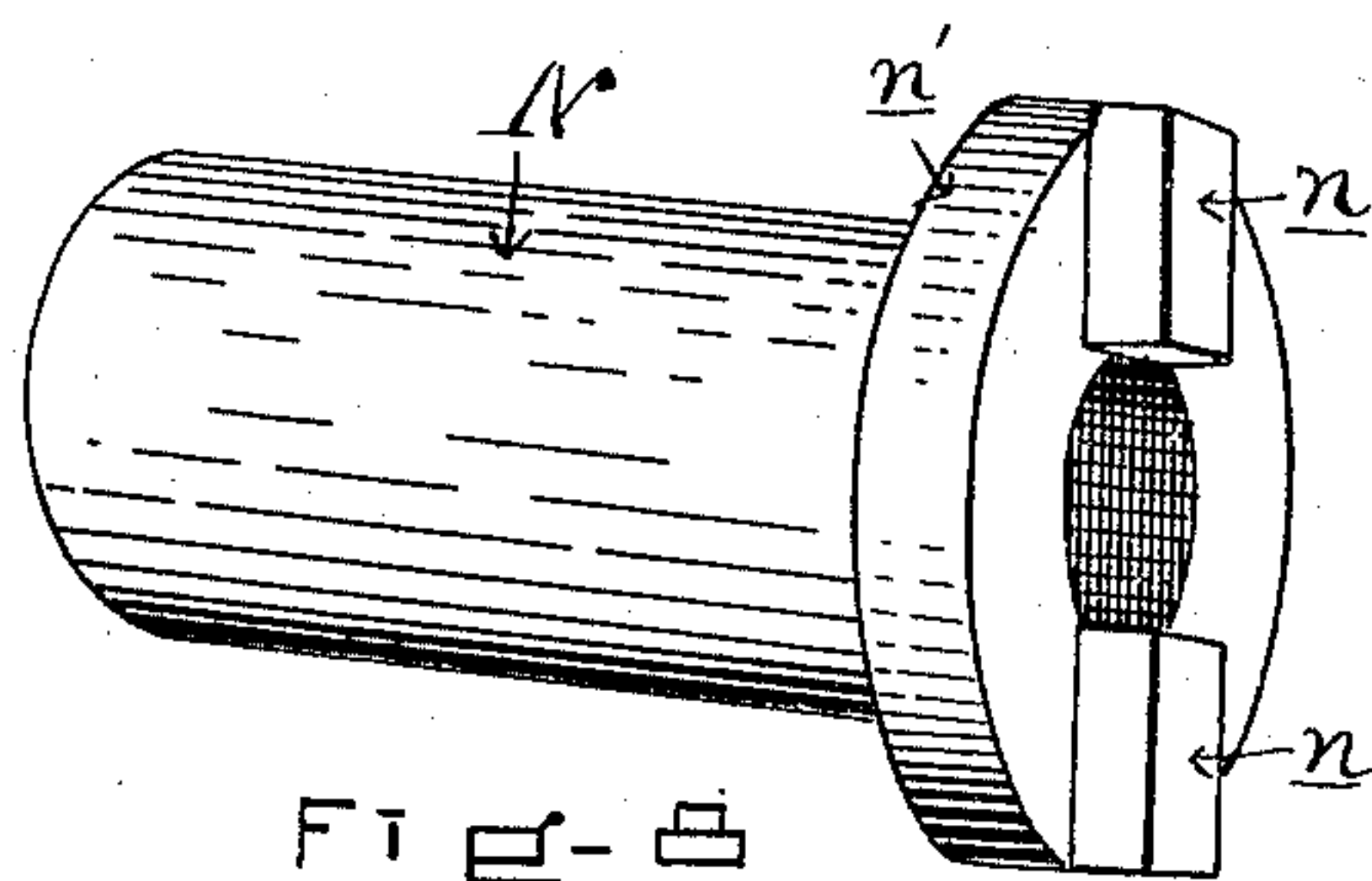


FIG-8

WITNESSES

Chas. Litch
W. H. Mearns

INVENTOR

Samuel L. Allen

By his Attorney

J. B. H. Dwyer

(No Model.)

3 Sheets—Sheet 3.

S. L. ALLEN.
POTATO DIGGER.

No. 387,331.

Patented Aug. 7, 1888.

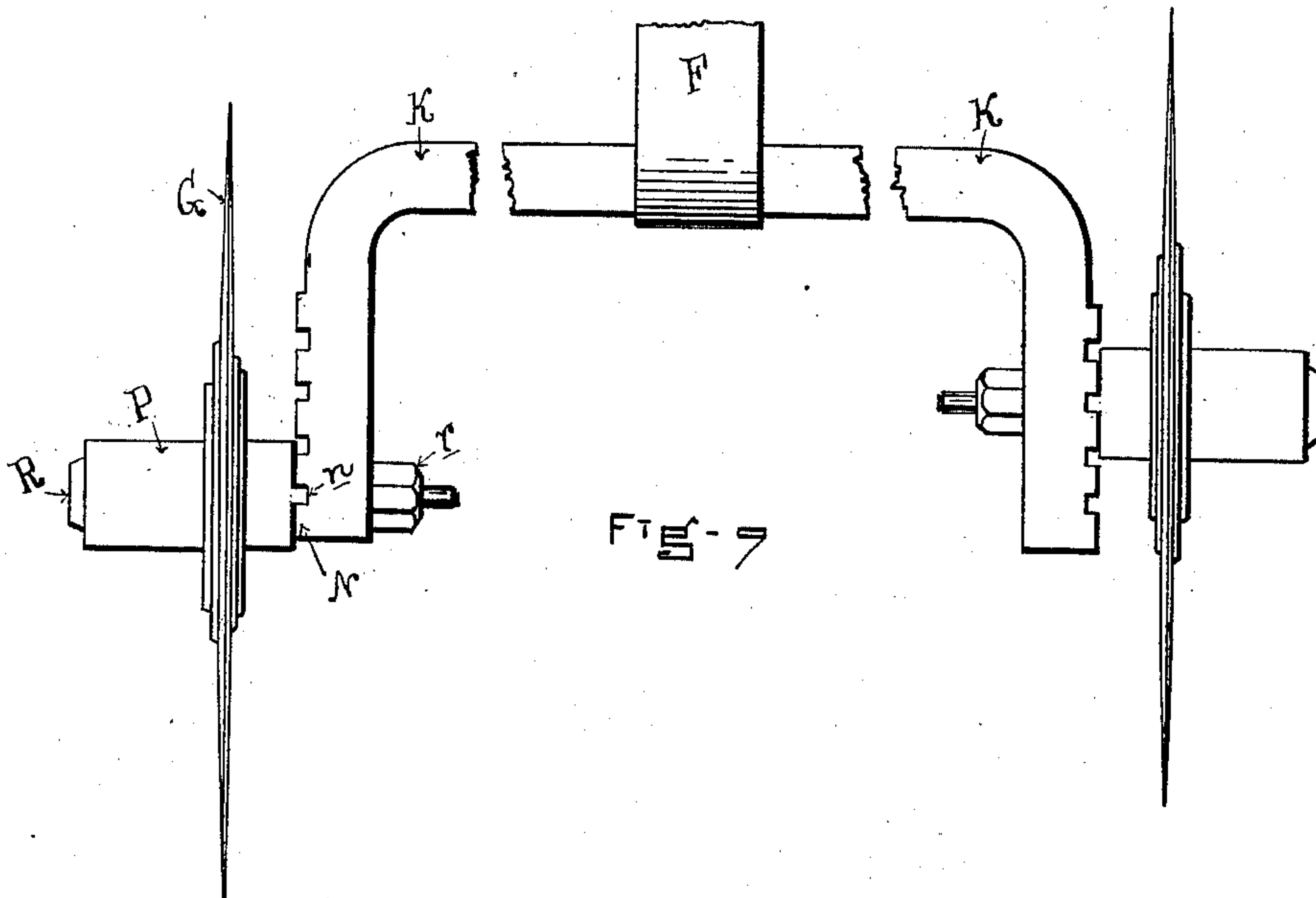


Fig-7

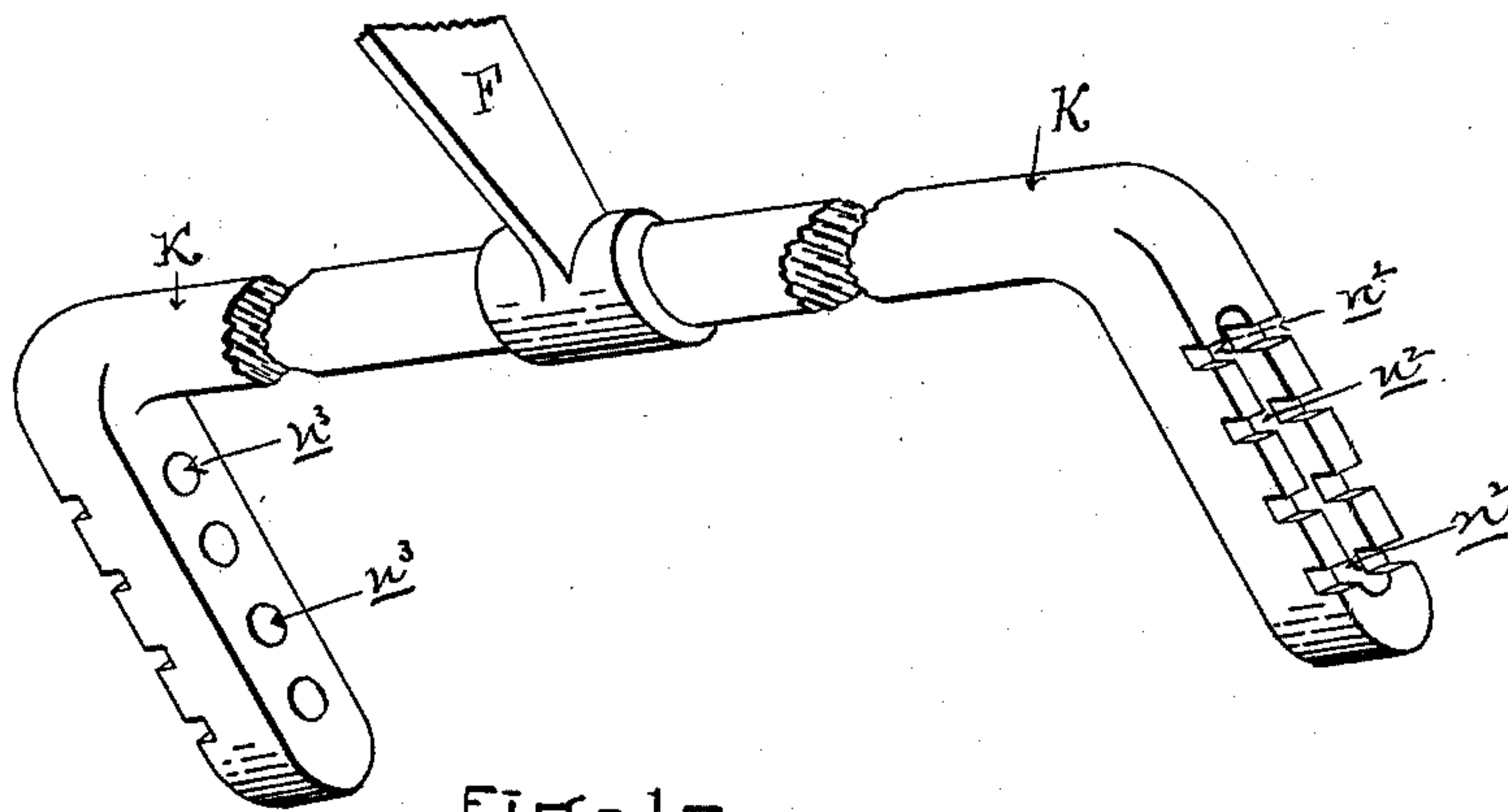


Fig-1

WITNESSES.

Chas. Litch.
Wm. H. Hareton.

INVENTOR.

Samuel L. Allen.
By *his* Attorney.
Wm. H. Hareton.

UNITED STATES PATENT OFFICE.

SAMUEL L. ALLEN, OF CINNAMINSON, NEW JERSEY.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 387,331, dated August 7, 1888.

Application filed October 28, 1886. Serial No. 217,398. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. ALLEN, a citizen of the United States, residing at Cinnaminson, Burlington county, State of New Jersey, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a true and complete specification.

My invention relates to implements especially adapted for digging sweet potatoes; and it consists of the devices and combinations hereinafter set forth.

In the drawings, Figure 1 is a side elevation of my improved sweet-potato digger. Fig. 2 is a plan view of the same. Fig. 3 is a sectional view of the revolving disk-knives for cutting vines, showing also the sand-shields and removable axle. Fig. 4 is an elevation of the same, showing the attachment to the gang-frame. Figs. 5 and 6 show the method of attaching the gang-frame to the beam of the digger and adjusting the depth of cut of the revolving disk-knives. Fig. 7 is a view of the plowshare, mold-board, and part of the frame, showing the long bolt and washers to adjust the mold-board in height and so regulate the throw. Fig. 8 is a view of the adjustable and removable axle on which the disk-knives revolve. Fig. 9 is a front elevation showing a modified form of the gang-frame. Fig. 10 is a perspective view of the same, showing the slot, bolt-holes, and notches for adjusting the revolving cutters in height.

A is the beam, and B the cast-iron frame, of the digger.

D is the plowshare secured to the frame, and C C the handles of the digger.

E is the mold-board, which is provided with a supplementary skeleton mold-board consisting of the rods H H H H. The mold-board E, Fig. 7, is provided at its lower edge with the lugs e^3 and e^4 , which fit into corresponding recesses in the plow-standard, and are held in place by the plowshare D. At its upper part it has a bolt, e , the head of which is countersunk into the mold-board. The bolt E passes through a hole in the frame of the digger, and is provided at its other end with a nut, E' , and a number of metal washers, e^2 . One or more of these washers may be placed between the frame and the back of the mold-board E, as shown at E^5 , Fig. 7, and so tilt the mold-board more or less away from the frame B,

thus regulating the amount of throw of the soil overturned by the implement.

To the back edge of the mold-board E are screwed or otherwise suitably secured the bars H H H H, which extend backward and outward, as shown in Figs. 1, 2, and 7. These bars constitute a supplementary skeleton mold-board, and receive the mold and potatoes turned up by the mold-board E and sufficiently separate the potatoes from the earth in the furrow-slice. To the beam of the plow, at or near its middle point, is bolted the plate M, which is provided with a bolt, m , and nut m^4 , the parallel guide-bars m' and m^2 , and the lug m^3 , as shown in Fig. 5.

G G, Figs. 1, 2, 3, and 4, are revolving disk-knives, and consist of plates of steel struck up into the desired shape in a drop press. Their form is best seen in the sectional view, Fig. 3, in which $g g$ is a sort of groove or circular strengthening-wave, which is formed in the metal in the operation of striking them up. Each of these disk-knives is riveted to its hub P by the rivets p^2 , which pass through a hole in the flange on the hub, thence through the disk-knife itself, and then through a flanged piece, p , as shown.

Within the hub P is the axle N, which is screwed to the gang-frame K by a bolt, R, Fig. 4, which passes through the axles, and thence through a corresponding hole in the gang-frame K, and is secured by the nut r . The axle N is provided with the lugs $n n$, Fig. 8, which engage with corresponding notches in the gang-frame, Fig. 4, and so prevent the axle N from turning with the hub P on the bolt R. The hub P is provided with the sand-shields p and p' , which extend out over the head of the bolt R and the washer p^3 on the outer side of the hub, and which extend over the shoulder n' on the axle N on the inner side of the hub, and serve to keep the sand and dirt out of the bearings.

It will be noted that the axle N is removable and may be replaced when worn out, it being only necessary to unscrew the nut r and remove the bolt R, when the axle may be easily detached.

The gang-frame K has an arm, F, Fig. 6, which is provided with a longitudinal slot, f' , and a series of teeth, $f f f$, adapted to pass between the guide-bars m' and m^2 of the plate M

and engage with the lug m^3 , the bolt m passing through the slot f' in said arm. The distance of the centers of the revolving disks below the beam A may be easily adjusted (see Fig. 1) by
 5 loosening the nut m^4 and shifting the arm F up or down, as may be desired, and retightening the nut, when the lug m^3 will engage with two of the teeth $f f$ and prevent any further movement. The disk-knives G G, revolving, serve
 10 to cut the vines in advance of the plow, and may be accurately adjusted in height and depth to cut all the vines clean.

In Figs. 9 and 10 I show a modified form of gang-frame, whereby the revolving cutters may
 15 be adjusted in height independently of each other. I provide the arms which carry the cutters with a longitudinal slot, as shown at n^2 , Fig. 10, or with a series of bolt-holes, as shown at $n^3 n^3$. By means of these and the notches
 20 engaging with the lugs n on the axles N, either of the revolving cutters may be easily raised or lowered independently of the other, and quickly.

When the digger is in operation, it runs
 25 close to one side and under the potato-hills, the potatoes being received on the skeleton mold-board, which sifts them sufficiently from the surrounding earth. The separate hills of potatoes are left lying on their sides, the pota-
 30 toes showing on one side of the furrow and the tops of the hills on the other side.

When properly adjusted, this implement runs almost without guidance. If it has a tendency to run to the left, it is only necessary to
 35 screw in the set screw behind the gang standard and tighten up the main bolt which attaches the gang of the wheels to the beam. If it runs to the right, loosen the bolt and screw
 40 out the set-screw and then tighten the main bolt. To change the width between the revolving cutters, it is only necessary to take

out the bolts which hold the cutters to the gang-frame and place them with the short ends of the hubs next the frame if the narrow width is wanted, with the long ends if a wide
 45 width is desired, or one long and one short if a medium width is preferred.

What I claim is—

1. In combination with a revolving wheel or disk, a gang frame or axle having attached
 50 to its end the bolt R, and a removable and stationary axle, N, substantially as described.

2. In combination with a gang-frame, the bolt R, axle N, provided with lugs, and the hub P, provided with sand-shields $p p'$, sub-
 55 stantially as described.

3. An adjustable mold-board provided at its lower edge with lugs and at its upper edge with an adjusting-bolt, substantially as de-
 60 scribed.

4. An adjustable mold-board consisting of the piece E, having at its lower edge pivots and at its upper edge an adjusting device, and provided with a supplementary skeleton, sub-
 65 stantially as described.

5. The gang-frame arm F, having a longitudinal slot, f' , and a series of teeth, $f f$, in combination with the bolt m and plate M, pro-
 70 vided with the guide-bars $m' m^2$ and lug m^3 , all arranged substantially as described.

6. The gang-frame K, having an arm provided with a longitudinal slot, n^2 , or a series of holes, n^3 , and lug-notches, in combination with the axle N and bolt R, all arranged sub-
 75 stantially as herein described.

In witness whereof I have hereunto set my hand.

SAML. L. ALLEN.

Witnesses:

WM. H. WOODWARD,
 OSWALD SMITH.